J. G. MILLINGEN

CURIOSITIES OF MEDICAL EXPERIENCE

GLOBALBOOKSHELF.ORG

Curiosities of Medical Experience

by J. G. Millingen

GlobalBookShelf.org
books to read.

books to read.

Curiosities of Medical Experience by J. G. Millingen

This work was originally published in 1838.

This book can be found on our archive here:

globalbookshelf.org/books/curiosities-of-medical-experience

Brought to you by GlobalBookShelf.org. Our mission is to restore and preserve timeless literature for the modern digital reader.

All special formatting, digital restoration, and unique layouts in this edition are copyright © 2026 Global Book Shelf. All rights reserved.

Contents

Preface To The Second Edition
Introduction
Obesity
Dwarfs
Gigantic Races
Unlawful Cures
Voice And Speech
Ecstatic Exaltation
Varieties Of Mankind
On The Inhumation Of The Dead In Cities
Buried Alive
Spontaneous Combustion
Brassica Eruca, Or The Rocket Plant
Cagliostro
Lunar Influence On Human Life And Diseases
Spectacles
Leeches
Somnambulism
Medical Powers Of Music
The Food Of Mankind. Its Use And Abuse
Influence Of Imagination
Ancient Ideas Of Phrenology
Perfumes
Love Philters And Potions
Ventriloquism
Chaucer’s Description Of A Physician. The Doctor Of Physic
Dæmonomania
The Plague
Abstinence
Poison Of The Upas, Or Ipo
Homophagous And Polyphagous
Causes Of Insanity

Leprosy
The Aspic
Selden's Comparison Between A Divine, A Statesman, And A Physician
The Lettuce
Medical Fees
Enthusiasm
Medicinal Effects Of Water
Proverbs And Sayings Regarding Health And Disease
The Night-Mare
Incubation Of Diseases
Quackery And Charlatanism
On The Use Of Tea
Mandragore
Barber-Surgeons, And The Progress Of Chirurgical Art
On Dreams
On Flagellation
On Life And The Blood
Of The Homœopathic Doctrines
Doctrine Of Signatures
Coffee
Aqua Tophania
Plica Polonica And Human Hair
Animal Magnetism
Poisonous Fishes
Memory And The Mental Faculties
Affections Of The Sight
Hellebore
Sympathies And Antipathies
The Archeus Of Van Helmont
Monsters
Longevity
Cretinism
Temperaments
Solar Influence
Sweating Fever

Smallpox
Generative Animalcules
Circulation Of The Blood
Drunkenness
Decapitation
Mummies
Hydrophobia
On The Rise And Progress Of The Science Of Medicine
Medicine Of The Chinese
Experiments On Living Animals

Preface To The Second Edition

The rapid sale of the first edition of this work has induced the publisher to reprint it with considerable additions in a less expensive, and more concise form—and the author embraces this opportunity, gratefully to acknowledge the liberality with which it has been received, and the indulgence shown to its many imperfections. At the same time he cannot but regret, that in some quarters it has been surmised that he yielded credence to the many strange relations which he has recorded from various medical works, but which he merely narrated, to show the fallacy even of experience, and the many dangers that may arise from the most ingenious theories and doctrines, in the very ratio of their apparent plausibility.

Although these sketches were not intended for the profession, yet they may prove of some utility to the pupil who commences the arduous study of medicine. They may convince him, that great names, however justly respected and renowned, do not constitute a sufficient basis, on which to rest a satisfactory and conclusive judgment; and, as Locke has justly observed, that "*reverence or prejudice must not be suffered to give beauty or deformity to any of their opinions*." He will find that of which further experience will subsequently convince him, that medical investigation is too often founded upon analogy and hypothesis—but let not this painful and disheartening impression arrest his progress, or deter him from seeking to assist his judgment by collecting "the scattered parts of truth," for in speaking of hypothesis, Dr. Crichton has thus expressed himself: "There is a period in knowledge, when it must be indulged in if we mean to make any progress; it is that period when the facts are too numerous to be recollected without general principles, and yet, where the facts are too few to constitute a valid theory. If the exterior form of an edifice is often the principal motive with men for examining its internal structure; so it is in science, that the splendour of an hypothesis, and the desire of proving its solidity, are more frequent motives for research than a mere love of knowledge."

Notwithstanding our boasted progress in scientific pursuits, and our supposed approach to perfection, there never perhaps was a period, since the fanciful days of Paracelsus, Agrippa, and Van Helmont, when more deceitful and fascinating reveries were indulged in than at the present *enlightened* moment, nor more ingenuity and disingenuousness displayed in seeking to give substance to a vision or overthrowing its baseless fabric. It is painful to be obliged to admonish the would be legislators of our belief, in the words of the sceptical Bolingbroke:

"Folly and knavery have prevailed most where they should be tolerated the least, and presumption has been excused most where diffidence and candour are on many accounts the most necessary.

"Quale per incertam lunam sub luce maligna
Est iter in Silvis."

Hanwell Lunatic Asylum,
Dec. 1838.

Introduction

The great success and correspondent utility of D'Israeli's "Curiosities of Literature," have induced me to add to the ample harvest of that ingenious writer a few gleanings from another field. They may not afford the same amusing variety to the general reader, but they may tend to draw some attention to many important points that affect the chequered lot of mankind. The progress that every science has rapidly made during the last half-century has been astounding, and seems to have kept pace with those struggles of the intellectual faculties to burst from the shackles of prejudice and error that had ignobly bound them for so many ages. Groping in darkness, man sought the light, but unfortunately the sudden refulgence at times dazzled instead of guiding his steps in the pursuit of truth, and led him into errors as perilous as those that had surrounded him in his former mental obscurity. His gigantic powers were aroused, but, too frequently misapplied, they shook the social edifice to its very foundation. The daring hand of innovation destroyed without contemplating what better fabric could be raised on the ruin: and while the nobler faculties with which Providence had gifted us were exerted for the public weal, the baser parts of our passions sought liberty in licentiousness. Ambition degenerated into ferocity, scepticism led to impiety, and even apparent virtue sought to propagate the doctrines of good, by assuming the "goodly outside" of vice. Religion was overthrown because priestcraft had deceived, and high rank was held up to detestation because princes and nobles had been corrupt; and to use Shakespeare's words,

Thus we debase
The nature of our seats, and make the rabble
Call our cares, fears; which will in time break ope
The lock o' the senate, and bring in the crows
To peck the eagles.

In ten short years this mighty revolution in the intellect of man took place,—in a country too that may be considered the cradle of the future weal and woe, perhaps of the universe;—in ten short years we beheld Montesquieu, Raynal, Rousseau, Voltaire, Condillac, Helvetius, beaming like rising meteors in the dark firmament, and shedding a fearful gleam on the past, the present, and the future; boldly tracking a path once trodden with groping steps by Bacon, Descartes, Hobbes, and Gassendi![1] No longer trusting in blind confidence to the scholastic rules of those dignitaries of science whose conclusions were considered sufficient to command our faith, man became sceptical and positive; doubt and disbelief were carried into every investigation; the reign of *prestiges* was over; the former monopolists of power and of science, the two great levers of society (the more effective since their fulcra rested on timidity and ignorance), were thrown from their antiquated stand, and found themselves brought face to face in explanatory contact with their once all-believing and obedient pupils, but now become a neoteric generation;—the crown and the sceptre, the cap and the gown, were baubles in their eyes. When the faculty of reasoning was not able to prevail, the shafts of

[1] During these ten years the following works appeared:
Montesquieu—Esprit des Lois, 1748.
—— Défense de l'Esprit des Lois, 1750.
Rousseau—Discours sur l'Influence des Sciences et des Lettres, 1750.
—— Discours sur l'Inégalité des Conditions, 1754.
Voltaire—Essai sur les Mœurs et l'Esprit des nations, 1757.
Condillac—Essai sur l'Origine des Connaissances Humaines, 1746.
—— Traité des Sensations, 1754.
Helvétius—De l'Esprit, 1758.

ridicule were drawn from the quiver of philosophic wit, and inflicted rankling wounds where they could not destroy. Ancient systems were exploded with ancient prejudices, theories were overthrown with dynasties, and doctrines with governments;—one might have imagined that the formidable power of steam had been communicated to the mind, illustrating the words of Milton,

The mind is its own place, and in itself
Can make a heaven of hell, and hell of heaven.

Science, now aimed at generalization-the physiologist, the chemist, became legislators, stepping from the academic chair to the senatorial seat, and from teaching how to benefit mankind they hurried to destroy, forgetful, in their ambitious dream, of the noble encomium of Cicero, "*Homines ad deos nullâ se proprius accedunt, quam salutem hominibus dando*."

Philosophy and the study of medicine were now inseparable; this generous science was not to be attained in books only, but in the study of mankind. Rousseau thus spoke of physicians when writing to Bernardin de Saint Pierre:—"*Il n'y a pas d'état qui exige plus d'étude que le leur; par tous les pays, ce sont des hommes les plus véritablement savans et utiles*." Voltaire was of a similar opinion when he thus expressed himself:—"*Il n'est rien de plus estimable au monde, qu'un médecin qui, ayant dans sa jeunesse étudié la nature, connu les ressorts du corps humain, les maux qui le tourmentent, les remèdes qui peuvent le soulager, exerce son état en s'en défiant, et soigne également les pauvres et les riches*."

How came it then that these great observers did not partake of the prejudices of Montaigne, Molière, and other writers, who invariably stigmatized the practice of physic? simply because it was no longer a dogmatic profession exercised with scholastic pedantry, but a science founded on the study of nature, and the immutable laws of sound philosophy. Although a classic education forms an indispensable part of a physician's education, yet it is in more important pursuits that his experience should be obtained: the knowledge of ancient languages is principally useful in discovering the errors of the olden writers, and in detecting the barefaced plagiarisms of the moderns.

Much valuable time, however, may be lost in the pursuit of ancient lore; and Montaigne has justly observed, "There are books which should only be read, but others that must be learnt." This discrimination is of the utmost importance; for it may be said of the bookworm's library, "*Multitudo librorum sæpe est nubes testium ignorantiæ possessoris*." Aristippus very properly replied to a man who boasted of his reading, "It is not those who eat the most that are hale and healthy, but those who can best digest." Hence the distinction that arose between the philosophical physician and the dogmatizer. The one was guided by the observation of facts, the other by glossarial records. Men of erudition are seldom men of genius. The exploring mind is ever anxious to take flight from the prison-house of scholastic restraints. Scepticism, moreover, is frequently the result of deep study, which leads the neophyte into such a labyrinth of conflicting opinions, that decision and conviction are not easily attained. Laugier, a most learned German physician, had no faith in his profession: being reproached with his incredulity, he replied, "*Credo, Domine, adjuva incredulitatem meam*."

The preceding observations lead to an important, and at the same time a painful reflection. Will this rapid intellectual progress tend ultimately to meliorate the condition of mankind? Nations have been compared to Man: having once reached the acme of prosperity and strength, their vigour like his gradually declines. History offers nothing more than a chronicle of such facts. Whatever may be the causes of this degeneracy, is a matter foreign to my present subject; although I may be permitted to observe by the way, that it may have arisen from the great disparity and inequality in the condition of society that tends to lull the

wealthy into apathetic indifference and blind security in their power, while it urges the poor and the bold to rapine and destructive deeds. This perilous state can only cease to exist when general education is improved: if this most important source of real prosperity is attended to, we perhaps need not seek in particular events, gloomy anticipations of the future.

Whatever may be the destinies of nations in the wreck of empires and the destruction of men, the philosopher calmly seated on ruins that often "speak that sometime they were a worthy building," reflects with pride that science has withstood the withering hand of time. It is true, that in every study errors have been heaped upon errors; but truth will often result from falsehood, and doubt that brings on investigation, leads to comparative certainty. Locke has justly observed, that the faculty of reasoning seldom or never deceives those who trust to it: its consequences, from what it builds on, are evident and certain; but that which it oftenest, if not only, misleads us in, is, that the principles from which we conclude, the grounds upon which we bottom our reasoning, are but a part—*something* is left out which should go into the reckoning to make it just and exact. This *something* is the constant pursuit of the philosopher. The name of a country may be obliterated from a map, the deeds of heroes be effaced from the annals of the world; the pursuit of truth can only cease when man is no more;—its light may be veiled by ignorance, craft, or cupidity,—but it cannot be extinguished. The cities that gave birth to the illustrious philosophers of old have long ceased to exist, yet the immortal works of those sages that have escaped the ravages of time, are still as fresh and luxuriant as when their glorious oratory enchanted and captivated their disciples' ears.

No science has been cultivated with more difficulty than that of Medicine. The following papers will show how fearfully it has had to contend in turn with the power of priestcraft, that sought to monopolize its practice, as a privilege from the gods, and with the furious opposition of contemporary members of the profession, whose cupidity and vanity were alarmed by the introduction of novel doctrines, which they were too old, too busy, or too obstinate to learn. The extracts from Medical Literature that I have given will show that most of our modern notions were known to the earliest writers, and were only improved in succeeding ages, as in like manner our present doctrines will in all probability be advanced by future generations. The destruction of kingdoms and of chronicles, the inroads of barbarism,—the more destructive inroads of ignorance and bigotry, have not been able to produce a void in the world of science; the catenation of philosophic inquiry has never been broken in its connexions. Oppression only riveted the chain more firmly, as if to resist the united power of man and time. Adversity, which

Like the toad, ugly and venomous,
Wears yet a precious jewel in its head,

has always been considered the best school of practical wisdom: and it is thus that, amidst the portentous events which have shaken every institution, and which perhaps still menace further dissolution, the fane of science has oftentimes been more vividly illumined by the surrounding conflagration.

The evils that desolate society too frequently arise from the hasty acts of intemperate men, who deem it necessary to meet the tumultuous demands of the multitude with decided and energetic, but, at the same time, perilous measures: the progress of science, on the contrary, is gradual, and of course more likely to be eventually permanent. While political speculations are daily becoming more uncertain in their operations, the triumph of intellectual superiority over prejudice is every where apparent;—unjust disabilities are being abolished, and the gates of learning thrown open to every candidate, whatever may be his religious or his political tenets.

In our country, more than in any other, industry and perseverance have ever had a fairer chance of attaining social pre-eminence, despite the shackles imposed upon the candidate for fame by institutions framed in the darker ages. What then may we not expect, when we behold the bright era that opens before us,—when exclusive institutions will be considered the obsolete remnants of expiring bigotry and intolerance! May we not indulge in the most sanguine hope, that our former glories are only the historic earnest of still more glorious days? If the spirit of the immortal Locke could hover over our earth, he would feel, with some degree of pride, that his admonitions have not been unheeded; and that "those who live mewed up within their own contracted territories, and will not look abroad beyond the boundaries that *chance*, *conceit*, or *laziness* have set to their inquiries, but live separate from the notions, discourses, and attainments of the rest of mankind," have at last felt the necessity of yielding to the voice of reason, or rather of their own welfare.

In the following work I merely rank myself as a compiler. I have only sketched—sometimes perhaps with too fanciful a pencil, subjects of great importance, which, by being thus rendered popular, may induce abler pens to imbody them in a more permanent form. The variety of matter introduced has obliged me to be discursive, and to have recourse to some repetitions that were necessary to illustrate subjects not easily abridged. Whenever I have held up errors and evil passions to exposure, I have not, in one single instance, I trust, been influenced by any hostility towards men or parties—ranks or creeds. If I have unwillingly and unwittingly given offence, I shall most sincerely lament it. My materials have been gleaned from the works of many contemporaries, whose well-known and justly-appreciated names will in general appear: but I should be wanting in candour, did I not avow that I have derived much valuable information from *Le Dictionnaire des Sciences Médicales*, an elaborate compilation, containing more "Curiosities of Medical Experience" than any existing work.

48, Eaton Square,
January, 1837.

Obesity

Various are the opinions concerning the cause of excessive corpulence. By some it is attributed to too great an activity in the digestive functions, producing a rapid assimilation of our food; by others, to the predominance of the liver: while indolence and apathy, such as is commonly observed in the wealthy monastic orders, are considered as occasioning a laxity of fibre favourable to this *embonpoint*. Boileau has thus described one of these fat lazy prelates, who

Muni d'un déjeûner,
Dormant d'un léger somme, attendait le dîner.
La jeunesse en sa fleur brille sur son visage;
Son menton sur son sein descend à triple étage;
Et son corps ramassé, dans sa courte grosseur,
Fait gémir les coussins sous sa molle épaisseur.

It is certain that exercise, anxiety of mind, want of sleep, and spare food, are circumstances opposed to fatness. This fact is illustrated by Shakspeare, when Cæsar says to Antony,

Let me have men about me that are fat,—
Sleek-headed men, and such as sleep o' nights;
Yon Cassius has a lean and hungry look,
He thinks too much: such men are dangerous.

Antony and Dolabella were both men of some corpulence. The Roman ladies dreaded above all things too voluminous a development of the bosom: to prevent it they were in the habit of applying to their breasts the raw flesh of a fish called Angel. Hippocrates has maintained that obesity was an obstacle to conception. This assertion which was partaken by other medical writers, may, in some measure account for the dread of corpulence. Strange indeed have been the fancies on this subject amongst various nations.

Fat is a fluid similar to vegetable oils, inodorous, and lighter than water; besides the elements common to water, to oils, and wax, it contains carbon, hydrogen, and sebacic acid, which is pretty similar to the acetic. Human fat, like that of other animals, has been frequently employed for various purposes. A story is told of an Irish tallowchandler, who, during the invasion of Cromwell's army, made candles with the fat of Englishmen, which were remarkable for their good quality; but when the times became more tranquil, his goods were of an inferior kind, and when one of his customers complained of his candles falling off, he apologised by saying, "I am sorry to inform you that the times are so bad that I have been short of Englishmen for a long time."

Obesity may be considered a serious evil, and has exposed corpulent persons to many *désagrémens*. The ancients held fat people in sovereign contempt. Some of the Gentoos enter their dwellings by a hole in the roof; and any fat person who cannot get through it, they consider as an excommunicated offender who has not been able to rid himself of his sins. An Eastern prince had an officer to regulate the size of his subjects, and who dieted the unwieldy ones to reduce them to a proper volume. In China this calamity is considered a blessing, a man's intellectual qualities are esteemed in the ratio of corporeal bulk.

There are cases on record among ourselves where unwieldiness led to estimation. The corpulent antiquarian Grose was requested by his butcher to tell all his friends that he bought his meat from him; and the paviers of Cambridge used to say, "God bless you, sir!" to a huge

professor when he walked over their work. Fatness has often been the butt of jocularity. Dr. Stafford, who was enormously fat, was honoured with this epitaph:

Take heed, O good traveller, and do not tread hard,
For here lies Dr. Stafford, *in all this church-yard*.

And the following lines were inscribed on the tomb of a corpulent chandler:

Here lies in earth an honest fellow,
Who died by fat and lived by tallow.

Dr. Beddoes was so uncomfortably stout that a lady of Clifton used to call him "the walking feather-bed." At the court of Louis XV. there were two lusty noblemen, related to each other: the king, having rallied one of them on his corpulency, added, "I suppose you take little or no exercise?" "Your majesty will pardon me," replied the bulky duke, "for I generally walk two or three times round my cousin every morning."

Various ludicrous anecdotes are related of fat people. A scene between Mrs. Clive and Mrs. Pritchard, two corpulent actresses, must have been very amusing. They were playing in the parts of Lady Easy and Edging, in the Careless Husband, when the former desires Edging to pick up a letter she had dropped; and Mrs. Clive, who might as well have attempted to raise a hundred pound weight, exclaimed, "Not I indeed, take it up yourself if you like it." This answer threw the audience into roars of laughter, when Mrs. Pritchard replied, "Well, if you won't take up the letter, I must find some one who will;" and so saying, she beckoned to a servant in the wing, who came forward and terminated the dispute.

In some countries, especially in the East, moderate obesity is considered a beauty, and Tunisene young ladies are regularly fattened for marriage; a different practice from that of the Roman matrons, who starved their daughters, to make them as lean as possible on such occasions. Thus Terence,

Nostræ virgines—si bono habitu sunt, matres pugiles esse aiunt, et cibum deducunt.

Erasmus states that the Gordii carried their admiration for corpulence to such an extent, that they raised the fattest amongst them to the throne. It is well known that the preposterous size of some of the Hottentots is deemed a perfection, and one of their Venuses was not long since exhibited in London.

There is no doubt that food materially influences this condition of mankind, although we frequently see enormous eaters who are miserably lean, and fat persons whose diet is most scanty. During the late war, a ravenous French prisoner was known to eat four pounds of raw cow-udder, ten pounds of raw beef, and two pounds of candles, per diem, diluting his meals with five quarts of porter; yet this carnivorous brute was a perfect skeleton.

Amongst the many predisposing causes of obesity we may rank emasculation. An epicurean fishmonger of the name of Samuel Tull performed this operation on fishes, to render them more delicate. His curious experiments were submitted to the Royal Society. The same practice has been subsequently illustrated by Professor Dumeril. Father Charleroix informs us that Caraib cannibals had recourse to this process to fatten their prisoners before they were devoured.

Anatomical pursuits are also known to occasion *embonpoint*. This has been frequently observed amongst medical pupils. Professor Mascagni attributed his corpulence to his constant attendance on dissections; he also excused his amorous propensities on similar grounds.

For the cure of corpulency, diminution of food of a nutritious nature has been generally recommended; added to this, little sleep and much exercise are advised. Acids to reduce fatness are frequently administered, but have done considerable mischief. Amongst other wonderful accounts of their efficacy in such cases, it is related of a Spanish general who was of an enormous size, that he drank vinegar until his bulk was so reduced that he could fold his skin round his body.

For a similar purpose soap has been frequently recommended, particularly by Dr. Flemyng. He began this experiment with one of his patients who weighed twenty stone and eleven pounds (jockey weight): in July 1754, he took every night a quarter of an ounce of common Castile soap. In August 1756 his bulk was reduced two stone, and in 1760 he was brought down to a proper condition.

Darwin is of opinion that salt and salted meat are still more efficacious than soap. All these experiments, however, are in general not only useless but pernicious, and frequently prove fatal. Mr. Wadd, from whose curious work on corpulence much is extracted in this article, properly observes that, “certain and permanent relief is only to be sought in rigid abstemiousness, and a strict and constant attention to diet and exercise.” Dr. Cheyne, who weighed thirty-two stone, reduced himself one-third, and enjoyed good health till the age of seventy-two. Numerous instances of the kind are mentioned, where journals of gradual reduction were kept: the following is an abstract of one of them, in the case of a person who, on the 17th June 1820, weighed twenty-three stone two pounds:—

June 17
23 stone 2 pounds.

July 27
21 stone 10 pounds

September 10
20 stone 7 pounds

October 10
19 stone 3 pounds

November 10
18 stone 11 pounds

December 10
18 stone 4 pounds

December 25
18 stone 1 pounds

In another case, attended by Dr. Gregory of Edinburgh, the patient weighed twenty-three stone, and by a regular system of diet was brought down to fifteen stone. In this instance brown bread, with a certain quantity of bran in it, was employed; and it is well known that the alimentary secretions are materially altered by the quality of bread. The article of drink also requires much attention. Corpulent persons generally indulge to excess, and in this case, every endeavour to reduce them will be vain. We frequently see our jockeys reducing themselves to the extent of a stone and a half in the week. A lower scale of diet is by no means as injurious as it is generally supposed; the English prisoners made by Tippoo Saib, though kept upon a scanty pittance of bread and water, found themselves in better health than before, and some of them were cured during their captivity of liver complaints of long and severe duration.

One of the most corpulent persons known was Mr. Lambert, of Leicestershire, who weighed fifty-two stone eleven pounds (14 lbs. to the stone).

At Hainton, there died in 1816, Samuel Sugars, aged fifty-two; and his body, with a single coffin weighed fifty stone.

In 1754 died Mr. Jacob Powell, of Stebbing in Essex: his body was above five yards in circumference, and weighed five hundred and sixty pounds; requiring sixteen men to bear him to his grave.

In 1775 Mr. Spooner, of Skillington near Tamworth, weighed, a short time before his death, forty stone and nine pounds, and measured four feet three inches across the shoulders.

Keysler mentions a young man in Lincoln who ate eighteen pounds of beef daily, and died in 1724, in the twenty-eighth of his age, weighing five hundred and thirty pounds.

A baker, in Pye Corner, weighed thirty-four stone, and would frequently eat a small shoulder of mutton, baked in his oven, and weighing five pounds; he, however, persisted for one year to live upon water-gruel and brown bread, by which he lost two hundred pounds of his bulk.

Mr. Collet, master of the Evesham Academy, weighed upwards of twenty-six stone; when twelve years old, he was nearly as large as at the time of his death. At two years of age he required two nurses to lift him in and out of bed, one of whom in a fit of anger he felled to the floor with a blow of his hand.

At Trenaw in Cornwall, there was a man, known by the name of Grant Chillcot, who weighed four hundred and sixty pounds; one of his stockings could contain six gallons of wheat.

Our poet Butler must have met with some such enormous creatures in the type of his Saxon Duke, who, in Hudibras,

———did grow so fat,
That mice (as histories relate)
Ate grots and labyrinths to dwell in
His postique parts, without his feeling.

If obesity has been the subject of ungenerous jokes, leanness has not passed unnoticed. An anecdote is related of a reverend doctor of a very ghostly appearance, who was one day accosted by a fellow with the following salutation: “Well, doctor, I hope you have taken care of your *soul*?” “Why, my friend?” said the divine. “Because,” replied the impertinent interlocutor, “your *body* is not worth caring for.”

A poor diminutive Frenchman being ordered by his Sangrado to drink a quart of ptisan a day, replied, with a heavy sigh, “Alas! doctor, that I cannot do, since I only hold a pint.”

When the Duke de Choiseuil, a remarkably meager man, came to London to negotiate a peace, Charles Townshend being asked whether the French government had sent the preliminaries of a treaty, answered, “He did not know, but they had sent the *outline of an ambassador*.”

That change of spare diet to a more nutritious food may bring on some corpulence, is evidenced in an anecdote of Colly Cibber, who relates that a poor half-starved actor, who used to play the Apothecary in Romeo and Juliet, to the life, and with great applause, received an augmentation of salary in consequence of his popularity. Unfortunately, increase of wealth led him to increase his fare, until he gradually assumed a plumpness which unfitted him for the worn-out pharmacopolist; and not being able to perform in any other line, the

poor man was discharged. However, poverty once more brought him down to his original condition, when he reappeared upon the boards as triumphantly as ever.

If *embonpoint* is generally a sign of good-humour and a cheerful disposition, leanness frequently betokens a sour, crabbed, and ill-natured character. Solomon has said, “A merry heart doeth good like medicine; but a broken spirit drieth the bones.” This observation, however, cannot be considered a rule in forming a judgment of various tempers. This is by no means an easy attempt in our intercourse with the world, when physiognomy is not always a sure guide in the selection of our companions. Dr. Franklin tells a singular story on this subject:

“An old philosophical gentleman had grown, from experience, very cautious in avoiding ill-natured people. To endeavour to ascertain their disposition he made use of his legs, one of which was remarkably handsome, the other, by some accident, crooked and deformed. If a stranger at the first interview regarded his ugly leg more than his handsome one, he doubted him; but if he spoke of it, and took no notice of his handsome leg, that was sufficient to determine the philosopher to have no further acquaintance with him. Every body has not this two-legged instrument; but every one, with a little attention, may observe signs of this carping, fault-finding disposition, and take the same resolution of avoiding the acquaintance of those infected by it. I therefore advise those querulous, discontented, unhappy people, if they wish to be respected and beloved by others, and happy in themselves, *to leave off looking at the ugly leg*.”

Various expedients, in addition to a better diet, have been resorted to, to restore lean persons to a better case; but amongst the most singular that we have on record is that of flagellation. Galen says, that horse-dealers having been observed to fatten horses for sale by flogging them, an analogous method might be useful with spare persons who wish to become stouter. He also mentions slave-dealers who employed similar means. Suetonius informs us that Musa, the favourite physician of Augustus, used to fustigate him, not only to cure him of a sciatica, but to keep him plump. Meibomius pretends that nurses whip little children to fatten them, that they may appear healthy and chubby to their mothers. No doubt but flagellation determines a greater influx of blood to the surface, and may thus tend to increase the circulation, and give tone to parts which would otherwise be languid. With this intention, *urticatio*, or whipping with nettles, has been frequently used in medical practice with great advantage. Xenophon thawed his frozen soldiers by flagellation. In amorous despondency and grief, Cœlius Aurelianus recommended this process, and Elidœus Paduanus advises it to bring out tardy eruptions. The most singular effect of this castigation is recorded by Meibomius, in his work *De flagrorum usu*, &c., dedicated to a councillor of the Bishop of Lubeck, with the following epigraph:

Delicias pariunt Veneri crudelia flagra.
Dum nocet, illa juvat; dum juvat, ecce nocet.

Menghus Faventinus had long before extolled this practice, mentioned also by Cœlius Rhodiginus, and various ancient writers, and more recently recognised as effectual by Rousseau, in his Confessions.

A remarkable case of leanness is mentioned by Lorry in a priest, who became so thin and dry in all his articulations, that at last he was unable to go through the celebration of mass, as his joints and spine would crack in so loud and strange a manner at every genuflexion, that the faithful were terrified, and the faithless laughed. One of these miserable laths once undertook a long journey to consult a learned physician on his sad condition, and having begged to know, in a most piteous tone, the cause of his desiccation, was favoured with the following

luminous answer: “Sir, there is a predisposition in your constitution to make you lean, and a disposition in your constitution to keep you so.” Another meager patient being told that the celebrated Hunter had fattened a dog by removing his spleen, exclaimed, with a deep sigh, “O, sir! I wish Mr. Hunter had mine.”

Dwarfs

We can scarcely believe that the ancients gave any credence to the fabulous accounts of dwarfish nations, or could be persuaded of the existence of those pigmies spoken of by Aristotle and other writers, who, in all probability, described as such a species of diminutive monkeys.

Athenæus mentions a race of dwarfs who were in perpetual war with cranes, who harnessed partridges to their chariots, and were obliged to cut down corn with felling-axes, like forest trees. Pliny asserts that their constant enemy, the crane, drove them out of Thracia, but that they still were to be met with in Ethiopia, near the source of the Nile, and above the rise of the Ganges, where they were named *Spithania*, their stature not exceeding three palms. Nicephorus Calixtus, in his Ecclesiastical History, mentions an Egyptian who was not longer than a partridge, and who, at the age of twenty-five, displayed considerable mental endowment. Strabo, however, judiciously observed that these stories arose from the circumstance of the small size of every animal in intemperate regions. Various modern travellers have recorded the most absurd stories of diminutive men, as well as of gigantic nations; but to most of them we may apply the words of Congreve—

Fernandez Mendez Pinto was but a type of thee,
Thou liar of the first magnitude.

It is nevertheless true, that man exhibits differences of stature in various climes. The Laplanders and Samoïdes in Europe, the Ostiacks and Tungooses in Asia, the Greenlanders and Esquimaux in America—all the natives indeed of high northern latitudes are remarkably short, measuring little more than four feet; and Niels Sara, the Laplander mentioned by Von Buch in his Travels, and who measured five feet eight inches, may be considered as a gigantic exception. It had been reported by travellers, that a nation of white dwarfs, called *Quimos* or *Kimos*, existed in the interior of Madagascar; but Flacourt has positively denied the fact, although Commerson, the naturalist of Bougainville, and De Modave, confirm the former statement. It has also been remarked by various travellers, that dwarfs are not uncommon amongst robust and manly races, instanced in Poland and Lithuania. Sigismund de Herbestein made the same observation in Samogitia, the population of which was of a high stature.

It is by no means evident that climate or any external agency invariably produces this effect; for, in the very regions inhabited by the stunted Hottentot, the shortest race in Africa, since the Bosjernan tribe scarcely ever exceed four feet, we find the strong and tall Kaffer. Amongst these it is also to be remarked, that there exists a singular difference between the sexes. Langsdorf thus expresses himself on the subject: “The Kaffer women were mostly of low stature, very strong-limbed, and particularly muscular in the leg: the men, on the contrary, were the finest figures I ever beheld; they were tall, robust, and muscular. A young man of about twenty, of six feet ten inches high, was one of the finest figures that perhaps was ever created. He was a perfect Hercules; and a cast from his body would not have disgraced the pedestal of the deity in the Farnese Palace.” He further adds, “There is, perhaps, no nation on earth, taken collectively, that can produce so fine a race of men as the Kaffers: they are tall, stout, muscular, well-made, elegant figures. They are exempt, indeed, from many of those causes that in more civilized societies contribute to impede the growth of the body. Their diet is simple, their exercise of a salutary nature; their body is neither cramped nor encumbered by clothing; the air they breathe is pure; their rest is not disturbed by violent

love, nor their minds ruffled by jealousy; they are free from those licentious appetites which proceed frequently more from a depraved imagination than a real natural want. Their frame is neither shaken nor enervated by the use of intoxicating liquor; they eat when hungry, and sleep when nature demands it. With such a kind of life, languor and melancholy have nothing to do. The countenance of a Kaffer is always cheerful, and the whole of his demeanour bespeaks content and peace of mind."

Are diminutive races more productive than those of stronger formation? The brute creation has been taken as an example in support of this opinion; large animals producing one or two young ones, while the smaller species are singularly prolific. The lioness seldom brings forth more than two or four whelps, the cat will have a litter of eight or ten kittens; the pullulation of insects is incredible. But is not this circumstance an illustration of the wisdom of Providence? If the larger species were as abundant as the lesser races, where could they find sustenance in regions where the produce is, under the influence of the seasons, occasionally abundant or scarce? In the ocean, this is not the case; the myriads of its creatures suffice to support each other, and we therefore meet in the deep, the largest of animals in numerous shoals, while the small fry are generated in marvellous abundance.

That the facility of obtaining food and the nature of the nutritious substances that animals may find, influence their stature, is evident. In sandy and arid plains poor in pasture, we find horses and cattle of a stunted breed: the herds of Flanders widely differ from those of Wales and of the Ukraine, and the Scotch and Welsh cattle cannot be compared to those of Holstein. At the same time, it must be observed, that in regard to dwarfs, although it frequently does occur that they are labouring under a hereditary lowness of stature, this is not invariably the case. In these instances dwarfs may be considered as morbid phenomena. Thus Bebe, the dwarf of Stanislaus of Poland, who was thirty-three French inches high, was weak, of delicate health, became deformed as he grew up, and died at the age of twenty-three; his parents were of the usual stature: whereas the Polish nobleman Borwlaski was well-made, active, intelligent: he measured twenty-eight inches; he had a brother of thirty-four inches, and a sister of twenty-one. Stöberin, of Nürenberg, was nearly three feet high at twenty, well-proportioned, and possessing a cultivated mind: his parents, brothers, and sisters, were all dwarfs. Such natural dwarfs have been known to evince brilliant qualities. Uladislas, king of Poland, surnamed *Cubitalis* from his only measuring a cubit in height, was renowned for his warlike exploits; and we find a dwarf of the name of Kasan, a khan of Tartary, boldly leading their enterprising bands. These individuals sprung from dwarfish parents; whereas the dwarfs we generally meet with are deformities of nature; their head is voluminous, their intellectual faculties obtuse, they are mostly childish in their ideas and pursuits, and are rarely able to propagate their race.

Held in contempt by the people, dwarfs naturally become peevish and irritable; and the diminutive names given to them to match their apparent natural imperfection tend constantly to increase their irritability. Thus the Latins called them *Homunciones*, the Italians *Piccoluomini*, the Flemings *Mennekin*,—whence, no doubt, our term *Mannikin* given to little men, and *Minikin* applied to small pins. A very curious case of a dwarf born from parents of the usual stature was exhibited in Paris in 1819: her name was Anne Souvray; she was born in the Vosges, and was only thirty-three inches in height. She was at that period seventy-three years of age; was gay, animated, good-humoured, and danced with tolerable grace with her sister Barbe, seventy-five years of age, and taller than her by two inches. In 1762, King Stanislaus wanted to marry her to his Bebe; the bridegroom, however, did not live to contract so desirable a match; but, faithful to her lover, she ever afterwards called herself *Madame Bébé*.

Jeffrey Hudson, the dwarf of King Charles, must also have been of a very diminutive stature, since we find that he was served up in a pie to the royal table, and jumped out when the crust was raised. It appears that introducing live pies in those days were not an uncommon frolic; hence there may be some truth in the old song of

Four-and-twenty black-birds bak’d in a pye,
When the pye was open’d the birds began to sing,
Was not that a dainty dish to lay before a king?

Gigantic Races

While we dismiss as fabulous all ancient and modern accounts of dwarfish races, we must also treat with the same scepticism the relations of gigantic nations. Although individuals of incredible stature have been occasionally seen, the word giant must be considered not only comparative as regarding primary races, but in many instances allegorical. Thus the Hebrew word, *Nophel* and *Giboor* (*Nephilim* and *Gibborim* in the plural), did not signify giants, as commonly translated, but cruel and violent men. Athletic power and uncommon energies were naturally associated with the idea of supernatural stature, though intellectual accomplishments were not always included in the association: on the contrary, we find the ancient axiom *Homo longus rarè sapiens* frequently adduced.

In temperate climates the height of the human race averages from four feet and a half to six feet, but occasional instances have been met with of men reaching eight and nine feet—nay, some authors go so far as ten and eighteen; but the latter assertions seem to refer to fossil bones attributed to man, but which evidently belonged to other animals. Buffon mentions gigantic human bones discovered at Lucerne, but which upon examination Blumenbach pronounced to be the remains of an elephant. Halicot, in his work called *Gigantosteologia*, describes bones found in a sepulchre in Dauphiny over which was a stone inscribed Teutobocchus Rex: this skeleton was twenty-five feet and a half high, and ten feet broad at the shoulder. Riolan, the celebrated anatomist, disputes the fact; and in his book entitled *Gigantomachia* positively affirms that they also belonged to an elephant. It is worthy of remark, that in this controversy each party considered his opinion and decision of sufficient weight to need no illustration, and therefore neither of them thought it necessary to confirm his *dixit* by drawings and engravings of the questionable remains. Such is the vanity of the learned! An infallible philosopher informs us that Adam's stature was one hundred and twenty-three feet nine inches; Eve's, one hundred and eighteen feet nine inches and three quarters; Noah's, twenty feet short of Adam's; Abraham's, twenty-eight feet; Moses', thirteen; and Hercules', ten.

That the first races of man were of larger dimensions than those of our contemporaries, has ever been a general opinion. Thus Virgil in his Georgics:

Grandiaque effossis mirabitur ossa sepulchris.

Lucretius ascribes the same superiority to animals.

Jamque adeò fracta est ætas, effœtaque tellus
Vix animalia parva creat, quæ cuncta creavit
Sæcla, deditque ferarum ingentia corpora partu.

And again the Mantuan poet,

Sic Omnia fatis
In pejus ruere, ac retrò sublapsa referri.

Not only have our forefathers been considered more gigantic in stature, but of more vigorous power. Hence Juvenal says,

Nam genus hoc, vivo jam decrescebat Homero.
Terra malos homines nunc educat, atque pusillos.

It is however obvious, that former races, although they might have excelled the present generation in vigour from the nature of their education and pursuits, could not claim any pre-

eminence in stature. The remains of human bones, found in tombs and Egyptian mummies, demonstrate this fact most clearly; and the armour, helmets, and breastplates of the ancients confirm it. Their swords were as light, nay, much lighter in many instances, than those of the present day; and those enormous ones of the times of chivalry were only wielded to inflict one overwhelming blow with both hands, and could scarcely be recovered for protection.

Ancient writers corroborate this opinion. Homer, when speaking of a fine man, gives him four cubits in height and one in breadth. Vitruvius fixes the usual standard of man at six Roman feet: the giant Gabbarus mentioned by Pliny did not exceed nine feet. Aristotle's admeasurement of beds was six feet; and certainly the doorways of ancient edifices by no means indicated taller inmates than our present generation. It is therefore pretty clear that the supposed fossil remains of gigantic human bones belonged to the *Megatherium*, the *Palæotherium*, and other individuals, which certainly prove that in remote ages there existed animals of much larger dimensions than any now in being, though we have no reason to suppose that this variety extended to our species.[2]

The origin of the fabled giants has led to marvellous disquisitions. Many fathers of the church, amongst whom we may quote St. Cyprian, St. Ambrosius, St. Chrosostom, St. Cyrillius, Tactantius, Tertullian, and several others, gravely maintain that giants were the favoured offsprings of holy maidens and angels. This may seem an impious conclusion, since the gigantic monsters of sacred history were any thing but angelic; for the Canaaneans, the Moabites, and the sons of Anak, descended from giants, (compared with whom the Israelites seemed as grasshoppers,) were most ferocious, and their land devoured its inhabitants; (though Neuman gives a different signification to the scriptural passage, which according to his paraphrase merely meant "that the number of inhabitants was so great, that they eat up all the land;") Og, king of Bashan, whose country was delivered into the hands of Israel, had an iron bedstead nine cubits in length and four cubits in breadth; and Goliath, the reproach of Israel, was six cubits and a span (which according to Cumberland makes eleven feet English) in stature. It is therefore difficult to imagine why so many saints considered giants as an angelic progeny.

To the present day, however, we find various races distinguished by their elevated stature. Humboldt says, that the Guayaquilists measure six feet and a half, and the Payaguas are equally tall, while the Caribbees of Cumana are distinguished by their almost gigantic size from all the other nations he had met with in the New World. Hearne saw in the cold regions north of Canada individuals of six feet four inches. The Patagonians, or Tehuels, were stated by Pigafitta and the Spanish early navigators as measuring seven feet four inches; and although it appears that this account is exaggerated, more recent travellers, amongst whom we may name Bougainville, Commodore Byron, Captain Wallis, Carteret, and Falkner, affirm that their height ranges from six to seven feet.

From the best authenticated observations, it appears that the tallest persons on respectable record, did not, according to Haller, exceed nine feet. A young man from Huntingdonshire was exhibited in London, and measured about eight feet at the age of seventeen; he was, as usual, born of the ordinary size, but began to grow most rapidly; his sister was of great height, and all his family were remarkably tall.

Dwarfs generally die from premature old age, and giants from exhaustion. A curious instance of marvellous growth is recorded in a tract called "*Prodigium Willinghamense*," or an account of a surprising boy who was born at Willingham, near Cambridge, and upon whom

[2] The *Homo diluvii testis*, the skeleton of which was described by Scheuchzer, was considered by Cuvier to have belonged to a species of Salamander.

the following epitaph was written:—"Stop, traveller, and wondering, know, here buried lie the remains of Thomas, son of Thomas and Margaret Hall; who, not one year old, had the signs of manhood; at three, was almost four feet high, endued with uncommon strength, a just proportion of parts, and a stupendous voice; before six, he died as it were at an advanced age." Mr. Dawker, a surgeon of St. Ives, Huntingdon, who published this account, viewed him after death, and the corpse exhibited all the appearances of decrepit old age. This is a confirmation of the case of the boy of Salamis, mentioned by Pliny as being four feet high, and having reached puberty at the age of three; and may also confirm the account of the man seen by Craterus, the brother of Antigonus, who in seven years was an infant, a youth, an adult, a father, an old man, and a corpse.

The experiment of Dr. Berkeley, bishop of Cloyne, to ascertain the influence of food in promoting extraordinary growth, is curious. He selected for this purpose an orphan child of the name of Macgrath; and, by dint of feeding, at the age of sixteen he had grown to the height of seven feet; but his organization had been so exhausted by this forced process, that he died in a state of moral and physical decay at the age of twenty.

In the development of organized bodies, the effects of light contribute materially. Dr. Edwards, an English physician in Paris, and one of our most distinguished physiologists, has shown that by excluding tadpoles from the light, they will grow to double and triple their ordinary size, but are not metamorphosed into frogs. He thinks that the *Proteus Anguinis* is the first stage of an animal prevented from growing to perfection by inhabiting the subterraneous waters of Carniola.

The influence of food on the changes of animals is further shown in the aphidivorous flies, that are larvæ for eight or ten days, pupæ for about a fortnight, and perfect insects in about the same time, in the whole living about six weeks; whereas a pupa deprived of food underwent no change, and lived for twelve months. Rapid development of the organism invariably brings on premature dissolution. A case is recorded of a girl who cut four teeth at the end of the first fortnight; walked about, and had hair reaching to the middle of her back after the seventh month; exhibited signs of puberty at the ninth month, but perished in a state of exhaustion in her twelfth year. Dr. Comarmond, of Lyons, relates the case of a female infant, who was perfectly developed at the age of twenty-seven months, but she sank under rachitis when she had attained her twelfth year.

Precocious mental attainments are frequently as destructive of life as a rapid growth. The wonderful Baratier, at the age of four, spoke and read Latin, French, and German; was an excellent Greek scholar at six; and when ten years of age, translated the Scriptures from the Hebrew; at nineteen he died of exhaustion. The vulgar saying, "The child is too clever to live," is founded upon observation. These early specimens of superior intellect are sometimes followed by a state of imbecility. Antiochus tells us that Hermogenes, who was a celebrated rhetorician at fourteen years, was ignorant in the extreme at twenty-four; and of him it was said,

In pueritia senex, in senectute puer.

Tall men generally produce children of high stature. The celebrated grenadier guards of Frederick William, in the words of Dr. Johnson, "*propagated procerity*;" and the inhabitants of Potsdam are remarkable for their height. Haller states that his own family were distinguished by their tallness, without excepting one single grandchild, although they were very numerous.

In the hereditary transmission of physical and moral qualities, many curious observations have been made. Women of high mental attainments have been known to produce children of

genius, more frequently than men of a superior intellect; although Haller relates the singular case of two noble females who married wealthy idiots on account of their fortunes, and from whom this melancholy defect had extended for a century into several families, so that some of all their descendants still continued idiots in the fourth and fifth generation. Horace had observed this tendency to produce offsprings resembling their parents,

Fortes creantur fortibus et bonis:
Est in juvencis, est in equis patrum
Virtus: nec imbellem feroces
Progenerant aquilæ columbam.

This remark, however, is more applicable to physical transmissions, and certain peculiarities characterize whole families. Pliny mentioned examples of six-fingered families, who bore the name *Sedigita*. C. Horatius had two daughters with a similar deformity. Mr. Carlisle knew a family in which supernumerary toes and fingers were observed for four generations: they were introduced by a female who had six fingers on each hand, and as many toes on each foot. From her marriage with a man naturally formed, were produced ten children, with a supernumerary member on each limb; and an eleventh, in which the peculiarity existed in both feet and one hand, the other hand being naturally formed. The latter marrying a man of ordinary formation, they had four children, of which three had one or two limbs natural, and the rest with the supernumerary parts; while the fourth had six fingers on each hand, and as many toes on each foot. The latter married a woman naturally formed, and had issue by her eight children; four with the usual structure, and the same number with the additional fingers and toes: two of them were twins, of which one was naturally formed, and the other six-fingered and six-toed.—The well-known porcupine family, that were exhibited in London and elsewhere, is a remarkable example of hereditary transmission of organic peculiarities. They were all covered with dark-coloured horny excrescences, which they shed annually in the autumn or winter. Their names were Lambert. Two brothers, John and Richard, grandsons of the original porcupine men, were shown in Germany.—One of these unsightly individuals, who was exhibited some time ago in Bond-street, stated that he was descended from the fourth generation of a savage found in the woods of America; and he further asserted that the females of the family were exempted from this lucrative but uncomfortable peculiarity: all the males had them, and shed them regularly until the thirty-sixth year, when these species of quills grew to a considerable length. We have examples of bristly hair being shed in a whole family every autumn.

Amongst animals, gigantic races no longer inhabit the regions which bore them in ancient times. An extensive whale-fishery was once carried on at Biariz, in the Gulf of Gascony; and the hippopotamus is no longer to be seen on the banks of the Nile.

Gigantic bones having been occasionally discovered with the remains of men and horses and fragments of armour, it has been imagined that in ancient times armies were attended by terrific giants; but it is more than probable that these large fragments of departed warriors belonged to their war-elephants, which with their horses were not unfrequently immolated on their master’s tomb.

Skeletons of giants were considered by the ancients as curious as in the present day; and those of Secondilla and Pusio were carefully preserved in the gardens of Sallust.

Some naturalists have maintained that giants had more numerous vertebræ than ordinary men; but this has not been confirmed by observation, nor has it been found that the spinal bones of dwarfs are in smaller number.

Schreber, who has collected the description of the principal modern giants, found few above seven feet and a half; although he mentions a Swedish peasant of eight feet Swedish measure, and one of the guards of the Duke of Brunswick eight feet six inches Dutch. Not so Hakewell, who informs us, from the testimony of Nannez, that the Emperor of China had archers and porters fifteen feet high. Howbeit, Ol. Magnus's account surpasses his; for he tells us of a "*puella—in capite vulnerata, mortua induta chlamyde purpurea, longitudinis cubitorum 50, latitudinis inter humeros quatuor*!"

Unlawful Cures

One can scarcely credit that at any period there could have existed men of science and genius who believed that there were supernatural means of curing disease, did we not even to the present day find imbeciles who verily dread the malpractices of the devil and his vicarious agents. Ancient writers divided their cures into *lawful* and *unlawful*. The former were obtained from divine aid; the latter from sorcerers, witches, magicians, wizards, and cunning men, who treated all maladies by spells, cabalistic words, charms, characters, images, amulets, ligatures, philters, incantations, &c.; by which means, according to Cardan, Artesius, Picatrix, and sundry wise men, the aforesaid sorcerers and witches could prevent fire from burning, find out thieves and stolen goods, show absent faces in a glass, make serpents lie still, stanch blood, *salve* gout, biting of mad dogs, toothache, *et omnia mundi mala*. "Many doubt," says Nicholas Taurellus, "whether the devil can cure such diseases he hath not made, and some flatly deny it; however, common experience confirms, to our astonishment, that magicians can work such feats, and that the devil, without impediment, can penetrate through all the parts of our body, and cure such maladies by means to us unknown." Some of these means were rather singular; for St. Austin mentions as one of these processes, "*Agentes cum patientibus conjungunt, colligere semina rerum eaque materiæ applicare*;" and learned divines, moreover inform us, that to resist exorcisms these witches and magicians had St. Catherine's wheel imprinted on the roof of their mouths, or on some other part. Taurellus asserts, that to doubt it is to run into a sceptical extreme of incredulity. Godelman affirms that Satan is an excellent physician; Langius maintains that Jupiter Menecrates was a magician; and Marcellus Donatus pays the same compliment to Solomon, who, he says, "cured all the diseases of the mind by spells, charms, and drove away devils, and that Eleazar did the same before Vespasian." Galen, in his book "*de Medicamentis facilè purandis*," observes after a preparation, "*hæc enim suffita, dæmonus abigunt*."

This fact being clearly ascertained, the next question was whether it was lawful in a desperate case to crave the help of the evil one on the principle

Flectere si nequeunt Superos, Acheronta movebunt.

Paracelsus rather impiously argues that we might, as it matters not, he says, "whether it be God or the devil, angels or unclean spirits, (*immundi spiritus*,) that cure him, so that he be eased. If a man fall in a ditch, what matter is it whether a friend or an enemy help him out? If I be troubled with such a malady, what care I whether the devil himself, or any of his ministers, by God's permission, redeem me?"—and he therefore concludes, that diseases brought on by *malefices* can only be cured by *incantations*. However, this doctrine was denounced as abominable by Remigius, Bodinus, Godelmannus, Erastus, and various divines and schoolmen; and Delrio plainly declares, "*mori præstat quàm superstitiosè canari*." Therefore pontificial writers and sages recommend adjuration and exorcism by "fire, suffumigations, lights, cutting the air with swords (*gladiorum ictus*), sacred herbs, odours," &c., though some hungry devils can only be cast out by fasting.

Witches and impostors, says Lord Bacon, have always held a competition with physicians. Galen complains of this superstition, and observes that patients placed more confidence in the oracles of Esculapius and their own idle dreams than in the prescriptions of doctors. The introduction of precious stones into medical practice owed its origin to a superstitious belief that, from their beauty, splendour, and high value, they were the natural receptacles for *good* spirits. Mystery, in the dark ages, and, alas! even now, increases the confidence in

remedial means; reveal their true nature, the charm is dissolved: "*Minus credunt quæ ad suam salutem pertinent si intelligunt*," said Pliny. One cannot but wonder when we behold men pre-eminent in deep learning and acute observation becoming converts to such superstitious practices. Lord Bacon believed in spells and amulets; and Sir Theodore Mayence, who was physician to three English sovereigns, and supposed to have been Shakspeare's Dr. Caius, believed in supernatural agency, and frequently prescribed the most disgusting and absurd medicines, such as the heart of a mule ripped up alive, a portion of the lungs of a man who had died a violent death, or the hand of a thief who had been gibbeted on some particular day. Nauseous medicines have ever been deemed the most efficacious, on the reasoning that as every thing medicinal is nauseous, every thing that is nauseous must be medicinal. The ancients firmly believed that blood can be stanched by charms; the bleeding of Ulysses was stopped by this means; and Cato the Censor has given us an incantation for setting dislocated bones. To this day charms are supposed to arrest the flow of blood:

Tom Pots was but a serving-man,
But yet he was a doctor good,
He bound his kerchief on the wound,
And with some kind words he stanch'd the blood.

Sir Walter Scott says, in the "Lay of the Last Minstrel,"—

She drew the splinter from the wound,
And with a charm she stanch'd the blood.

The strength of imagination in effecting wonderful cures has been observed in all ages; and Avicenna declares, "that he prefers confidence before art, precepts, and all remedies whatsoever." Our learned Burton says, "that this strong imagination or conceit is *Astrum Hominis*, and the rudder of this our ship, which reason should steer, but overborne by phantasie, cannot manage, and so suffers itself and the whole vessel of ours to be overruled and often overturned."

Nothing could be more absurd than the notions regarding some of these supposed cures: a ring made of the hinge of a coffin had the power of relieving cramps; which were also mitigated by having a rusty old sword hung up by the bedside. Nails driven in an oak-tree prevented the toothache. A halter that had served in hanging a criminal was an infallible remedy for a headache, when tied round the head; this affection was equally cured by the moss growing on a human skull, dried and pulverized, and taken as a cephalic snuff. A dead man's hand could dispel tumours of the glands by stroking the parts nine times, but the hand of a man who had been cut down from the gallows was the most efficacious. To cure warts, one had nothing to do but to steal a piece of beef from the butcher, with which the warts were to be rubbed; then inter it in any filth, and as it rotted, the warts would wither and fall.

The chips of a gallows on which several persons had been hanged, when worn in a bag round the neck, would cure the ague. A stone with a hole in it, suspended at the head of the bed, would effectually stop the nightmare; hence it was called a *hag-stone*, as it prevents the troublesome witches from sitting upon the sleeper's stomach. The same amulet tied to the key of a stable-door, deterred witches from riding horses over the country.

Rickety children were cured by being drawn through a cleft tree, which was afterwards bound up, and as the split wood united, the child acquired strength. Creeping through a perforated stone to cure various disorders was a Druidical rite, still practised in the East. In the parish of Marden there is a stone with a hole in it, fourteen inches in diameter, through which children are drawn for the rickets; and, in the North, infants are made to pass through a hole cut in a *groaning* cheese the day of their christening.

Second sight, which, as an hereditary faculty, was deemed a malady, was cured in the Isle of Man, according to Mr. Aubrey's account, by baptizing a child upon the first sight of its head. This ceremony exempts the succeeding generation from the troublesome gift.

It is a melancholy reflection that, at various periods, impostors have impiously called in Scriptural aid to promote their sordid or ambitious views. Chiromancers have quoted the Bible in support of their doctrines and adduced the following lines of Job,—"He sealeth up the hand of every man, that all men may know his works:" while, in the like manner, the Holy Inquisition of Spain and Portugal justified their atrocities on the score of the parable of the marriage of the king's son, in the 22nd of St. Matthew.

Unlawful cures, as they were called, being thus anathematized, lawful remedies were resorted to, and the patient was first ordered to pray with due devotion before he took his physic; or, as Burton observes, not one without the other, but both together; for, as he adds, to pray alone, and reject ordinary means, is to do like him in Æsop, that, when his cart was stalled, lay flat on his back, and cried out "Help, Hercules!" However, Hyperius maintains that no physicians can hope for success unless "with a true faith they call upon God and teach their patients to do the like." Comineus, when he addressed the Christian princes after the overthrow of Charles of Burgundy, bade them "first pray with all submission and penitency, confess their sins, and then take physic."

Another question of importance that led to much controversy was, whether it were lawful to seek the aid of the saints; the learned Burton's remarks on this controverted point are so curious that they are worth relating. "They (the papists) have a proper saint for almost every peculiar infirmity: for poisons, gout, agues, Petronella; St. Romanus, for such as are possessed; St. Vitus for madmen, &c.; and as, of old, Pliny reckons up gods for all diseases. All affections of the mind were heretofore accounted gods: Love and Sorrow, Virtue, Honour, Liberty, Contumely, Impudency, had their temples; Tempests, Seasons, *Crepitus Ventris*, *Dea Vacuna*, *Dea Cloacina*. Varro reckons up thirty thousand gods; Lucian makes Podagra, the gout, a goddess, and assigns her priests and ministers. 'Tis the same devil still, called heretofore, Apollo, Mars, Venus, &c.; the same Jupiter, and those bad angels, are now worshipped and adored by the name of St. Sebastian, St. Barbara, &c.; and our Lady succeeds Venus in many offices; and God often winks at these impostures, because they forsake his word, and betake themselves to the devil, as they do, that seek after holy water, crosses," &c.

Amidst this violent denunciation against popery and devilment, evil spirits and saints, it is somewhat singular to find a spirit of anomalous perversity which justifies suicide to rid ourselves of disease and suffering; and these very sanctimonious censors quote ancient and modern authorities to sanction a practice which every Christian must condemn. Let us pursue the disquisition of our learned bookworm Burton:—"Another doubt is made by philosophers, whether it be lawful for a man in such extremity of pain and grief to make away himself, and how those men that do so are to be censured. The Platonists approve of it, that it is lawful in such cases upon a necessity. Plotinus (*L. de Beatitud.*) and Socrates himself defend it (*in Plato's Phædon*): *If any man labour of an incurable disease, he may despatch himself, if it be to his good*. Epictetus and Seneca say, *Quamcunque veram esse viam ad libertatem*;—any way is allowable that leads to liberty. *Let us give God thanks no man is compelled to live against his will. Quid ad hominem claustra, carcer, custodia? liberum ostium habet.* Death is always ready at hand: *Vides illum precipitem locum, illud flumen?* There is liberty at hand. *Effugia cervitutis et doloris sunt*, as that Laconian lad cast himself headlong, *Non serviam, aiebat puer*; to be freed of misery. Wherefore hath our mother earth brought out poisons (saith Pliny) in so great a quantity, but that men in distress might make away themselves? which kings of old had ever in readiness, *ad incerta fortunæ venenum sub*

custode promptum. Many worthy men and women, *quorum memoria celebratur in ecclesiâ*, sayeth Leminctius, killed themselves to save their chastity and honour, when Rome was taken. Jerome vindicates the same, and Ambrose commendeth Pelagia for so doing. Eusebius admired a Roman matron for the same fact, to save herself from the lust of Maxentius the tyrant. Adelhelmus, the Abbot of Malmesbury, calls them, *beatas virgines quæ sic, &c.* Sir Thomas More, in his Utopia, commends voluntary death if one be *sibi aut aliis molestus; especially if to live be a torment to him*, let him free himself with his own hand from this tedious life, or from a prison, or suffer himself to be freed by others." However, be it said in justice to our worthy Burton, he condemns this practice as "a false and pagan position, founded in prophane stoical paradoxes and wicked examples;" and although he denounces most fulminating anathemas on papists, he concludes by saying, "we ought not to be rash and rigorous in our censures, as some are; Charity will judge and hope best; God be merciful unto us all!"

But why should we marvel at the credulity and superstition of our forefathers, when we daily observe equal absurdities? Fanaticism and bigotry will ever strive to speculate on human weakness, and endeavour to surround with impenetrable mists every rebel to their power who gropes for the shrine of reason and of truth. Johanna Southcote had her votaries, and Prince Hohenlohe is still considered by many a pious person, as a vicarious instrument of divine mercy. No miraculous recovery recorded in the dark ages can surpass the tenebral absurdity of the following relation of one of his cures:

Miss O'Connor was a nun in a convent near Chelmsford, and in December 1820, being about thirty years old, was suddenly attacked by a violent pain in the right hand, which extended with much swelling and inflammation up the arm. The whole limb became red, swollen, extremely painful, and entirely useless. Every remedy, both topical and directed to the system, was tried in vain for a year and a half. There was no suppuration, nor any formation of pus; but the malady continued obdurate, and yielded to no application. The resources of the flesh having manifestly failed, Mrs. Gerard, the worthy superior, very properly betook herself to those of the spirit. She made a request through a friend to Prince Hohenlohe to assist the patient in this her extreme case; when the following precious document, which it would be impious to translate into heretical English, was received:

"*Pour la Religeuse Novice d'Angleterre.*

"Le trois du mois de Mai, à huit heures, je dirai, conformément à votre demande, pour votre guérison, mes prières. Joignez-y à la même heure, après avoir confessé et communié, les votres, avec cette ferveur angélique et cette confiance plénière que nous devons à notre Rédempteur J. C.: excitez au fond de votre cœur les vertus divines d'un vrai repentir, d'un amour Chrétien, d'une croyance sans bornes d'être exaucé, et d'une résolution inébranlable de mener une vie exemplaire, afin de vous maintenir en état de grace. Agréez l'assurance de ma considération.

"Prince Alexandre Hohenlohe.

"Bamberg, Mars 16, 1822."

It is to be regretted that this letter, which was no doubt a circular to his proselytes, with necessary blanks to be filled up *pro re natâ*, as the doctors have it, was not drawn out in better French. Howbeit, on the appointed day, asserts Dr. Baddely (the lady's unsuccessful medical attendant), Miss O'Connor went through the religious process prescribed by her princely physician. Mass being said, Miss O. not finding the immediate relief she expected from her faith, or faithfully expected, exclaimed somewhat impatiently, not having the fear of Job before her eyes, "Thy will be done, O Lord, since thou hast not thought me worthy of this

cure;" when behold! *immediately* after she felt an extraordinary sensation throughout the whole arm to the end of the fingers. The pain *instantly* left her, the swelling gradually subsided, and Dr. B., who no doubt was the pet physician of the nuns, declares that the hand shortly resumed its natural size and shape.

Now, Miss O'Connor was most likely a young lady from Ireland, where this miraculous cure was re-echoed in every chapel. The protestants were naturally offended by a report which seemed to impugn the sanctity of the reformed religion, and they thought it incumbent on them, for the welfare of church and state, to get up a miracle of their own which would cast Prince H., Nun O., and Dr. B. in the shade. The following statement was therefore published and certified upon oath by sundry most respectable and most worthy Orangemen:

"I pledge you the word and honour of an Orangeman that the following facts, sworn to by all present, occurred yesterday evening. A party of gentlemen dined with me, and after dinner a vase, containing some orange lilies, was placed upon the table by my directions. We drank several toasts; but on the glorious and immortal memory being given, an *unblown lily*, which the party had remarked, *expanded its leaves and bloomed before us* in all its splendour!" How appropriate are the lines of Otway when applied to the propagators of such absurdities, who dare to call upon our faith to give credence to their impostures.

You want to lead
My reason blindfold like a hamper'd lion
Check'd of its noble vigour; then, when baited
Down to obedient tameness, make it crouch
And show strange tricks, which you call signs of faith:
So silly souls are gull'd, and you get money.

A curious anecdote is related of Lord Chief Justice Holt. When a young man, he happened, with some of his merry companions, to run up a score at a country inn, which they were not able to pay. In this dilemma they appealed to Holt, to get them out of the scrape. Our young lawyer had observed that the inn-keeper's daughter looked very ill, and, passing himself for a medical student, asked her father what ailed her, when he was informed that she suffered from an ague. Holt immediately gathered various plants, mixed them up with great ceremony, and after rolling them up in parchment, scrawled upon the ball some cabalistic characters. The amulet, thus prepared, he suspended round the neck of the young woman, and, strange to say, the ague did not return. After this cure the doctor offered to pay the bill, to which the grateful landlord would not consent, allowing Holt and his party to leave the house.

Many years after, when on the bench, a woman was brought before him, accused of witchcraft—the very last person tried upon such a charge. Her only defence was, that she possessed a ball invariably efficacious in the cure of agues. The charm was produced, handed to the judge, who recognised the identical ball which he had prepared in his youthful frolics.

Not only did these victims of superstition firmly believe that evil spirits had the power of inflicting disease, and afterwards salve the mischief, but they were also invested with the privilege of killing and subsequently restoring to life. The story related of the truly learned Agrippa, who was falsely represented as a necromancer, is curious.

Agrippa had occasion one time to be absent for a few days from his residence in Louvain. During his absence he intrusted his wife with the key of his museum, but with an earnest injunction that no one on any account should be allowed to enter it; Agrippa happened at that time to have a boarder in his house, a young fellow of insatiable curiosity, who constantly importuned his hostess, till at length he obtained from her the forbidden key. The first thing that attracted his attention was a book of spells and incantations. He spread the volume before

him, and, thinking no harm, began to read aloud. He had not long continued this occupation, when a knock was heard at the door of the chamber. The youth took no notice, but continued reading. Presently there followed a second and a louder knock, which somewhat alarmed the reader. The space of a minute having elapsed, and no answer been made, the door opened and a demon entered. “For what purpose am I called?” said the unwelcome visitor in a stern voice: “What is it you demand to have done?” The youth was seized with the greatest alarm and struck speechless. The demon then rushed upon him, seized him by the throat, and strangled him, indignant no doubt in having been interrupted in some more interesting pursuit to no purpose.

At the expected time Agrippa came home, and to his great surprise found a number of devils capering about, and playing strange antics on the roof of his house. By his art he caused them to desist from their gambols, of which he demanded the cause. The chief of them then related to him what he had done, how he had been disturbed and insulted, and how he had thought proper to revenge himself. Agrippa became much alarmed at the probable consequences of this unfortunate adventure, and he ordered the demon, without loss of time, to reanimate his victim, and walk about the streets with him, that the public might behold him alive. The infernal spirit reluctantly obeyed, and went forth with the student in the marketplace and promenades. This excursion over, however, he maliciously allowed his companion to fall down, when life once more flitted from his body. For a time it was thought that the student had been killed by a sudden attack of illness; but, presently, the marks of strangulation became evident, and the truth came out. Agrippa was thus suddenly obliged to quit the town, and seek refuge in a distant state.

It was further related of this supposed wizard, that he was always accompanied by a familiar spirit in the shape of a black dog; and that when he lay on his deathbed he was earnestly exhorted to repent of his sins. Struck with remorse, he took hold of the dog, and removed from his neck a collar studded with cabalistic nails, exclaiming, “Begone, wretched animal, that has been the cause of my perdition!” and lo! the dog immediately ran away, and, plunging into the river Soane, disappeared. It is to be regretted that historians do not relate whether the water hissed or not when the canine devil took his last leap.

It merits notice, that the mystic and medicinal celebrity of various substances have to this hour survived the traditions of their superstitious origin; coral, for instance, which was considered as possessed of the power of keeping off evil spirits, and rendering effete the malefices of the evil eye, was constantly worn as an amulet; and Paracelsus informs us that it should be worn round the necks of infants, as an admirable preservative against fits, sorcery, charms, and poisons. We still find necklaces of this substance suspended by fond mothers and nurses round the necks of infants. In the West Indies these chaplets are worn by the negroes as a magic protection against Obiism, and they even affirm that the colour of the coral is affected by the state of health of the wearer, and becomes paler when he is ill.

The irrational belief in the mysterious powers of certain remedies went so far in former days, that when they were applied to the weapon that had inflicted an injury, their indirect sympathetic action was considered as effectual as if they had been used to heal the wound. The sympathetic powder of Sir Kenelm Digby, which was nothing else but pulverized green vitriol, was eulogized in a discourse pronounced by its inventor, at Montpellier, in 1658. Our James I. purchased this wonderful discovery from Sir Kenelm, who pretended that he had obtained it from a Carmelite friar, who had learned it in America and Persia. This superstitious practice is alluded to by Walter Scott, in the “Lay of the Last Minstrel:”

But she has ta'en the broken lance,
And wash'd it from the clotted gore,
And salved the splinter o'er and o'er.

Dryden has also illustrated this absurdity in his "Enchanted Island," where Ariel says,

Anoint the sword which pierced him, with this
Weapon-salve, and wrap it close from air
Till I have time to visit it again.

Sir Kenelm's sympathetic powder was applied in the same manner; the weapon being covered with ointment and dressed three times a day. But it was not mentioned that at the same time the wound was to be brought together, and bound up with clean linen bandages for seven days. This wonderful cure was then simply the process of what surgeons call healing by first intention, which means uniting the lips of the wound without suppuration. Dr. Paris apprehends that this secret was suggested to the worthy knight by the cures operated by the rust of the spear of Telephus, which, according to Homer, healed the injuries it had occasioned; and this rust was most probably verdigris.

To this day the Irish peasantry, and even many of the superior classes, firmly believe in the malevolent and destructive effect of the evil eye, when cast upon man or beast. Hence the absurd custom that prevails, especially in the western provinces, of adding "God bless it," to any expression of admiration; and if perchance a Sassenagh traveller exclaimed "What a sweet child!" or, "What a fine cow!" without the adjunctive benediction, he would be suspected of malefice, and the priest forthwith summoned to save the devoted victim of sorcery. In Scotland dairy-maids drive cattle with a switch of the mountain ash, or roan-tree, considered as held sacred since the days of Druidism; and in some districts the sheep and lambs are made to pass through a hoop of its wood on the first day of May.

The toad was also considered to be possessed of marvellous qualities for the cure of various maladies, more especially the stone that was supposed to be occasionally found in the reptile's head, and which was called *Crapaudina*. Lupton, in his seventh book of "Notable Things," thus instructs us how to obtain it. "You shall knowe whether the tode stone be the ryght and perfect stone or not. Holde the stone before a tode, so that he may see it; and if it be a ryght and true stone, the tode will leape towarde it and make as though he would snatch it, he envies so much that man should have this stone." This famous toadstone is simply one of the fossil teeth of various fishes, and is chiefly formed of phosphate of lime. Its high polish and convexity has often induced lapidaries to have it set in rings and other jewels, to which marvellous powers were attached.

Pulverized toads were not only employed in medicine with supposed advantage, but were also considered a slow but certain poison. Solander relates, that a Roman woman, desirous of poisoning her husband gave him this substance; but instead of attaining her criminal desire, it cured him of a dropsy that had long perplexed him. Boccaccio relates the story of Pasquino and Simona, two young lovers, who, wandering in a garden, plucked some sage-leaves, with which Pasquino rubbed his teeth and gums. In a few minutes he fell ill and expired. Simona accused of being his assassin, was brought before a magistrate, who ordered an immediate investigation of the matter, when, on proceeding to the garden, Simona, after relating the particulars of the case, took some leaves from the same plant and used them in a similar manner. In a few minutes the lovers were reunited in death; when it was discovered that a large toad was under the root of the plant to which it had communicated its deadly venom.

Regarding unlawful cures, have we not seen vaccination, when first introduced, condemned from the very pulpit as an impious interference in a disease which seemed to have been

assigned to mankind by the Creator as an inevitable doom? Did not these desperate bigots even pronounce that we were not warranted to seek in the brute creation a human remedy or preservative? What is still more worthy of remark, is the coincidence of a similar idea in India, where the greatest obstacle vaccination encountered arose from a belief that the natural smallpox was a dispensation of a malicious deity, called *Mah-ry-Umma*, or rather that the disease was an incarnation of the goddess herself into the person who was affected by it: the fear of irritating her, and of exposing themselves to her resentment, necessarily rendered the natives averse to vaccination, until it was impressed upon their easy belief, that *Mah-ry-Umma* had altered her mind, and chosen this new and milder mode of manifesting her visits to her votaries.

Could there ever have existed a more superstitious belief than that which vested in the regal touch a healing power? Yet from Edward the Confessor to the accession of the House of Hanover, it was generally thought in these realms that our kings could cure scrofula with their anointed fingers!

Dr. Paris's truly philosophic remarks on this subject, in his valuable work, entitled Pharmacologia, are worthy of quotation:—"Credulity, although it is nearly allied to superstition, yet differs from it widely. Credulity is an unbounded belief in what is possible, although destitute of proof, and perhaps of probability; but superstition is a belief in what is wholly repugnant to the laws of the physical and moral world. Credulity is a far greater source of error than superstition; for the latter must be always more limited in its influence, and can exist only, to any considerable extent, in the most ignorant portions of society; whereas the former diffuses itself through the minds of all classes, by which the rank and dignity of science are degraded, its valuable labours confounded with the vain pretensions of empiricism, and ignorance is enabled to claim for itself the prescriptive right of delivering oracles, amidst all the triumph of truth and the progress of philosophy. Credulity has been justly defined *belief without reason*, while scepticism, its opposite, is *reason without belief*, and the natural and invariable consequence of credulity; for it may be observed that men who believe without reason are succeeded by others whom no reasoning can convince."

Voice And Speech

Blumenbach has given us a most ingenious definition of this wonderful function. The voice, properly speaking, is a sound formed by means of expiration in the *larynx*, which is a most beautifully constructed organ, fixed upon the top of the windpipe, like a capital upon a column. It is composed of various cartilages, united in the form of a little box, and supplied with numerous muscles, that, moving altogether or separately, produce the variations of sound.

The part of the *larynx* most concerned in producing the voice is the *glottis*, or narrow opening of the windpipe, having the *epiglottis* suspended over it like a valve. The air expired from the lungs strikes upon the glottis, and thus becomes sonorous. The change that the glottis undergoes in the modulation of the voice has been matter of much controversy. Aristotle and Galen compared the glottis to a wind instrument; Ferrein assimilated it to a chorded one. This latter hypothesis was objected to, on the principle that a chord, to vibrate, should not only be in a state of tension, but dryness; characters which this organ does not possess, being constantly lubrified with mucus, and in a state of greater or lesser relaxation. Fulgentius considers the human voice to be composed of ten parts: the four first are the front teeth, so useful for the appulse of the tongue in forming sounds, without which a whistle would be produced instead of a voice; the fifth and sixth are the lips, which he compares to cymbals striking against each other; the seventh the tongue, which serves as a plectrum to articulate sounds; the eighth is the palate, the concavity of which forms the belly of the instrument; the ninth the throat, which performs the part of a flute; and the tenth the lungs, which supply the place of bellows.

That every degree of action in the *glottis* is due to the muscles of the *larynx* is proved by the experiment of tying or dividing the recurrent nerves, when the voice is destroyed or weakened.

Speech is a peculiar modification of the voice adjusted to the formation of the sounds of letters, by the expiration of the air through the nostrils and mouth, and in a great measure by the assistance of the tongue applied and struck against the neighbouring parts, the palate and front teeth in particular, and by the diversified action of the lips. This is Payne Knight’s doctrine, in his analytical essay on the Greek alphabet, and an illustration of the notions of Fulgentius.

Singing is compounded of speech and a musical modulation of the voice, a prerogative peculiar to man even in his most savage state; for, despite the assertions of the visionary Rousseau, who maintained that it is not natural to our species, we find that even in the uncivilized regions of Ethiopia, Greenland, and Kamtschatka, singing is a solace and a comfort.

The mechanism of speech and articulation is so intricate, that even the division of letters and their distribution are attended with difficulties. The following is the division of Amman in his work *Surdus Loquens*, published at Amsterdam in 1629, and enlarged under the title of *Dissert. de Loquela*, 1700, and is, perhaps, the most natural and intelligible.

He divides into, I. Vowels; II. Semi-vowels; III. Consonants.

I. The vowels are *simple*, *a*, *e*, *i*, *o*, *u*; and *mixed* *ä*, *ö*, *ü*: these are formed by the *voice* only. The semi-vowels and consonants are articulated by the mechanism of *speech*.

II. The semi-vowels are *nasal*, *m*, *n*, *ng* (*n* before *g*, which is nearly related to it), that is, the labio-nasal *m*, the dente-nasal *n*, and the gutture-nasal *ng*; or *oral* (lingual), *r*, *l*, that is, *r* with a vibration of the tongue, or *l* with the tongue less moved.

III. The consonants he distinguishes into *sibilant* (pronounced in succession), *h*, *g*, *ch*, *s*, *sh*, *f*, *v*, *ph*, that is *h*, formed in the throat, as it were a mere aspiration; *g* and *ch*, true consonants; *s*, *sh*, produced between the teeth; and *f*, *v*, *ph*—formed by the application of the lower lip to the upper front teeth—and *explosive* (which are as it were suddenly exploded by an expiration for a time suppressed, or interrupted), namely *k*, *q*, formed in the throat; *d*, *t*, about the teeth; *p*, *b*, near the lips; and *double* (compound), *x*, *z*.[3]

It has been thought that the tongue was indispensable for the purposes of speech, yet there are instances on record in which this has not been found an invariable rule. Dr. Conyers Middleton mentions two cases of distinct articulation with at least little or no tongue. In his exposure of the *pious* deceptions of weak and wicked Christians during the first centuries of the Christian era, he notices a pretty tale of an Arian prince cutting out the tongues of some of the orthodox party, and these being as able to talk as before; nay, one of them, who had been dumb from his birth, gained the faculty of speech by losing his tongue! We find various accounts of persons who spoke more or less fluently without this organ. Jussieu has inserted in the *Mémoires de l'Académie des Sciences*, 1718, the case of a Portuguese girl, who instead of a tongue had merely a little protuberance of about four lines in diameter in the middle of her mouth, and endowed with the power of contraction and dilatation; she spoke distinctly, but experienced difficulty in pronouncing *c*, *f*, *g*, *l*, *n*, *r*, *s*, *t*, *x*, and *z*, when she was obliged to bend her neck forward to upraise as it were the larynx. In this case, deglutition could not be well performed, and she was obliged to use her finger to propel the masticated food downwards.

Dr. Eliotson observes, that it is by no means improbable that the progress of modern art may present us at some future period with mechanical substitutes for orators and preachers; for, putting aside the magic heads of Albertus Magnus and Roger Bacon, Kratzenstein actually constructed an instrument to produce the vowels. De Kempelin has published a full account of his celebrated speaking machine, which perfectly imitated the human voice. The French celebrated mechanician, the Abbé Mical, also made two heads of brass, which pronounced very distinctly entire phrases; these heads were colossal, and their voices powerful and sonorous. The French government refusing, it is said, in 1782, to purchase these automata, the unfortunate and too sensitive inventor, in a paroxysm of despair, destroyed these masterpieces of scientific ingenuity.

It has been observed, that in various races the pronunciation seemed to depend upon some peculiar and characteristic conformation; and Adelung informs us that in the Hottentots, the bony palate is smaller, shorter, and less arched than in the other races, and that the tongue, especially in the Bosjesman tribe, is rounder, thicker, and shorter. Hence their pronunciation is singular, and has been compared to the clucking of the Turkey, or the harsh and broken noises produced by some other birds. They combine their aspirated gutturals with hard consonants, without any intervening vowels, in a manner that Europeans cannot imitate.

No doubt the differences of language are as numerous as the other distinctions which characterize the several races of men. The various degrees of natural capacity and of intellectual progress; the prevalence of particular faculties; the nature of surrounding circumstances; the ease or difficulty with which our different wants and desires are gratified,

[3] For the further illustration of this curious subject, Dr. Eliotson's valuable notes on Blumenbach may be consulted to advantage.

will produce not only peculiar characters in the nature and construction of language, but in its copiousness and development.

One of the most curious points in the subject of language, is the continued existence in a large portion of Asia, very anciently civilized, and considerably advanced, at least in the useful arts, of simple monosyllabic languages, which are not in the slightest degree connected with the peculiar organization of the Mongolian variety, to which these people belong, and whose language is distinctly polysyllabic.

The attempts that have been made to trace the origin of languages to the varieties of our species, or to the influence of climate, have hitherto been fruitless, and the doctrines broached on the obscure subject refuted by observation. Mr. Jefferson states that there are twenty radical languages in America for one in Asia; more than twenty languages, he adds, are still spoken in the kingdom of Mexico, most of which are at least as different from one another as the Greek and the German, the French and the Polish. The variety of idioms spoken by the people of the new continent, and which without the least exaggeration may be stated at some hundreds, offers a very striking phenomenon, particularly when we compare it to the few languages spoken in Asia and in Europe. Vater also informs us, that in Mexico, where the causes producing insulation of the several tribes have been for a long time in a course of diminution, Clavigero recognised thirty-five different languages. Some of these words are rather of difficult pronunciation, and Humboldt tells us that *Notlazomahuiztespixcatatzin* is the term of respect with which they addressed their priests. During the French revolution, a learned Jacobin discovered that the early Peruvians adored a divinity who patronized the *Sans-culottes*, of their day, and who was named *Cawaltze-quos*, i. e. without breeches. Such barbarous words do not constitute that engaging tongue that Shakspeare calls "*speaking holiday*," but rather confirms Byron's ideas of the Russians' difficult expressions, which no man has leisure to pronounce except on high-days and holidays.

Although brutes pronounce no articulate sounds, there is, no doubt but they have a language perfectly intelligible to one another. Their manner of expressing their different emotions is in some instances perfectly distinct; and birds have most decidedly a peculiar language. The following may be said to be the words of a nightingale's strain observed by Bechstein, an ingenious ornithologist, and committed to paper several times while he listened with deep attention to that sweet bird's "complaining notes," that "tune our distresses and record our woes."

Tiouou, tiouou, tiouou tiouou
Shpe, tiou, tokoua
Tio, tio, tio, tio.
Kououtio, kououtio kououtio,
Tskouo, tskouo, tskouo,
Tsii, tsii, tsii, tsii, tsii, tsii, tsii, tsii tsii tsii,
Kouoror tiou. Tskoua pipitskousisi
Tso, tso, tso, tso, tso, tso, tso tso, tso, tso, tso, tso, tsirrhading!
Tsisi si tosi si, si, si, si, si, si, si.
Tsorre tsorre tsorre tsorrehi
Tsatn, tsatn, tsatn tsatn tsatn tsatn tsatn tsi,
Dlo, dlo, dlo dla, dlo dlo dlo dlo dlo
Kouioo trrrrrrrrtzt
Lu, lu, lu, ly ly ly li li li li
Kouio didl li loulyli
Ha guour, guour, koui kouio!

Kouio, kououi kououi kououi koui, koui, koui, koui,
Ghi ghi ghi
Gholl, gholl, gholl gooll ghia hududoi
Koui koui koui ha hia dia dillhi!
Hets, hets, hets, hets, hets, hets, hets hets, hets, hets
Hets, hets, hets, hets, hets
Tourrho hostehoi
Kouia, kooia, kouia, kouia, kouia kouia kouia kouiati!

A story is related of an irascible Irish piper of the name of *Molroy*, who declared a war implacable against the feline race, as he swore that they invariably pronounced his name in their nocturnal concerts. Gall and various observers of animals have fully ascertained that the attention of dogs is awakened by our conversation. He brought one of these intelligent creatures with him from Vienna to Paris, which perfectly understood French and German, of which he satisfied himself by repeating before it whole sentences in both languages. A recent anecdote has been related of an old ship-dog, that leaped overboard and swam to the shore on hearing the captain exclaim, “Poor old Neptune! I fear we shall have to drown him!” and such was the horror which that threat inspired, that he never afterwards would approach the captain or any of the ship’s company, to whom he had previously been fondly attached. It must, however, be observed that in the brute creation, as in ours (sometimes more brutal species), peculiar attributes, that do not belong to the race, distinguish individuals gifted with what in man we might call a superior intellect, but which in these animals shows a superiority of what we term instinct. Spurzheim relates an instance of a cow belonging to Mr. Dupont de Nemours, which, amongst the whole kindred herd, was the only one that could open the gate leading to their pastures; and her anxious comrades, when arriving at the wished-for spot, invariably lowed for their conductor. It is also related of a hound, who, unable to obtain a seat near the fire without the risk of quarrelling with the dozing occupants that crowded the hearth, was wont to run out into the court-yard barking an alarum that brought away his rivals in comfort, when he quietly reentered the parlour, and selected an eligible stretching-place. This animal displayed as much ingenuity as the traveller who, according to the well-known story, ordered oysters for his horse for the purpose of clearing the fireside.

Ecstatic Exaltation

This rapturous excitement is not unfrequently the province of the physician. Fortunately perhaps for the patient, it is an incurable malady, illustrating the lines of Dryden,

There is a pleasure, sure, in being mad,
Which none but madmen know.

If we admit this state of ecstasy to be a mental aberration, it is surely of an enviable nature, since it elevates the soul to a beatitude which is rarely the lot of man.

No definition of this state can equal that given by St. Theresa of her own feelings. By prayer she had attained what she calls a "celestial quietude,—a state of union, rapture, and ecstasy." "I experienced," she continues, "a sort of sleep of all the faculties of the soul—intellect, memory, and volition; during which, though they were but slumbering, they had no conception of their mode of operation. It was a voluptuous sensation, such as one might experience when expiring in raptures in the bosom of our God. The soul is unconscious of its actions; she (the soul) knows not if she speaks or if she remains silent, if she laughs or if she cries. It is, in short, a blessed extravagance, a celestial madness, in which she attains in the knowledge of true wisdom, an inconceivable consolation. She is on the point of merging into a state of languor; breathless, exhausted, the slightest motion, even of the hands, is unutterably difficult. The eyes are closed by a spontaneous movement; or, if they remain open, the power of vision has fled. In vain they endeavour to read: they can distinguish letters, but are unable to class them into words. Speak to a person in this absorbed condition, no answer will be obtained; although endeavouring to speak, utterance is impossible. Deprived of all external faculties, those of the soul are increased, to enjoy glorious raptures when conversing with the Deity and surrounding angels." These conversations the blessed St. Theresa relates; and she further states, that after having remained about an hour in this joyous trance, she recovered her usual senses, and found her eyes streaming in tears, as though they were weeping for the loss she had experienced in being restored to earthly relations.

Now, with all due deference to St. Theresa, this state was most probably a hysteric condition. Zimmerman relates two cases somewhat of a similar kind. Madame M. experienced effusions of divine love of a peculiar nature. She first fell into a state of ecstasy, motionless and insensible, during which, she affirms, she felt this love penetrating her whole being, while a new life seemed to thrill through every fibre. Suddenly she started up, and seizing one of her companions, exclaimed, "Come, haste with me to follow and call Love, for I cannot sufficiently call upon his name!"—A French young lady was the second instance of this affection. She also frequently lost the power of speech and all external senses, animated with a love divine, spending whole nights in ecstatic bliss, and rapturously embraced by her mystic lover. It is difficult, perhaps, to separate this amorous feeling from physical temperament; and the following remarks of Virey on the subject of St. Theresa are most judicious:—"She possessed an ardent and sensitive disposition, transported, no doubt, by terrestrial affection, which she strove to exchange for a more exalted ardour for the Deity; for devotion and love are more or less of a similar character. Theresa was not fired by that adoration which is exclusively due to the infinite and invisible Intelligence which rules the universe; but she fancied a sensible, an anthropomorphous divinity; so much so, that she not unfrequently reproached herself with bitterness that these raptures were not sufficiently unconnected with corporeal pleasures and voluptuous feelings."

St. Theresa was not the only beatified enthusiast who suspected that the evil spirit occasionally interfered in those ecstatic visions. St. Thomas Aquinas divides ecstasies into three classes;—the first arising from divine power, and enjoyed by the prophets, St. Paul, and various other saints. The second was the work of the devil, who bound down all external senses, suspended their action, and reduced the body to the condition of a corpse: such were the raptures in which magicians and sorcerers were frequently entranced, during which, according to Tertullian and other writers, the soul quitted the body to wander about the world, inquire into all its occurrences, and then returned with the intelligence it had obtained to its former abode. The third rapturous category of St. Thomas he simply attributes to physical causes, constituting mental alienation.

May not all these ecstatic raptures be considered as belonging to this third class? It has been observed that women, hysteric ones in particular, were the most subject to this supposed inspired affection; and amongst men it has also been remarked, that the enraptured individual was in general nervous, debilitated, and bald; and it is well known that the fall of the hair is frequently the result of moral and physical weakness, brought on by long studies, contemplation, grief, and illness, all of which may occasion mental aberration; for what other denomination can be given to the ecstatic state of the Monks of Mount Athos, who pretended or fancied that they experienced celestial joys when gazing on their umbilical region, in converse with the Deity? Hence were they called *Omphalopsychians*, whose notions in the matter are thus described by Allatius: “Elevate thy spirit above earthly concerns, press thy beard upon thy breast, turn thine eyes and all thy thoughts upon the middle of thine abdomen, hold thy breath, seek in thy bowels the abode of thy heart—then wilt thou find it unalloyed with dense and tenebral mists; persevere in this contemplation for days and nights, and thou shalt know uninterrupted joys, when thy spirit shall have found out thy heart and has illumined itself.”[4]

Bernier relates an act of supposed devotion amongst the Fakirs nearly as absurd, when, to seek the blessings of a new light, they rivet their eyes in silent contemplation upon the ceiling; then gradually looking down, they fix both eyes gazing, or rather squinting, at the tip of their nose, until the aforesaid light beameth on them.

St. Augustin mentions a priest who could at will fall into one of these ecstasies, during which his external senses were so totally suppressed that he did not experience the pangs of the torture. Cardanus affirms that he was possessed of the same faculty. “*Quoties volo*,” he says, “*extra sensum quasi in exstasim transeo—sentio dùm eam ineo, ac (ut veriùs dicam) facio, juxta cor quandam separationem, quasi anima abscederet, totique corpori res hæc communicatur, quasi ostiolum quoddam aperiretur. Et initium hujus est à capite, maximè cerebello, diffunditurque per totam dorsi spinam, vi magnâ continetur; hocque solùm sentio, quad sum extra meipsum magnâque quâdam vi paululum me contineo.*”

This state of mind is usually succeeded by contemplation, which has justly been considered one of the attributes of Genius. This contemplation, however, may be applied to positive relation, or to the workings of fiction. In the latter case it becomes to a certain degree mental, and beyond the control or the influence of our reason, although we cannot regulate the

[4] The dream of Ertucules seems to have been connected with similar phantasies. “I dreamed, venerable sir,” said he to Edebales, “that the brightness of the moon did proceed from your bosom, and thence afterwards did pass into mine: when it was thither come, there sprung up a tree from my umbilic, which overshadowed at once many nations, mountains, and valleys. From the root of this tree there issued waters sufficient to irrigate vines and gardens; and then both my dream and my sleep forsook me.” Edebales after some pause thus answered: “There will be born unto you, my good friend, a son whose name shall be Osman; he shall wage many wars, and shall acquire victory and glory; and my daughter must be married to your son Osman, and she is the brightness which you saw come from my bosom into yours, and from both sprung up the tree.”—*Lips. Marsil.*

rationality of our mental pursuits by any given or acknowledged standard. The pseudo-philosopher, who searches for the *elixir vitæ* or the power of transmuting metals, and the judicial astrologer, are in the eyes of society madmen: yet, do they reason on certain rational principles, and in many respects may be considered wise; one might figuratively say, that here the mind must have taken flight beyond its natural limits, if we can limit thought. In the wild wanderings of Theosophy man has fancied that by abstracting himself from the world, he might place himself in relation with the Divinity, and has so forcibly indulged the flattering illusion, that he actually believes that he is in converse with his Creator or his angels. Unquestionably this is a state of mania, yet is it founded upon a systematic train of ideas, that, strictly speaking, does not partake of mental aberration, but rather of enthusiasm. Although an indulgence in this may terminate in mania, still there is something delightful in these fond aberrations. A new world—a new condition is evoked—we are freed from the trammels of society and its prejudices—and perhaps encompassed by misery we burst from its shackles into another orb of our own creation, when the eyes closed in a vision of bliss—a meridian sunbeam, through the darkness of night. If the slumber of the visionary ushered in death, his destiny might be enviable—he had already quitted the world, seeking the presence of his God—his soul had already soared from its earthly tenement.

There is no doubt that such contemplation may lead us to a better knowledge of the Supreme Being, whose image and attributes have been distorted by ignorance and superstition. It has been truly said, that until the light of Christianity shone upon mankind, God was unknown. He had been represented as wrathful and revengeful—implacable in his anger—insatiable in his thirst for blood—when he was revealed to us upon the earth, gentle, forgiving, loving, humble, and charitable. The type of all excellence—and delivering doctrines so pure, so convincing, as to entitle him to the name of *Saviour*, even were his godhead doubted—for who could question the salvation of those who followed his laws. Until ambition swayed the church and polluted the altar with blood and rapine—how happy, how blessed were these followers—even in the midst of persecution and in agonies—pardoning their barbarous murderers and praying for their conversion.

Unfortunately according to the temperament of individuals their ecstasy has frequently led to an enthusiasm which knew no bounds, and induced the illuminated visionary to consider all men who did not coincide in his opinions the enemies of Divinity—hence arose fanaticism and persecution—yet did these murderous madmen conceive that they were wielding their hateful sword in the cause of an offended God; and, although we read of their excesses and cruelty with horror, they were not bad men, and many of them imagined that they were fulfilling a heavenly mission. I have known many worthy and amiable ecclesiastics in Spain and in Portugal who advocated the inquisition as a useful institution, although they readily admitted that it had too frequently been rendered instrumental to ambition and political intrigues.

This state of mental exaltation is not unfrequently within the province of a physician’s care. The treatment like that of all moral affections is a task of great difficulty. Perhaps the best curative means to be adopted is occupation of the body in active pursuits. St. Augustine was so convinced of this necessity of occupation to prevent ecstatic habits, that the monks of the Thebaid cultivated their ground with such industry, that they freighted several vessels with their produce. Priest has observed in his extensive practice in insanity that he never met with an insane naturalist. Travelling is also to be enjoined. Marriage has also been advised, although it is to be feared that the little charms men of this description may have to suit a woman’s fancy, might lead to contemplation of a nature widely different from beatitude. The Jewish Rabbi tell us, that as soon as Moses became contemplative and prophetic, his wife

Marjarin left him. It is certain that enthusiasm produces a concentration of mind prejudicial to all other functions.[5]

There is no doubt that melancholy or intense cogitation may bring on this morbid condition. Zimmerman relates that the mathematician Viote was sometimes so wrapped up in calculation, that he was known to remain three days and three nights without sleep or food: and Mendelsohn the philosopher, who was called the Plato of Germany, fell into a swoon the moment philosophy was talked of; and he was therefore ordered by his doctor not to think. Being asked one day what he contrived to do when not allowed thought, he replied, "Why, I go to the window and count the tiles on the roof of the opposite house."

This morbid condition of our intellectual faculties has been admirably described by Johnson, in his Rasselas. "To indulge the power of fiction, and send imagination out upon the wing, is often the sport of those who delight too much in silent speculation. He who has nothing external that can divert him, must find pleasure in his own thoughts, and must conceive himself what he is not; for who is pleased with what he is? He then expatiates in boundless futurity, and culls from all imaginary conditions that which for the present moment he would most desire; amuses his desires with impossible enjoyments, and confers upon his pride unattainable dominion. The mind dances from scene to scene, unites all pleasures, in all combinations, and riots in delights which nature and fortune, with all their bounty cannot bestow. In time, some particular train of ideas fixes the attention: all other intellectual gratifications are rejected; the mind, in weariness or leisure, returns constantly to the favourite conception, and feasts on the luscious falsehood whenever she is offended with the bitterness of truth. By degrees the reign of fancy is confirmed; she grows first imperious, and in time despotic. Then fictions begin to operate as realities, false opinions fasten upon the mind, and life passes in dreams of raptures or of anguish."

The celebrated physician Boerhaave was once engaged in so profound a meditation that he did not close his eyes for six weeks. Any fixity of idea may be considered as a monomania. Pascal, being thrown down on a bridge, fancied ever after that he was standing on the brink of a terrific precipice, which appeared to him an abyss ever ready to ingulf him. So immutable was this dread, that when his friends conversed with him they were obliged to conceal this ideal peril with a chair, on which they seated themselves, to tranquillize his perturbed mind. This is an instance of a painful fixity of thought, the result of which is melancholic mania; whereas ecstatic exultation is the enjoyment of a delicious sensation unknown in our habitual earthly enjoyments, and beautifully expressed by Shakspeare, when Pericles thus addresses Helicamus—

O Helicanus! strike me, honoured sir;
Give me a gash,—put me to present pain,
Lest this great sea of joy, rushing upon me,
O'erbear the shores of my mortality,
And drown me with their sweetness.

Archimides was heedless of the slaughter around him. Father Castel, the inventor of the ocular harpsichord, spent an entire night in one position, ruminating on a thought that struck him as he was retiring to rest. And it is related of an arduous student, that he was reflecting so deeply on some interesting and puzzling subject, that he did not perceive that his feet were burnt by the fire near which he was seated.

[5] Vide the article "Enthusiasm."

Varieties Of Mankind

The most approved classification of mankind is that of Blumenbach. He divides them into five varieties: 1. The Caucasian; 2. Mongolian; 3. Ethiopian; 4. American; and 5. Malay: and the following are the characteristics of each.

I. THE CAUCASIAN.

The skin white; the cheeks rosy—almost a peculiarity of this variety; the hair of a nut-brown, running on the one hand to yellow, on the other into black, soft, long, and undulating; the head symmetrical, rather globular; the forehead moderately expanded; the cheek-bones narrow, not prominent; the alveolar edge round, the front teeth of each jaw placed perpendicularly. The face oval and pretty straight; its features moderately distinct; the nose narrow and slightly aquiline, the bridge of it rather prominent; the mouth small; the lips, especially the lower, gently turned out; the chin full and round. This variety comprehends all Europeans, except the Laplander and the rest of the Finnish race; the Western Asiatics as far as the Obi, the Caspian, and the Ganges; and the people of the North of Africa.

II. THE MONGOLIAN.

Skin of an olive colour; the hair black, stiff, straight, and sparing. The head almost square, the cheek-bones prominent outwards; the superciliary arches scarcely perceptible; the osseous nostrils narrow; the alveolar edge arched obtusely forward; the chin somewhat projecting. The face broad and flattened, and its parts consequently less distinct; the space between the eyebrows very broad as well as flat, the cheeks not only projecting outward, but nearly globular; the aperture of the eyelids narrow and linear; the nose small and flat.

This comprehends the remaining Asiatics, except the Malays of the extremity of the Transgangetic Peninsula, the Finnish races of the North of Europe, Laplanders, &c., and the Esquimaux, diffused over the most northern parts of America, from Behring’s Strait to the farthest habitable point of Greenland.

III. THE ETHIOPIAN.

Skin black; the hair black and crisp. Head narrow, compressed laterally; forehead arched; the cheek-bones projecting; the osseous nostrils large, the jaws lengthened forward; the alveolar edge narrow, elongated, more elliptical; the upper front teeth obliquely prominent, the lower jaw large and strong; the skull thick and heavy; the face narrow, and projecting at its lower part; the eyes prominent; the nose thick and confused with the projecting cheeks; the lips, especially the upper, thick; the chin somewhat receding; the legs in many instances bowed.

This comprehends the inhabitants of Africa, with the exception of the Caucasian variety which inhabits the northern parts.

IV. THE AMERICAN.

Skin of a copper colour; hair black, stiff, straight, and sparing. Forehead short; cheek-bones broad, but more arched and rounded than in the Mongolian variety; the orbits generally deep; the forehead and vertex frequently deformed by art; cranium usually light. The face broad, with prominent cheeks, not flattened, but with every part distinctly marked if viewed in profile; the eyes deep; the nose rather flat, but still prominent.

This comprehends all the American, excepting the Esquimaux.

V. THE MALAY.

Skin tawny; hair black, soft, curled, thick, and abundant; head rather narrow; forehead slightly arched; cheek-bones not prominent, upper jaw rather projecting. Face prominent at its lower part; the features viewed in profile more distinct; the nose full, broad, bottled at its point; mouth large.

This comprehends the inhabitants of the Pacific Ocean, of the Marian, Philippine, Molucca, and Sunda isles, and of the Peninsula of Malacca.

The Caucasian variety derives its name from *Mount Caucasus*, where we meet with a beautiful race—the Georgians; and because, so far as the imperfect light of history and tradition can guide us, the original abode of the species appears to have been in that quarter. In this class are included all the ancient and modern Europeans; the Assyrians, Medes, Chaldeans, Sarmatians, Scythians, and Parthians; the Philistines, Phœnicians, Jews; the Turks, Persians, Arabians, and Hindoos of high caste. Blumenbach is inclined to believe that the primitive human race belonged to this variety. In support of this opinion it may be stated, that the part of Asia which seems to have been the cradle of the race has always been, and still is, inhabited by tribes of this formation; and the inhabitants of Europe in great part may be traced back for their origin to the West of Asia.

Are all these various tribes, brethren descended from one stock? or must we trace them to more than one? The physiologists who have ventured to express the latter opinion have been stigmatized by intolerance and blind bigotry as atheists and unbelievers; yet this question belongs to the domain of the naturalist, and the philosopher has an unqualified right to moot it without incurring the heinous charge of infidelity. To form an opinion on this difficult subject, it will be necessary, as Lawrence justly observes, to ascertain carefully all the differences that exist between the various races of men; to compare them with the diversities observed among animals; to apply to them all the light which human and comparative physiology can supply, and to draw our inferences concerning their nature and causes from all the direct information and all the analogies which these considerations may unfold. “It is quite clear,” continues the same ingenious writer, “that the Mosaic account makes all the inhabitants of the world descended from *Adam* and *Eve*. The entire, or even the partial inspiration of the various writings comprehended in the Old Testament, has been and is doubted by many persons, including learned divines and distinguished Oriental and Biblical scholars. The account of the creation, and subsequent events, has the allegorical figurative character common to Eastern compositions, and it is distinguished amongst the cosmogonies by a simple grandeur and natural sublimity, as the rest of these writings are by appropriate beauties in their respective parts. The representation of all the animals being brought before Adam in the first instance, and subsequently of their all being collected in the ark, if we are to understand them as applied to the living inhabitants of the whole world, is zoologically impossible. How could the polar bear have traversed the torrid zone? If we are to believe that the original creation comprehended only a male and female of each species, or that one pair only was saved from an universal deluge, the difficulties are increased; the carnivorous animals must have perished with hunger, or destroyed most of the other species.” On this obscure subject Adelung has expressed himself with much ingenuity: “Asia has been at all times regarded as the country where the human race had its beginning, and from which its increase was spread over the rest of the globe. Tracing the people up to tribes, and the tribes to families, we are conducted at last, if not by history, at least by the tradition of all old people, to a single pair, from which tribes and nations have been successively produced. What was the first family, and the first people descended from it?—where was it settled?—and how was it extended so as to fill the four large divisions of the globe? It is a question of fact, and must be answered by History. But History is silent: her first books have been

destroyed by time; and the few lines preserved by *Moses* are rather calculated to excite than to satisfy our curiosity.

“We must fancy to ourselves this first tribe endowed with all human faculties, but not possessing all knowledge and experience, the subsequent acquisition of which is left to the natural operation of time and circumstances. As Nature would not unnecessarily expose her first-born and inexperienced son to conflicts and dangers, the place of his early abode would be so selected that all his wants could be easily satisfied, and every thing essential to his existence be readily procured. He would be placed, in short, in a garden of paradise. Such a country is found in central Asia, between the 30th and 50th degrees of north latitude, and the 90th and 110th of east longitude (from Ferro); a spot which in respect to its height, can only be compared to the lofty plains of Quito in South America. Here, too, all the animals are found wild, which man has tamed for his use, and carried with him over the whole earth.”

This ingenious historical investigation points out the east as the earliest and original seat of our species, the source of our domesticated animals and our principal vegetable food; but it by no means decides whether the globe was peopled by one or several original stocks.

The startling nature of this question on the first view of the subject must induce us to consider the circumstance of these five distinct varieties arising from one stock as miraculous; but when we compare them with the corresponding difference in animals, we can easily come to the conclusion that the various races of human beings are only to be regarded as varieties of a single species, without supposing the intervention of any supernatural agency.

The sceptic Voltaire, who evinced more wit than learning in his endeavours to invalidate Scriptural tradition by ridicule, thus expresses himself: “Il n’est permis qu’à un aveugle de douter que les blancs, les négres, les albinos, les Hottentots, les Lapons, les Chinois, les Américains, soient des races entièrement différentes;” but had this philosopher been better versed in zoology and physiology, he would not have made so groundless an assertion. “Analogical and direct facts,” says Dr. Elliotson, “lead to the conclusion that none of the differences among mankind are so great as to require the belief of their originality.” A contrary opinion, however, should not be stigmatized by bigotry, for Locke has justly observed that only matters above human reason are the proper subjects of revelation; and Bacon has also maintained that religious and philosophical inquiries should be kept separate, and not pompously united. Dr. Bostock, than whom no man could be less sceptical, plainly admits that we do not find that the writer of the book of Genesis lays claim to any supernatural source of information with respect to natural phenomena, while the whole tenour of his work seems to show that on such topics he adopted the opinions which were current among his contemporaries.

The causes of the difference of our species have been the subject of as great a discrepance in opinion. Most of the Greek and Roman Historians have attributed it to the influence of climate; and amongst the moderns, Montaigne, Montesquieu, Buffon, and Zimmerman, have considered the modification of the individual and the degeneration of the offspring as the result of this external agency. Lord Kaimes, Hume, and many other philosophers, have entertained a contrary opinion. No doubt, the influence of climate may materially affect colour, stature, hair, features, and even the moral and intellectual character; but it must be considered as inadequate to act upon conformation. The prevalence of light colours in the animals of polar regions is well known: the arctic fox, the white bear, the snow-bunting, are striking instances of this peculiarity; but these circumstances are purely superficial. The skulls of these individuals are similar to those of the Europeans; nay, it is well known that light races are found among dark nations, and many protected parts of the body are blacker than those which are exposed. Buchanan tells us, that the Jews in Cochin are divided into

white and black classes, though born under the same parallel; the white Jews having been known there for upwards of one thousand seven hundred years. Dr. Shaw and Bruce describe a race of fair people, near Mount Aurasius in Africa, with red hair and blue eyes, and who are, according to tradition, descended from the Vandals. We find the red Peruvian, the brown Malay, and the white Abyssinian in the very zones peopled by jet black races. This influence of temperature upon colour frequently varies according to the seasons. Pallas observed that even in domestic animals, such as the horse and cow, the coat is of a lighter colour in winter. The Siberian roe, red in summer, is white in the winter; the fur of the sable and the martin is much deeper in the warm months; and the squirrel and mustela nivalis, which become white in Siberia and Russia, do not change their hue in Germany. The winter coat, it has been observed by naturalists, is found far advanced in the preparatory autumn. This bounteous provision of nature seems to have been extended to the vegetable kingdom and it has been observed that the pellicle of onions is much thicker on the approach of a severe winter than on that of a more temperate season. But if further proof were necessary to impugn this doctrine respecting climate, we may adduce the fact of a woman having borne twins of different complexions, a white and a black. With all due respect to the much-lamented Bishop Heber, we must receive with some degree of hesitation his assertion that the Persian, Greek, Tartar, and Arabian inhabitants of India, assume, in a few generations, without any intercourse with the Hindoos, a deep blue tint, little lighter than that of a negro; and that the Portuguese, during three hundred years' residence in that climate, have assumed the blackness of a Kaffer. The same learned prelate is of opinion that our European complexion was not primitive, but rather that of an Indian; an intermediate tint is perhaps the most agreeable to the eye and instinct of the majority of the human race. Dr. Heber, perhaps, had not seen, in various Roman catholic treasures, portraits of the Virgin Mary, painted, according to tradition, by St. Luke, and in which she is represented as a negress.

That solar heat produces blackness of the integuments is an ancient opinion, and is illustrated by Pliny, who tells us, "Æthiopes vicini sideris vapore torreri, adustisque similes gigni, barba et capillo vibrato, non est dubium." Buffon asserts that "climate may be regarded as the chief cause of the different colours of man;" and Smith is of opinion "that from the pole to the equator we observe a gradation in the complexion nearly in proportion to the latitude of the country."

Blumenbach, under the same impression, endeavours to account for this black tinge by a chemical illustration somewhat curious. He states that the proximate cause of the dark colour is an abundance of carbon secreted by the skin with hydrogen, precipitated and fixed by the contact of the atmospheric oxygen. Our creoles, and the British inhabitants of India, may esteem themselves particularly fortunate in not being subject to this chemical operation!

On the other hand, it is well known that a black state of the skin has been produced in white races under peculiar circumstances; and Le Cat and Camper mention cases of women who turned dark during their pregnancy. It would be idle to dwell further on the hypothetic illustrations regarding this supposed operation of climate, which the observation of every unprejudiced traveller can impugn. Yet the following remarks on the subject by an American divine, the Rev. J. S. Smith are worthy of notice:

"In tracing the globe from the pole to the equator we observe a gradation in the complexion nearly in proportion to the latitude of the country, immediately below the arctic circle a high and sanguine colour prevails. From this you descend to the mixture of red and white. Afterwards comes the brown, the blue, the tawny, and at length the black as you proceed to the line. The same distance from the sun, however, does not in any degree indicate the same temperature of climate. Some secondary causes must be taken into consideration, in

connecting and limiting its influence. The elevation of the land, its vicinity to the sea, the nature of the soil, the state of cultivation, the course of the winds, and many other circumstances enter into this view. Elevated and mountainous countries are cool in proportion to their altitude above the level of the sea, increasing to the ocean, just in opposite effects, in northern and southern latitudes; for the ocean being of a more equal temperature than the land, in one case corrects the cold, and in the other moderates the heat. Ranges of mountains, such as the Apennines in Italy, and Taurus, Caucasen, and Iman, in Asia, by interrupting the course of cold winds, render the quite dry country below them warmer, and the countries above them colder, than is equivalent to the proportionate difference of latitude. The frigid zone, in Asia, is much wider than it is in Europe; and that continent hardly knows a temperate zone."

Climate also receives some difference from the nature of the soil, and some from the degree of cultivation; sand is susceptible of greater heat than clay, and an uncultivated region shaded with forests and covered with undrained marshes, is more frigid in northern and more temperate in southern latitudes, than a country laid open to the direct and constant action of the sun. History informs us that when Germany and Scythia were bound in forests, the Romans often transported their armies across the frozen Danube; but since the civilization of those barbarous regions, the Danube rarely freezes.

Migration to other countries has also been adduced as one of the causes of variety in mankind; but the permanency of the characteristic distinctions of any race militates against this supposition. The physical character of the Celts, who peopled the west of Europe at an early period, is still observable in the Spaniard, most of the French, the native Welsh, the Manks, and the Scotch Highlander; whereas the German race, who occupied the more northern and eastern settlements, are still distinguished by their transparent skin, rosy complexion, flaxen hair, and blue eyes; and in Ireland, the race of the Danes and the Milesians can to this day be recognised in their respective characters. Shaw and Bruce traced the descendants of the Vandals who passed from Spain into Africa in the fifth century; and, after a lapse of thirteen centuries, Bruce says that they are "fair like the English, their hair red, and their eyes blue." Negroes have been introduced into the New World for upwards of three centuries, where, despite of a new clime and different habits, they still retain the character of their race; and the Jews who have not intermarried out of their nation, have preserved their features for nineteen centuries.

Not only do we observe the peculiarities of physical conformation resisting the destructive or degenerating hand of time, but certain imperfections in their faculties have been equally permanent in certain tribes. It is a curious fact that the Mamelukes, who have resided in Egypt for upwards of five hundred and fifty years, have never perpetuated their subsisting issue. Volney observed, that there does not exist one single family of them in the second generation; all their children perishing in the first or second descent. The same observation applies to the Turks, who can only secure the continuance of their families by marrying native women, an union which the Mamelukes disdained. This singularity, remarked by Volney, has been since confirmed by late travellers.

It will be found that the progress of domestication, the natural result of civilized improvement, tends more materially to operate a wonderful change in the animal conformation, than any other supposed agency. The head of the domestic pig differs as much from that of the wild one as the Negro's from the Caucasian's. At Padua, it has been observed that fowls have a cranium perforated by numerous holes, and hollowed out like a shell. In some countries, nay districts, cattle and sheep have or have not horns; and in other instances sheep have so many of them as to have acquired the epithet of *polycerateous*. Wild animals

continuing to inhabit the place that bore them, undergo little or no change, and their fossil remains and skeletons are similar to the present species; but nothing can form a stronger contrast to this specific uniformity than the numerous varieties to be found in those races that have been crossed in breed and domesticated by man. We could scarcely imagine that our sheep owe their origin to the mouflon or argali, (*ovis ammon*,) an animal large in size, fleet, and fierce. The sheep of Senegal and India are those that have undergone the least degradation; while those of Barbary, Egypt, Arabia, and Persia, have experienced greater degeneration. We daily see dogs degenerate before our eyes, and it has not yet been satisfactorily ascertained whether they arise from one or several species. Cuvier, in his diligent researches, has concluded that our oxen do not originate in the urus or bison of the ancients formerly found in various parts of Europe, and still met with in the forests of Lithuania, and on the Carpathian and Caucasian chains; but he is of opinion, from the examination of fossil remains, that, like the camel and the dromedary, the species has been destroyed by civilization: the causes of these changes do not appear to operate by altering the parents but disposing them to produce offsprings more or less dissimilar in colour, form, and disposition.

Dr. Prichard observes, that the negro slaves of the third and fourth generation differ materially from the natives of Africa.

In opposition to this doctrine, which admits this wonderful degeneration under the plastic influence of domestication, it has been shown that, as far as we know, the lapse of ages has not produced any change in the generality of animals. The zoological descriptions given by Aristotle twenty-two centuries ago apply distinctly to the same species of the present day, and every work of art in which these animals are represented corroborates the fact. Geoffroy de St. Hilaire brought numerous mummies of animals from the sepulchres of Egypt, and found no more difference between their skeletons and the osseous conformation of the present races, than in the relics of the human mummy and the bones of our contemporaries.

The following luminous conclusion of Lawrence illustrates the observation of the foregoing fact: “If new characters are produced in the domestic animals because they have been taken from their primitive condition, and exposed to the operation of many, to them, unnatural causes,—if the pig is remarkable among these for the number and degrees of his varieties, because it has been the most exposed to causes of degeneration,—we shall be at no loss to account for the diversities in man, who is, in the true, though not in the ordinary sense of the word, more of a domesticated animal than any other. We know the wild state of most of them, but we are ignorant of the natural wild condition to which man was destined. Probably there is no such state; because Nature having limited him in no respect,—having fitted him for every kind of life, every climate, and every variety of food,—has given him the whole earth for his abode, and both the organized kingdoms for his nourishment. Yet, in the wide range through which the scale of human cultivation extends, we may observe a contrast between the two extremities, analogous to that which is seen in the wild and tamed races of animals. The savage may be compared to the former, which range the earth uncontrolled by man; civilized people to the domesticated breeds of the same species, whose diversities of form and colour are endless.”

It is therefore obvious that the various causes which operate upon animals in producing these alterations from the primitive race, although the manner in which they act is unknown, are sufficiently evident to convince us, by analogy, that they may account for similar phenomena in the human race, without the gratuitous assumption of different original species, tending to invalidate the Mosaic account of the creation. Despite the witticisms of Voltaire and other philosophers on this subject, sound philosophy teaches us to assign the same causes to the

same effects without calling in the adventitious aid of other possible influences; and no difficulties prevent us from recognising the unity of the human species, which are not applicable to all other animals.

On The Inhumation Of The Dead In Cities

From time immemorial, medical men have strongly pointed out to municipal authorities the dangers that arise from burying the dead within the precincts of cities or populous towns. Impressed with the same conviction, ancient legislators only allowed to the most illustrious citizens a sepulchre in the temple of the gods. Euclides was interred in the temple of Diana Euclis, as a reward for his pious journey to Delphi in search of the sacred fire; the Magnesians erected a monument to Themistocles in their forum; Euphron received the same honour in Corinth; and Medea buried her two sons, Mermerus and Pheres, under the protection of Juno Acræa's altars, to guard their ashes from their persecutors. Lycurgus was perhaps the only Grecian legislator who recommended inhumation in temples and in cities, to accustom youth to the daily spectacle of death.

The primitive Grecians, it appears, buried their dead in or about their dwellings; and we find a law amongst the Thebans, ordaining that every person who built a house should provide a repository for the dead upon his premises. In latter days, both Grecians and Romans erected their tombs outside of their cities, and chiefly by the road-side. It appears also, that, among the Romans, the bodies of the lower orders were promiscuously cast into wells, called *fruticuli*. Horace seems to allude to this practice. *Hoc miseræ plebi stabat commune sepulchrum.* The funerals of the wealthy patricians appear to have been most sumptuous and costly, the pall formed of valuable materials and decorated with splendid ornaments. Thus Statius:

Ditantur flammæ: non unquam opulentioan ille ante cinis: crepitant gemmæ: atque immane litescit argentum, et pietis exsudat vestibus aurum. The laws of the twelve tables prohibited the practice of this waste of gold.

Both religious and civil motives might have dictated the propriety of this regulation. The traveller, setting out upon a journey, and passing by the sepulchres of his sires, could in the presence of their manes invoke their protection; and on his return to his penates, safe from danger, he could put up thanks to the gods for his preservation. As a prudential measure, the interment of the dead beyond the walls of their towns prevented the fatal consequences that might have arisen from extensive putrefaction and infection, and moreover the burning of bodies would have exposed the adjoining buildings to the danger of frequent fires. It is also possible that policy dictated these sanatory enactments. The ancients held the remains of the departed as a sacred trust, in the defence of which they were ever prepared to fall; and it is not improbable that their warriors would have rushed forth to meet the invader, before he would have defiled, by his approach to their cities, the ashes of their ancestors. So scrupulously religious were the Athenians in performing the funeral rites of the dead, that they put to death ten of their commanders, after the battle of Arginusæ, for not having committed to the earth the dead bodies that floated on the waters. Such was the dread of being deprived of sepulchral rites, that it is related of several citizens of Cappadocia, that during the pestilence that devastated their town in the reign of Gallus and Valerian, they actually shut themselves up to perish in their tombs.

There is no doubt but that their dead were buried in such a manner as not to prove injurious to the survivors; and Seneca plainly says, "Non defunctorum causâ, sed vivorum, inventa est sepultura." The ancients both burned and buried their dead, but inhumation appears to have been the most early and the most approved rite. "Let the dead be buried," says a law of Cecrops. Solon justifies the claims of the Athenians to the island of Salamis, from the

circumstance of the dead bodies interred on its shores having been inhumed according to the Athenian custom, with their feet turned to the west, whereas the Megarensians turned theirs to the east.

In various instances the burial or the burning appear to have been adopted upon philosophical doctrines. Democritus, with a view to facilitate resurrection, recommended interment, and Pliny thus ridicules the intention: “Similis et de asservandis corporibus hominum, et reviviscendis promissa à Democrito vanitas, qui non revivixit ipse.” Heraclitus, who considered fire as the first principle, advocated the funeral pile; while Thales, who deemed water the chief element, urged the propriety of committing the departed to the damp bosom of the earth. Although burning the dead was customary, there were curious exceptions to the rule. Infants who died before cutting their teeth, persons struck dead with lightning, were buried. The place of interment of infants was called the *suggrundarium*.

The early Christians inhumed the bodies of their martyrs in their temples. This honour was afterwards conferred on the remains of distinguished citizens, illustrious prelates, and princes. The infectious diseases which at various periods arose from this custom, induced Theodosius, in his celebrated code, strictly to prohibit it; and he even ordered that the remains of the dead thus inhumed should be removed out of Rome. The vanity of man, and the cupidity of the priesthood, soon overruled these wise regulations. Every family possessing sufficient means, claimed a vault within the churches, and thereby the revenues of the clergy were materially increased. At all times, even the dead appeared to have shared with the living the obligation of supporting the ministers of the altar. By a law of Hippias, the priestesses of Minerva received a chœnix[6] of wheat, and one of barley, with an obolus, for every individual who departed this life. The *libitinarii* of the Romans fulfilled the duties of our undertakers, or rather of the directors of funeral pomp of the French; yet they were attached to the temple of the goddess Libitina, whose priests received a fee in silver for every one who died, under the name of *Libitinæ ratio*. Suetonius informs us, that in Nero’s time the mortality was so great during one autumn, that thirty thousand of these silver pieces were deposited in the fatal treasury. To increase the emoluments of this sacerdotal body, these *libitinarii* sold at high prices every thing that was requisite for the funeral ceremonies, received a toll at the city gate through which the bodies were carried out, as well as at the entrance of the amphitheatre through which the dead gladiators were borne away. Phædrus alludes to this speculation in one of his fables, when speaking of a miser,

Qui circumcidis omnem impensam funeris,
Libitina ne quid de tuo faciat lucrum.

It is supposed that this avaricious divinity owed her name to the displeasure which it must have occasioned to all who heard it,—*quòd nemini libeat*; but it is also possible that it was derived from her bearing poor mortals away, whenever she fancied it, and *ad libitum*.

In more modern times, Theodolphus, Bishop of Orleans, complained to Charlemagne that lucre and vanity had converted churches into charnel-houses, disgraceful to the clergy and perilous to the community. It was upon this representation that this prince, in his capitularies, prohibited burials in churches under heavy penalties. But the laws of the wisest could not prevent priesthood from considering this source of emolument, although endangering public salubrity, an indisputable property that could not be meddled with without endangering the church.

In England the custom of burying the dead in churches was first sanctioned by Cuthbert, Archbishop of Canterbury, in 758, it having been previously forbidden by Augustine, who

[6] The chœnix contained a pint.

had decreed that no corpse either of prince or prelate should be buried within the walls of a city.

In France, Maret in 1773, and Vicq d'Azyr in 1778, pointed out the danger of this practice in such glaring colours, that government by an edict, only allowed church interment to certain dignitaries; but in 1804, by a wise law that should be enforced in every civilized country, inhumation in cities was entirely abolished. Amongst the numerous well authenticated evil results of burying in churches that led to this wise prohibition, the following were the most striking and circumstantial:

In 1773, in Saulieu, Burgundy, an epidemic disease arising from the inhumation of a corpse in the church of St. Saturnin created considerable alarm. The body of a corpulent person had been interred on the 3d of March, and a woman was buried near it on the 20th of April following: both had died of a reigning fever. During the last burial a fetid effluvia arose from the vault, which pervaded the whole church; and, out of one hundred and seventy persons who were present, one hundred and forty-nine were attacked with the prevailing malady, although its progress had been arrested amongst the other inhabitants of the town.

In 1774, a similar accident occurred in a village near Nantes, where several coffins were removed in a vault, to make room for the lord of the manor: fifteen of the bystanders died from the emanation.

In 1744, one-third of the inhabitants of Lectouse perished from a fever of a malignant character that manifested itself after some works that required the removal of a burial-ground. Two destructive epidemics swept away large proportions of the population of Riom and Ambert, two towns in Auvergne.

Taking this matter under consideration in a moral, or even a religious light, it may be questioned whether any advantage can accrue from the continuance of this pernicious custom, which during the prevalence of epidemic diseases endangers the life of every person who resides near a church. Does it add to the respect which the remains of the dead are entitled to? Certainly not: the constant tolling of "the sullen bell"—the daily cortège of death that passes before us—the graves that we hourly contemplate, perusing monumental records which more frequently excite unseasonable laughter than serious reflection—every thing, in short, tends to make death of little or no moment, except to those who have heard the mutes gossiping at their door. So accustomed, indeed, are we from our childhood to sepulchral scenes, that, were it not for the parish-officers, our churchyards would become the playground of every truant urchin; and how often do we behold human bones become sportive baubles in the wanton pranks of the idlers, who group around the gravedigger's preparations! So callous are we to all feelings of religious awe when surrounded with the dead, that our cemeteries are not unfrequently made the rendezvous of licentiousness and the assembly-ground of crime, where thieves cast lots upon a tomb for the division of their spoil.

With what different feelings does the traveller wander over the cemetery of *Père la Chaise*? I am well aware that many of the gewgaw attributes that there decorate the grave, have been called the "*frippery*," "*the foppery*" of grief; but does there exist a generous, a noble sentiment, that may not be perverted by interested motives and hypocrisy into contemptible professions? How often is the sublime rendered ridiculous by bad taste and hyperbolic affectation! When we behold the fond lover pressing to his lips a lock of hair, or the portrait of all that he holds dear, the cold calculating egotist may call this the *frippery of love*; but the stoic who thinks thus, has never known the "sweet pangs" of requited affection, when, in bitter absence, the recollection of bliss gone by, imbodies in our imagination the form we once pressed to our respondent heart. The creation of our busy fancy stands before us, gazing

on us with that tender look that in happier days greeted the hour of meeting; or trembles in our tears as when we last parted—to meet, perhaps, no more! With what fervour of religious love do we not behold the simple girl kneeling with uplift eye and hand on the green sod that covers all that endeared her to existence, till, overwhelmed with burning, choking regrets—as idle as they are uncontrollable—she sinks prostrate on the cold earth that now shrouds that bosom which once nestled her young hopes and fears! There have I seen the pale, the haggard youth,—to all appearances a student,—seated mournfully by the side of a tomb, absorbed in deep thought, heedless of the idlers who passed by him, looking at him perhaps with contempt!—heedless of the swift flight of time, which shrouded him imperceptibly in darkness, until he was warned by the guardian of the dead that it was time to depart—and to depart *alone*! No inscription recorded the "one loved name;" he would not expose it to the unfeeling gaze of the heartless tourist: all he would willingly have traced upon her tomb, would have been "Here lies *my own*!"

The mouldering earth, the fleshless skeleton over which he mourns, cannot obliterate the remembrance of what she was: though her eyes, perhaps, no longer exist, still their former languid, liquid look of bliss, beams freshly in his recollection. The lips which once pronounced the long wished-for avowal of mutual love are still moist and open to memory's embrace—still seem to lisp the delicious *tu*! Our language is rich, without comparison richer far than the French; but we have nothing so endearing, so bewitching, as their *tu-toiement*: our *thee's* and *thou's* are frigid, chilly, when compared to the *first toi* that escapes inadvertently from beloved lips! A French writer has beautifully expressed this exquisite moment: "Le *premier tu* est tout-puissant; c'est le *fiat lux* de l'âme; il est sublime, il débrouille le chaos!"

Sublime are the words, "Blessed are the dead who die in the Lord!" Would it be irreligious to say, "Happy are the dead who die beloved?" Their fond and ardent heart had never been chilled by the withering hand of infidelity and ingratitude. They died in an ecstatic dream of perfect bliss on earth, and never were awakened to the world's mocking realities!—they died when they felt and believed in their heart of hearts that they were dearly beloved—could not be loved more dearly: with that conviction, death, in a worldly acceptation, can never be untimely. Probably, they died still sufficiently animated by a latent, lingering spark of life, to press the hand that was so often linked in mutual pressure in happy days—to feel the burning tear of anguish drop on the pale cheek—to hear the sad, the awful, last word, *à Dieu!*—an expression that habit has rendered trivial, but which bears with it, in the tenderest solicitude, the most hallowed meaning; since, in pronouncing it, we leave all that we cherish under the protection and the safeguard of our god.

Affection deprives death of all horrors. We shrink not from the remains of what we cherished. Despite its impiety, there was something refined in that conviction of the ancients, who imagined that in bestowing their farewell kiss they inhaled the souls of those they loved. How sweet are those lines of Macrobius, originally attributed to Plato!

Dum semihulco suavio
Meum pullum suavior,
Dulcemque florem spiritus
Duco ex aperto tramite,
Animo tunc ægra et saucia
Cucurrit ad labia mihi!

Our Shakspeare has quaintly, yet beautifully, described this parting embrace:

And lips, O you
The doors of breath, seal with a righteous kiss
A dateless bargain to engrossing death.

Nor was it only on the dying that the ancients bestowed this mark of fondness: Tibullus and Propertius tell us, that, as their bodies were laid on the funeral pile, they clasped them in a fond and last embrace.

In regard to the painted crosses, the chaplets, the garlands of flowers, which mark the hallowed resting-place of the departed, it may be said that they are but romantic and poetical expressions of grief. If it were only real grief that expressed itself by outward testimonials, how soon would mourning be banished as an idle expense!—the "inky cloak," and customary "suits of solemn black—the trappings and the suit of woes," be laid aside! What a different feeling does the splendid catafalcum, covered with black velvet, studded with silver tears, and illumined by thousands of glaring tapers, excite, when compared with the simple and verdant graves which point out the spot "where souls do couch in flowers," blessed by affection's tears instead of lustral waters. At all periods, amongst every nation, flowers and certain trees seem to have been consecrated to the dead. The Romans planted the wild vine and the box around their tombs. Thus Martial to Alcimenes:

Accipe, non Phario nutantia pondera saxo,
Quæ cineri vanus dat ruitura labor,
Sed fragiles buxos, et opacas palmitis umbras,
Quæque virent lacrymis humida prata meis.

The wealthy assigned a beauteous garden to their departed favourites, as in the instance of Augustus and Mæcenas. Not only did they suspend garlands over their tombs, but scattered flowers around them. Again in Virgil,

Purpureosque jacit flores, ac talia fatur.

The same custom prevailed amongst the Grecians, who considered all purple and white flowers acceptable to the dead. The Thessalian's strewed Achilles' grave with the immortal amaranth and lilies. Electra complains that the tomb of Agamemnon received no myrtle boughs; in short, instances of this practice are every where to be found. In addition to flowers and perfumes, ribands and hair were also deposited on their sepulchres. Electra adorns Agamemnon's tomb with her locks, and Canace laments that she had not been able to perform the same rite on her beloved Macareus. Poets tell us that precious ointments and wines were poured upon their monuments; and we find, in Euripides, Helen bidding Hermione to take locks of her hair, honey mixed with milk, and wine, to the sepulchre of her aunt.

Amongst the Chinese, to the present day, the cypress and the fir, shade their cemeteries: the former tree, an attribute of Pluto was ever considered funereal, hence called *feralis*; and the *feralia* were festivals in honour of the dead, observed by the Romans. Varro pretends that the cypress was called funereal from *funus*, as it emitted an antiseptic aroma. Pliny and others pretend that it typified the dead, from its never shooting out fresh sprouts when the trunk was hewn down. At any rate, to this hour, it is planted in burying-grounds in every civilized country.

The yew-tree has also been considered an emblem of mourning from the earliest times. The custom of planting it singly appears also to be very ancient. Statius, in his Thebaid, calls it the *solitary yew*. In England, the trees planted in churchyards were protected by legal enactments, as appears by a statute of 35 Edward I. From the scarcity of bow staves, they had been frequently despoiled by our numerous archers; and, to meet this service, by an

enactment of Edward IV. every foreign trader was obliged to bring in four bow staves for every ton of imported merchandise; Elizabeth, from the scarcity of this important article, put the statute in full force.

Let us then hope, both for the living and the dead, that this custom, which obtains in France and other countries, will be adopted by us, instead of becoming the subject of ridicule. It is far more desirable to see families repairing to the tomb of the departed on the anniversary of their death, than to behold them daily passing by their remains with cold indifference.

It would scarcely be believed upon the continent of Europe, that to this very hour bodies are buried in confined churchyards in the most crowded and dirty parts of the British metropolis, such as Russel-court, Drury-lane, and various other similar holes and corners; the rudest nations were never guilty of such a glaring impropriety. In the kingdom of Siam, the remains of the opulent are burnt with great ceremony, while the bodies of the poor are carried out and exposed on mountains: in Ceylon, the remains of the indigent are interred in the neighbouring woods; the rich consumed on gorgeous funeral piles.

The Chinese inhume their dead at some distance from their cities and towns; it is only the bodies of the rich and noble that are allowed to remain on the premises of the family. Navarette mentions a curious custom prevalent in one of their provinces, Chan Si, where, in the event of two betrothed persons dying at the same period, they are married while their coffins are still in their former dwelling, and afterwards burnt together. By the accounts of various travellers, the wealthy Chinese are burnt with great pomp, and their monuments are most curious and expensive. Their mausoleums are actually halls or grottos, decorated with splendour: and they inter with the deceased many articles to which he might have been attached during life, and that may add to his comforts after death. A custom that was more prevalent before the invasion of the Tartars—a comb, a pair of scissars to pare his nails; four little purses, containing the nail-parings of the defunct, were placed in the coffin, and, amongst the wealthy, gold coin and jewels were inserted in the mouth. The Hottentots bury their dead in the wild clefts of rocks and caverns; the Peruvians bear theirs to the neighbouring hills and mountains. The Greenlanders wrap their dead in furs and skins, and carry them to a considerable distance from their huts. In Kamtschatka and Siberia bodies are covered with snow in caverns and caves; and the African savages perform the same funeral rites as the Irish: their dead are carried to the burying-ground, followed by crowds of relatives and other people, who join the procession, bellowing and howling most piteously, “Oh! why did you die? did you want any thing that was ever denied you?” and after the funeral the survivors invariably get drunk on palm-wine, or any strong liquor they can procure; a custom similar to the *circumpotatio* of the Romans.

Buried Alive

Every nation, however uncivilized, holds the idea of being buried alive in constant dread; the horrors of such a situation cannot be described. Bodies have been found where the miserable victims of precipitation had actually devoured the flesh of their arms in the agonies of hunger and despair. Such was the fate of John Scott and the Emperor Zeno. It is to be feared that this melancholy occurrence is more frequent than is supposed, more especially in countries where inhumation is speedily resorted to. The ancients were remarkably cautious in this respect, especially when we take into consideration the climate of Greece and Rome during the summer months. A law of Greece on this subject directs that "the corpse should be laid out at the relations' pleasure, but that the following morning before daylight the funeral procession should take place." From various authorities, however, it appears that the bodies were kept three, and sometimes six days. Servius was of opinion that the time for burning bodies was the eighth day, and the time for burying the tenth; it appears, however, that this was a privilege granted to the wealthy, as the poor were consumed the day after their death, a custom alluded to in an epigram of Callimachus. Among the Romans several days were also allowed to elapse before interment—sometimes seven days; during which, loud cries, in which the deceased was called by his name, and the noise of various instruments resounded near the body; this was called the *conclamatio*, alluded to by Terence:

Desine, jam conclamatum est.

Lucan also alludes to this custom:

————Sic funere primo
Attonitæ tacuere domus, quam corpora nondum
Conclamata jacent, noc mater crine soluto
Exigit ad sævos famularum brachia planctus.

The ancients held hasty inhumation in great dread, and grounded their apprehension on various current traditions. Thus Plato remarks the case of a warrior who was left for ten days on the field of battle amongst the dead, and who came to life when he was being borne to the sepulchre. Asclepiades restored life to a man who was also consigned to the funeral pile, and Pliny relates the case of Lucius Aviola and Lucius Lamia, who showed signs of life upon the pile, but were too much injured to be saved.

Amongst the many absurd fancies regarding the dead, was the superstitious belief of their being able to masticate in their coffin any substance buried with them. Women more especially were believed to be gifted with this *post mortem* faculty of moving their jaw-bones very loudly. *Claro sonitu*, says the learned Michael Ranfft, in his curious and elaborate work, *de masticatione mortuorum*. In this apprehension, that the deceased in their hunger might devour their own limbs, articles of food were interred with them.

According to the law of the Jews, who appear to have been in constant dread of pestilential disease, the inhumation of the dead were most hasty. Yet in this instance many Rabbi maintain that the Talmud has been erroneously interpreted, for although it decreed that a night should not be allowed to pass before inhumation, it clearly meant that actual death must have been ascertained.

While such fears are entertained of suspended animation being taken for dissolution, it is strange that in some savage tribes the aged are allowed to perish without any care being taken to prolong their lives. Such is the custom of some of the Esquimaux, where old and decrepit

creatures are abandoned in their huts and left to their fate. An ancient tradition stated that the inhabitants of the Isle of Syria never died of any distemper, but dropped into their graves at a certain old age.

It would be desirable that in cases where interment is speedily resorted to, a physician should attend, in order to ascertain that death had actually taken place. This is seldom practised, from the common saying "that it is uncivil on the part of a doctor to visit a dead patient." Various means are employed to ascertain death: the looking-glass applied to the mouth of the corpse, to find out whether breath had departed; the coldness of the extremities, the falling of the lower jaw, the rigidity of the limbs, and various other appearances, are universally known; but in the villages of Italy and Portugal, pins and needles are frequently driven under the nails, in what is vulgarly called *the quick*, to excite an excruciating pain if life should not have fled. The most certain evidence, when bodies are long kept, is most decidedly the commencement of decomposition; but, in other cases, the action of the voltaic pile on a bared muscle is an infallible test.

It is much to be feared that on the field of battle and naval actions many individuals apparently dead are buried or thrown overboard. The history of François de Civille, a French captain, who was missing at the siege of Rouen, is rather curious: at the storming of the town he was supposed to have been killed, and was thrown, with other bodies, in the ditch, where he remained from eleven in the morning to half-past six in the evening; when his servant, observing some latent heat, carried the body into the house. For five days and five nights his master did not exhibit the slightest sign of life, although the body gradually recovered its warmth. At the expiration of this time, the town was carried by assault, and the servants of an officer belonging to the besiegers, having found the supposed corpse of Civille, threw it out of window, with no other covering than his shirt. Fortunately for the captain, he had fallen upon a dunghill, where he remained senseless for three days longer, when his body was taken up by his relations for sepulture, and ultimately brought to life. What was still more strange, Civille, like Macduff, had been "from his mother's womb untimely ripp'd," having been brought into the world by a Cæsarean operation, which his mother did not survive; and after his last wonderful escape he used to sign his name with the addition of "three times born, three times buried, and three times risen from the dead by the grace of God."

The fate of the unfortunate Abbé Prevost, author of "Manon Lescaut," and other esteemed novels, was lamentable beyond expression. In passing through the forest of Chantilly, he was seized with an apoplectic fit: the body, cold and motionless, was found the following morning, and carried by some woodcutters to the village surgeon, who proceeded to open it; it was during this terrific operation that the wretched man was roused to a sense of his miserable condition by the agonies he endured, to expire soon after in all the complicated horrors of his situation. Various cases are recorded where persons remained in a state of apparent death for a considerable time. Cullen mentions an hysterical woman who was deprived of movement and sensibility for six days. Licelus knew a nun of Bresia, who, after an hysteric attack, continued in an inanimate state for ten days and nights.

Spontaneous Combustion

The singular fact of persons, more especially individuals who were in the habit of indulging in the use of spirituous liquors, having taken fire and been consumed, is authenticated beyond the slightest doubt. Little confidence, it is true, can be placed in the reports on this subject which occasionally appear in the newspapers of different countries; but many celebrated practitioners have witnessed and recorded the event, and physiologists have endeavoured to account for its causes. The celebrated Le Cat mentions a woman of Rheims, of the name of Millet, who was found consumed at the distance of two feet from her chimney; the room exhibited no appearance of fire, but of the unfortunate sufferer nothing was found except her skull, the bones of the lower extremities, and some vertebræ. A servant-girl was accused of the murder, and condemned to death; but on her appeal, and a subsequent investigation, her innocence was fully ascertained.

Joseph Battaglia, a surgeon of Ponte Bosio, relates the following case:—Don G. Maria Bertholi, a priest of Mount Valerius, went to the fair of Filetto, and afterwards visited a relation in Fenilo, where he intended to pass the night. Before retiring to rest, he was left reading his breviary; when, shortly afterwards, the family were alarmed by his loud cries and a strange noise in his chamber. On opening the door, he was lying prostrate on the floor, and surrounded by flickering flames. Battaglia was immediately sent for, and on his arrival the unfortunate man was found in a most deplorable state. The integuments of the arms and the back were either consumed or detached in hanging flaps. The sufferer was sufficiently sensible to give an account of himself. He said that he felt all of a sudden as if his arm had received a violent blow from a club, and at the same time he saw scintillations of fire rising from his shirt-sleeves, which were consumed without having burned the wrists; a handkerchief, which he had tied round his shoulders, between the shirt and the skin, was intact. His drawers were also sound; but, strange to say, his silk skull-cap was burnt, while his hair bore no marks of combustion. The unfortunate man only survived the event four days, when mortification of the burnt parts was most extensive, and the body emitted intolerable putrid effluvia. The circumstances which attended this case would seem to warrant the conclusion that the electric fluid was the chief agent in the combustion.

Bianchini relates the death of the Countess of Cornelia Bandi, of Cesena, who was in the habit of using frictions of camphorated spirits. She was found consumed close to her bedside. No traces of fire could be observed in the room—the very lights had been burnt down to their sockets; but the furniture, closets, and linen were covered with a grayish soot, damp and clammy.

The Annual Register mentions two facts of a similar nature which occurred in England, one at Southampton, the other at Coventry. In the transactions of the Royal Society of London, an extraordinary instance of combustion is also recorded. The fact is thus related. Grace Pitt, the wife of a fishmonger of Ipswich, aged about sixty, had contracted a habit, which she continued for several years, of coming down every night from her bedroom, half dressed, to smoke a pipe. On the night of the 9th of April, 1744, she got up from her bed as usual; her daughter who slept with her, did not perceive she was absent till next morning when she awoke; soon after which she put on her clothes, and going down into the kitchen, found her mother stretched out on her right side, with her head near the grate; the body extended on the hearth, with the legs on the floor, which were of deal, having the appearance of a log of wood consumed by a fire without any apparent flames. On beholding this spectacle, the girl run in great haste and poured over her mother’s body some water contained in two large vessels, in

order to extinguish the fire, while the fetid odour and smoke that exhaled from the body almost suffocated some of the neighbours who had hastened to the girl's assistance.

The trunk was in some measure incinerated, and resembled a heap of wood covered with white ashes. The head, the arms, the legs, and the thighs, had also participated in the burning. This woman, it is said, had drank a large quantity of spirituous liquor, in consequence of being overjoyed at hearing of the return of one of her daughters from Gibraltar. There was no fire in the grate, and the candle had burnt down to the socket of the candlestick, which was close to her. Besides, there were found close to the consumed body, the clothes of a child and a paper screen, which had sustained no injury from the fire. The dress of the woman consisted of a cotton gown.

It is possible that this accident may be attributed to the escape of hydrogen gas; the presence of this inflammable body in animals is evident, and it is also proved that it is liable to ignite. Morton saw flames coming from the body of a pig. Bonami and Ruysh, with a lighted candle, set fire to the vapour arising from the stomach of a woman whom they were opening. In the Memoirs of the Academy of Science of Paris, of 1751, we find the case of a butcher, who, on opening the body of an ox that had died after a malady which had swollen him considerably, was severely burnt by an explosion and a flame which rose to the height of about five feet. Sturm, Bartholini, and Gaubius record fiery eructations in which, no doubt, phosphurated hydrogen had been generated in the stomach, from some combination of alcohol and animal substances, and inflamed upon coming into contact with atmospheric air; the fetid odour which invariably accompanies these combustions appears to warrant the conclusion. Fodéré remarks that hydrogen gas is developed in certain cases of disease even in the living body, and he agrees with Mere in attributing spontaneous combustion to the united action of hydrogen and electricity. The case of a Bohemian peasant is narrated, who lost his life in consequence of ignited inflammable air issuing from his mouth which could not be extinguished. It seems evident that this accident only occurs under certain conditions of the body; generally in aged persons upwards of sixty years old; more frequently in women than in men, and chiefly when of indolent habits, a debilitated frame, and intemperate in their mode of living. That the body has been usually consumed long before the head and the extremities is evident, since these parts have been more commonly found than the trunk. It also has been ascertained by observation that this strange accident seldom occurs in summer, but principally during severe cold and frosty weather. It appears that some experiments have been recently made in the United States, when the blood flowing from the arm of a man addicted to spirituous liquors actually took fire, being placed in contact with a lighted taper!

Medical observers differ in opinion on this singular yet well-authenticated phenomenon. Lair, Vicy d'Argou, and Dupuytren maintain that to produce it, the contact of fire is necessary. Le Cat and Kopp, on the contrary, affirm that this combustion may be spontaneous without the intervention of any external agent, and resulting from some peculiar predisposition. According to Le Cat animals contain inflammable substances which ignite of themselves. De Castro relates the cases of several individuals from whom friction could draw sparks. Daniel Horstius mentions a gouty patient, from whose limbs, on being rubbed, vivid sparks arose. These physicians consider that these electric sparks are sufficient to ignite the spirituous liquor which may have saturated any organic tissue of the body, the combustion being afterwards fed by animal oil.

This theory is, however, subject to many objections. It is difficult to imagine that any substance introduced into the organ of digestion should retain its former principles of inflammability. Although Cuvier and Dumeril relate, that in opening the body of a man who died from excess of drinking, the effluvia of the liquor arose from every cavity.

On this subject, fraught with much interest, nothing positive has been ascertained, despite the late progress of chemical investigation. This combustion indeed differs widely from all other burning; sometimes a flickering and bluish flame arises; at other times a smothered heat or fire, without visible flames, is the consuming agent. Water increases the combustion instead of allaying it. It is moreover a well-known fact, that a considerable quantity of fuel is required to consume a dead body, whereas in this combustion, incineration is most rapid. The human body, indeed, is not easily consumed; a case is related of a baker-boy, named Renaud, who was sentenced to be burnt at Caen; two large cart-loads of fagots were required to consume the body, and at the end of more than ten hours, some remains were still visible.

The extreme incombustibility of the body was singularly exemplified in the case of Mrs. King, whose murderer was engaged for several weeks in endeavouring to burn her remains without effecting his purpose.

It has also been affirmed by various medical observers, that the human body will occasionally secrete an inflammable matter emitted by perspiration. Thus, it is stated, that the perspiration of the wife of a physician of the Archbishop of Toledo was of such a combustible nature, that a ribbon which she had worn, being exposed to the air, took fire. Borelli relates the case of a peasant, whose linen would ignite in a similar manner, whether it was laid up in a chest or hung up to dry. Amongst the many curious stories of the kind, we quote De Castro, who affirms that he knew a physician, from whose back-bone fire issued so vividly as to dazzle the eyes of the beholders. Krautius informs us, that certain people of the territory of Nivers (?) were burning with an invisible fire, and that some of them lopped off a foot or a hand to cut off the conflagration!

Brassica Eruca, Or The Rocket Plant

This plant, now in total disuse, was considered by the ancients as a most powerful aphrodisiac, and consecrated to Venus. Hence Martial and Ovid—

Et Venerem revocans eruca morantem.

——

Nec minus erucas jubeo vitare salaces.

But the most curious document regarding this obnoxious weed is found in Lobel, who states that it was carefully cultivated in the gardens of monasteries and nunneries, to preserve their chastity.

“Hæc eruca, major Hispanica, vel quia in condimentis lautior, vel ad venerem vegetior erat, gentilis vulgò vocata fuit; quo vocabulo Hispanica et Itala gens designat quamlibet rem aptam reddere hominem lætum et experrectum ad munia vulgò pausibilia, ut joca ludicra et venerem; quæ commoda ut ex eâ perciperet monachorum saginata caterva, in perquàm amœna Magalonæ, insula maris Narbonensis, hujus gentilis erucæ semine à fratre quodam Hispano ambulone donato, quotannis hocce serebat, et in mensis cuilibet, vel maximo gulæ irritamento, vel blandimento, præferebat; nimirum usu gnara quantum frequens esus conferret ad calorem venereum in illis otio et frequenti crapula obrutum, ad vigorem animi excitandum, et præsertim corpus obesum extenuandum, somnumque excutiendum, quo illi veluti ursi gliresve tota hyeme saginati, fermè adipe suffocabantur. Verùm isto Hispanico remedio adeò hilarescebant et gentiles fiebant, ut plerumque recinctis lumbis castitate, coacti essent vota et cœnobii mœnia transilire, et aliquid solatii venerei ab vicinis plebanis efflagitare. Nobis hæc visa et risa. Eruca verò inibi superstes est copiosissima, monumentum futura monasticæ castitatis et rei veritatis.”—*Adv. p. 68.*

Cagliostro

The first appellation the Grecians gave to those who exercised the art of healing was *iatros*. Originally it merely signified a man possessed of the power of relieving accidents, either by manual exertions, or the hidden virtues of some amulet or charm. Sextus tells us that in ancient times it applied to an extractor of arrows, *sagittarum extractor*. No doubt, this operation constituted the chief business of the surgeon in the infancy of the art; and warriors and heroes themselves performed it on the field of battle, as fully exemplified in Homer.

The primitive title of *iatros* gradually descended to surgical practitioners. We find that Nebrus and Heraclides were the chief *iaters* of Cos, the birthplace of Hippocrates. To this day the same name is given to medical men in Greece, where, until lately, they were in the habit of perambulating the streets, and seeking occupation by crying out at certain distances, *Callos iatros!* (The good doctor!) Balsamo, a celebrated mountebank, being at Cairo, where he died, one of his disciples repaired to Europe, and, anxious to bear a singular name, assumed this cry, and called himself *Calloiatro*, or, according to the corrupt pronunciation, *Cagliostro*: his history is well known, and he certainly excelled in impudence and industry all his predecessors. These Greek *iaters*, when going over to Italy to practise, called themselves *medici*, which Cato wanted to change into *mendici*, for, said he, "These creatures, (*Illi Græculi*,) quit their native country, where they were starving, to seek their fortune in Rome (*ut fortunam sibi mendicent*)." Under this austere censor few of these emigrants dared to settle in the Roman territories, but after his demise they inundated the country to such an extent, that it was said that Rome had more physicians than patients who needed their attendance. This influx of practitioners occasioned constant competition, and each *iater* endeavoured to obtain fame and emolument by underrating his opponents, and endeavouring to introduce novel doctrines, seeking a livelihood, as Pliny observed, *inter mortes et mendacia*. It was on these adventurers that the following epigram was written:

Fingunt se cuncti medicos,—idiota, sacerdos,
Judæus, monachus, histrio, rasor, anus.

The quackery of these candidates for popularity became the subject of bitter satire; and Martial thus speaks of the *Iatre* Symmachus:

Languebam, sed tu comitatus protinus ad me
Venisti centum, Symmache, discipulis;
Centum me tetigere manus, aquilone gelatæ,
Non habui febrem, Symmache; nunc habeo.[7]

This Symmachus, it appears, invariably moved abroad surrounded by hundreds of his disciples, whose cold investigating hands produced upon their patients the effects to which Martial alludes.

[7] These lines afford a convincing proof of the minute attention the ancients paid to the phenomena of nature. Our poet had no doubt observed the frequent effect of the application of cold to the surface of the body producing a reaction in the circulation tending to overcome the noxious agent by a glow of heat, which in many instances of predisposition may assume a febrile character.

Lunar Influence On Human Life And Diseases

The ancients, who were chiefly guided in their medical notions by the simple operations of nature, attached great importance to the influence of the moon. As the stars directed their navigators, so did the planets in some degree regulate their other calculations. Finding that the state of the weather materially acted on our organism whether in health or in sickness, they attributed this influence to the appearance of the moon, which generally foretold the vicissitudes in the atmospheric constitution. Thus Hippocrates advises his son Thessalus to study numbers and geometry, as the knowledge of astronomy was indispensable to a physician, the phenomena of diseases being dependent on the rising or the setting of the stars. Aristotle informs his disciples that the bodies of animals are cold in the decrease of the moon, that blood and humours are then put into motion, and to these revolutions he ascribes various derangements of women. To enter into these medical opinions would be foreign to the present purpose, but the notions of the ancients regarding lunar influence in other matters are curious.

Lucilius, the Roman satirist, says that oysters and echini fatten during lunar augmentation; which also, according to Gellius, enlarges the eyes of cats: but that onions throw out their buds in the decrease of the moon, and wither in her increase, an unnatural vegetation, which induced the people of Pelusium to avoid their use. Horace also notices the superiority of shell-fish in the increase.

Pliny not only recognises this influence on shell-fish, but observes, that the streaks on the livers of rats answer to the days of the moon's age; and that ants never work at the time of any change: he also informs us that the fourth day of the moon determines the prevalent wind of the month, and confirms the opinion of Aristotle that earthquakes generally happen about the new moon. The same philosopher maintains that the moon corrupts all slain carcasses she shines upon; occasions drowsiness and stupor when one sleeps under her beams, which thaw ice and enlarge all things; he further contends, that the moon is nourished by rivers, as the sun is fed by the sea. Galen asserts that all animals that are born when the moon is falciform, or at the half-quarter, are weak, feeble, and shortlived; whereas those that are dropped in the full moon are healthy and vigorous.

In more modern times the same wonderful phenomena have been attributed to this planet. The celebrated Ambroise Paré observed, that people were more subject to the plague at the full. Lord Bacon partook of the notions of the ancients, and he tells us that the moon draws forth heat, induces putrefaction, increases moisture, and excites the motion of the spirits; and, what was singular, this great man invariably fell into a syncope during a lunar eclipse.

Van Helmont affirms, that a wound inflicted by moonlight is most difficult to heal; and he further says, that if a frog be washed clean, and tied to a stake under the rays of the moon in a cold winter night, on the following morning the body will be found dissolved into a gelatinous substance bearing the shape of the reptile, and that coldness alone without the lunar action will never produce the same effect. Ballonius, Diemerbroeck, Ramazzini, and numerous celebrated physicians, bear ample testimony to its baneful influence in pestilential diseases. The change observed in the disease of the horse called moon-blindness is universally known and admitted.

Many modern physicians have stated the opinions of the ancients as regards lunar influence in diseases, but none have pushed their inquiries with such indefatigable zeal as the late Dr.

Mosely; he affirms that almost all people in extreme age die at the new or at the full moon, and this he endeavours to prove by the following records:

Thomas Parr died at the age of 152, two days after the full moon.
Henry Jenkins died at the age of 169, the day of the new moon.
Elizabeth Steward, 124, the day of the new moon.
William Leland, 140, the day after the new moon.
John Effingham, 144, two days after full moon.
Elizabeth Hilton, 121, two days after the full moon.
John Constant, 113, two days after the new moon.

The doctor then proceeds to show, by the deaths of various illustrious persons, that a similar rule holds good with the generality of mankind:

Chaucer, 25th October 1400, the day of the first quarter.
Copernicus, 24th May 1543, day of the last quarter.
Luther, 18th February 1546, three days after the full.
Henry VIII, 28th January 1547, the day of the first quarter.
Calvin, 27th May 1564, two days after the full.
Cornaro, 26th April 1566, day of the first quarter.
Queen Elizabeth, 24th March 1603, day of the last quarter.
Shakspeare, 23rd April 1616, day after the full.
Camden, 9th November 1623, day before the new moon.
Bacon, 9th April 1626, one day after last quarter.
Vandyke, 9th April 1641, two days after full moon.
Cardinal Richelieu, 4th December 1642, three days before full moon.
Doctor Harvey, 30th June 1657, a few hours before the new moon.
Oliver Cromwell, 3rd September 1658, two days after full moon.
Milton, 15th November 1674, two days before the new moon.
Sydenham, 29th December 1689, two days before the full moon.
Locke, 28th November 1704, two days before the full moon.
Queen Anne, 1st August 1714, two days after the full moon.
Louis XIV, 1st September 1715, a few hours before the full moon.
Marlborough, 16th June 1722, two days before the full moon.
Newton, 20th March 1726, two days before the new moon.
George I, 11th June 1727, three days after new moon.
George II, 25th October 1760, one day after full moon.
Sterne, 13th September 1768, two days after new moon.
Whitfield, 18th September 1770, a few hours before the new moon.
Swedenburg, 19th March 1772, the day of the full moon.
Linnæus, 10th January 1778, two days before the full moon.
The Earl of Chatham, 11th May 1778, the day of the full moon.
Rousseau, 2nd July 1778, the day after the first quarter.
Garrick, 20th January 1779, three days after the new moon.
Dr. Johnson, 14th December 1784, two days after the new moon.
Dr. Franklin, 17th April 1790, three days after the new moon.
Sir Joshua Reynolds, 23rd February 1792, the day after the new moon.
Lord Guildford, 5th August 1722, three days after the full moon.
Dr. Warren, 23rd June 1797, a day before the new moon.
Burke, 9th July 1797, at the instant of the full moon.
Macklin, 11th July 1797, two days after full moon.
Wilkes, 26th December 1797, the day of the first quarter.

Washington, 15th December 1799, three days after full moon.
Sir W. Hamilton, 6th April 1803, a few hours before the full moon.

The doctor winds up this extract from the bills of mortality by the following appropriate remark: “Here we see the moon, as she shines on all alike, so she makes no distinction of persons in her influence:

“———æquo pulsat pede pauperum tabernas,
Regumque turres.”
Hor. Lib. i. Od. 4.

Not only did the ancients consider the animal creation as constantly under planetary influence, but all vegetable productions and medicinal substances were subject to its laws. The Druids of Gaul and Britain gathered the famed misletoe with a golden knife when the moon was six days old. The vervain, held in such high repute by the Romans, was gathered, after libations of honey and wine, at the rising of the dog-star, and with the left hand, and thus collected served, for various sacerdotal and medical purposes: its branches were employed to sweep the temples of Jupiter; it was used in exorcisms for sprinkling lustral water; and moreover it cured fevers, the bite of venomous reptiles, and appeased discord; hence it was borne by those heralds who were sent to sue for peace, and called *verbenarii*; and when its benign powers were shed over the festive board, mirth and good temper were sure to prevail. So generally and so highly appreciated was this all-powerful plant, that Pliny tells us,

Nulla herba Romanæ nobilitatis plus habet quam hierabotane.

However, it is somewhat doubtful whether the vervain of the ancients was similar to the plant which now bears that name. It would appear that formerly the appellation of *verbenæ* or *sagmina* was given to various plants employed in religious ceremonies: and branches of pine-tree, of laurel, and of myrtle were sometimes thus denominated. Virgil says in his Eclogues,

Verbenasque adole pingues, et mascula thura.

Now the epithets of *pingues* and *thura* cannot apply to our vervain, but to some resinous production.

Medicine at that period might have been called an astronomic science; every medicinal substance was under a specific influence, and to this day the R which precedes prescriptions, and is admitted to represent the first letter of *recipe*, was in fact the symbol of Jupiter, under whose special protection medicines were exhibited. Every part of the body was then considered under the influence of the zodiacal constellations, and Manilius gives us the following description of their powers:

Namque Aries capiti, Taurus cervicibus hæret;
Brachia sub Geminis censentur, pectora Cancro;
Te, scapulæ, Nemæe, vocant, teque ilia, Virgo;
Libra colit clunes, et Scorpius inguine regnat;
Et femur Arcitenens, genua et Capricornus amavit;
Cruraque defendit Juvenis, vestigia, Pisces.
Astronomicon, lib. 1.

Spectacles

The origin of these valuable instruments is uncertain: that the ancients were acquainted with the laws of refraction is beyond all doubt, since they made use of glass globes filled with water to produce combustion; and in Seneca we find the following very curious passage—"Litteræ, quamvis minutiæ et obscuræ, per vitream pilam aquâ plenam majores clarioresque cernuntur;" yet thirteen centuries elapsed ere spectacles were known. It is supposed that they were first invented by *Salvino* or *Salvinio Armati*; but he kept his discovery secret, until Alessandro de Spina, a monk in Pisa, brought them into use in 1313. Salvino was considered their inventor, from the epitaph on his tomb in the cathedral church in Florence: "Qui giace Salvino d'Armato, degl' Armati di Firenze, inventor delli occhiali, &c., 1317." Another circumstance seems to add weight to this presumption: *Luigi Sigoli*, a contemporary artist, in a painting of the Circumcision, represents the high-priest Simeon with a pair of spectacles, which, from his advanced age, it was supposed he might have needed on the occasion.

Leeches

The origin of their introduction in the practice of medicine is uncertain. They were well known to the ancients under the name of *hirudo*. Thus Horace:

Non missura cutem nisi plena cruoris hirudo.

The Greeks called them Bôελλα, and Pliny states that elephants were often cruelly tormented by them when they swallowed any of these worms in their water: “Cruciatum in potu maximum sentiunt haustâ hirudine, quam sanguisugam vulgo cœpisse appellari adverto.”

Leeches are oviparous, and their ova are discharged in one involucre near the surface and margin of pools, and are hatched by the heat of the sun. They do not cast their skin, as is generally supposed, but merely throw off a tough slimy membrane, which appears to be produced by disease, and from which they get disencumbered by straining themselves through grass and rushes. During winter they remain in a torpid state. They are most tenacious of life; some say they can live for several days in the exhausted receiver of the air-pump, and in other media destructive of other animals. This phenomenon is attributed to the slow oxygenation of the blood in the respiratory vesicles.

In regard to their food we are ignorant, although Dr. Johnson says that they live by sucking the blood of fish and reptiles.

The collection of leeches constitutes a lucrative trade on the Continent, but more particularly in France, where it is called a leech-fishery, and where, in Paris alone, three millions are annually consumed. The following is an interesting description of the miserable people engaged in this occupation from the *Gazette des Hôpitaux*.

“If ever you pass through La Brenne, you will see a man, pale and straight-haired, with a woollen cap on his head, and his legs and arms naked; he walks along the borders of a marsh, among the spots left dry by the surrounding waters. This man is a leech-fisher. To see him from a distance,—his wobegone aspect, his hollow eyes, his livid lips, his singular gestures, you would take him for a maniac. If you observe him every now and then raising his legs and examining them one after another, you might suppose him a fool; but he is an intelligent leech-fisher. The leeches attach themselves to his legs and feet as he moves among their haunts; he feels their bite, and gathers them as they cluster about the roots of the bulrushes and aquatic weeds, or beneath the stones covered with a green and slimy moss. He may thus collect ten or twelve dozen in three or four hours. In summer, when the leeches retire into deep water, the fishers move about upon rafts made of twigs and rushes. One of these traders was known to collect, with the aid of his children, seventeen thousand five hundred leeches in the course of a few months; these he had deposited in a reservoir, where, in night, they were all frozen *en masse*.” But congelation does not kill them, and they can easily be thawed into life, by melting the ice that surrounds them. Leeches, it appears, can bear much rougher usage than one might imagine: they are packed up closely in wet bags, carried on pack-saddles, and it is well known that they will attach themselves with more avidity when rubbed in a dry napkin previous to their application. Leech-gatherers are in general short-lived, and become early victims to agues, and other diseases brought on by the damp and noxious air that constantly surrounds them; the effects of which they seek to counteract by the use of strong liquors.

Leeches kept in a glass bottle may serve as a barometer, as they invariably ascend or descend in the water as the weather changes from dry to wet, and they generally rise to the surface

prior to a thunder-storm. They are most voracious, and are frequently observed to destroy one another by suction; the strong ones attaching themselves to the weaker.

The quantity of blood drawn by leeches has been a subject of much controversy; but it is pretty nearly ascertained that a healthy leech, when fully gorged, has extracted about half an ounce. When they will not readily fix, Dr. Johnson recommends that they be put into a cup of porter. The cause of a leech falling off when full is not clearly ascertained, but it is supposed to arise from a state of asphyxia brought on by the compression of the breathing vesicles, and the distension of the alimentary tube.

Many serious accidents have arisen from leeches being swallowed in the water of swamps and marshes, too frequently drunk with avidity by the thirsty and exhausted soldier. Larrey mentions several cases of the kind during the French campaign in Egypt, and two fatal instances fell under my observation during the Peninsular war; draughts of salt water, vinegar, and various stimulating injections could not loosen their hold, and they were too deeply attached in the throat to be seized with a forceps. Zacutus Lusitanus had witnessed the same unfortunate results. The leech thus swallowed is generally the *hirudo Alpina*.

Norfolk supplies the greater part of the leeches brought to London, but they are also found in Kent, Suffolk, Essex, and Wales. The leeches imported from France differ from ours, in having the belly of one uniform colour. The best are the green, with yellow stripes along the body. The horse-leech, which is used in the north of Europe, but also common in England, is entirely brown, or only marked with a marginal yellow line. A popular belief prevails, that the application of this variety is most dangerous, as they are said to suck out all the blood in the body.

Somnambulism

This singular aberration from our natural habits may be considered an intermediate state between sleeping and being awake. This infraction of physiologic laws may therefore be looked upon as a morbid condition. Physicians have given it various denominations, founded on its phenomena, *nocti-vagatio*, *nocti-surgium*, *noct-ambulatio*, *somnus vigilans*, *vigilia somnans*. Somnambulism was well known by the ancients; and Aristotle tells us, “there are individuals who rise in their sleep, and walk about seeing as clearly as those that are awake.”

Diogenes Laertius states that Theon the philosopher, was a sleep-walker. Galen slept whilst on a road, and pursued his journey until he was awakened by tripping on a stone. Felix Plater fell asleep while playing on the lute, and was only startled from his slumbers by the fall of the instrument. There is no doubt but that in somnambulists the intellectual functions are not only active, but frequently more developed than when the individual is awake. Persons in this state have been known to write and correct verses, and solve difficult problems, which they could not have done at other times. In their actions and locomotion they are more cautious, and frequently more dexterous, than when awake. They have been known to saddle and bridle horses, after having dressed themselves; put on boots and spurs, and afterwards ride considerable distances from home and back again. A sleep-walker wandering abroad in winter complained of being frozen, and asked for a glass of brandy, but expressed violent anger on being offered a glass of water. The celebrated sect of *Tremblers*, in the Cevennes mountains, used to rove about in their sleep, and, although badly acquainted with the French language, expressed themselves clearly and put up prayers in that tongue, instead of the Latin *Pater* and *Credo* which they had been taught. A singular phenomenon in some cases of this affection is that of walking about without groping, whether the eyelids are closed or open. Somnambulism has been known to be hereditary: Horstius mentions three brothers who were affected with it at the same period; Willis knew a whole family subject to it. It is not generally known that the subject of the French dramatic piece called “La Somnambule” was founded on fact.

Singular faculties have been developed in the mental condition. Thus a case is related of a woman in the Edinburgh infirmary, who during her paroxysm not only mimicked the manner of the attendant physicians, but repeated correctly some of their prescriptions in Latin.

Dr. Dyce, of Aberdeen, describes the case of a girl, in which this affection began with fits of somnolency, which came upon her suddenly during the day, and from which she could at first be roused by shaking or by being taken into the open air. During these attacks she was in the habit of talking of things that seemed to pass before her like a dream, and was not at the time sensible of any thing that was said to her. On one occasion she repeated the entire of the baptismal service of the Church of England, and concluded with an extemporary prayer. In her subsequent paroxysms she began to understand what was said to her, and to answer with a considerable degree of consistency, though these replies were in a certain measure influenced by her hallucination. She also became capable of following her usual employment during the paroxysm. At one time she would lay out the table for breakfast, and repeatedly dress herself and the children, her eyes remaining shut the whole time. The remarkable circumstance was now discovered, that, during the paroxysm, she had a distinct recollection of what had taken place in former attacks, though she had not the slightest recollection of it during the intervals. She was taken to church during the paroxysm, and attended the service with apparent devotion, and at one time was so affected by the sermon that she actually shed tears; yet in the interval she had no recollection whatever of the circumstance, but in the

following paroxysm she gave a most distinct account of it, and actually repeated the passage of the sermon that had so much affected her. This sort of somnambulism, relating distinctly to two periods, has been called, perhaps erroneously, a *state of double consciousness*.

This girl described the paroxysm as coming on with a dimness of sight and a noise in the head. During the attack, her eyelids were generally half shut, and frequently resembled those of a person labouring under amaurosis, the pupil dilated and insensible. Her looks were dull and vacant, and she often mistook the person who was speaking to her. The paroxysms usually lasted an hour, but she often could be roused from them. She then yawned and stretched herself like a person awakening from sleep, and instantly recognised those about her. At one time Dr. Dyce affirms, she read distinctly a portion of a book presented to her, and she would frequently sing pieces of music more correctly and with better taste than when awake.

In illustration of the phenomena of the preceding case, Dr. Abercrombie gives the following very curious history: “A girl, aged seven years, an orphan of the lowest rank, residing in the house of a farmer, by whom she was employed in tending cattle, was accustomed to sleep in an apartment separated by a very thin partition from one which was frequently occupied by an itinerant fiddler. This person was a musician of very considerable skill, and often spent a part of the night in performing pieces of a refined description; but his performance was not taken notice of by the child, except as a disagreeable noise. After a residence of six months in this family she fell into bad health, and was removed to the house of a benevolent lady, where, on her recovery after a protracted illness, she was employed as a servant. Some years after she came to reside with this lady, the most beautiful music was often heard in the house during the night, which excited no small interest and wonder in the family; and many a waking hour was spent in endeavours to discover the invisible minstrel. At length the sound was traced to the sleeping-room of the girl, who was found fast asleep, but uttering from her lips a sound exactly resembling the sweetest tones of a small violin. On further observation it was found, that after being about two hours in bed, she became restless and began to mutter to herself; she then uttered sounds precisely resembling the tuning of a violin, and at length, after some prelude, dashed off into an elaborate piece of music, which she performed in a clear and accurate manner, and with a sound exactly resembling the most delicate modulation of the instrument, and then began exactly where she had stopped in the most correct manner. These paroxysms occurred at irregular intervals, varying from one to fourteen and even twenty nights; and they were generally followed by a degree of fever and pain over various parts of the body.

“After a year or two, her music was not confined to the imitation of the violin, but was often exchanged for that of a piano, of a very old description, which she was accustomed to hear in the house in which she now lived, and then she would begin to sing, imitating exactly the voices of several ladies of the family.

“In another year from this time she began to talk a great deal in her sleep, in which she fancied herself instructing a young companion. She often descanted with the utmost fluency and correctness on a variety of subjects, both political and religious, the men of the day, the historical parts of Scripture, public characters, and particularly the character of the members of the family and their visiters. In these discussions she showed the most wonderful discrimination, often combined with sarcasm, and astonishing powers of mimickry. Her language through the whole was fluent and correct, and her illustrations often forcible and even eloquent. She was fond of illustrating her subjects by what she called *a fable*, and in these, her imagery was both appropriate and correct. The justice and truth of her remarks on

all subjects, excited the utmost astonishment in those who were acquainted with her limited means of acquiring information.

“She had been known to conjugate correctly Latin verbs, which she had probably heard in the school room of the family, and she was once heard to speak several sentences very correctly in French, at the same time stating that she had heard them from a foreign gentleman whom she had met accidentally in a shop. Being questioned on this subject when awake, she remembered having seen the gentleman, but could not repeat a word of what he had said.

“During her paroxysms it was almost impossible to awake her, and when her eyelids were raised and a candle brought near the eye, the pupil seemed insensible to the light. For several years she was, during the paroxysm, entirely unconscious of the presence of other persons, but about the age of sixteen, she began to observe those who were in the apartment, and she could tell correctly their number though the utmost care was taken to have the room darkened. She now also became capable of answering questions that were put to her, and of noticing remarks made in her presence, and, with regard to both, she showed astonishing acuteness. Her observations indeed were often of such a nature, and corresponded so accurately with character and events, that, by the country people, she was believed to be endowed with supernatural power.

“During the whole period of this remarkable affection, which seems to have gone on for at least ten or eleven years, she was, when awake, a dull awkward girl, very slow in receiving any kind of instruction, though much care was bestowed upon her; and in point of intellect, she was much inferior to the other servants of the family. In particular, she showed no kind of turn for music. She did not appear to have any recollection of what passed in her sleep; but during her nocturnal ramblings, she was more than once heard to lament her infirmity of speaking in her sleep, adding how fortunate it was she did not sleep among the other servants, as they teased her enough about it as it was.

“About the age of twenty-one she became immoral in her conduct, and was dismissed the family. Her propensity to talk in her sleep continued to the time of her dismissal, but a great change had taken place in her nocturnal conversation. It had gradually lost its acuteness and brilliancy, and latterly became the mere babbling of a vulgar mind, often mingled with insolent remarks against her superiors, and the most profane scoffing at morality and religion. It is believed that she afterwards became insane.”

To what serious reflections does not this curious history give rise. Here there did unquestionably exist a double existence. The one a relative being surrounded with the realities of life; the other a natural condition, unshackled by constraint, and left entirely to the wild enjoyment of a luxuriant fancy and an apprehension quick and brilliant. In the former, the young creature found herself derided and degraded by her vulgar companions; her generous infirmities, if such they may be called, made the subject of low ribaldy. In her second existence, she became the free child of nature.

Might not proper care have saved this interesting creature from misery! It is admitted that “much care had been bestowed upon her instruction,” but was she withdrawn from the low circle that surrounded her and placed in a society where, in her waking hours, she could have derived those advantages of a superior intercourse, which might have worked upon her vivid imagination as powerfully as the melodious sounds she had heard at other times? “She became immoral—scoffed at religion”—*in her sleep*. She was then in a state of nature; unconscious, to a certain extent, of immorality and religion, although conscious, no doubt, of relative good and evil. Is it not more than probable that when awake, not only were her ears assailed by profane and improper language, but is it not most likely that her ruin was

perpetrated during her visionary slumbers, and ever after visited her mind during her paroxysms? Nor is it improbable that her affections had been bestowed upon her despoiler. Instead of being dismissed and cast upon the wide world, helpless, stigmatized, perhaps, with the odious epithet of witch—for we have seen that the lower order considered her such—might not a friendly hand have secured her in an abode where she might have been invited *to* come *and sin no more*! Alas! no wonder that the poor creature should have become insane! It is said that she was obtuse in intellect when awake. May not this be accounted for in some measure, by the exhaustion of her mental faculties during her paroxysms? It is to be lamented that the learned and philosophic Dr. Abercrombie, who has given this history, did not comment upon it. True Christianity and its benevolence breath in every line of the eloquent writer, and the poor Scotch *lassie* might have afforded him a valuable theme. How proud would any humane person have felt in making this interesting object of pity what she might have been!

Dr. Dewar also relates the case of an ignorant servant-girl, who, during the paroxysm of somnambulism, showed an astonishing knowledge of geography and astronomy, and expressed herself, in her own language, in a manner which, though often ludicrous, showed an understanding of the subject. The alteration of the seasons, for example, she explained by saying the world was set *a gee*.

In many cases of somnambulism the sleeper is able to continue the occupation that he had previously carried on. Martinet mentions a watchmaker's apprentice, whose paroxysm came on once in the fortnight, and commenced in a sensation of heat ascending to the heart. This was followed by a confusion of thought and insensibility. His eyes were open, but fixed and vacant, and he was totally insensible to every thing around him. Yet he continued his usual employment, and was always much surprised when he awoke to find the progress that had taken place in his work. This case ended in epilepsy.

Horstius, whom we have already quoted, tells us of a noble youth of Breslau, living in the citadel, who used to steal out of a window during his sleep, muffled up in his cloak, and ascend the roof of the building, where one night he tore in pieces a magpie's nest, wrapped up the little ones in his cloak, and returned to bed. The following morning he mentioned the circumstance as having occurred in a dream, but could not be persuaded of the reality of the circumstance till the magpies in the cloak were shown to him.

Dr. Abercrombie has given a very remarkable case of a young woman of low rank, who, at the age of 19, became insane, but was gentle, and applied herself eagerly to various occupations. Before her insanity she had been only learning to read and to form a few letters; but during her lunacy she taught herself to write perfectly, though all attempts of others had failed; she had intervals of reason, which frequently continued three weeks and sometimes longer. During these she could neither read nor write, but immediately on the return of her insanity, she recovered the power of writing and reading.

The faculty of conversing in a state of somnambulism is too well authenticated to be doubted, although in many instances it may have been a fraudulent trick of animal magnetism. This singular power has been recorded by several of the ancient writers, many of whom pretended that divine inspiration illumined the sleepers. Cicero tells us that when the Lacedæmonian magistrates were embarrassed in their administration, they went to sleep in the temple of Pasiphae, thus named from *Pasi phainein*, or "communicative to all." Strabo mentions a cavern, sacred to Pluto and Juno, where the sick came to consult sleeping priests. Aristides is said to have delivered his opinion while fast asleep in the temple of Æsculapius. It would be endless to quote all the authorities on this subject. Modern magnetisers, however, outstrip the ancients in the wonders they relate in regard to somnambulent faculties developed by

magnetism. In 1829, Cloquet, a very distinguished Parisian surgeon, assisted by Dr. Chapelain, removed the cancerous breast of a lady in her magnetic sleep, during which she continued her conversation, unconscious of the operation, which lasted twelve minutes.

The faculty of seeing through the closed eyelids was fully substantiated in the presence of a commission of investigation appointed by the Academy of Medicine of Paris, and in the presence of fifteen persons. They found a somnambulist, of the name of Paul, to all appearance fast asleep. On being requested to rise and approach the window, he complied immediately. His eyes were then covered in such a manner as not to awaken him, and a pack of cards having been shuffled by several persons, he recognised them without the slightest hesitation. Watches were then shown him, and he named the hour and minute, though the hands were repeatedly altered. A book was then presented to him,—it happened to be a collection of operas,—and he read *Cantor et Pollux* instead of *Castor et Pollux, Tragédie Lyrique*: a volume of Horace was then submitted to him, but not knowing Latin, he returned it, saying, "This is some church-book." The celebrated Dr. Broussais laid before the same somnambulist a letter he had drawn from his pocket; to his utter surprise he read the first lines: the doctor then wrote a few words on a piece of paper in very small characters, which the somnambulist also read with the utmost facility; but, what was still more singular, when letters or books were applied to his breast, or between the shoulders, he also perused them with equal accuracy and ease. In one instance the queen of clubs was presented to his back; after a moment's hesitation he said, "This a club—the nine;" he was informed that he was in error, when he recovered himself and said, "No, 'tis the queen:" a ten of spades was then applied, when he hastily exclaimed, "At any rate this is not a court-card; it is—the ten of spades."

The many astute tricks played by animal magnetisers, and frequently detected, naturally induced most persons to doubt the veracity of these experiments; but when we find that they were witnessed by seventy-eight medical men, most of them decidedly hostile to magnetism, and sixty-three intelligent individuals not belonging to the profession, and in every respect disinterested, what are we to say?—perhaps, exclaim with Hamlet,

There are more things in heaven and earth, Horatio,
Than are dreamt of in your philosophy!

I cannot better conclude this article than by the following quotation from Dr. Pritchard's valuable work:[8] "There is an obvious relation between the state of the faculties in somnambulism and that which exists during dreams. It is indeed probable that somnambulism is dreaming in a manner so modified, that the will recovers its usual power over muscular motion, and likewise becomes endued with a peculiar control over the organs of sense and perception. This power, which gives rise to the most curious phenomena of somnambulism, is of such a kind, that, while the senses are in general obscured, as in sleep, and all other objects are unperceived, the somnambulator manifests a faculty of seeing, feeling, or otherwise discovering those particular objects of which he is in pursuit, towards which his attention is by inward movement directed, or with which the internal operations of his mind bring him into relation. As in dreams, so likewise in somnambulism the individual is intent on the pursuit of objects towards which his mind had been previously directed in a powerful manner, and his attention strongly roused; he is in both states impelled by habit, under the influence of which he repeats the routine of his daily observances. A somnambulator is a dreamer who is able to act his dreams."

[8] A Treatise on Insanity.

Medical Powers Of Music

The powerful influence of music on our intellectual faculties, and consequently on our health, has long been ascertained, either in raising the energies of the mind, or producing despondency and melancholy associations of ideas. Impressed with its sublime nature, the ancients gave it a divine origin. Diodorus tells us that it was a boon bestowed on mankind after the deluge, and owed its discovery to the sound produced by the wind when whistling through the reeds that grew on the banks of the Nile. This science became the early study of philosophers and physicians. Herophilus explained the alterations of the pulse by the various modes and rhythms of music. In the sacred writings we have many instances of its influence in producing an aptitude for divine consolation. The derangement of Saul yielded to the harp of David, and the hand of the Lord came upon Elisha as the minstrel played. In Egypt certain songs were legally ordained in the education of youth, to promote virtue and morality. Polybius assures us that music was required to soften the manners of the Arcadians, whose climate was heavy and impure; while the inhabitants of Cynæthe, who neglected this science, were the most barbarous in Greece. The medical power of harmonious sounds was also fully admitted. We find Pythagoras directing certain mental disorders to be treated by music. Thales, called from Crete to Sparta, cured a disastrous pestilence by its means. Martinus Capella affirms that fevers were thus removed. Xenocrates cured maniacs by melodious sounds, and Asclepiades conquered deafness with a trumpet. In modern times it has been related of a deaf lady that she could only hear while a drum was beating, and a drummer was kept in the house for the purpose of enabling her to converse. Aulus Gellius tells us that a case of sciatica was cured by gentle modulations, and Theophrastus maintains that the bites of serpents and other venomous reptiles can be relieved by similar means. Ancient physicians, who attributed many diseases to the influence of evil spirits, fancied that harmonious sounds drove them away, more especially when accompanied by incantations; and we find in Luther, “that music is one of the most beautiful and glorious gifts of God, to which Satan is a bitter enemy.”

In more modern times we have several instances of the medical powers of music, and the effect produced by Farinelli on Philip of Spain is well known. This monarch was in such a deplorable state of despondency from ill health, that he refused to be shaved or to appear in public. On the arrival of Farinelli, the Queen was resolved to try the power of music, and a concert was ordered in a room adjoining the King’s chamber: Farinelli sang two of his best airs,[9] which so overcame Philip that he desired he might be brought into his presence, when he promised to grant him any reasonable request he might make. The performer, in the most respectful manner, then begged of the King to allow himself to be shaved and attended by his domestics, to which Philip consented. Farinelli continued to sing to him daily until a perfect cure was effected.—The story of Tartini is rather curious: in a moment of musical enthusiasm he fell asleep, when the devil appeared to him playing on the violin, bidding him with a horrible grin to play as well as he did; struck with the vision, the musician awoke, ran to his harpsichord, and produced the splendid sonata which he entitled “*the Devil’s*.” Brückmann, and Hufeland relate cases of St. Vitus’s dance, cured by music, which, according to Desessarts, also relieved Catalepsy. Schneider and Becker have ascertained its influence in hysteric and hypochondriac affections.

[9] *Pallido il Sol* and *Per quanto dolce amplasso* of Hasse.

The following curious case is recorded by Paret:—"Une jeune fille d'environ 11 ans, fort prématurée relativement aux facultés, ayant le genre nerveux très sensible et très irritable, fut attaquée, il y a environ deux ans, de douleurs violentes dans tout le corps, avec insomnie, tension excessive et fort douleureuse des muscles de l'abdomen, accompagnée de fièvre. Deux ans après, des convulsions se déclarèrent, avec une violence qui surpassa tout ce que je craignais; les bonds, les élans, furent, pendant quatre or cinq jours et autant de nuits, si forts, qu'il fallait deux hommes pour retenir dans le lit la jeune personne, d'ailleurs faible et délicate. Enfin, je proposai d'employer la musique. On fit, en conséquence, entrer deux ménestriers, disposés à donner leur premier coup d'archet; à l'instant de leur apparition les convulsions cessèrent d'abord et-reparurent peu de tems après: on changea d'air, et les convulsions cessèrent encore pour reparaître, aussi au troisième air, qui sans doute se trouva plus au goût de la malade, elle demanda un violon, qu'on lui donna, et quoiqu'elle n'eût jamais fait d'autre essai, son œil fixé sur les joueurs, son attention fut si grande, et ses mouvemens si rapides, qu'elle suivait ceux des ménétriers sans causer aucune discordance. Des connaisseurs ne pouvaient s'empêcher de convenir de la justesse et de la précision qu'elle observait. Son oreille était même si délicate, qu'elle faisait des reproches aux ménétriers, qui, obligés de jouer une grande partie de la nuit, se trouvaient eux-mêmes dans le cas de manquer de mésure.

La petite malade continua de jouer pendant plus de 30 heures de suite, sans autre interruption que celle qu'il fallait pour prendre ses bouillons, et dans ce court intervalle on voyait les contractions des tendons se renouveller, quoique moins fortes. Les musiciens fatigués, elle se contenta de la voix, qu'elle accompagna de son instrument. Au bout de ce terme, un sommeil de six ou sept heures, qui vint très naturellement, produisit une augmentation de calme. Au réveil, on varia les exercices, et ainsi se termina la scène qui avait duré 48 heures, après laquelle les convulsions cessèrent totalement. Trois jours après, la malade se trouva parfaitement bien; et ne restait que des convulsions très faibles, et la maladie se termina après trois mois de durée."

A still more singular effect of music is related by Roger in the case of a poor wretch broken upon the wheel. In his agonies he blasphemed in the most fearful manner, and cordially damned the spiritual comforter who sought to reconcile him to his sufferings. Some itinerant musicians chanced to pass by, they were stopped by the priest and requested to play to the patient, when to the surprise of all around, he seemed relieved, and became so tranquil, that he attended with calm resignation to their exhortations, confessed his manifold offences, and died like a good Christian.

Rousseau, who entertained a sovereign contempt for French music, observes, that the *Cantates* of Bernier cured the fever of a French musician, while they most probably would have given a fever to a musician of any other country.

This remark of Rousseau reminds me of the French philosophical traveller (I believe it was Diderot), who on his journey to London from Dover, while horses were changing, had the curiosity to see a sick ostler with a raging fever attended by a country practitioner, who, despairing most probably of his patient, said, that he might be allowed to eat any thing he wished for. The man asked for a red-herring, which was forthwith given to him. Our tourist, generalizing like most of his brethren, immediately noted in his diary—*English Physicians allow red-herrings to fever patients*.

Some months after he changed horses at the same inn, and asked how long the unfortunate creature had survived his herring, when, to his utter surprise, he was informed that the hale, hearty fellow who was bringing out the relays, was the very man. He of course pulled out his journal and entered—*red-herrings cure the fever of Englishmen*.

Our traveller crossed over, and having accidentally seen in a French inn a poor devil whose case appeared to him similar to the sturdy ostler, he ventured to prescribe a similar remedy, which the patient only survived an hour or two; when his death was announced, he philosophically shrugged up his shoulders, and wrote in his book—*Though red-herrings cure fevers in England, they most decidedly kill in France*.

Mad musicians seem to be more mad than others; for Fodéré gives us the following strange account of some of them. “Les plus grands musiciens ne reconnaissent souvent plus leurs instruments: l’un prenant son violon, que je lui avais mis dans les mains, pour un vase de nuit, et un autre prenant sa flûte pour un sabre, et voulait m’en frapper.”

We, however, frequently meet with lunatics who, although they have no remembrance of the past circumstances of their life, recollect and perform airs which they had formerly played.

Various well-authenticated cases lead us to suppose, that a sensibility to music long latent may be called into action by accidental circumstances. A case is on record of a countrywoman, twenty-eight years of age, who had never left her village, but was, by mere chance, present at a *fête* where a concert was performed, and dancing to a full band afterwards followed. She was delighted with the novelty of the scene; but, the *fête* concluded, she could not dismiss from her mind the impression the music had produced. Whether she was at her meals, her devotions, her daily occupation, or in her bed,—still, or moving about,—the airs she had heard, and in the succession in which they had been performed, were ever present to her recollection. To sleep she became a stranger,—every function became gradually deranged, and six short months terminated her existence, not having for one moment lost this strange sensation; and during this sad period, when any false note on the violin was purposely drawn, she would hold her head with both hands, and exclaim, “Oh! what a horrible note! it tears my brain!”

Sir Henry Halford relates the case of a man in Yorkshire, who after severe misfortunes lost his senses, and was placed in a lunatic asylum. There, in a short time, the use of the violin gradually restored him to his intellects; so promptly, indeed, that six weeks after the experiment, on hearing the inmates of the establishment passing by, he said, “Good morning, gentlemen; I am quite well, and shall be most happy to accompany you.”

Curious anecdotes are related of the effect of music upon animals. Marville has given the following amusing account of his experiments. “While a man was playing on a trump-marine, I made my observations on a cat, a dog, a horse, an ass, a hind, some cows, small birds, and a cock and hens, who were in a yard under the window: the cat was not the least affected; the horse stopped short from time to time, raising his head up now and then as he was feeding on the grass; the dog continued for above an hour seated on his hind-legs, looking steadfastly at the player; the ass did not discover the least indication of his being touched, eating his thistles peaceably; the hind lifted up her large wide ears, and seemed very attentive; the cows slept a little, and, after gazing at us, went forward; some little birds that were in an aviary, and others on trees and bushes, almost tore their little throats with singing; but the cock, who minded only his hens, and the hens, who were solely employed in scraping a neighbouring dunghill, did not show in any manner that the trump-marine afforded them pleasure.” That dogs have an ear for music cannot be doubted: Steibelt had one which evidently knew one piece of music from the other: and a modern composer, my friend, Mr. Nathan, had a pug-dog that frisked merrily about the room when a lively piece was played, but when a slow melody was performed, particularly Dussek’s Opera 15, he would seat himself down by the piano, and prick up his ears with intense attention until the player came to the forty-eighth bar; as the

discord was struck, he would yell most piteously, and with drooping tail seek refuge from the unpleasant sound under the chairs or tables.[10]

Eastcot relates that a hare left her retreat to listen to some choristers who were singing on the banks of the Mersey, retiring whenever they ceased singing, and reappearing as they recommenced their strains. Bossuet asserts, that an officer confined in the Bastille drew forth mice and spiders to beguile his solitude with his flute; and a mountebank in Paris had taught rats to dance on the rope in perfect time. Chateaubriand states as a positive fact, that he has seen the rattlesnakes in Upper Canada appeased by a musician; and the concert given in Paris to two elephants in the Jardin des Plantes leaves no doubt in regard to the effect of harmony on the brute creation. Every instrument seemed to operate distinctly as the several modes of pieces were slow or lively, until the excitement of these intelligent creatures had been carried to such an extent that further experiments were deemed dangerous.

The associations produced by national airs, and illustrated by the effect of the *Rans des Vaches* upon the Swiss, are too well known to be related; and the *mal de pays*, or *nostalgia*, is an affection aggravated by the fond airs of infancy and youth during the sad hours of emigration, when the aching heart lingers after home and early ties of friendship and of love. It is somewhat singular, but this disease is frequent among soldiers in countries where they are forcibly made to march: but is seldom, if ever, observed in the fair sex, who most probably seek for admiration in every clime, and are reconciled by flattery to any region.

The whims of musical composers have often been most singular; Gluck composed in a garden, quaffing champaign; Sarti, in a dark room; Paesiello, in his bed; Sacchini, with a favourite cat perched upon each shoulder. The extraordinary fancies of Kutswara, composer of the "Battle of Prague," are too well known, and led to his melancholy, but unpitied end.

Great as the repute of the most popular musical performers, whether vocal or instrumental, in the present day may be, and enormous as their remuneration may seem, the ancients were more profuse in their generosity to musicians and the factors of musical instruments. Plutarch, in his life of Isocrates, tells us that he was the son of Theodorus, a flute-maker, who had realized so large a fortune by his business, that he was able to vie with the richest Athenian citizens in keeping up the chorus for his tribe at festivals and religious ceremonies. Ismenias, the celebrated musician of Thebes, gave three talents, or 581*l.* 5*s.* for a flute. The extravagance of this performer was so great, that Pliny informs us he was indignant at one of his agents for having purchased a valuable emerald for him at Cyprus at too low a price, adding, that by his penurious conduct he had disgraced the gem. The vanity of artists in those days appears to have been similar to the present impudent pretensions of many public favourites. Plutarch relates of this same Ismenias, that being sent for to play at a sacrifice, and having performed for some time without the appearance of any favourable omen in the victim, his employer snatched the instrument out of his hand, and began to play himself most execrably. However, the happy omen appeared, when the delighted bungler exclaimed that the gods preferred his execution and taste. Ismenias cast upon him a smile of contempt, and replied, "While *I* played, the gods were so enchanted that they deferred the omen to hear me the longer; but they were glad to get rid of *you* upon any terms." This was nearly as absurd as the boast of Vestris, the Parisian dancer, who, on being complimented on his powers of remaining long in the air, replied, "that he could figure in the air for half an hour, did he not fear to create jealousy among his comrades."

Amœbæus the harper, according to Athenæus, used to receive an Attic talent of 193*l.* 15*s.* for each performance. The beautiful Lamia, the most celebrated female flute-player, had a temple

[10] Much curious matter will be found in Mr. Nathan's valuable work upon music, entitled, "*Musurgia vocalis*."

dedicated to her under the name of Venus Lamia. The *Tibicinæ*, or female flute-players, who formed collegiate bodies, were as celebrated for their talent and their charms, as for their licentiousness and extravagance. Their performances were forbidden by the Theodosian code, but with little success; since Procopius informs us that, in the time of Justinian the sister of the Empress Theodora, who was a renowned amateur *tibicina*, appeared on the stage without any other dress than a slight and transparent scarf.

In the early ages of Christianity, the power of music in adding to religious solemnity was fully appreciated, and many of the fathers and most distinguished prelates cultivated the auxiliary science. St. Gregory expressly sent over Augustine the monk, with some singers, who entered the city of Canterbury singing a litany in the Gregorian chant, which extended the number of the four tones of St. Ambrose to eight. A school for church music was established at Canterbury; and it was also taught in the diocese of Durham and Weremouth. St. Dunstan was a celebrated musician, and was accused of having invented a most wonderful magic harp; it was, perhaps, to prove that the accusation was false, that he took the devil by the nose with a pair of tongs. This ingenious saint is said to be the inventor of organs, one of which he bestowed on the abbey of Malmesbury. It appears, however, that instruments resembling the organ were known as early as 364, and were described in a Greek epigram attributed to Julian the Apostate, in which he says, “I beheld reeds of a new species, the growth of each other, and a brazen soil; such as are not agitated by winds, but by a blast that rushes from a leathern cavern beneath their roots; while a robust mortal, running with swift fingers over the concordant keys, makes them, as they smoothly dance, emit melodious sounds.”

The influence of music on the fair sex has long been acknowledged, and this advantage has proved fatal to some artists who had recourse to its fascinating powers; Mark Smeaton was involved in the misfortunes of Anne Boleyn; Thomas Abel, who taught harmony to Catherine, met with a similar fate, and David Rizzio was not more fortunate. They were, perhaps, too much impressed with the ideas of Cloten: “I am advis’d to give her music o’ mornings; they say it will penetrate.”

It is worthy of remark, that no woman was ever known to excel in musical composition, however brilliant her instrumental execution might have been. The same observation has been made in regard to logical disquisitions. To what are we to attribute this exception?—are we to consider these delightful tormentors as essentially unharmonious and illogical? We leave this important question to phrenologists.

The Food Of Mankind. Its Use And Abuse

Destined by Providence to wander over the globe, and to live in various climes, man is essentially an omnivorous animal. According to the country he inhabits, its productions and the nature of his pursuits, his mode of living differs. The inhabitant of cold and sterile regions on the borders of the ocean becomes ichthyophagous; and fish, fresh, dried, smoked, or salted, is his principal nourishment. The bold huntsman lives upon the game he pursues; while the nomadian shepherd, who tends his herd over boundless steeps, supports himself on the milk of his flock. In warm countries fruits and vegetables constitute the chief support of life; and there the disciples of Pythagoras can luxuriate on the rich produce of a bountiful soil, solely debarring themselves from beans, which, like all flesh, they consider to have been created by putrefaction. What would these good people have done among the Scythians and the Getæ, who, according to Sidonius Apollinaris, mingled blood and milk for food—

——————Solitosque cruentum
Lac potare Getas, ac pocula tingere venis;

or the stunted natives of the arctic regions, who feed upon whales and seals, drink deep potations of train-oil, and consider the warm blood of the seal an exquisite beverage, dried herrings moistened with blubber a dainty, and the flesh of the seal half frozen in snow during winter, or half corrupted in the earth in summer, the most delicious morsel. The semi-barbarous Russians, who during the late wars enjoyed the abundant bills of fare of France and Italy, accustom themselves easily to this disgusting diet on their return; and their troops, who live amongst the Samoiedes, thrive uncommonly well on raw flesh and rein-deer blood. It is in temperate regions that man displays his omnivorous propensities: there, animal food can be abundantly procured; and every description of grain, roots, and fruit, is easily cultivated. It is as we pass from these middle climes towards the poles, that animal substances are more exclusively consumed; and towards the equator that we enjoy refreshing fruits, and nourishing roots and vegetables. So scarce is food in some desolate tracts of the globe, that we find the wandering Indian satisfying his cravings with earth and clay: and Humboldt informs us that the Ottomaques, on the banks of the Mata and Oronoco, feed on a fat unctuous earth, in the choice of which they display great epicurean skill, and which they knead into balls of four or six inches in diameter, and bake slowly over the fire. When about to be used, these clods are soaked in water, and each individual consumes about a pound of them in the day; the only addition which they occasionally make to this strange fare consists in small fish, lizards, and fern-roots.

The art of cookery has improved, no doubt, with the progressive advance and development of our other institutions; and it seems to prove that the employment of all kinds of food is as natural to man, as a stationary uniformity and restriction of one species of aliment is to animals. A most erroneous idea has prevailed regarding the use of animal food, which has been considered as the best calculated to render mankind robust and courageous. This is disproved by observation. The miserable and timid inhabitants of Northern Europe and Asia are remarkable for their moral and physical debility, although they chiefly live on fish or raw flesh; whereas the athletic Scotch and Irish are certainly not weaker than their English neighbours, though consuming but little meat. The strength and agility of the negroes is well known, and the South Sea islanders can vie in bodily exercises with our stoutest seamen. We have reason to believe, that, at the most glorious periods of Grecian and Roman power, their armies were principally subsisted upon bread, vegetables, and fruits.

Man by his natural structure was created omnivorous, and there is no doubt but that a judicious mixed alimentation is the best calculated to ensure health and vigour, and enable the ambitious or the industrious wanderer to spend his winters near the poles, colonize beneath the equator, or inhabit regions where the hardiest of animals must starve and die. The teeth, the jaws, all the digestive organs fit him for this mode of existence. There is a curious passage in one of Dr. Franklin's letters in regard to wine: he pleasantly observes, that the only animals created to drink water are those who from their conformation are able to lap it on the surface of the earth, whereas all those who can carry their hands to their mouth were destined to enjoy the juice of the grape.

The diversity of substances which we find in the catalogue of articles of food is as great as the variety with which the art or the science of cookery prepares them: the notions of the ancients on this most important subject are worthy of remark. Their taste regarding meat was various. Beef they considered the most substantial food; hence it constituted the chief nourishment of their athletæ. Camels' and dromedaries' flesh was much esteemed, their heels most especially. Donkey-flesh was in high repute; Mæcenas, according to Pliny, delighted in it; and the wild ass, brought from Africa, was compared to venison. In more modern times we find Chancellor Dupret having asses fattened for his table. The hog and the wild boar appear to have been held in great estimation; and a hog was called "animal propter convivia natum;" but the classical portion of the sow was somewhat singular—"vulvâ nil dulcius amplâ." Their mode of killing swine was as refined in barbarity as in epicurism. Plutarch tells us that the gravid sow was actually trampled to death, to form a delicious mass fit for the gods. At other times, pigs were slaughtered with red-hot spits, that the blood might not be lost; stuffing a pig with asafœtida and various small animals, was a luxury called "porcus Trojanus;" alluding, no doubt, to the warriors who were concealed in the Trojan horse. Young bears, dogs, and foxes, (the latter more esteemed when fed upon grapes,) were also much admired by the Romans; who were also so fond of various birds, that some consular families assumed the names of those they most esteemed. Catius tells us how to drown fowls in Falernian wine, to render them more luscious and tender. Pheasants were brought over from Colchis, and deemed at one time such a rarity, that one of the Ptolemies bitterly lamented his having never tasted any. Peacocks were carefully reared in the island of Samos, and sold at such a high price, that Varro informs us they fetched yearly upwards of 2000*l.* of our money. The guinea-fowl was considered delicious; but, wretched people! the Romans knew not the turkey, a gift which we moderns owe to the Jesuits. Who could vilify the disciples of Loyola after this information! The ostrich was much relished; Heliogabalus delighted in their brains, and Apicius especially commends them. But, of all birds, the flamingo was not only esteemed as a *bonne-bouche*, but was most valuable after dinner; for, when the gluttonous sensualists had eaten too much, they introduced one of its long scarlet feathers down their throats, to disgorge their dinner. The modern gastronome is perhaps not aware that it is to the ancients he owes his delicious fattened duck and goose livers,—the inestimable *foies gras* of France. Thus Horace:

Pinguibus et ficis pastum jecur anseris albi.

The swan was also fattened by the Romans, who first deprived it of sight; and cranes were by no means despised by people of taste. In later days the swan seems to have been in great estimation in our own country. We find in the Northumberland household book that in one year twenty of these birds were consumed at the earl's table.

While the feathered creation was doomed to form part of ancient delights, the waters yielded their share of enjoyments, and several fishes were immortalized. The *muræna Helena* was

educated in their ponds, and rendered so tame that he came to be killed at the tinkling of his master's bell or the sound of his voice.

Natat ad magistrum delicta muræna,

says Martial. Hirtius ceded six thousand of these fish to Cæsar as a great favour, and Vitellius delighted in their roe. The fame of the lamprey, *mustela* of Ausonius and Pliny, is generally known; and the sturgeon, the *acipenser sturio*, was brought to table with triumphant pomp: but the turbot, one of which was brought to Domitian from Ancona, was considered such a present from the gods, that this emperor assembled the senate to admire it. Soles were also so delectable that punning on the word *solea*, they were called the *soles* of the gods: the dorad, *sparus auratus*, was consecrated to Venus; the *labrus scarus* was called the brain of Jupiter, and Apuleius and Epicharmus maintain that its very entrails would be relished in Olympus.

To these dainties may be added the *Alphestæ*, a fish always caught in pairs from their eagerness to be eaten. The *Amia* so very delicious that the Athenians defied the worst cook to spoil them. The *Gnaphius* that imparted to the water that had had the honour to boil them, the facility of taking out all stains. The *Pompilus* which sprang with Venus from the blood of the sky. The fish called *fox* by the Rhodians, and *dog* by the Bœotians, was considered such a dainty that Archestratus recommended epicures to steal them if they could not procure them by honest means; adding, that all calamities should be considered immaterial after a man had once feasted on such a luscious morsel, too divine to be gazed upon by vulgar eyes, and which ought to be procured by the wealthy, if they did not wish to incur the wrath of the gods, for not appreciating at its true value the flower of their nectar. Eels were also highly esteemed by the ancients. The preference being given to the *Copaic*, which the Bœotians offered to the gods crowned with flowers, giving them the same rank among fish that Helen held amongst women.

The *garum*, or celebrated fish-sauce of the Romans, was principally made out of the *sciæna umbra*, and the mackerel; the entrails and blood being macerated in brine until they became putrid.

Expirantis adhuc scombri, de sanguine primo
Accipe fastosum munera cara garum:—

thus says Martial: and Galen affirms that this disgusting preparation was so precious, that a measure of about three or four pints fetched two thousand silver pieces. So delightful was the effluvium of the garum considered, that Martial informs us it was carried about in onyx smelling-bottles. But our luxurious civic chiefs are not aware that the red mullet—for such I believe was the *mullus*—was held in such a distinguished category among genteel fishes, that three of them, although of small size, were known to fetch upwards of 200*l.* They were more appreciated when brought alive, and gradually allowed to die, immersed in the delicious garum; when the Romans feasted their eyes in the anticipated delight of eating them, by gazing on the dying creature as he changed colour like an expiring dolphin. Seneca reproaches them with this refinement of cruelty—"Oculis quoque gulosi sunt;" and the most renowned of Apicius's culinary discoveries was the *alec*, a compound of their livers.

Snails were also a great dainty. Fulvius Herpinus was immortalized for the discovery of the art of fattening them on bran and other articles; and Horace informs us they were served up, broiled upon silver gridirons, to give a relish to wine. Oysters were brought from our coasts to Rome, and frozen oysters were much extolled. Grasshoppers, locusts, and various insects, were equally acceptable to our first gastronomic legislators. Acorns, similar to those now eaten in Spain, formed part of a Roman dessert; the best were brought from Naples and

Tarentum. It does not appear that the ancients had a great variety in their vegetable diet; condiments to stimulate the sluggish appetite seemed to be their principal research: amongst these the asafœtida, which is to this day highly relished in the East, was an indispensable ingredient; this has been doubted by various naturalists, but it appears certain, since Pliny informs us that it was frequently adulterated by *sagapenum*, which bears the strongest resemblance to it. This substance was called *laser*, and by many tasteless persons, such as Aristophanes and Apuleius, considered offensive and disgusting; hence the latter, "lasere infectas carnes," and "laseratum porcellum." According to Theophrastus, asafœtida was collected and preserved, as it is at present, in skins; and, despite its estimation as a culinary ingredient, it was not unfrequently named *stercus diaboli*. In addition to this gum, they seasoned their food with various other strong articles, such as coriander and cummin seeds, sumac, saffron, cinnamon, thyme; with divers peppers, salt, and sal-ammoniac.

Instead of bread, which was only introduced in Rome 580, a. d. they used a heavy kind of unleavened paste, similar to the present *polenta*. This nourishment occasioned frequent indigestion, hence the use of warm water after meals, and the necessity of emetics. Warm water was sold about the streets in their thermopolia, and Seneca observed the paleness and debility that arose from its use and abuse; a practice recorded by Martial:

Et potet calidam, qui mihi livet, aquam.

While water was thus freely drunk, wine was not disregarded; but the various articles with which it was adulterated, must have rendered it any thing but a delectable potation according to our received ideas. Thus we see the Greeks putting salt and sea-water in theirs; at other times dissolving mastic and myrrha, or infusing wormwood, in their choicest Falernian. Like modern tasters, however, they knew the method of developing the *bouquet* by warmth; and, to appreciate the flavour, they frequently added hot water. That wines of a resinous taste were esteemed, appears from Martial:

Resinata bibis vina, Falerna fugis.

But we may conclude that, according to our modern taste, their boasted wines did not equal ours either in flavour or in delicacy.

The ancients however were very careful in the preparation of their bread, justly called the "staff of life," as constituting one of the most wholesome and nutritious parts of our food. The Athenian bakers bore the palm in the confection of this article. Archestratus recommended the wheaten bread of Athens and the barley meal of Lesbos, which their poets asserted was supplied to the gods. The Grecian millet bread was also in great repute, while delicious bread was also made with the *Zea*, the *Triticum Spella* of Linnæus and the *Far* of the Romans. A species of wheat called *Tiphe* was also much esteemed. Brown bread was made of a grain called *Olyra*, and it was with loaves of this description that Homer's heroes fed their horses.

It appears that great attention was paid to the kneeding and the boulting: unboulted meal was called *Syncomista*, and when finely boulted in a woollen cloth, *Semidalis*. The most approved method of baking was in the *Cribanus* or *Clibanus*, an earthen or iron vessel, which they surrounded with charcoal. Bread according to its superior or inferior quality was consecrated to various divinities. Thus the goddesses used the *Homoros*, and Hecate was served with the *Hemiantium*, but we are unacquainted with the preparation of these varieties. The flour of barley was used by the *Canephoræ*, or virgins that bore the sacred baskets in the festivals of Ceres, to sprinkle themselves. Bread according to its particular kind was served up in various ways; wheaten bread was brought to table upon fresh leaves; barley bread upon a layer of reeds. At the feasts of Ceres and Proserpine, a large loaf was kneeded and baked by the ladies

of Delos, called *Achaïnas* which gave the name to the festival, instituted most probably in Achaia, to commemorate the invention of bread, which Ceres taught to Eumelus, a citizen of Patræ.

Barley for the preparation of bread was used long before wheat or any other sort of corn, and hence Artemidorus calls it *Antiquissimum in cibis*. It was also given to the athletæ who were thence called *Hordearii*. In latter times it was chiefly given to cattle, although used by the poorer classes. Barley bread was also issued to soldiers as a punishment, the loss of wheaten bread being considered a great privation. Vegetius tells us that soldiers who had been guilty of any offence were thus punished—"*hordeum pro frumentuo cogebantur accipere*." In the second Punic war we find Marcellus sentencing the cohorts that had lost their standards to this infliction. Suetonius also informs us that Augustus only allowed barley to the troops that had misbehaved in action. *Cohortes, si quæ cepissent, loco, decimatas hordeo pavit.* But there is reason to believe that under the head of bread were included various kinds of cakes, many of which were prepared with honey, some of them were called *Placentæ omnigenæ*, and were prepared by bakers who bore the name of *pistores dulciarii*. This honied bread or cake it appears, was frequently resorted to, as in the present day, to quiet troublesome children as well as to please the taste of fastidious patients. Thus Martial:

Leniat ut fauces medicus, quas aspera vexat
Assiduè tussis, Parthenopæ tibi
Mella dari, nucleosque jubet dulcesque placentas.
Est quidquid pueros non sinit esse truces,
At tu non cessas totis tussire diebus
Non est hæc tussis, Parthenopæ gula est.

The bread made of spring wheat was called *Collabus*, and the Athenians considered a toasted *Collabus* eaten with a slice of a pig's belly, the very best cure for a surfeit occasioned by an excess in anchovies, especially the Phalerian ones, which were deemed fit for the gods.

Fragments of bread it appears were used instead of napkins to wipe the fingers on. These were called *Apomygdaliæ*, with which Aristophanes fed his sausage-makers. These dainty bits were usually thrown to dogs.

The cooks of the ancients appear to have been much more consummate in their art than our modern practitioners. Athenæus records various descriptions of their incomparable science. A new dish immortalized its inventor, and transmitted his name to posterity. Apicius's cakes were called Apicians; and Aristoxenes had attained such perfection in curing hams, that the glorious appellation of Aristoxenians was bestowed upon them. Philosophers and poets gloried in their culinary science; the pleasures of the table were the subject of their writings and their conversation. Archestratus tells us with delight, that, although various delicacies can only be enjoyed in their proper season, yet we can talk about them with watering mouths all the year round.

One of these illustrious ministers of luxury attained such a degree of enviable perfection, that he could serve up a pig boiled on one side and roasted on the other, and moreover stuffed with all possible delicacies, without the incision through which these dainties were introduced being perceived. Supplicated to explain this wonderful secret, he swore solemnly by the manes of all the heroes who fell at Marathon, or conquered at Salamis, that he would not reveal this sacred mystery for one year. When the happy day arrived and he was no longer bound by his vows, he condescended to inform his anxious hearers, that the animal had been bled to death by a wound under the shoulder, through which the entrails were extracted; and afterwards hanging up the victim by the legs, the stuffing was crammed down his throat. One

half of the pig was then covered with a thick paste, seasoned with wine and oil, put into a brass oven, and gently and tenderly roasted: when the skin was brown and crisp, our hero proceeded to boil the other moiety; the paste was then removed, and the boiled and roasted grunter triumphantly served up.

So refined was the taste of the ancient *bons vivans*, that Montanus, according to Juvenal, would proclaim, at the first bite, whether an oyster was of English produce or not. Sandwich is believed to have been the favoured spot whence Rome imported her oysters and other shell-fish. Shrimps and prawns must have been in great estimation, since we find Apicius quitting his residence at Minturnæ, upon hearing that the shrimps of Africa were finer than those he could procure in Campania. He instantly set sail for the happy coast, despite a gale of wind: after encountering a desperate storm, he reached the wished-for land of promise; but alas!—the fishermen displayed the largest prawns they could collect, and to his cruel disappointment, they could not vie, either in delicacy or beauty, with those of Minturnæ. He immediately ordered his pilot to steer a homeward course, and left Africa's shore with ineffable contempt.

These ingenious gluttons had recourse to every experiment that could add to their enjoyment. Philoxenus, and many others, used to accustom themselves to swallow hot water, that they might be able to attack scalding dishes before less fireproof guests would dare to taste them.

Sinon maintained that cookery was the basis of all arts and sciences: natural philosophy taught us the seasoning of dishes; architecture directed the construction of stoves and chimneys; the fine arts, the beautiful symmetry of each dish; and the principles of war were applied to the drilling and marshalling of cooks, confectioners, and scullions, posting proper sentries to watch the fires, and videttes to keep off idle intruders. That man is a "cooking animal" is considered one of his proudest attributes, and a proper bill of fare may be considered as the *ne plus ultra* of human genius!

It may be easily imagined that when good living became a science, *sponging* upon the wealthy *Amphitryons* became an art amongst the needy *bons vivants*, and parasites, as in the present day, were ever seen fawning and cringing for their dinner. These sycophants stuck so close to their patrons, that they were called shadows. Thus Horace:

——Quos Mœcenas adduxerat umbras.

They were also called flies, γυῖας, by the Greeks, and *Muscæ* by the Romans; no doubt from their constant buzzing about the object of their devotion. Plautus calls an entertainment free from these despicable guests, *Hospitium sine muscis*. Horus Apollo tells us that in Egypt a fly was the symbol of an impudent fellow; because, although driven away, it will constantly return. We have, however, reason to believe that the term *parasite* was originally applied to the followers of princes, Patroclus was the parasite of Achilles, and Memnon of Idomeneus; it was only in later times that the appellation was given to despicable characters and "*trencher friends*."

Our Shakspeare had adopted the term of the ancients, as appears in the following passages:

In such as you,
That creep like *shadows* by him, and do sigh
At each his needless heavings.

And again—

Feast-won, fast-lost, one cloud of winter showers.
These *flies* are couched.

While climate points out the most suitable articles of food, it exercises a singular influence over their qualities and properties, more especially in vegetable substances. We find plants which are poisonous in some countries, edible and wholesome in others. Next to climate, culture and soil modify plants to a singular degree: flowers which yield a powerful perfume in some latitudes, are inodorous in others; and, according to climate, their aroma is pleasant or distressing. A striking proof of this fact can be adduced from the well-known effects of perfumes in Rome; where the inhabitants, especially females, cannot support the scent even of the rose, which has been known to produce syncope, illustrating the poet's line to

Die of a rose in aromatic pain.

This variety in the action of vegetable substances is more particularly observable in such as are considered medicinal. Opium, narcotics, and various drugs, are more powerful in warm climates than in northern regions. The Italian physicians express astonishment at the comparatively large doses prescribed by our practitioners.

Cultivation brings forth singular intermediate productions; and by its magic power we have seen the coriaceous and bitter almond transformed into the luscious peach, the sloe converted into the delicious plum, and the common crab transformed into the golden pippin. The same facts are observed in vegetables; the celery sprung from the nauseous and bitter *apium graveolens*, and the colewort, is metamorphosed into the cabbage and the cauliflower. All cruciform plants degenerate within the tropics, but acquire increased energies in cold countries.

Recent experiments in Germany have demonstrated that in times of scarcity, the wood of several trees may be converted into a nutritious substance. The fibres of the beech, birch, lime, poplar, fir, and various other trees, when dried, ground, and sifted into an impalpable powder, constitute a very palatable article of food. If cold water be poured on this ligneous flour, enclosed in a linen bag, it becomes milky, and considerable pressure and kneading is required to express the amylaceous or starchy part of it. Professor Von Buch, in his travels through Norway and Lapland, has fully described the Norwegian *barke bröd*. We find the savages scattered along the coast of the great austral continent mixing up a paste of the bark of the gum-tree with the ants and the other insects, with their larvæ, which they find in it. Ground dried fish and fish-bones have from time immemorial been converted into bread; Arrianus tells us that Nearchus found several nations on the shores of the Red Sea living upon a bread of this description.

It is thus evident that all substances from the animal and vegetable kingdom appear to afford more or less nutriment, provided that they contain no elements unlike the animal matter of the being they are intended to nourish. All others are either medicinal or poisonous. Food may be considered nourishing in the ratio of its easy digestion or solution. Magendie attributes the nutritious principle to the greater or lesser proportion of nitrogen or azote. According to his view of the subject, the substances that contain little or no nitrogen are the saccharine and acid fruits, oils, fats, butter, mucilaginous vegetables, refined sugar, starch, gum, vegetable mucus, and vegetable gelatin. The different kinds of corn, rice and potatoes, are elements of the same kind. The azotical aliments, on the contrary, are vegetable albumen, gluten, and those principles which are met with in the seeds, stems and leaves of grasses and herbs, the seeds of leguminous plants, such as peas and beans, and most animal substances, with the exception of fat.

To this doctrine, it was objected, that animals who feed upon substances containing little nitrogen, and the field negroes, who consume large quantities of sugar, might be adduced as an exception. Magendie replies, that almost all the vegetables consumed by man and animals

contain more or less nitrogen—that this element enters in large quantity in the composition of impure sugar—and lastly, that the nations whose principal food consists in rice, maize, or potatoes, consume at the same time milk and cheese.

To support his theory, this physiologist had recourse to various curious experiments on dogs, whom he fed with substances which contained no nitrogen. During the first seven or eight days, the animals were brisk and active, and took their food and drink as usual. In the course of the second week they began to get thin, although their appetite continued good, and they took daily between six and eight ounces of sugar. The emaciation increased during the third week; they became feeble, lost their appetite and activity, and at the same time ulcers appeared in the cornea of their eyes. The animals still continued to eat three or four ounces of sugar daily, but, nevertheless, became at length so feeble as to be incapable of motion, and died on a day varying from the 31st to the 34th: and it must be recollected that dogs will live the same length of time without any food.

The same were the results where dogs were fed upon gum, and butter; when they were fed with olive oil and water the phenomena were the same, with the exception of ulceration of the cornea.

In Denmark, a diet of bread and water for a month is considered equivalent to the punishment of death. Dr. Stark died in consequence of experiments which he instituted on himself to ascertain the effects of a sugar diet.

Muller has justly observed that these experiments of Magendie have thrown considerable light on the causes and the mode of treatment of the gout and calculous disorders. The subjects of these diseases are generally persons who live well and eat largely of animal food; most urinary calculi, gravelly deposits, the gouty concretions, and the perspiration of gouty persons, contain an abundance of uric acid, a substance in which nitrogen is contained in a large proportion. Thus, by diminishing the proportion of azotical substance in the food, the gout and gravelly deposits may be prevented.

The experiments of Tiedemann and Gmelin have confirmed those of Magendie, whose curious observations on the necessity of varying diet I shall transcribe.

1. A dog fed on white bread, wheat, and water, did not live more than fifty days.

2. Another dog, who was kept on brown soldiers' bread did not suffer.

3. Rabbits and guineapigs who were fed solely on any one of the following substances—oats, barley, cabbage, and carrots,—died of inanition in fifteen days; but they did not suffer when these substances were given simultaneously or in succession.

4. An ass fed on dry rice, and afterwards on boiled rice, lived only fifteen days; a cock, on the contrary, was fed with boiled rice for several months with no ill consequence.

5. Dogs fed with cheese alone, or hard eggs, lived for a long time; but they became feeble and lost their hair.

6. Rodent animals will live a very long time on muscular substances.

7. After an animal has been fed for a long period on one kind of aliment, which, if continued, will not support life, allowing it the former customary food will not save it: he will eat eagerly, but will die as soon as if he had continued to be restricted to the article of food which was first given him.

Dr. Paris is of opinion that all that these experiments tend to prove is, that animals cannot exist upon highly-concentrated aliment. Horses fed on concentrated aliment are liable to

various disorders, originating from diseased action of the stomach and liver, broken wind, staggers, blindness, &c.

Professor Muller has given an excellent definition of indigestion. “It is a state of the digestive organs in which either they do not secrete the fluid destined for the solution of the aliment, or they are in such a condition of irritability or atony, that by the mechanical irritation of the food, painful sensations and irregular motions are exerted.”

But the most curious experiments made on the changes which the food undergoes in the stomach, according to the greater or lesser facility with which it is digested, were those of Dr. Beaumont. This physiologist had the rare opportunity of investigating this subject in a patient of the name of St. Martin, who came under his care in consequence of a gun-shot wound, which left a considerable opening in the stomach, which, when empty, could be explored to the depth of five or six inches by artificial distention. The food and the drink could in this manner be seen to enter it. This enabled him to keep an interesting journal and table, showing the time required for the digestion of different kinds of food, which were taken with bread or vegetables, or both. The following are some of his interesting observations:

Experiment 33. At 1 o’clock St. Martin dined on roast beef, bread, and potatoes—in half an hour examined the contents of the stomach, found what he had eaten reduced to a mass resembling thick porridge. At 2 o’clock, nearly all chymified—a few distinct particles of food still to be seen. At half-past four, chymification complete. At 6 o’clock nothing in the stomach but a little gastric juice tinged with bile.

Ex. 42. At 8 a.m., breakfast of three hard-boiled eggs, pancakes, and coffee. At half-past eight, found a heterogenous mixture of the articles slightly digested. At a quarter-past ten, no part of breakfast could be seen.

Ex. 43. At 2 o’clock same day, dined on roast pig and vegetables. At 3 they were chymified; and at half-past four nothing remained but a little gastric juice.

Ex. 18, in a third series. At half-past eight a.m., two drams of fresh fried sausage, in a fine muslin bag, were suspended in the stomach of St. Martin, who immediately afterwards breakfasted on the same kind of sausage, and a piece of broiled mutton, wheaten bread, and a pint of coffee. At half-past eleven, stomach half empty, contents of bag about half diminished. At 2 o’clock p.m., stomach empty and clean, contents of bag all gone with the exception of fifteen grains, consisting of small pieces of cartilaginous and membranous fibres, and the spices of the sausage, which last weighed six grains.

As I have elsewhere observed, various are the theories that have been entertained in regard to digestion, but the experiments of Dr. Beaumont seem to have proved beyond a doubt, that this operation is due to the action of the gastric juice, with which he was enabled to produce artificial digestion. Having obtained one ounce of this solvent from the stomach of his patient, he put into it a solid piece of recently-boiled beef, weighing three drams, and placed the vessel that contained it in a water bath heated to 100°. In forty minutes digestion had commenced on the surface of the meat; in fifty minutes, the fluid was quite opake and cloudy, the external texture began to separate and become loose; in sixty minutes, chyme began to form. At 1 p.m. (two hours after the commencement of the experiment), the cellular substance was destroyed, the muscular fibres loose and floating about in fine small threads very tender and soft. In six hours they were nearly all digested—a few fibres only remaining. After the lapse of ten hours, every part of the meat was completely digested. The artificial digestion by these experiments appears to be but little slower than the natural process—they also demonstrate the influence of the temperature, and the quantity of the solvent secretion. Having obtained from St. Martin two ounces of gastric juice, he divided this quantity into two

equal portions, and laid in each an equal quantity of masticated roast beef. One he placed in a water bath at the temperature of 99° Farh.—and left the other exposed to the open air at the temperature of 34°; a third similar portion of meat he kept in a phial, with an ounce of cold water. An hour after the commencement of the experiment, St. Martin had finished his breakfast, which consisted of the same meat with biscuit, butter, and coffee. Two hours after the meat had been put into the phial, the portion in the warm gastric juice was as far advanced in chymification as the food in the stomach; the meat in the cold gastric juice was less acted on, and that in the cold water only slightly macerated. In two hours and forty-five minutes from the time that the experiment was begun, the food in the stomach was completely digested, the stomach empty, while even at the end of six hours the meat in the gastric juice was only half digested. Dr. Beaumont, therefore, having procured 12 drams of fresh gastric juice, added now a portion to each of the phials containing meat and gastric juice, and to a portion of the half-digested food which he had withdrawn from the stomach two hours after the commencement of the experiment, and which had not advanced towards solution. After eight hours' maceration, the portions of meat in the cold gastric juice, and in the cold water, were little changed, but, from the time of the addition of the fresh gastric juice, digestion went on rapidly in the other phials, which were kept at the proper heat, and at the end of 24 hours, the meat which had been withdrawn from the stomach after digestion had commenced, were, with the exception of a piece of meat that had not been masticated, converted into a thickish pulpy mass of a reddish-brown colour: the meat in the warm gastric juice was also digested, though less perfectly, while that in the cold gastric juice was scarcely more acted on than the meat in the water, which was merely macerated. Dr. Beaumont now exposed these two phials containing the meat in cold gastric juice, and meat in water, to the heat of the water bath for 24 hours, and the gastric juice, which when cold had no power on the meat, now digested it; while the meat in the water underwent no change, except that towards the end of the experiment, putrefaction had commenced. The antiseptic properties of the gastric juice were fully demonstrated in several other experiments.

Various philosophers, in idle disquisitions, have endeavoured by the most absurd hypotheses to determine what is the natural food of man, and to show that he is not created omnivorous. The comparison between our species and animals confutes these vain theories. The masticatory and digestive organization of man assigns to him an intermediate rank between carnivorous and herbivorous creatures. The teeth may be said by their figure and construction to bear a relation with our natural food. The teeth of flesh-eating animals rise in sharp prominences to seize and lacerate their prey, and those of the lower jaw shut within those of the superior one. The herbivorous animals are not armed with these formidable weapons, but have broad flat surfaces with intermixed plates of enamel, that they should wear less rapidly in the constant labour of grinding and triturating. In the carnivorous, the jaws can only move backward and forward; in the herbivorous their motion is lateral, as observed in the cow when chewing her cud. Beasts of prey tear and swallow their food in masses, while in others it undergoes a careful communition before it is transmitted to the stomach. The teeth of man only resemble those of carnivorous animals by their enamel being confined to their external surface, while in the freedom of the motion of the jaws from side to side they partake of the conformation of the herbivorous. The teeth and jaws of man are in all respects more similar to those of monkeys than any other animals; only in some of the simiæ the canine teeth are much longer and stronger, and denote a carnivorous propensity.

It is to the abuse of this omnivorous faculty that Providence has bestowed upon mankind, that we owe many of the diseases under which our species labours. "Multos morbos, multa fercula fecerunt," sayeth Seneca; yet we are far more temperate in the present age than the ancients during the period of their boasted high civilization and prosperity. Their excesses must have

been of the most disgusting nature, since, to indulge more easily in their gluttonous propensities, they had recourse to emetics both before and after their meals. “Vomunt ut edant, edunt ut vomunt, et epulas quas toto orbe conquirunt nec concoquere dignantur,” was the reproach of the above-quoted philosopher. Suetonius and Dion Cassius give Vitellius the credit of having introduced this revolting custom into fashion; and splendid vessels for the purpose were introduced in their feasts. Martial alludes to it in the following lines:

Nec cœnat priùs, aut recumbit, antè
Quam septem vomuit meri deunces.

And Juvenal tells us that the bath was polluted by this incredible act of bestiality,—

Et crudum pavonem in balneâ portas.

The sums expended by the ancients on their table exceed all belief. Vitellius expended for that purpose upwards of 3200*l.* daily, and some of his repasts cost 40,000*l.* At one of them, according to Suetonius, 7000 birds and 2000 fishes were served up. Ælius Verus laid out 600,000 sestertii on one meal; and some of the dishes of Heliogabalus cost about 4000*l.* of our money. The excesses of this monster were such, that Herodianus affirms that he wanted to ascertain, not only the flavour of human flesh, but of the most disgusting and nameless substances. The freaks related of this emperor are scarcely credible; but his gastronomic profusion may be easily conceived when we find that his very mats were made with the down of hares or soft feathers found under the wings of partridges! When such ideas of *enjoyment* prevailed, can we wonder that Philoxenus should have wished that he had the throat of a crane, that he might prolong the delights of eating!

Our early ancestors were remarkable for their frugality, and it is supposed that luxurious, or, at least, full living was introduced by the Danes: it has been even asserted that the verb *gormandize* was derived from *Gormond*, a Danish king, who was persuaded by Alfred to be baptized. Erasmus observed that the English were particularly fond of good fare. William the Conqueror, and Rufus, were in the habit of giving most splendid entertainments; and the former monarch was such an irascible epicure, that, upon one occasion, an underdone crane having been served up by the *master of the cury*, he would have knocked him down but for the timely interference of his *dapifer*, or purveyor of the mouth. This office of *dapifer*, with that of *lardrenius*, *magnus coquus*, *coquorum prepositus*, and *coquus regius*, were high dignitaries in those days. Cardinal Otto, the pope’s legate, being at Oxford in 1238, his brother was his *magister coquorum*; and the reasons assigned for his holding that office were his brother’s suspicious fears “*ne procuraretur aliquid venenosum, quod valdè timebat legatus*.” These officers were not unfrequently clergymen, who were elevated to the bench for their valuable services.

Whatever barbarity the ancients may have shown in preparing their dainty dishes, none could have surpassed in refinement of cruelty. Their method of roasting and eating a goose alive, is thus directed: “Take a goose or a duck, or some such *lively creature*, (but the goose is best of all for the purpose,) pull off all her feathers, only the head and neck must be spared; then make a fire round about her, not too close to her, that the smoke do not choke her, and that the fire may not burn her too soon, nor too far off, that she may not escape the fire; within the circle of the fire, let there be small cups and pots full of water, wherein salt and honey are mingled, and let there be set also chargers full of sodden apples, cut into small pieces in the dish. The goose must be all larded and basted over with butter, to make her the more fit to be eaten, and may roast the better. Put the fire about her but do not make too much haste, when as you see her begin to roast; for by walking about, and flying here and there, being cooped in by the fire that stops her way out, the unscared goose is kept in; she will fall to drink the

water to quench her thirst and cool her heart, and all her body, and the apple sauce will cleanse and empty her, and when she wasteth, and consumes inwardly, always wet her head and heart with a wet sponge, and when you see her giddy with running and begin to stumble, her heart wants moisture, and she is roasted enough. Take her up and set her before your guest, and she will cry as you cut off any part from her, and will be almost eaten up before she is dead. *It is mighty pleasant* to behold."

Our forefathers were most ingenious in these diabolical fancies, we find in Portar's Magick the way how to persuade a goose to roast *herself* if you have a lack of cooks.

The heroic conduct of French cooks has been recorded in history, and compared with the noble devotion of the ancients. Vatel, maître d'hôtel of Louis XIV., put an end to his wretched existence in consequence of fish not having arrived in time for dinner. On this sad event being reported to his sovereign, he both praised and blamed his courage; and, to use the words of Madame de Sevigné, he perished "à force d'avoir de l'honneur à sa manière; on loua fort et l'on blama son courage." It is strange that Napoleon should have used the very same expressions when speaking of one of his most distinguished generals. In more modern times we have heard of persons who expected that clerical functions should be combined with various lay duties, as appears by the following curious advertisement in a late paper:

"Wanted, for a family who have bad health, a sober, steady person, in the capacity of doctor, surgeon, apothecary, and man-midwife. He must occasionally act as butler, and dress hair and wigs. He will be required sometimes to read prayers, and to preach a sermon every Sunday. A good salary will be given." This was certainly an economical speculation for the use of soul and body.

Cooks have sometimes been obliged to resort to pious frauds; and it is related of our Richard Cœur de Lion, that, being very ill during the holy wars, he took a strange fancy for a bit of pork, but, as no pig could be procured, a plump Saracen child was roasted as a substitute; and it was remarked that Richard was ever after partial to pork.

There is little doubt but that our forefathers were harder livers than the present generation: even within the memory of man, drinking to excess is a vice seldom observed, excepting in some individuals belonging to the old school. The hours of refection have been singularly altered; and while our fashionable circles seldom sit down to table before eight o'clock in the evening, we find in olden chronicles that even royalty was used to dine at nine in the morning, more especially upon the Continent. In the Heptæmeron of the Queen of Navarre we find an account of the manner of spending the day:

"As soon as the morning rose, they went to the chamber of Madame Oysille, whom they found already at her prayers; and when they had heard during a good hour her lecture, and then the mass, they went to dine at ten o'clock, and afterwards each privately retired to his room, but did not fail at noon to meet in the meadow. Vespers heard, they went to supper; and after having played a thousand sports in the meadow they retired to bed."

During the reign of Charles V. of France, the court dined at ten, supped at seven, and retired to rest at nine. Holinshed gives the following curious description of our early diet: "Our tables are oftentimes more plentifully garnished than those of other nations, and this trade has continued with us since the very beginning; for, before the Romans found out and knew the way into our country, our predecessors fed largely upon flesh and milk, whereof there was great abundance in this isle, because they applied their chief studies unto pasturage and feeding.

"In Scotland, likewise, they have given themselves unto very ample and large diet, wherein as for some respect nature doth make them equal with us, so otherwise they far exceed us in

over much and distemperate gormandize, and so engross their bodies, that divers of them do oft become unapt to any other purpose than to spend their time in large tabling and belly cheer. In old times these North Britons did give themselves universally to great abstinence; and in time of war their soldiers would often feed but once, or twice at the most, in two or three days, especially if they held themselves in secret, or could have no issue out of their bogs and morasses, through the presence of an enemy; and in this distress they used to eat a certain kind of confection, whereof so much as a bean would qualify their hunger above common expectation. In those days, also, it was taken for a great offence over all to eat either goose, hare, or hen, because of a certain superstitious opinion which they had conceived of these three creatures. Amongst other things, baked meats, dishes never before this man's (James I.) days seen in Scotland, were generally so provided for by virtue of this act, that it was not lawful for any to eat of the same under the degree of a gentleman, and those only but on high and festival days. In number of dishes and changes of meat, the nobility of England (whose cooks are for the most part musical-headed Frenchmen and strangers) do most exceed; sith there is no day in manner that passeth over their heads, wherein they have not only beef, mutton, veal, lamb, kid, pork, cony, capon, pig, or so many of these as the season yieldeth, but also some portion of the red and fallow deer, beside great variety of fish and wild fowl, and thereto sundry other delicates, wherein the sweet hand of the seafaring Portingale is not wanting; so that for a man to dine with one of them, and to taste of every dish that standeth before him, is rather to yield unto a conspiracy, with a great deal of meat for the speedy suppression of natural health, than the use of a necessary mean to satisfy himself with a competent repast, to sustain his body withal. The chief part, likewise, of their daily provision is brought in before them commonly in silver vessels, if they be of the degree of barons, bishops, and upwards, and placed upon their tables; whereof when they have taken what it pleaseth them, the rest is reserved, and afterwards sent down to their serving-men and waiters.

"The gentlemen and merchants keep much about one rate, and each of them contenteth himself with four, five, or six dishes, when they have but small resort; or, peradventure, with one or two, or three at the most, when they have no strangers. And yet their servants have their ordinary diet assigned, besides such as is left at their masters' boards, and not appointed to be brought thither the second time, which, nevertheless, is often seen, generally in venison, lamb, or some especial dish whereon the merchantman himself liketh to feed when it is cold.

"At such times as the merchants do make their ordinary or voluntary feasts, it is a world to see what great provision is made of all manner of delicate meats from every quarter of the country, wherein, beside that they are often comparable herein to the nobility of the land, they will seldom regard any thing that the butcher usually killeth, but reject the same as not worthy to come in place. In such cases, also, *geliffes* of all colours, mixed with a variety in the representation of sundry flowers, herbs, trees, forms of beasts, fish, fowls, and fruits; and thereunto *marchpane* wrought with no small curiosity, tarts of divers hues and sundry denominations; conserves of old fruits, foreign and home-bred; suckets, codiniacs, marmalades, sugar-bread, ginger-bread, florentines, wild-fowl, venison of all sorts, and sundry outlandish confections, altogether seasoned with sugar, (which Pliny calls *mel ex arundinibus*, a device not common nor greatly used in old times at the table, but only in medicine, although it grew in Arabia, India, and Sicilia,) do generally bear the sway, besides infinite devices of our own not possible for me to remember. Of the potato, and such *venerous* roots as are brought out of Spain, Portingale, and the Indies, to furnish our banquets, I speak not, wherein our *Mures*, of no less force, and to be had about Crosby Ravenswath, do now begin to have place.

“And as all estates do exceed in strangeness and number of costly dishes, so these forget not to use the like excess in wine, insomuch as there is no kind to be had (neither any where more store of all sorts than in England, although we have none growing with us; but yearly the proportion of twenty or thirty thousand tun and upwards, notwithstanding the daily restraints on the same brought over to us) whereof at great meetings there is not some store to be had. Neither do I mean this of small wines only, such as claret, white, red, French, &c. which amount to about fifty-six sorts, according to the number of regions from whence they come; but also of the thirty kinds of Italian, Grecian, Spanish, Canarian, &c., whereof *Vernage*, *Cate-pument*, *Raspis*, *Muscadell*, *Romnie*, *Bastard Fire*, *Osey*, *Caprike*, claret, and malmsey, are not least of all accounted of, because of their strength and value. For as I have said of meat, so, the stronger the wine is, the more it is desired, by means thereof in old times, the best was called *Theologicum* because it was had from the clergy and religious men, unto whose houses many of the laity would often send for bottles filled with the same, being sure that they would neither drink nor be served of the worst, or such as was any ways mingled or brewed by the vintner; nay, the merchant would have thought that his soul should have gone straightways to the devil, if he should have served him with any other than the best. Furthermore, when they have had their course which nature yieldeth, sundry sorts of artificial stuff, as *ypocras* and wormwood wine, must in like manner succeed in turns, besides stale ale and strong beer, which nevertheless bears the greatest brunt in drinking, and are of so many sorts and ages as it pleaseth the brewer to make.

“In feasting, the artisans do exceed after their manner, especially at bridals, purifications of women, and such like odd meetings, where it is incredible to tell what meat is consumed and spent; each one bringing such a dish, or so many as his wife and he do consult upon, but always with this consideration, that the *leefer* (the more liberal) friend shall have the best entertainment. This is also commonly seen at these banquets, that the good man of the house is not charged with any thing, saving bread, drink, house-room, and fire.

“Heretofore there hath been much more time spent in eating and drinking than commonly is in these days; for whereas of old we had breakfasts in the forenoon, *beverages* or *nuntions* after dinner, and thereto *rere suppers*, generally when it was time to go to rest (a toy brought in by Hard Canutus), now these odd repasts, thanked be God! are very well left, and each one in manner (except here and there some young hungry stomach that cannot fast till dinner-time contenteth himself with dinner and supper only). The Normans, disliking the gormandize of Canutus, ordained, after their arrival, that no table should be covered above once in the day; which Huntingdon imputeth to their avarice: but, in the end, either waxing weary of their own frugality, or suffering the cockle of old custom to overgrow the good corn of their new constitution, they fell to such liberty, that in often feeding they surmounted Canutus surnamed the Hardy; for whereas he covered his table but three or four times in the day, they spread their cloths five or six times, and in such wise as I before rehearsed. They brought in also the custom of long and stately sitting at meat, which is not yet left, although it be a great expense of time, and worthy reprehension; for the nobility and gentlemen, and merchantmen, especially at great meetings, do sit commonly till two or three of the clock at afternoon, so that with many it is an hard matter to rise from the table to go to evening prayer, and return from thence to come time enough to supper.”

The early prevalence of drinking in England seems to have been derived from our foreign intercourse. In the reign of Elizabeth and James I. we find various statutes against ebriety.

Tom Nash, in his “Pierce Pennilesse” says, “Superfluity in drink is a sin that ever since we have mixed ourselves with the Low Countries is counted honourable; but, before we knew their lingering wars, was held in that highest degree of hatred that might be. Then, if we had

seen a man go wallowing in the streets, or lain sleeping under the board, we should have spit at him, and warned all our friends out of his company."

According to our laws intoxication is looked upon as an aggravation of any offence. Sir Edward Coke calls a drunkard *voluntarius dæmon*. The Romans thought differently: with them intoxication was often deemed an extenuation of guilt, "Per vinum delapsis capitalis pœna remittitur." The Greeks, more severe, had a law of Pittacus that enacted the infliction of a double punishment on those who committed a crime when drunk.

That hard drinking was introduced from Flanders and Holland, and other northern countries, seems probable from the derivation of many of the expressions used in carousing. The phrase of being "half-seas over," as applied to a state of drunkenness, originated from *op zee*, which in Dutch meant *over sea*; and Gifford informs us that it was a name given to a stupifying beer introduced in England from the Low Countries, and called *op zea*; thus Jonson in the Alchemist:

I do not like the dulness of your eye;
It hath a heavy cast, 'tis *up see Dutch*.

An inebriating draught was also called an *up see freeze*, from the strong *Friesland* beer. The word "carouse," according to Gifford and Blount, is derived from the name of a large glass, called by the Danes *ruuse*, or from the German words *gar*, *all*, and *ausz out*: hence drink *all out*.

Nash, in the work above quoted, says, "Now he is nobody that cannot drink *super nagulum*, carouse the hunters' *hoope*, quaff *upsee freze crosse*, with healths, gloves, mumpes, frolickes, and a thousand such domineering inventions." The origin of these slang terms is not quite evident. Drinking *super nagulum*, or on the nail, was a northern custom which consisted in only leaving one drop in the cup, which was poured upon the thumb-nail, to prove that justice had been done to the potation or toast; and that, to use the language of modern drinkers, the glass was *cleared*. This custom is alluded to by Bishop Hall in his "Mundus alter et idem," in which the Duke of Tenderbelly exclaims, "'Let never this goodly-formed goblet of wine go jovially through me:' and then he set it to his mouth, stole it off every drop, save a little remainder, which he was by custom to set upon his thumb's nail and lick it off." In Fletcher we find the phrase

I am thine *ad unguem*;

which meant he was ready to drink with him to this extent. The term *hoop* alludes to the marks of hoops being traced upon drinking-pots to point out certain measures. Jack Cade says, "The three-hooped pot shall have ten hoops, and I will make it felony to drink small beer!" Hence probably the common saying of "drinking deep," or to the last hoop. The *peg tankard* was another measured vessel used in the jollifications of our forefathers, and is still to be found in some parts of England, more especially in Derbyshire. Pegge in his "Anonymiana," thus describes them: "They have in the inside a row of eight pins, one above the other, from top to bottom; the tankard holds two quarts, so that there is a gill of ale between each peg or pin. The first person who drank was to empty to the first peg, the second was to drink to the next, and so on; by which means the pegs were so many measures to the compotators, making them all drink alike or the same quantity." In Archbishop Anselm's Canons made in the council at London in 1102, priests are enjoined not to go to drinking-bouts, nor to *drink pegs*: "Ut presbyteri non eant ad potationes, nec ad *pinnas* bibant."

Gloves, also called *shoeing-horns*, were relishes to encourage drinking, like our modern *devils*, introduced for a similar purpose. Bishop Hall says in his description of a carousal, "Then comes me up a service of *shoeing-horns* of all sorts,—salt cakes, red-

herrings, anchovies, and gammon of bacon, and abundance of such *pullers on*." Massinger thus describes these incentives:

I usher
Such an unexpected dainty bit for breakfast
As never yet I cooked; 'tis not *botargo*,
Fried frogs, potatoes marrow'd, cavear,
Carps' tongues, the pith of an English chine of beef,
Nor our Italian delicate oil'd mushrooms,
And yet a *drawer on too*; and if you show not
An appetite, and a strong one, I'll not say
To eat it, but devour it, without grace too,
(For it will not stay a preface,) I am shamed,
And all my past provocatives will be jeer'd at.

The *botargo* was a relish made of mullet's roes, and highly seasoned, much in use among the Italians.

Amongst many other curious frolics of hard drinkers, we find the use of what they called *flap-dragons*, or *snap-dragon*, which consisted in igniting combustible substances, which were swallowed while floating on the glass of liquor. Johnson describes them "a play in which they catch raisins out of burning brandy, and, extinguishing them by closing the mouth, eat them." This prank is not uncommon to the present day in boarding-schools in certain festive entertainments of the *young ladies*.

Drunkenness being considered a beastly propensity, its gradations were fixed by animal comparisons. In a curious treatise on drunkards by George Gascoigne, we find the following illustration of these degrees: "The first is *ape-drunk*, and he leaps and sings and hallos and danceth for the hearers; the second is *lion-drunk*, and he flings the pots about the house, calls the hostess w——, breaks the glass windows with his dagger, and is apt to quarrel with any man that speaks to him; the third is *swine-drunk*, heavy, lumpish, and sleepy, and cries for a little more drink and a few more clothes; the fourth is *sheep-drunk*, wise in his own conceit, when he cannot bring forth a right word; the fifth is *maudlin-drunk*, when a fellow will weep for kindness in the midst of his drink, and kiss you, saying, 'By G—! Captain, I love thee! Go thy ways; thou dost not think so often of me as I do of you; I would I could not love thee so well as I do!' and then he puts his finger in his eye and cries; the sixth is *martin-drunk*, when a man is drunk, and drinks himself sober ere he stir; the seventh is *goat-drunk*, when in drunkenness he hath no mind but in lechery; the eighth is *fox-drunk*, when he is crafty drunk, as many of the Dutchmen be, which will never bargain but when they are drunk. All these species, and more, I have seen practised *in one company at one sitting*."

Drunkenness has at various periods been resorted to in religious and political fervour. Daring the usurpation of Cromwell, the Cavaliers were wont to drink their king's health in bumpers of wine in which some crumbs of bread had been thrown, exclaiming, "God send this *crum-well* down!" and Whitelocke, in his Memorials, records the following barbarous Catilinian orgies: "Five drunkards agree to drink the king's health in their blood, and that each of them should cut out a piece of his buttock, and fry it upon the gridiron, which was done by four of them, of whom one did bleed so exceedingly that they were fain to send for a chirurgeon, and so were discovered. The wife of one of them, hearing that her husband was amongst them, came to the room, and, taking up a pair of tongs, laid about her, and so saved the cutting of her husband's flesh."

The laws enacted to prevent drunkenness at various periods and by different governments, are curious. Domitian ordered all the vine-plants in the Roman territory to be rooted out. Charles IX. of France issued a similar edict. In 1536, under Francis I, a law was passed sentencing drunkards to imprisonment on bread and water for the first offence; a public whipping punished a second infringement; and, on reiteration, banishment and the loss of ears. The ancients, equally aware of the danger that arose from intoxication, were also anxious to prevent it. Draco inflicted capital punishments. Lycurgus destroyed the vineyards. The Athenians had officers, named *ophthalmos*, to prevent excesses in liquor drinking. In Rome, patricians were not allowed the use of wine until they had attained their thirty-fifth year. Wine was only drunk pure in the beginning of sober repasts in honour of *Deus Sospes*, and afterwards mixed with water in honour of *Jupiter Servator*. Notwithstanding these wise examples in support of prudent precepts, it appears that drunkenness was a common vice amongst the Romans. Tiberius was surnamed *Biberius*; and it was said of the parasite Bibulus, "dum vixit, aut bibit aut minxit." Aurelianus had officers of his household whose duty was to intoxicate foreign ambassadors; and Cato's partiality for the juice of the grape has been recorded by Horace,

Narratur et prisci Catonis
Sæpe mero caluisse virtus.

In the middle ages, drinking was resorted to by the monks as a religious libation; and they also drank to the dead, a custom which was condemned as idolatrous. These excesses were restrained by various regulations, and in 817 the quantity of wine allowed each monk was fixed at five pints. Charlemagne, in his Capitularies, forbids the provocation of drinking healths and hob-nobbing (*pléger et trinquer*). Temperance societies are not modern institutions. In 1517, Sigismund de Dietrichstein established one under the auspices of St. Christopher; a similar association was formed in 1600 by Maurice Duke of Hesse, which, however, allowed a knight to drink seven *bocaux*, or glasses, at each meal, but only twice in the day. The size of these *bocaux* is not recorded, but no doubt it was an endeavour to obtain a comparative condition of sobriety. Another temperate society, under the name of the Golden Ring, was instituted by Frederic V. Count Palatine.

Whether the influence of temperate societies or their advocates will tend to diminish the consumption of wine and spirituous liquors in the British empire, it is difficult to say. Hitherto every act of interference, either from individuals or on the part of the legislature, has proved not only abortive, but has increased the evil it was intended to remedy. The imposition of heavy duties only threw the distillation of spirits into the hands of illicit speculators instead of respectable capitalists; and, as M'Culloch justly remarks, "superadded the atrocities of the smuggler to the idleness and dissipation of the drunkard." During the latter part of the reign of George I. and the earlier period of George II. gin-drinking was so prevalent, that it was denounced from the pulpit and the press. At length ministers determined to make a vigorous effort to put a stop to the further use of spirituous liquors except as a cordial or medicine. To accomplish this end, a duty of twenty shillings was laid on spirits, exclusive of a heavy licence duty to retailers, while a fine of 100*l.* was levied on all defaulters. But instead of the anticipated effects, this act produced results directly opposite: the respectable dealers withdrew from a trade proscribed by the legislature; and the sale of spirits fell into the hands of the lowest and most profligate characters. The officers of the revenue were hunted down by the populace, and did not dare to enforce the law; and Tindal, in his Continuation of Rapin, says, "within two years of the passing of this act, it had become so odious and contemptible, that policy as well as humanity forced the commissioners of excise to mitigate its penalties." During these two years twelve thousand persons were convicted of offences connected with the sale of spirits, while no exertion could check the

torrent of smuggling, and seven millions of gallons illicitly distilled were annually consumed in London and its environs. Our present consumption of British, Colonial and Foreign spirits is immense, but not equal to what it was at the period alluded to. The following is the account of this consumption in 1832:

In England, 1,530,988 imperial gallons, - Foreign.
3,377,507 imperial gallons - Colonial.
7,259,287 imperial gallons - British.

In Scotland, - 69,236 - gallons, - Foreign.
112,026 gallons - Colonial.
5,407,097 gallons - British.

In Ireland, - 33,413 - " - Foreign.
24,432 gallons - Colonial.
8,657,756 gallons - British.

In that year, 1832, the total amount of spirits that paid duty in the United Kingdom was 2,646,258 gallons, yielding a revenue of 8,483,247*l.* In the same year the appearance and dread of the cholera produced a singular increase in the consumption of brandy. In the preceding year, 1831, the entries for home use in England had amounted to 1,194,717 gallons; but during this state of alarm, it increased to 1,508,924; in 1833, the danger having subsided, the consumption declined to its former level, and did not exceed 1,356,620 gallons.

From the above observations it may be inferred, that no penal enactments, no denunciations of canting senators or fanatic preachers, will ever succeed in checking the evils which must arise from excesses in the use of spirituous liquors. Gluttony and drunkenness can only be combated by the salutary effects of good example held out by the superior classes of society; by a gradual improvement in the moral education of the lower grades, for whom salutary amusements should be procured when a cheerful repose from their weekly labour will no longer be considered a breach of the sabbath. Diffusion of knowledge and habits of industry will do more than sanctimonious admonitions, and the Penny Magazines may be considered more hostile to gin-drinking than the ranting of pseudo-saints.

In regard to the quantity that we should eat, no rules can be established, as individuals differ widely from each other, both as to their capacity and their inclination. Mr. Abernethy maintained, that it would be well if the public would follow the advice of Mr. Addison, given in the Spectator, of reading the writings of L. Cornaro, who, having a weak constitution, which he seemed to have ruined by intemperance, so that he was expected to die at the age of 32, did at that period adopt a strict regimen, allowing himself only 12 ounces daily. To this remark Dr. Paris very properly observes, “When I see the habits of Cornaro so incessantly introduced as an example for imitation, and as the standard of dietetic perfection, I am really inclined to ask with Feggio, ‘Did God create Lewis Cornaro to be a rule for all mankind in what they were to eat and drink?’”

In regard to the dyspeptic, Dr. Philips has given the very best advice in the following paragraph:

“The dyspeptic should carefully attend to the first feeling of satiety. There is a moment when the relish given by the appetite ceases; a single mouthful taken after this oppresses a weak stomach. If he eats slowly and carefully attends to this feeling, he will never overload the stomach.” To this Dr. Paris adds, “Let him remember to *eat slowly*.” “This is an important condition—for when we eat too fast we introduce a greater quantity of food into the stomach than the gastric juice can at once combat with; the consequence of which is, that hunger may

continue for some time after the stomach has received more than would be sufficient, under the circumstances, to induce satiety."

The introduction of French cookery in every part of England amongst the wealthy will render attention to dietetic rules still more important than in former days; although Dean Swift, in his time, observed, "That modern epicurism had become so prevalent, that the world must be encompassed, before a washerwoman can sit down to breakfast."

Influence Of Imagination

Innumerable are the diseases that arise from our busy fancy. We are all subject to the tyrannic sway of imagination's empire. Under this mighty influence man displays energies which lead him boldly to dare danger and complicated sufferings, or he is reduced to the most degraded state of miserable despondency. These diseases are the more fearful, since they rarely yield to physical aid, and it is seldom that moral influence is sufficiently persuasive to combat their inveteracy. It is idle to tell the timid hypochondriac that he is not ill; the mere circumstance of his believing himself sick, constitutes a serious disorder. His constant apprehensions derange his functions until an organic affection arises. The patient who fancies that he labours under an affection of the heart disturbs the circulation, which is ever influenced by our moral emotions, till at last this disturbance occasions the very malady which he dreaded. These aberrations of the mind arise from various causes,—mental emotions, constitution, climate, diet, hereditary disposition, education. Tertullian called philosophy and medicine twin sisters; both may become powerful agents in controlling our imagination.

The ancients have variously endeavoured to determine the seat of this faculty. Aristotle placed it in the heart, which, from the sense of its oppression observed in acute moral sufferings he considered the origin of our nerves, or sensorium. Avicenus and other philosophers located imagination in the anterior portion of the brain, which he called the *prow*; memory in the posterior part, which he denominated the *poop*, and judgment in the centre of the organ, or what mariners would term *mid-ship*. The notions of Gall and Spurzheim had long since been anticipated by philosophers and physicians, both in regard to the division of the cerebral organ, and the external appearance of the cranium, which denoted their preponderancy. That temperature exercises a powerful influence over our mental faculties is evident. In warm climates we find a greater exaltation of the mind, more enthusiasm and vivid emotion, than in northern latitudes. The East is the land of fancy, illustrated by their wondrous tales of fiction, and their vivid and fantastic imagery, displayed in the chimeras and the arabesques of their palaces and temples. In these regions all the passions are uncontrollable and wild. Love is characterized by furious or dark jealousy, according to the rank and power of the lover; and ambition is signalized by bloodthirsty and promiscuous barbarity. No opposition can be brooked: man is either a ferocious tyrant, or an abject slave; subjection alone preventing the oppressed from being as sanguinary as the oppressor. Government is despotism, and religion fatality and fanaticism. In northern climes, on the contrary, every thing is cold and calculating. The almighty passion of love may prevail; but its demonstrations are morose, concentrated, although not less ferocious than under a southern sky. In the one country, man seeks the dark shelter of the forest, and the solitude of the mountain, to ponder over his grievances, or soliloquise on his sufferings; in the other he courts the roseate bower and the orange grove, to lull him into a soft repose which may calm his feelings by temporary oblivion, to be roused again to action by the stimulus of opium, tobacco, and a burning sun. The ancients were so fully convinced of this influence of the amorphous constitution, that Lucianus tells us that the Abderites (a people so remarkable for their stupidity and sluggishness that *Abderitica mens* was proverbial), having witnessed the performance of one of Euripides's plays under the fierce solar rays, became fired with such enthusiasm, that they ran about the streets in a wild phrensy, repeating aloud his sublime verses, until the coolness of the evening restored them to reason and to their native torpor. So predominant are these feelings, which owe their character to climate, that they regulate our ideas of a future state, as well as our conduct on earth. The paradise of the Mohammedan is a blessed region of everlasting pleasure and sensual enjoyments; beauteous

houris await the soul, which is to luxuriate in corporeal voluptuousness; and the purple wine, forbidden to the living, is to flow in delectable streams, to delight the dead, who may, in the seventh paradise inhabit a land where rivers of wine, and milk, and honey, are ever flowing; where evergreen trees bend under luxurious fruits, whose very pips are transformed into lovely maidens, so sweet—to use their own metaphorical language—that the ocean would lose its bitterness if they did but condescend to spit in its briny waters; and all these enjoyments are secured to the true believer by hosts of guardian angels, who have seventy thousand mouths, and seventy thousand tongues, to praise God seventy thousand times each day in seventy thousand languages: and such is their horror of earthly heat, that in the other world one of the greatest rewards is the delight of being able to sleep under the cool shade of a tree each leaf of which is of such an expanse that a man might travel fifty thousand years under its benign protection. How different is the paradise of Odin! There, it is true, the soul of the departed dwells in magnificent palaces; but what are his enjoyments compared to those of the sensual Asiatic! Instead of soft music, the din of war is constantly to resound in his ear, while he luxuriates in drinking strong beer and hydromel, poured by the fair Valknas, the houris of the Vahalla paradise, into the skulls of his enemies. Their God is called the god of crows; and two of these sable familiars, *Hugin*, who represents the mind, and *Nunnin*, or memory, are constantly perched upon his shoulders, until they take flight to seek information for their master.

To this day it is said that the Tartars fancy, that, in their future abode of bliss, their reward will be a sort of Platonic affection, and a perpetual and undisturbed state of meditation; in short, a celestial *far niente*. So convinced were the ancients of this effect of peculiar temperature, that the morose Heraclitus maintained that the power of the mind arose from a *dry splendour*; that all things were created by solar heat; and when ill himself, he sought health by endeavouring to dispel watery accumulations by the heat of a dunghill. Ptolemy and Posidonius assert, that southern climes engender genius and wit, and are better calculated for the study of things divine; and Plato, Hippocrates, and Galen, on the same principle, affirm that stupidity and forgetfulness are produced by cold and humidity. The celebrated Descartes, in his younger days, states that he felt his enthusiasm moderated by the damps and cold of Holland; and that he ever experienced more facility in pursuing his philosophic studies in winter than in summer. Poets, on the contrary, court the glowing rays of an inspiring sun, and their Phœbus and their Apollo is the conductor and the inspirer of the Muses:

Cynthius aurem vellit et admonuit.

That the energies of our intellectual faculties are under the influence of our food, is a fact long since observed. The stupidity of the athletæ, who lived upon coarse bread (coliphium) and underdone meat, was proverbial; even Hercules laboured under the imputation of a mind somewhat obtuse. Our genius, our energies are all affected by our mode of living. The rule of *Sanis omnia sana*, of Celsus, is applicable to very few individuals; and all our faculties may be rendered more keen or less vivid by temperance or excesses. As the nature of our *ingesta* influences the functions of our digestive organs, so do these organs in their turn influence our moral powers when our physical energies are elevated or depressed. Our courage, our strength of mind, our religious and our moral train of thinking, are under the control of diet. Fasting has ever been considered as predisposing to meditation and ascetic contemplation. Tertullian tells us, that we should approach the altars fasting, or having eaten nothing but dry substances. All the religious ceremonies of the Egyptians were preceded by abstinence, and their sacrificators were allowed neither animal food nor wine. Indeed, the Egyptian priesthood were remarkable for their abstinence and self-denial, fearful, according to Plutarch, that “the body should not sit light upon the soul.” Similar precautions were observed with animals, and the ox apis was not allowed to drink the waters of the Nile, as

they were considered of a gross and fattening nature; even upon festive days they observed a similar moderation. It was customary, on the 9th day of the month Thoth, for every one to eat fried fish at their doors—the priests only conformed to the custom by burning theirs at the appointed time. In general they abstained from most sorts of pulse, especially beans and lentils, onions, garlic, leeks, mutton, pork; and on certain days of purification, even salt was forbidden. Many of their fasts lasted from seven to forty-two days, during which time they abstained entirely from animal food, from herbs and vegetables, and the indulgence of any passion. Similar privations were observed by all those who attended the mysteries of Juno and Ceres. In Holy Writ we find that it was after abstinence that Divine inspiration illumined the elect. The angel appeared unto Daniel after he had been three weeks without tasting flesh, or wine, or "pleasant bread." In the Acts, x., we find that the vision appeared to Peter, "when he had become hungry and would have eaten." Moses fasted forty days on Mount Sinai. We find in Jonah, that even cattle were frequently subject to this mortification, when he proclaimed in Nineveh that neither man nor beast, herd nor flock, should taste any thing; "let them not feed nor drink water." Congius Ripensis tells us, that the same restriction was imposed by the Lacedæmonians on their Helots and all domestic animals. Fasting was considered by the early Christians as an essential rite. St. Anthony prescribed to his disciples one meal of dry bread, salt and water, in the day without any food on Wednesdays and Fridays. In the monastery of Mocham, in Egypt, a monk of the name of Jonas was beatified for having lived until the age of eighty-five, working hard in the garden, and without any other food than raw herbs and grass steeped in vinegar; this abstemious cenobite added to his claims to canonization by always sleeping in his chair. St. Hilarius only ate fifteen figs and six ounces of barley bread *per diem*. St. Julian Sabus retired to a cavern, where he only luxuriated once in the week on millet-bread, with salt and water; and St. Macarius resolved to outdo him by restraining his sustenance to a few cabbage-leaves every Sunday. Not only did these gastric martyrs attribute their holy visions to abstinence, but they considered it as the source of their longevity. Thus, St. Anthony lived to the age of one hundred and five; St. Paphinus to ninety on dry bread; and St. Paul the Hermit thrived for one hundred and fifty-nine years upon dates. It is not derogatory to their supposed divine mission to say that all these men were as enthusiastic as the fakirs of the east.

So acceptable to the Deity was starvation considered, that at various periods it was enforced by penal laws. Charlemagne denounces the punishment of death on all those who transgressed in this respect; and, by an old Polish edict, any sinner who ate on a fast-day was sentenced to have all his teeth drawn. However, monkish ingenuity endeavoured to elude these severe enactments, by interpreting the letter instead of the spirit; and we find, in the regulations of a German monastery, the following accommodation, "*Liquidum non frangit jejunium*," by which, on days of penance, the monks only took rich soups and succulent broth. In latter days, being permitted to eat fish in Lent, they saw no reason why fowl should not be included, on the authority of Genesis, that the waters brought forth every winged fowl after his kind. This relaxation in culinary discipline called forth loud indignation from many prelates. St. Ambrosius attributes the profligacy of the monks to these excesses; and Tertullian considers the fall of the Israelites as the punishment of their neglect in this respect. Our Shakspeare illustrates this belief in the influence of fasting as preparatory to inspiration.

Last night the very gods shew'd me a vision—
I *fast* and pray'd for their intelligence.

Not satisfied with this mystification in food, we find some austere monks endeavouring to reduce carnal appetites by other means, such as by blood-letting, *monialem minuere*; and claustral flesh was brought down by phlebotomy and purging at regular periods. To this day

we find that well-behaved Turks, during the Ramasan, make it a godly point never to swallow their saliva.

This digression on fasting was somewhat necessary, to show how much our diet tends to modify our being. It is well known that troops will display more activity and courage when fasting than after a meal; and an ingenious physician of our day is perfectly correct when he attributes a daring spirit or a pusillanimous feeling to the influence of our stomach.

Intellectual weakness, frequently brought on by excesses, has proved a rich source to empiricism; hence the belief in mystic and supernatural agencies, and the power of certain nostrums. Coloured fountain water and bread pills have made the fortune of various quacks, when imaginary cures have relieved imaginary diseases. In our days, numerous have been the recoveries attributed to Hohenloe's prayers. Trusting to mystic numbers, three, five, seven, or nine pills have produced effects, when other numbers less fortunate would have failed. To this hour mankind, even in enlightened nations, are fettered by these absurd trammels. Credulity, and superstition her twin sister, have in all ages been the source whence priestcraft, and quackery have derived their wealth. Next to these rich mines we may rank fashion. The adoption of any particular medicine by princes and nobles will endow it with as great a power as that which was supposed to be vested in regal hands in the cure of scrofula, hence called *king's evil*; and we have too many instances of such cures having been effected by a monarch's touch to doubt the fact. The history of the potato is a strong illustration of the influence of authority: for more than two centuries the use of this invaluable plant was vehemently opposed; at last, Louis XV. wore a bunch of its flowers in the midst of his courtiers, and the consumption of the root became universal in France. The warm bath, so highly valued by the Romans, once fell into disrepute, because the Emperor Augustus had been cured by a cold one, which for a time was invariably resorted to. Thus Horace exclaims,

——Caput ac stomachum supponere fontibus audent
Clusinis, Gabiosque petunt et frigida rura.

Unfortunately, the means which had relieved Augustus killed his nephew Marcellus; and the *Laconicum* and the *Tepidarium* were again crowded with the "fashion."

Persecution and its prohibitions have also been most powerful in working upon our imagination. Rare and forbidden fruits will always be considered more desirable than those we can easily obtain. The history of tobacco is a striking instance of this influence of difficulty upon the mind of man. Pope Urban VIII. prohibited its use in any shape, under the penalty of excommunication. It was afterwards forbidden in Russia, under the pain of having the offender's nose cut off. In some cantons of Switzerland the prohibition was introduced in the decalogue, next to the commandment against adultery. Amurath IV. ordered all persons taken in *flagranti delicto* smoking tobacco, to be impaled, on the principle that its use checked the progress of population. The denunciation of our James I. may be considered as a masterpiece of the imaginary horrors attributed to this obnoxious weed. "It is," he says, "a custome loathsome to the eye, hatefull to the nose, harmefull to the braine, dangerous to the lungs, and in the black stinking fume thereof neerest resembling the horrible Stygian smoake of the pit that is bottomlesse." During the reign of this monarch such a restriction might have been necessary, unless the consumption of tobacco enriched the exchequer: for it appears that some *amateurs* consumed no less than £500 per annum in smoke. Surely we should reap some flourishing revenue from fashion and credulity, when we find our government awarding £5000 to a *certain* Johanna Stephens for her discovery of *certain* medicines for the cure of *calculi*! The same imaginary hope induced many a credulous creature to minister to the necessities of another Johanna, for *certain* expectations. Alas! how this indefinite *sense* exhibits the infinite folly of poor humanity!

A morbid imagination, although frequently the source of much misery, will prove in many cases the fountain-head of many noble qualities; its exaltation constitutes genius, which is, in fact, a natural disposition of individual organization sometimes bordering upon insanity. "*Non est magnum ingenium sine mixturâ dementiæ*," says Seneca; and Montaigne observes, "De quoi se fait la plus subtile folie que de la plus subtile sagesse? il n'y a qu'un demi-tour à passer de l'une à l'autre." Aristotle asserts that all the great men of his time were melancholy and hypochondriac. The ancient and eastern nations entertained a singular idea regarding men of innate genius, and possessed of more than common attributes; they fancied that they were the first-born, and the offsprings of illicit love: Zoroaster, Confucius, Mahomet, Vishnou, were born of virgins; and Theseus, Hercules, Castor and Pollux, and Romulus, were all illegitimate.

So prone is a lively imagination to a derangement of the intellectual harmony, that the greatest care should be taken during the youthful development to resort to a sound and proper exercise. The constant tendency to wild and supernatural visions, the disregard of every daily and vulgar matter of fact consideration, soaring in regions of fiction, should engage our incessant vigilance, such a state of mind, as Abercrombie justly observes, "tends in a most material manner to prevent the due exercise of those nobler powers which are directed towards the cultivation both of science and of virtue," and Foster has thus beautifully illustrated this subject in his essays.

"The influence of this habit of dwelling on the beautiful fallacious forms of imagination, will accompany the mind into the most serious speculations or rather musings, on the real world, and what is to be done in it and expected; as the image which the eye acquires from looking at any dazzling object, still appears before it wherever it turns. The vulgar materials, that constitute the actual economy of the world, will rise up to its sight in fictitious forms, which it cannot disenchant into plain reality, nor will ever suspect to be deceptive. It cannot go about with sober, rational inspection and ascertain the nature and value of all things around it—in that paradise it walks delighted, till some imperious circumstance of real life call it thence, and gladly escapes thither again when the avocation is past. If a tenth part of the felicities that have been enjoyed, the great actions that have been performed, the beneficial institutions that have been established, and the beautiful objects that have been seen in that happy region, could have been imported into this terrestial place!—what a delightful thing the world would have been to awake each morning to see such a world once more!"

Of the miseries the hypochondriacs experience the following extract of a letter to a physician will afford a specimen: "My poor body is a burning furnace, my nerves red-hot coals, my blood is boiling oil; all sleep has fled, and I am suffering martyrdom. I am in agony when I lie on my back; I cannot lie on either side; and I endure excruciating torture when I seek relief by lying on my stomach; and, to add to my misery, I can neither sit, stand, nor walk." The fancies of hypochondriacs are frequently of the most extraordinary nature: one patient imagines that he is in such a state of obesity as to prevent his passing through the door of his chamber or his house; another impressed with the idea that he is made of glass, will not sit down for fear of cracking; a third seems convinced that his head is empty; and an intelligent American, holding a high judicial seat in our West Indian colonies, could not divest himself of the occasional conviction of his being transformed into a turtle.

The most melancholy record of the miseries of hypochondriacism is to be found in the diary of Dr. Walderstein of Gottingen. He was a man much deformed in person, and his mind seemed as distorted as his body. Although of deep learning and research, and convinced of the absurdity of his impressions, yet he was unable to resist their baneful influence. "My misfortune," says the doctor, "is, that I never exist in this world, but rather in possible

combinations created by my imagination to my conscience. They occupy a large portion of my time, and my reason has not the power to banish them. My malady, in fact, is the faculty of extracting poison from every circumstance in life; so much so that I often felt the most wretched being because I had not been able to sneeze three times together. One night when I was in bed I felt a sudden fear of fire, and gradually became as much oppressed by imaginary heat as though my room were in flames. While in this situation, a fire-bell in the neighbourhood sounded, and added to my intense sufferings. I do not blush at what might be called my superstition any more than I should blush in acknowledging that my senses inform me that the earth does not move. My error forms the *body* of my judgment, and I thank God that he has given it a *soul* capable of correcting it. When I have been perfectly free from pain, as is not unfrequently the case when I am in bed, my sense of this happiness has brought tears of gratitude in my eyes. I once dreamt," adds Walderstein, "that I was condemned to be burnt alive. I was very calm, and reasoned coolly during the execution of my sentence. 'Now,' I said to myself, 'I am burning, but not yet burnt; and by-and-by I shall be reduced to a cinder.' This was all I thought, and I did nothing but think. When, upon awaking, I reflected upon my dream, I was by no means pleased with it, for I was afraid I should become *all thought and no feeling*." It is strange that this fear of thought, assuming a corporeal form in deep affliction, had occurred to our poet Rowe, when he exclaims in the Fair Penitent, "*Turn not to thought my brain*." "What is very distressing," continues the unfortunate narrator, "is, that when I am ill I can think nothing, feel nothing, without bringing it home to myself. It seems to me that the whole world is a mere machine, expressly formed to make me feel my sufferings in every possible manner." What a fearful avowal from a reflecting and intelligent man! Does it not illustrate Rousseau's definition of reason—*the knowledge of our folly*.

Dr. Rush mentions a man who imagined that he had a Caffre in his stomach who had got into it at the Cape of Good Hope, and tormented him ever since. Pinel relates the case of an unfortunate man who believed that he had been guillotined, but his innocence having been made complete after his execution, his judges decided that his head should be restored to him, but the person intrusted with this operation had made a mistake, and put on a wrong head. Dr. Conolly knew a man who really believed that he had been hanged, but had been brought to life by galvanism, but he maintained that this operation had not restored the whole of his vitality.

Jacobi relates the case of a man confined in the lunatic asylum at Wurtzburg, in other respects rational, of quiet, discreet habits, so that he was employed in the domestic business of the house, but who laboured under the impression that there was a person concealed in his stomach, with whom he held frequent conversations. He often perceived the absurdity of this idea, and grieved in acknowledging and reflecting that he was under the influence of so groundless a persuasion, but he never could get rid of it. "It was very curious to observe," adds our intelligent author, "how, when he had but an instant before cried what nonsense!—is it not intolerable to be thus deluded? and while the tears which accompanied these exclamations were yet in his eyes, he again began to talk, apparently with entire conviction about the person in his belly who told him that he was to marry a great princess. An attempt was made to cure him, by putting a large blister on his abdomen, and the instant that it was dressed, moving from behind him a dressed-up figure, as if just extracted from his body. The experiment so far succeeded that the patient believed in the performance, and his joy was at first boundless in the full persuasion that he was cured; but some morbid feeling about the bowels, which he had associated with the insane impression, still continuing, or being again experienced, he took up the idea that another person similar to the first was still left within him, and under that persuasion he still continues to labour."

A nobleman of the court of Louis XIV., fancied himself a dog, and would invariably put his head out of window to bark aloud. Don Calmet relates the case of some nuns in a convent in Germany, who imagined that they were transformed into cats, and wandered about the building loudly mewing and spitting at and scratching each other.

One of the strangest aberrations of a disordered state of mind was exhibited by some impudent fellows who fancied themselves virtuous and modest females. Esquirol relates the case of a young man of 26 years of age, handsome and of a good figure, who had been in the habit of occasionally putting on woman's attire to perform female parts in private theatricals, and who had actually fancied himself a woman. In his paryoxysms he would put off his male clothes, and equip himself like a nymph,—the greater part of his day was spent before his looking-glass, decorating his person and dressing his hair—he was incurable!

Ancient Ideas Of Phrenology

Although Gall and Spurzheim may fairly claim the merit of having developed in this science the particular parts of the brain that are the seat of different faculties, yet we find in various ancient writers similar notions. Burton, in his Anatomy of Melancholy, thus expresses himself on this subject: "*Inner senses* are three in number, so called because they are in the brain-pan; as *common sense*, *phantasie*, *memory*. This common sense is the judge or moderator of the rest, by whom we discern all differences of objects; *the fore part of the brain* is his organ or seat. *Phantasie*, or imagination, which some call æstimative, or cogitative, (confirmed saith, Fernelius, by frequent meditation,) is an inner sense, which doth more fully examine the species perceived by *common sense*, of things present or absent, and keeps them longer, recalling them to mind again, or making new of his own: his organ is the *middle cell of the brain*. *Memory* layes up all the species which the senses have brought in, and records them as a good register, that they may be forthcoming when they are called for by *phantasie* and *reason*; his organ is the *back part of the brain*." This corresponds with the account of the faculties given by Aristotle, and repeated by the writers of the middle ages. Albertus Magnus, Bishop of Ratisbon, designed a head divided into regions according to these opinions in the thirteenth century; and a similar plan was published by Petrus Montaguana in 1491. Ludovico Dolce published another engraving on the subject at Venice in 1562. In the British Museum is a chart of the universe and the elements of all sciences, and in which a large head of this description is delineated. It was published at Rome in 1632. In the *Tesoretto* of Brunetto Latini, the preceptor of Dante, we find this doctrine taught in the following lines:

Nel capo son tre celle,
Ed io dirò di quelle,
Davanti è lo intelletto
E la forza d'apprendere
Quello que puote intendere;
In mezzo è la ragione
E la discrezione,
Che scherne buono e male;
E lo terno e l'iguale
Dirietro sta con gloria
La valente memoria,
Che ricorda e retiene
Quello ch'in essa viene.

Perfumes

At all periods perfumes seem to have been more or less adopted as a luxury among the wealthy and fashionable. Tradition states that they were frequently rendered instrumental to sinister purposes, as the vehicle of poisonous substances. Historians relate that the Emperor Henri VI. and a prince of Savoy, were destroyed with perfumed gloves. Jeanne d'Albret, Queen of Navarre, and mother of Henri IV., died from the poisonous effect of gloves purchased from the noted René, perfumer and confidential agent of Catherine de Medicis. Lancelot, King of Naples, was destroyed by a scented handkerchief prepared by a Florentine lady. Pope Clement VII. sunk under the baneful effluvia of a torch that was carried before him; and Mathioli relates, that nosegays thus impregnated have been frequently known to prove fatal. It is certain that, without the aid of venenous substances, various flowers have caused serious accidents. Barton tells us that the *magnolia glauca* occasioned a paroxysm of fever, and increased the severity of an attack of gout. Jacquin had seen the *lobelia longiflora* producing a sense of suffocation; and the *nerium oleander* in a close chamber, has caused death. The injurious effects of bulbous flowers in giving rise to violent headachs, giddiness, and even fainting, are generally known. The horror roses inspire to the Roman ladies is scarcely credible; and Cromer affirms that it was to the odour of that ornament of our gardens that the death of one of the daughters of Nicolas I., Count of Salm, and of a Polish bishop, was attributed. The sympathetic effect that this flower can create is illustrated by Capellini, who saw a lady fall into a syncope on perceiving a rose in a girl's bosom, although it turned out to be an artificial one. The partiality or antipathy to certain odours is equally unaccountable, for the Italian ladies, who dread the rose, delight in the disgusting aroma of rue, which they carry about as a salubrious plant, that, according to their notions, dispels the *cattiva aria*, although it is not impossible that they might fancy it possessed of those salutary qualities to which Ovid had alluded:

Utilius summas acuentes lumina rutas,
Et quidquid veneri corpora nostra negat.

Rue, according to Serenus Samonicus, was one of the ingredients of the fabled antidote of Mithridates, which he thus describes:

Antidotus verò multis Mithridatica fertur
Consociata modis, sed magnus Scrinia regis
Cùm raperit victor, vilem deprendit in illis
Synthesim, et vulgata satis medicamina risit.
Bis denum *Rutæ* folium, salis et breve granum,
Juglandesque duas, totidem cum corpore ficus;
Hæc oriente die, parco conspersa Lycæo,
Sumebat, metuens dederat quæ pocula mater.

The ancients were so fond of perfumes, that they scented their persons and garments, their vases, their domestic vessels, and their military insignia. They not only considered aromatic emanations as acceptable to the gods, and therefore used them in their temples, as they are at present by the Roman Catholics, but as announcing the presence of their divinities; and Virgil thus speaks of Venus:

————Avertens roseâ cervice refulsit,
Ambrosiæque comæ divinum vertice odorem
Spiravêre.

Chaplets of roses were invariably worn in festivals and ceremonies; and wines were also aromatised with various odoriferous substances. The Franks and the Gauls continued the same custom; and Gregory of Tours called these artificial-flavoured liquors, *Vina odoramentis immixta*. To this day, the manipulation of French wines gives them a fictitious *bouquet*, with raspberries, orris-root, and divers drugs to suit the British market.

No external sense is so intimately connected with the internal senses as that of smell; none so powerful in exciting and removing syncope, or more capable of receiving delicate and delicious impressions: hence Rousseau has denominated this faculty "*the sense of imagination*." No sensations can be remembered in so lively a manner as those which are recalled by peculiar odours, which are frequently known to act in a most energetic measure upon our physical and moral propensities. How many perfumes excite a lively feeling of fond regret when reminding us of the beloved one who was wont to select them, and whom we long to meet again! It is not improbable that our partiality to the hair of those who are dear to us, arises from this circumstance. Every individual emits a peculiar odour; and, according to Plutarch, Alexander was distinguished by the sweet aroma that he shed. Perhaps the expression, so frequently found in the lives of the saints, "who die in odour of sanctity," may be referred to a belief that this peculiar gift was granted to beatitude.

It has been observed, that animals who possess the most acute smell, have the nasal organs the most extensively developed. The Ethiopians and the American Indians are remarkable for the acuteness of this sense, accounting for the wonderful power of tracking their enemies. But although we may take the peculiar organization of their olfactory organs as being partly the cause of this keen perceptibility, we must in a great measure attribute this perfection to their mode of living. Hunting and war are their chief pursuits, to which they are trained from their earliest infancy: therefore this perfection may, to a certain extent, be the result of habit; and the sight and hearing of these wanderers are as singularly perfect as their smelling. Mr. Savage relates, that a New Zealander heard the report of a distant gun at sea, or perceived a strange sail, when no other man on board could discern it. Pallas, in speaking of the Calmucks, says that many of them can distinguish by smelling at the hole of a fox whether the animal be there or not; and on their journeys and military expeditions they often smell out a fire or a camp, and thus seek quarters for the night or booty. Olaüs Borrich informs us, that the guides between Smyrna, Aleppo, and Babylon, when traversing the desert, ascertain distances by the smell of the sand. That odours float in the atmospheric air is obvious; the distance at which they are perceived is incredible. The spicy breezes of Ceylon are distinguished long before the island is seen; and it is a well-known fact that vessels have been saved by the olfactory acuteness of dogs, who, to use the common expression, were observed to "sniff" the land that had not been descried. As a proof of the intimate connexion between smell and respiration, when the breath is held odorous substances are not perceived, and it is only after expiration that they are again recognised. A proof of this may be easily obtained by placing the open neck of a small phial containing an essential oil in the mouth during the acts of inspiration and subsequent expiration. Willis was the first who observed that, on placing a sapid substance in the mouth, and at the same time closing the nostrils, the sensation of taste is suspended; and this observation has given rise to the prevailing opinion that smelling and tasting are intimately related. Odour which thus accompanies taste is termed flavour; and the ingenious Dr. Prout has admirably defined the distinction between taste and flavour, and he considers the latter an intermediate sensation between taste and smell.

The acuteness of the sensation of smelling in animals is such, that in many instances our observations have been deemed fabulous. The distance at which a dog tracks his master is scarcely credible; and it is strange that the ancients attributed a similar perfection to the

goose. Ælian affirms that the philosopher Lycadeus had one of these birds that found him out like a dog:

Humanum longè præsentit odorem
Romulidarum acris servator, candidus anser.

Birds of prey will scent the battle-field at prodigious distances, and they are often seen hovering instinctively over the ground where the conflict is to supply their festival. Humboldt relates, that in Peru, at Quito, and in the province of Popayan, when sportsmen wish to obtain that species of vulture called *vultur gryphus*, they kill a cow or a horse, and in a short time these sagacious birds crowd to glut their ravenous appetites. Ancient historians assert that vultures have cleft the air one hundred and sixty-six leagues to arrive in time to feast upon a battle; and Pliny boldly affirms that even crows have so acute a sense of approaching corruption, that they can scent death three days before dissolution, and generally pay the *moribond* a visit a day before his time, not to be disappointed. This notion has become a vulgar prejudice, as much so, indeed, as the howling of a dog, which is considered in most countries as foreboding death. In various animals an offensive odour is a protective gift. The *staphylinus olens*, for instance, sheds an effluvium which effectually keeps away the birds who would otherwise pounce upon him. But of all singular perfections in the sense of smelling that were ever recorded, may be cited the monk of Prague and the blind man in the Quinze-vingt Hospital of Paris, who possessed the faculty of ascertaining the presence of virginity whenever a female had the luck of being introduced to them.

Many curious instances are recorded, where the loss of one sense has added to the acuteness of others. Dr. Moyse the well-known blind philosopher, could distinguish a black dress on his friends by the smell. Professor Upham of the United States, mentions a blind girl who could select her own articles out of a basket of linen brought in by the laundress.

These anomalous senses, for such they may be called, are as wonderful as they are inexplicable, and appear to arise from a peculiar sensibility of the organs of smell, which renders them capable of being stimulated in a peculiar manner, that no language can express or define. It is scent, no doubt, that gives the migratory power to various animals; “which enables them,” to use the words of Dr. Mason Good, “to steer from climate to climate, and from coast to coast; and which, if possessed by man, might perhaps render superfluous the use of the magnet, and considerably infringe upon the science of logarithms? Whence comes it that the fieldfare and red-wing, that pass the summer in Norway, or the wild-duck and merganser, that in like manner summer in the woods and lakes of Lapland, are able to track the pathless void of the atmosphere with the utmost nicety, and arrive on our own coasts uniformly in the beginning of October.”[11]

This sense is not limited to migratory animals, as instanced by carrier-pigeons, who have been known not only to carry bags in a straight line from city to city, but traverse the city with an undeviating flight. Surely this faculty must be attributed to the sense of smell; it can scarcely be referred to sight or hearing; although the wonders of the creation are such, that we can no more account for these peculiar attributes refused to the lords of the creation, than for the power of the lobster, who not only can reproduce his claws when deprived of them by accident, but cast them off to extricate himself, from the captor’s grasp. The *Tipula pectiniformis*, or the daddy long-legs of our infant amusement and amazement, possesses the same renovating faculties. The gluttonous gad-fly may be cut to pieces without any apparent

[11] That animals are more frequently guided by the sense of smelling than by sight, is evident in those plants that shed a cadaverous effluvia, especially the *arum dracunculus* and the *stapelia variegata* of the Cape, which attract various insects that usually deposit their eggs in a stercoraceous or corrupt nidus. Here these insects have been deceived by vision, and imagined in their illusion that they had safely lodged their progeny in carrion.

interruption in his meal, when fastened to one’s hand: the polype does not seem to be at all discomposed when we turn him inside out; and, when divided into various sections, each portion is endowed with an instinctive and reformative power of multiplying his species in countless numbers! The diversity of our olfactory fancies is unaccountable and only illustrates the words of Petronius,

Non omnibus unum est quod placet; hic spinas, colligit ille rosas.

Love Philters And Potions

It will scarcely be credited, but to this very day the superstitious belief in the power that certain medicinal substances possess of causing a sympathetic fondness, still obtains, even amongst classes of the community whose education one would imagine ought to have rendered such an absurdity revolting. In Italy, Spain, and Portugal, the influence of love powders and aphrodisiac drugs is universally confided in.

The ancients thought that there existed, not only various charms to kindle amorous feelings, but also to check all fond desires. The latter influence they considered as *malefices*, vulgarly called in more modern times, "point tying." Plato, in his Republic, warns husbands to be on their guard lest their domestic peace might be disturbed by these diabolical practices. Lovers, separated from each other's embrace by these nefarious enchantments, were said to be tied down. Thus Virgil,

Dic, Veneris vincula necto:
Terna tibi hæc primum triplici diversa colore
Licia circumdo.

No power could release one from these bonds:

Quis neget et magicas nervos torpere per artes?

By the laws of the twelve tables such enchantments were punished with death; and Numantina, wife of Plautius Sylvanus, was accused,

Injecisse carminibus et veneficiis vecordiam marito.

When Faustina, the gay bride of Marc Antonius was rapturously enamoured with an histrionic favourite, she was only cured of her folly by a potion in which some of the comedian's blood had been introduced. Petrarch relates of Charlemagne, that this monarch was so fondly attached to a fair lady, that after her death he carried about her embalmed body in a superb coffin, until a venerable and learned bishop, who very wisely thought that a living beauty was preferable to the remains of a departed one, rebuked his sovereign for his irreligious and unnatural propensities, and revealed to him the important secret of his love arising from a charm that lay under the dead woman's tongue. Whereupon the bishop went to the corpse, and drew from it a ring, which the emperor had scarcely looked upon when he abhorred the former object of his attachment, and felt such an extraordinary fancy for the bishop that he could not dispense with his presence for a single moment, until the good prelate was so obseded with royal favour that he cast the ring into a lake. From that moment Charlemagne (his historian continues) "neglected all public business, and went to live in the middle of a fen in the vicinity of Aix, where he built a temple, near which he was finally buried."

St. Jerome, in the Life of Hilarius, mentions a young man who so bephiltered a maiden that she fell desperately in love with him; and Sigismundus Schereczius, in his chapter *De Hirco Nocturno*, affirms that "unchaste women, by the help of these witches, the devil's kitchen-maids, have their lovers brought to them during the night, and carried back again, by a phantom flying in the air in the likeness of a goat." "I have heard," he adds, "divers confess that they have been so carried on a goat's back to their sweethearts many miles in a night." These wonderful potions were made of strange ingredients, for amongst them we find a man's blood chemically prepared, mandrake roots, dead men's clothes, candles, a certain hair

in a wolf's tail, a swallow's heart, dust of a dove's heart, tongues of vipers, brains of a jackass, pebbles found in an eagle's nest, together with "*palliola quibus infantes obvoluti nascuntur*, *funis strangulati hominis*," &c. &c. &c. Cleghorn, in his History of Minorca, tells us that water in which a hedgehog has been allowed to run into corruption, was supposed to be possessed of similar exciting powers; and a pulverized bit of a caul, scrapings of nails, and chopped hair, are to this hour deemed equally effectual to obtain these desirable ends.

Notwithstanding all these absurdities, it is undoubtedly true that certain articles of food have been considered as endowed with aphrodisiac properties; fish of various kinds, the mollusca and testaceous animals more especially. Juvenal attributes this quality to oysters, which, in this respect, with cockles and muscles have become vulgarly proverbial:

Grandia quæ mediis jam noctibus ostrea mordet.

Wallich informs us that the ladies of his time had recourse on such occasions to the brains of the *mustela piscis*. The *sepia octopus* was also in great repute; and Plautus, in his *Casina*, brings on an old man who had just been purchasing some in the market. There is reason to believe that these ideas were not altogether as absurd as they may appear. Fourcroy and Vauquelin have attributed this influence to the presence of phosphorus, which is well known to be highly exciting. In the East, various vegetable productions are considered in the same light. Their *hakims* have numerous receipts for the purpose; amongst which we find several electuaries,—such as the *diacyminum*, the *diaxylaloes*, the confections of *Luffa Abunafa*, and the *chaschab abusidan* of the Arabians, of which wonderful effects are related.

The laws of every country have provided against the offence of witchcraft, sorcery, conjuration, and enchantment. We find a statute of our first James, making it "felony, without benefit of the clergy, under the penalty of death, the act of all persons invoking any evil spirit, or consulting, covenanting with, entertaining, employing, feeding, or rewarding any evil spirits; or taking up dead bodies from their graves, to be used in any witchcraft, sorcery, charm, or enchantment; or killing or otherwise hurting, any person by such infernal arts. And if any person should attempt by sorcery to discover hidden treasures, or to restore stolen goods, or to *provoke unlawful love*, (lawful love did not come within these salutary provisions,) he or she should suffer imprisonment and pillory for the first offence, and death for the second." Strange to say, that act continued in force till very lately; and Blackstone observes, "that many poor wretches were sacrificed thereby to the prejudice of their neighbours, and their own illusions; not a few having, by some means or other, confessed the fact at the gallows."

Nothing could be more absurd, nay atrocious, than the means judicially resorted to at that period to detect witchcraft. Sir Robert Filmer mentions two tests by fire: the first by burning the house of the pretended witch: the other, by burning any animal supposed to have been bewitched by her. In both these cases the witch would confess her *malefices*!

Moreover, it was asserted that a witch, even while enduring the pangs of torture, could only shed *three tears*, and those from the *left eye*; this was considered a sufficient proof of guilt by the judges of the day! Swimming a witch was another expedient; in this ordeal the hag was stripped naked, and cross-bound, the right thumb to the left toe, and *vice versâ*. Thus prepared, she was thrown into a pond or a river; in which, if guilty, she could not sink, for having by her compact with the Devil renounced the waters of baptism, the waters in return refused to receive her in their bosom.

Our wise legislators maintained that old women were generally selected by the evil ones for their malicious purposes, and they usually appeared to them in the form of a man wearing a black coat or gown; and sometimes, especially in the north, with a bluish band and turned-up

linen cuffs: hard bargains were sometimes driven between the parties for the value of the harridan's soul. This was also the case according to Echard, in the negotiation between Oliver Cromwell and the Devil before the battle of Worcester. There were black, white, and gray witches: some of them fond of junketing and merry-making, and often would Satan play on a pipe or a cittern to make them dance; and not unfrequently would he become enamoured with their withered charms, when toads and horrible serpents were the hated progeny of this unhallowed union. Sinclair tells us, in his "Invisible World," of one Mr. Barton, who was burnt with his wife for witchcraft, and who confessed, before he was tied to the stake, that he had intrigued with the Devil in the shape of a comely lady, who had given him 15*l.* for his trouble. His wife confessed at the same time, that the Devil in the shape of a poodle dog used to dance before her, playing upon the pipes with a candle under his tail. The Devil, particularly in Scotland would ever and anon get up into a pulpit, and preach a sermon in a voice "*hough* and *gustie*."

Burton gives us some curious traditions of these devilish amours, and quotes Philostratus's account of one Menippus Lycius, a young man twenty-five years of age, who going between Cenchreas and Corinth, met a phantom in the shape of a fair gentlewoman, which, taking him by the hand, carried him to her house in the suburbs of Corinth; and told him she was a Phœnician by birth, and, if he would tarry with her he should hear her sing and play, and drink such wine as never was drunk, and no man should molest him, but she, being fair and lovely, would live and die with him. The young man tarried with her awhile to his great content, and at last married her; to whose wedding, amongst other guests, came Apollonius; who by some probable conjecture, found her out to be a serpent—a lamia. When she saw herself discovered, she wept, and desired Apollonius to be silent; but he would not be moved, and thereupon she, plate, house, and all that was in it vanished in an instant.

Florigerus also mentions the case of a young gentleman of Rome, "who on his wedding day went out walking with his bride and some friends after dinner; and towards the evening went to a tennis-court, and while he played he took off his ring, and placed it upon the finger of a brass *Venus statua*. The game finished, he went to fetch his ring; but Venus had bent her finger upon it, and he could not get it off. Whereupon, loth to make his companions tarry, he there left it, intending to fetch it the next day, went thence to supper, and so to bed; but in the night Venus had slipped between him and his wife, and thus troubled him for several successive nights. Not knowing how to help himself, he made his moan to one Palumbus, a learned magician; who gave him a letter, and bade him at such a time of the night, in such a cross way, where old Saturn would pass by with his associates, to deliver to him the script: the young man, of a bold spirit, accordingly did it; and when the old fiend had read it, he called Venus to him, who was riding before him, and commanded her to deliver the ring, which forthwith she did."

Burton further quotes St. Augustine, Bodin, Paracelsus, and various other learned men, who firmly maintain that the Devil is particularly fond of a little flirtation with the ladies; and a Bavarian widower, who was sadly grieving for his beloved wife, was visited by Old Nick, who had assumed the form of the departed lady, and promised to live with him and comfort him on the condition that he would leave off swearing and blaspheming; he vowed it, married her, and she brought him several children; till one day, in an uxorious quarrel, he began to swear like a Pandour, whereupon she vanished, and never more was seen.

The preservatives against witchcraft were as absurd as the fear it inspired: some hair, parings of nails, or any part of a person bewitched, were put into a stone bottle, with crooked nails, then corked close, and hung up the chimney; this expedient occasioned most horrible tortures to the witch, until the bottle was uncorked. Witches, moreover, cannot pursue their victims

beyond the middle of a running stream, provided the fugitives had been baptized. I have now a patient under my care who fancies himself bewitched, and asserts that the only way to guard against the evil is by driving a nail in the impress left by a witch's foot on the threshold, when she will discontinue her visits.

By an act of George II. these offences were considered as misdemeanors, and punished with a year's imprisonment, and standing four times in the pillory. There is no doubt that, notwithstanding the absurdity of such delusions and impostures, legislators must endeavour to secure the ignorant against these impositions, which are frequently of a perilous nature, and have been often known to occasion serious accidents, and even death. Many of the substances thus administered are of a most dangerous description, and these enchantments are not unfrequently resorted to with sinister intentions. It is related of the Asiatic women, that, under the pretext of giving these philters, they sometimes times prepare a beverage from the seeds of the *Datura Metel*, which produces a lethargic stupefaction of a convenient nature. The mischief that has frequently arisen from the exhibition of the *Lytta vesicatoria* has been observed and recorded by every medical practitioner. The *Diablotini*, a kind of incentive sugar-plums of the Italians, have been known to occasion the most serious accidents; and the celebrated French actor Molé lost his life in one of these experiments. Yet penal enactments, in such cases, must be resorted to with much circumspection; for prohibition too frequently promotes the evils which it is designed to check.

Montesquieu observes, that the ridiculous stories that are generally told, and the many impositions that have been discovered in all ages, are enough to demolish all faith in such a dubious crime, if the contrary evidence were not also extremely strong. Unquestionably, we have too many instances of criminal acts of superstition in which supernatural agency is believed; but did this philosophic writer mean to say that we have evidence of actual witchcraft and sorcery? It is with some degree of regret that we find our learned Blackstone avow his belief in these matters, and we borrow his own words on the subject: "To deny the possibility, nay, the actual existence of witchcraft and sorcery, is at once flatly to contradict the revealed Word of God, in various passages both of the New and Old Testament; and the thing itself is a truth to which every nation in the world hath in its turn borne testimony, either by examples seemingly well attested, or by prohibitory laws which at least suppose the possibility of a commerce with evil spirits. The civil law punishes with death not only the sorcerers themselves, but also those who consult them; imitating in the former the express law of God, 'Thou shalt not suffer a witch to live!'" Without calling into doubt the records of supernatural agency in Holy Writ, evident manifestations of the power and the will of the Divinity at that period, it may fairly be asked—Can we promulgate such opinions in the present times, when miraculous events do not seem to be permitted by our Creator in His inscrutable wisdom, without incurring the risk of plunging the ignorant in all the dark horrors of the early ages? Montesquieu himself has justly remarked, "that the most unexceptionable conduct, the purest morals, and the constant practice of every duty in life, are not a sufficient security against the suspicion of crimes like these." And yet, because, forsooth, there may be made to appear *examples seemingly attested*, and that on the faith of such an attestation the most absurd and cruel *prohibitory laws* have been enacted by every *nation in the world, on the supposition of the possibility of such a crime*, however ignorant and brutalized by superstition these nations are or may have been, man is not only authorized by the Scriptures to persecute some poor miserable fool or vagrant impostor unto death, but he is sanctioned in founding this barbarous persecution on the laws of God! The mind sickens at such doctrines. It is grievous to find a man like our Addison sharing in such preposterous notions; notions which would induce a doubtful by-stander not to interfere with a mob of miscreants who were drowning some unfortunate old woman "for a witch."

“There are,” says Addison, “some opinions in which a man should stand *neuter*, without engaging his assent to one side or the other. It is with this temper of mind that I consider the subject of witchcraft. When I consider whether there are such persons in the world as those we call witches, my mind is divided between the two opposite opinions; or rather, to speak my thoughts freely, I believe in general that *there is*, and has been, such a thing as witchcraft, but, at the same time, can give no credit to any particular instance of it.”

Are we then still to believe that there may exist some supernatural hag, that can

————Untie the winds, and let them fight
Against the churches————
Control the moon, make ebbs and flows,
And deal in her command without her power?

or who, with the influence given to them by our poet Rowe,

By force of potent spells, of bloody characters,
And conjurations horrible to hear,
Call fiends and spectres from the yawning deep,
And set the ministers of hell to work,

with the liver of a blaspheming Jew, the nose of a Turk, the lips of a Tartar, the finger of a birth-strangled babe, and ditch-delivered by a drab, &c. &c.? If we are to believe in witches with Blackstone and Addison, we must give credence to all these mystic means by which they *work* their *way*. All these *means* have been *seemingly attested*, and led, from the just horror they inspired, to those *prohibitory laws* enacted by *every nation*; as if the laws of man could be of any avail in resisting the *admitted* supernatural powers with which these witches, sorcerers, magicians, &c. must have been invested by the Deity to perform their terrific operations! If we deny this authority we are Manicheans.

Ventriloquism

This peculiar faculty was well known to the ancients. Hippocrates verily believed that there did exist individuals who could draw a voice from their belly. He speaks of the wife of Polimarchus, who, being affected with a quinsy, spoke in this manner; hence this power was called *Engastrimysm*. Plato gives the history of Euricles, who mentions three persons whom St. Chrysostom and Œcumenius considered to be endowed with a heavenly gift. Cælius Rhodiginus describes an old woman of Rovigo who used to deliver her oracles in the like manner, and who was never so eloquent as when stripped to the skin, when she would answer most accurately all the questions put to her by a familiar who attended upon her, and was called Cincinnatulus. Anthony Vandael, a physician of Harlem, considered ventriloquism as a supernatural power, enabling the voice to proceed "ex ventre inferiore et partibus genitalibus;" and he describes a woman of seventy-three years of age, called Barbara Jacobi, who used to ventriloquise with an imp of the name of Joachim, who would weep most piteously, or fall into roars of laughter, and sometimes danced and sung with remarkable grace and elegance, according to the depressing or the exhilarating nature of Mrs. Jacobi's communications. In the Septuagint the Hebrew word *Ob* is rendered by *Engastrimythos*; and it was supposed that the Pythoness who evoked Samuel had recourse to this power. Oleaster, Grand Inquisitor of Portugal, in a work published at Lisbon in 1656, mentions a woman of the name of Cecilia who was brought before the court, and expressed herself in a ventriloquial voice, which she said was that of one Peter John, who had been dead for many years; but Peter John pleaded in vain for his hostess, for, despite his abdominal eloquence, she was sentenced to be transported. Whether Peter John accompanied her in exile is not stated. In 1643, Dickinson mentions a man at Oxford, who was called the King's Whisperer, and who expressed himself most clearly without opening the mouth or moving the lips. This faculty has frequently been employed in various speculations. In the sixteenth century, Borden relates the story of a valet of Francis I., named Brabant, who thus persuaded the mother of a young girl he courted to grant her consent to their marriage as speedily as possible, if she wished her husband's soul to get out of the torments of purgatory: after marriage, however, he was disappointed in his pecuniary expectations, and he applied his powers of ventriloquism to terrify a rich banker of Lyons, of the name of Corner, to bestow a fortune upon his wife; for which purpose he assumed the voice of Corner's father, who supplicated him to give the money as the only means of sending his poor consuming soul to paradise.

One of the most celebrated ventriloquists was a grocer of St. Germains, one St. Gilles; but he applied the faculty he possessed to benevolent purposes. Being called to reclaim a newly-married young man from a disgraceful connexion, which rendered his wife most unhappy, his supernatural voice, supposed to come from heaven, succeeded; and he was equally fortunate in bringing to a sense of propriety one of the most sordid misers of his time.

St. Gilles was not so felicitous in a trick he played to some monks, vainly attempting to prove the absurdity of their superstitious notions. One of the community had lately died, and, according to custom, the deceased was laid out in the church, and his brethren, grouped around him, were pouring forth prayers for the repose of his soul, when St. Gilles, throwing his voice into the coffin, returned them all the thanks of the departed friar for their supplications in his behalf. The astonished monks were most edified at this miraculous event; and their prior, who knew St. Gilles to be a freethinker, endeavoured to impress upon his mind the wonder that he himself had performed, and to inveigh most earnestly against the

impiety and incredulity of modern philosophers, who entertained sceptic ideas concerning miracles. After a long exhortation, our ventriloquist burst into a fit of laughter, and avowed the deception he had practised: to convince the brotherhood of the veracity of his assertion, he gave them various specimens of his skill,—but to no purpose; he was called an infidel, a scoffer, an atheist, and, had it been in Spain, the stake would in all probability have rewarded his perilous frolic, or his stiff-necked impiety in refusing to believe in his own miracles.

It is now pretty generally admitted that ventriloquism simply consists in a slow and gradual expiration, preceded by a strong and deep inspiration, by which a considerable quantity of air is introduced into the lungs, which is afterwards acted upon by the flexible powers of the larynx and the trachea: any person therefore, by practice, can obtain more or less expertness in this exercise; in which, although not apparently, the voice is still modified by the mouth and the tongue. Mr. Lespagnol, in a very able dissertation on this subject, has demonstrated that ventriloquists have acquired by practice the power of exercising the veil of the palate in such a manner, that, by raising or depressing it, they dilate or contract the inner nostrils. If they are closely contracted, the sound produced is weak, dull, and seems to be more or less distant; if, on the contrary, these cavities are widely dilated, the sound is strengthened by these tortuous infractuosities, and the voice becomes loud, sonorous, and apparently close to us. Thus any able mimic who can with facility disguise his voice, with the aid of this power of modifying sounds, may in time become a ventriloquist.

Chaucer’s Description Of A Physician. The Doctor Of Physic

With us there was a doctour of phisike;
In all this world, ne was there none him like
To speake of phisike and of surgerie,
For he was grounded in astronomie.
He kept his patient a full great dell
In houses: by his magike naturell
Well couth he fortune the assendent
Of his image for his pacient.
He knew the cause of every malady,
Whether it were of cold, heate, moist, or dry.
And whereof engendered was each humour.
He was a very parfit practisour;
The cause I knew, and of his haime the roote,
Anon he gave to the rich man his boot.
Full ready had he his apoticaries
To send him drugs and his lectuaries;
For each of them made other for to winne,
Their friendship was not new to beginne.
Well he knew the old Esculapius,
And Diascorides, and eke Ruffus,
And Hippocrates, and Galen,
Serapion, Rasis, and Avicen,
Aberrois, Damascene, and Constantin,
Bernard, Galisden, and Gilbertin
Of his diet measurable was he,
For it was of no superfluitie;
But of great nourishing and digestible.
His study was but little on the Bible.
In sanguine and in percepolad withall
Lined with taffata and with sendall;
And yet he was but easy of dispence.
He kept that he won in time of pestilence;
For gold in phisike is a cordial,
Therefore he loved gold speciall.

It appears from this quaint and satirical picture, that, in our Chaucer’s days, astrology formed part of a physician’s study. It also plainly proves that a disgraceful collusion prevailed between medical practitioners and their apothecaries, mutually to enrich each other at the expense of the patient’s purse and constitution. The poet, moreover, seems to tax the faculty with irreligion: that unjust accusation was not uncommon; hence the old adage, “Ubi tres medici, duo athei.” To the disgrace of many illiberal persons of the present age, we have known some of our most able and praiseworthy physiologists charged with materialism.

Dæmonomania

This disease is perhaps the most distressing species of insanity; since, with the exception of the miserable belief of being possessed by the evil spirit, the patient is often in full possession of his other faculties, and will even endeavour to reason with his attendants, with some apparent plausibility, on the very aberration that constitutes the malady.

The word ‘dæmon’ among the ancients was not considered as specific of an evil spirit; on the contrary, it signified genius, intellect, mind. Δαιμόνιον, from δαίμων, meant wisdom, science. The first notions of dæmons were probably brought from Chaldea, whence they spread amongst the Persians, Egyptians, and Greeks. Gales maintains that the original institution of dæmons was an imitation of the Messiah. The Phœnicians called them *Baalim*. So far do these early opinions prevail, that among the Anabaptists we find a sect called Dæmoniac, who believe that devils shall be saved at the end of the world.

Plato gave the name of dæmons to the benevolent spirits who regulated the universe. The Chaldeans and Jews considered them as the causes of all human maladies. Saul was agitated by an evil spirit, and Job and Joram suffered under a similar visitation.

Dæmonomania differs widely from the mental disease called Theomania. In the latter state of insanity the patient fancies that he is placed in communication with the Deity or his angels; in the former, he feels convinced that he has become the prey of the destroyer of mankind.

Under the head of “Unlawful Cures,” instances are related of the firm belief in the power of evil spirits to cause various diseases. Perhaps the origin of dæmonomania may be traced to fanatical persecution; never was the malady so common as during the denunciations of Calvin, when torture was frequently resorted to, to make the victims of bigotry renounce a supposed pact with the devil. D’Agessau was right when, in advising the parliament of Paris to repeal all statutes against sorcery, he recommended that dæmoniacs should be handed over to the physician, instead of the priest or the executioner.

The sufferings which dæmoniacs say they endure must be excruciating; so powerful is moral influence over our physical sensations. They will tell you that the devil is drawing them tight, and suffocating them with a cord; that he is pinching and lacerating their entrails, burning and tearing their heart, pouring hot oil or molten lead in their veins, while internal flames are consuming them. Their strength is exhausted, their digestive functions impaired, their appearance soon becomes miserable in the extreme, their countenances pale and haggard: the wretched creatures endeavour to conceal themselves during their scanty meals, or their attempts to enjoy a broken slumber; they are persuaded that they no longer possess a corporeal existence that requires refection or repose,—the evil spirit has borne away their bodies, the devil requires no earthly support; they even deny their sex: they are doomed to live for ever in constant agony. These unfortunate creatures are mostly women. One of them asserts, with horrid imprecations, that she has been the devil’s wife for a million of years, and had borne him a numerous family; her body is nothing but a sack made of a devil’s skin, and filled with their offsprings in the shape of devouring snakes, toads, and venomous reptiles. She exclaims that her husband constantly urges her to commit murder, theft, and every imaginable crime; and sometimes with bitter tears supplicates her keeper to put on a strait waistcoat, to prevent her from doing evil. Another woman, forty-eight years of age, assures us that she has two devils who have taken up their residence in both her hips, and have grown up to her ears: one of them is black and yellow, the other black, both in the shape of cats. She fills her ears with snuff and grease to satisfy their diabolical cravings. She eats with voracity,

but is a perfect skeleton in appearance; the devils consume all, and leave her nothing. They constantly bid her to go and drown herself; but she cannot obey them, since eternity is her doom. They are scarcely sensible of painful agents, and are unconscious of heat, cold, or the inclemency of the weather. Their perspiration, frequently profuse, exhales a most unpleasant odour; hence the vulgar fancy that they smell of the lower regions. This circumstance is the usual consequence of many nervous affections, and arises, most probably, from the foulness of the breath, a natural result of impaired digestion, and from a peculiar acrimony of the cutaneous secretions.

Pinel relates the case of a missionary whose enthusiastic aberrations led him into the horrible belief, that he could only be saved from eternal torments, by what he called a *baptism of blood*. This fatal mania induced him to attempt the life of his wife, who was fortunate to escape from the danger, after he had immolated two of his children, to secure their salvation! Tried for this crime he was sentenced to perpetual confinement in Bicêtre. In his dungeon he fancied himself the *fourth person in the trinity*, maintained that he was sent upon earth to baptize with blood, and all the power of the universe could not affect his life. During ten years' confinement this miserable wretch, betrayed the same insanity whenever religious subjects were touched upon, in all other matters, he reasoned most soundly. His lucid intervals at last became so long in their duration and calm, that it was questioned whether he might not be liberated—until on a Christmas eve, his sanguinary monomania resumed all its intensity, and having by some means or other obtained possession of a leather-cutter's knife, he inflicted a desperate wound on one of his keepers, and cut the throat of two patients who were near them; many other inmates of the establishment would, no doubt, have been sacrificed by the desperate maniac had he not been secured. This case might decidedly be considered one of true dæmonomania.

It has been generally remarked that cases of dæmonomania are more common amongst women than in men. Their greater susceptibility to nervous affections, their warmth of imagination and strong passions, which habit and education compel them to restrain, produce a state of concentration that must cause increased excitement, and render them more liable to those terrific impressions that constitute the disease. These terrors, from false notions of the Deity, make them anticipate in this world the sufferings denounced in the next. One woman has been known to become dæmonomaniac after an intense perusal of the Apocalypse, and another by the constant reading of the works of Thomas à Kempis. Women, moreover, at certain critical periods are subject to great mental depression, which they have not the power to relieve by exciting pursuits, like men. Melancholy succeeds a dull sameness. Religion, viewed in a false light, becomes her refuge; more especially at an advanced period of life, when loss of youth and beauty is bitterly felt, as galled vanity compares the present with the past. Hysteric symptoms are now developed: the passions, which are too frequently increased even to intensity, rather than cooled, by years, prompt her to rebellious thoughts that religion and virtuous feelings strive to restrain; and these powerful agents, acting upon a predisposition morbidly impressionable from ignorance or the errors of education, accelerate the invasion of this cruel malady. Jacobi informs us, that this is still the character which, in some catholic countries, insanity connected with superstition frequently assumes.

Pliny tells us that women are the best subjects for magical experiments; Quintilian is of the same opinion: Saul consults a witch; Bodin, in his calculations, estimates the proportion between wizards and witches as one to fifty. It is, perhaps, owing to these remarks that many ungenerous writers have denied *women* a soul, as not belonging to *mankind*. There exists a curious anonymous work, published at the close of the sixteenth century, to prove that women are not men, or, in other words, reasonable creatures, and entitled "*Dissertatio perjucunda quâ Anonymus probare nititur Mulieres homines non esse*." Our author upon this

principle endeavours to show that women cannot be saved. One Simon Geddicus, a Lutheran divine, wrote a serious confutation of this libel upon the fair sex, in 1595, and promises the ladies an expectation of salvation on their good behaviour. According to a popular tradition among the Mahometans, women are excluded from paradise: St. Augustin, however, calls them the *devout sex*; and in the prayer to the Virgin of the Romish Church we find "*Intercede pro devoto fœmineo sexu*." An hypothesis still more absurd was broached by a Doctor Almaricus, a theological Parisian writer of the twelfth century, who advanced that, had it not been for the original sin, every individual of our species would have come into existence a complete man; and that God would have created them by himself, as he created Adam. Our worthy doctor was a disciple of Aristotle, who maintained that woman was a defective animal, and her generation purely fortuitous and foreign to nature. Howbeit, my fair readers will learn with satisfaction that the doctrines of this aforesaid Almaricus were condemned by the church as heretical, and his bones were therefore dug up, and cast into a common sewer, as an *amende honorable* to the offended ladies.

"A woman," says one of the primitive fathers of the church, "went to the play, and came back with the devil in her; whereupon, when the unclean spirit was urged and threatened, in the office of exorcising, for having dared to attack one of the faithful, 'I have done nothing,' replied he, 'but what is very fair; I found her on my own grounds, and I took possession of her.'"

St. Cyprian informs us, that when he was studying magic, he was particularly intimate with the devil. "I saw the devil himself," he says; "embraced him; I conversed with him, and was esteemed one of those who held a principal rank about him." Who can doubt the assertion of a saint! It appears, that in those wonderful days the devil usually wore a black gown, with a black hat; and it was observed that, whenever he was preaching, his *glutei muscles* were as cold as ice.

At all times satire has endeavoured to make invidious distinctions between the sexes: this is not fair. Women are generally what men have made them. In a physical, and, consequently, to a certain degree in a moral point of view, their organization is essentially different from ours; therefore, a masculine woman is as intolerable as an effeminate man. The education of females tends in a great measure to increase that susceptibility to trifling excitements, which in after-life urges them to the extremes of good or evil. While the toys and amusements of boys are of a manly nature, a girl is taught to practise upon her darling doll all the arts which a few years after she will practise upon herself. Many intelligent writers have doubted the expediency of giving woman any education beyond the sphere of her domestic pursuits and occupations; Erasmus wrote largely on this subject to Budæus. Vives treats of it in his *Institutio fœminæ Christianæ*; and a German authoress, Madame Schurman, has published a treatise on the problem, "*Num fœminæ Christianæ conveniat studium literarum?*"

It is this nervous flexibility in women that exposes them to that constant succession of emotions which are expressed by a rapid transition from tears to smiles; and, anomalous as it may appear, they are more exposed to fond impressions in their grief than at any other moment; they then feel more helpless, and stand in greater need of consolation. The story of the Matron of Ephesus is not so great a libel on the sex as one might imagine. Their mind is prone to romantic enthusiasm; they delight in the extraordinary, the terrible, and as Madame de Sevigné, who well knew her sex, expresses it, they enjoy in chivalric tales *les grands coups d'épée*. Prudence preventing them too frequently from expressing their thoughts, thinking becomes more intense; and Publius Syrus has said, "*Mulier quæ sola cogitat, malè cogitat*:" but when the suppressed volcano bursts forth, its eruptions are boundless; it is then that one may exclaim, "*Notumque fuerit quid fœmina possit*." No passion is more

overwhelming than when it has been kept down by dissimulation; opportunity is their curse: Montaigne has too truly said, "*Oh le furieux avantage que l'opportunité*!" and our Denham has beautifully illustrated its fearful circumstances:

Opportunity, like a sudden gust,
Hath swell'd my calmer thoughts into a tempest.
Accursed opportunity!
That works our thoughts into desires; desires
To resolutions; those being ripe and quickened,
Thou giv'st them birth, and bring'st them forth to action.

It is a perilous ordeal for such to whom the lines of Ovid might apply,

Quæ, quia non liceat, non facit; illa facit.

To what prejudice against women are we to trace their sex having been chosen to represent the Furies, stern and inexorable ministers of Divine wrath; the Harpies, who defiled all they touched; the perilous Sirens; unless it be to woman's fascinations in youth, and envious bitterness in old age—the conventional type of witchcraft? This unhappy selection of woman for working *malefices* has been attributed to the facility which the devil found in tempting Eve. A witch is supposed by the most learned in the black art to be in compact with Satan, whom she is obliged to obey; whereas a sorcerer commands the devil himself by his knowledge of charms and invocations, but more especially of perfumes that the evil spirits delight in when properly suffumigated, or abhor when maliciously given them to smell. Thus the burning of a fish's liver by Tobit drove the devil into the remote parts of Egypt; and Lilly informs us, that one Evans having raised a spirit at the request of Lord Bothwell and Sir Kenelm Digby, and forgotten his favourite fumigation or incense, the angry elf whipped him up, and carried him from his house in the Minories to Battersea Causeway.

Although fairies are mostly considered juvenile, and many of their kind acts are recorded, yet are they in general mischievous imps; Mr. Lewis describes those he saw in the silver and lead mines of Wales, as only being about half a yard high. As a punishment for their vagaries, all their children are stunted and idiotic; and this accounts for their abominable custom of substituting their own "base elfin breed" for healthy infants. Hence are idiots commonly called changelings.

Dæmoniacs are prone to commit suicide, less from their loathing an irksome life than through fear, not of future torments, but of the renewal or the continuance of their worldly sufferings. Perhaps they may entertain some doubts as to the punishment of another existence, while their actual condition is intolerable; we not unfrequently see desperate men rushing to meet the very fate they dread.

Dæmonomania may be referred to a false view of divine justice,—ignorance, and consequent weakness of intellect,—and a pusillanimous apprehension of perhaps a merited chastisement. It is a disease which seldom admits of a cure. If the consolations of true religion are proffered, they are either spurned with anger, or merely produce an evanescent melioration. Zacutus relates the case of a dæmoniac who was cured by a person who appeared to her in the form of an angel, to inform her that her sins had been forgiven: it is possible that stratagems of a similar nature might prevail. I attended a monomaniac lady in Paris, who fancied herself in Jerusalem on the eve of its destruction. She furiously opposed all endeavours to move her from her residence; and it was only by personating a Jewish rabbi, and offering to take her to New Jerusalem as a place of refuge, that she consented to accompany me in a carriage to a *maison de santé* near the capital. Here imagination subdued imagination. I have had the pleasure to hear that ever since I thus succeeded in breaking a link in the morbid association

of her fancies, her state of mind rapidly improved, and that she is now restored to perfect sanity.

Dæmonomania has been known to be epidemic. From 1552 to 1554 no less than eighty-four persons became possessed in Rome. The endeavours of a French monk to exorcise them proved of no avail; and as most of the unfortunate victims of credulity were Jewesses who had consented to be baptized, the Jews were of course accused of sorcery. About the same period a similar disease broke out in a convent near Kerndrop, in Germany, when all the nuns were possessed, and denounced their cook, who, having confessed that she was a witch, was duly burnt alive with her mother.

Dæmonomania has been considered an hereditary visitation, and whole families have therefore been deemed in pact with the evil one. Insanity is unfortunately known to attach itself to certain generations; but perhaps it has not been sufficiently observed, when endeavouring to account for this melancholy fact, that the mind becomes gradually influenced by the nature of the constant conversation we daily and hourly are exposed to hear; and it is not impossible but that this transmission of mental disease may be attributed to morbid moral and physical sympathies, which might be avoided by withdrawing the persons exposed to it from the sphere of their action. Constant anxious thoughts and painful reflections tend to produce an increased sensorial power in the brain, with a diminished sensibility to external impressions. So great has been this effect upon the senses, that maniacs have been seen to gaze upon the meridian sun without any sensible effect on the organs of vision. It is therefore possible that an individual who beholds with incessant horror insanity in his family, or who constantly hears of their aberrations, may ultimately experience a similar peculiarity of the mind: hence wit as well as madness have been known to be the heir-looms of a race. Although the examples of vice, one might imagine, would inspire a love for virtuous actions, yet we daily see profligacy the characteristic of an entire family; and there are names which have been rendered by misconduct synonymous with depravity. This sad fact can only be attributed to natural temperament, whether it be sanguine or melancholic. It has been observed that our constitutions exercise a control over diseases, that modifies them in a peculiar manner. The more acute the sensibility, the greater is the predisposition to insanity. Warm and ungovernable passions will drive one female into all the horrid excesses of nymphomania, while the timid hypochondriac and hysteric woman will gradually sink into a morose or a malevolent despondency. Burton attributes dæmonomania to other causes, and tells us that the devil is so cunning that he is able to deceive the very elect; and, to compel them the more to stand in awe of him, he sends and cures diseases, disquiets their minds, torments and terrifies their souls, to make them adore him; and all his study, all his endeavour, is to divert them from true religion to superstition; and because he is damned himself, and is in error, he would have all the world participate of his errors, and be damned with him.

Amongst the various motives that induced the evil one to pay his sinister visits to frail mortality, that of inflicting upon them a salutary, or a vexatious fustigation, is frequently recorded by the fathers and other writers. It was more especially upon the backs of saints that this castigation took place. St. Athanasius informs us that St. Anthony was frequently flagellated by the devil. St. Jerome states that St. Hilarius was often whipped in a similar manner; and he calls the devil “a wanton gladiator,” and thus describes his mode of punishment: “Insidet dorso ejus festivus gladiator; et latera calcibus, cervicem flagello verberans.” Grimalaïcus, a learned divine, confirms the fact in the following passage: “Nonnumquam autem et apertâ impugnatione grassantes, dæmones humana corpora verberant, sicut B. Antonio fecerant.” St. Francis of Assisa received a dreadful flogging from the devil the very first night he came to Rome, which caused him to quit that city forthwith.

Abbé Boileau's remarks on this circumstance savour not a little of impiety and freethinking, for he says, "It is not unlikely that, having met with a colder reception than he judged his sanctity entitled him to, he thought proper to decamp immediately, and when he returned to his convent told the above story to his brother monks." Howbeit, Abbé Boileau is no authority, and it is to be feared that, partaking of the satirical disposition of his brother, he sacrificed piety to wit; for it is well known, beyond the power of sceptic doubts, that the aforesaid saint's assertion cannot possibly be impugned by proper believers. His power over the fiery elements was established; whereby he possessed the faculty of curing erysipelas, honoured by the appellation of St. Anthony's fire. In the like manner St. Hubert cured hydrophobia, and St. John the epilepsy.

It is, however, pleasing to know that it was not always that the beatified succumbed to these Satanic pranks, and many instances are recorded of the devil's being worsted in these sacrilegious amusements, as fully appears in the history of the blessed Cornelia Juliana, in whose room, one day, says her history, "the other nuns heard a prodigious noise, which turned out to be a strife she had had with the devil, whom, after having laid hold of him, she fustigated most unmercifully; then, having him upon the ground, she trampled upon him with her foot, and ridiculed him in the most bitter manner (*lacerabat sarcasmis*)." This occurrence is incontrovertible, being affirmed by that learned and pious Jesuit, Bartholomew Fisen.

This partiality of devils for flagellation can most probably be attributed to their horribly jealous disposition; for it is well known that the saints took great delight in fustigating, not only those who offended them, but their most faithful votaries. Flagellation was therefore the most grateful punishment that could be inflicted to propitiate the beatified; and we have several well-authenticated facts which prove that the Virgin was frequently appeased by this practice. Under the pontificate of Sextus IV., a heterodox professor of divinity, who had written against the tabernacle, was flogged publicly by a pious monk, to the great edification of the by-standers, more particularly the ladies. The description of this operation would lose materially by translation, I therefore give it in the original. "Apprehendens ipsum revolvit super ejus genua; erat enim valdè fortis. Elevatis itaque pannis, quia ille minister contra sanctum Dei tabernaculum locutus fuerat, cœpit cum palmis percutere *super quadrata tabernacula* quæ erant nuda, non enim habebat *femoralia vel antiphonam*; et quia ipse infamare voluerat beatam Virginem, allegando forsitan Aristotelem in libro priorum, iste prædicator *illum confutavit legendo in libro ejus posteriorum*: de hoc autem omnes qui aderant gaudebant. Tunc exclamavit *quædam devota mulier*, dicens, '*Domine Prædicator, detis ei alios quatuor palmatus pro me*; et alia postmodum dixit, 'Detis ei etiam quatuor; sicque *multæ aliæ* rogabant, ita quòd si illarum petitionibus satisfacere voluisset, per totum diem aliud facere non potuisset."

We need not seek for similar instances of the mighty power of proper fustigation in foreign parts. The Annals of Wales record a singular instance of the kind, which happened in the year 1188, as related by Silvester Gerald, in such a circumstantial manner that the most obdurate incredulity alone could doubt the fact:—"On the other side of the river Humber," he says, "in the parish of Hoëden, lived the rector of that church, with his concubine. This concubine, one day, sat rather imprudently on the tomb of St. Osanna, sister to King Osred, which was made of wood, and raised above the ground in the shape of a seat: when she attempted to rise from that place, she stuck to the wood in such a manner that she could not be parted from it, till, in the presence of the people who flocked to see her, she had suffered her clothes to be torn from her, and had received a severe discipline on her naked body, and that too to a great effusion of blood, and with many tears and devout supplications on her part; which done, and after she had engaged to submit to further penitence, she was divinely released."

In this instance, as in many others, freedom from vulgar habiliments appears to have been considered as acceptable to Heaven; so much so, indeed, that the state of greater or lesser nudity has been commensurate with the degree of the offence. The Cynic philosophers of Greece, among whom Diogenes made himself most conspicuous, used to appear in public without a rag upon them. The Indian wise men, called Gymnosophists, or naked sages, indulged in the same vagaries. In more modern times, the Adamites appeared in the simple condition of our first father. In the 13th century, a sect called *Les Turlupins* (a denomination which appears to have been an opprobrious nickname), perambulated France, disencumbered of vain accoutrements; and, in 1535, some Anabaptists made an excursion in Amsterdam in the condition in which they had quitted their baths, for which breach of decorum the impious burgomasters had them bastinadoed. We further read of one Friar Juniperus, a worthy Franciscan, who, according to history, "entered the town of Viterboo, and, while he stood within the gate, he put his hose on his head, and his gown being tied round his neck in the shape of a load, he walked through the streets of the town, where he suffered much abuse and maltreatment from the wicked inhabitants; and, still in the same situation, he went to the convent of the brothers, who all exclaimed against him, but he cared little for them, *so holy was the good little brother* (*tam sanctus fuit iste fraticellus*)."

The pranks of brother Juniper have been performed at sundry periods by various holy men. Are we not warranted in conceiving that these individuals were dæmonomaniacs? for surely the devil alone could have inspired them with such fancies, although Cardinal Damian defends the practice in the following terms, when speaking of the day of judgment: "Then shall the sun lose its lustre, the moon shall be involved in darkness; the stars shall fall from their places, and all the elements be confounded together: of what service then will be to you those clothes and garments with which you are now covered, and which you refuse to lay aside, to submit to the exercise of penitence?"

It must be remarked, in extenuation of these exhibitions, that they were accompanied by flagellation; which sometimes bore a close analogy to those of the Saturnalia and Lupercalia, and the discipline of the flagellants was not always dissimilar to that of the Luperci.

To resume: Dæmonomania may be considered the result of a morbid condition of the mind, and the dread of supernatural agency. The belief of an incarnation of the devil leads to the natural apprehension of his having taken possession of our bodies, when a credulous creature fancies that he has fallen into his snares, and forsaken the ways of the Omnipotent. This sad delusion has been admirably illustrated by Sir Walter Scott in his curious and learned Demonology. "It is, I think," says he, "conclusive that mankind, from a very early period, have their minds prepared for such events (supernatural occurrences) by the consciousness of the existence of a spiritual world. But imagination is apt to intrude its explanations and inferences founded on inadequate evidence. Sometimes our violent and inordinate passions, originating in sorrow for our friends, remorse for our crimes, our eagerness of patriotism, or our deep sense of devotion,—these, or other violent excitements of a moral character, in the visions of the night, or the rapt ecstasy of the day, persuade us that we witness with our eyes and ears an actual instance of that supernatural communication, the possibility of which cannot be denied. At other times the corporeal organs impose upon the mind, while the eye and the ear, diseased, deranged, or misled, convey false impressions to the patient. Very often both the mental delusion and the physical deception exist at the same time; and men's belief of the phenomena presented to them, however erroneously, by the senses, is the firmer and more readily granted, that the physical impressions corresponded with the mental excitement."

From the foregoing observations we may venture to conclude, that an individual who gives credence to apparitions will also believe in the incarnation of the devil. In both cases we infer that spiritual beings can assume corporeal forms; and, although we may not presume to question the possibility of such appearances when it may please the Omnipotent so to will it, to believe in possession is actually to admit that the devil is a spiritual being endowed with specific attributes and powers, and acting either independently or with the consent of the Almighty. This admission would to a certain extent border on the heresy of the Manicheans, who believed, with the heresiarch Cubricus, that there existed a good and an evil principle coeternal and independent of each other. We find in Holy Writ that indulgence was granted to Satan to visit the earth. But the period when miraculous power ceased, or rather was withdrawn from the church, is not determined. The Protestants bring it down beneath the accession of Constantine, while the Roman Catholic clergy still claim the power of producing or procuring supernatural manifestations when it suits their purpose; but, as Scott justly observes, it is alike inconsistent with the common sense of either Protestant or Roman Catholic, that fiends should be permitted to work marvels, which are no longer exhibited on the part of religion.

Cullen's opinion on this disease is worthy of remark. He says, "I do not allow that there is any true dæmonomania, because few people nowadays believe that demons have any power over our bodies or our minds; and, in my opinion, the species recorded are either a species of melancholy or mania,—diseases falsely referred by the spectators to the power of demons,—feigned diseases,—or diseases partly real or partly feigned."

Esquirol, moreover, justly observes, that "in modern times the punishments that the priest denounces have ceased to influence the minds and the conduct of men, and governments have recourse to restraints of a different kind. Many lunatics express now as much dread of the tribunals of justice, as they formerly entertained of the influence of stars and demons."

We frequently meet with despondent monomaniacs labouring under the fatal delusion of having forfeited all hopes of salvation, and being in fact inevitably doomed to perdition, but who are apparently of sound mind when touching upon other subjects. The case of one Samuel Brown was peculiarly striking. This unfortunate man, at a period when all his intellectual faculties were in full vigour, fancied that his rational soul had gradually succumbed under divine displeasure, and that he solely enjoyed an animal life in common with brutes.

Esquirol affirms that this form of lunacy is of rare occurrence, and that out of upwards of 20,000 insane persons whom he has observed, scarcely one case of dæmonomania could be found in a thousand, and these were amongst the lowest and most uneducated classes of society. The most powerful charm to withstand the efforts of the evil spirit, is the following one generally made use of in Livonia.

Two eyes have seen thee—may three eyes deign to cast a favourable look upon thee, in the name of the Father, the Son, and the Holy Ghost.

The Plague

Pestilential diseases have ever been considered a punishment inflicted on mankind for their manifold offences. The ancients deified the calamity, and viewed it in the light of an avenging god. In the Œdipus of Sophocles, the chorus implore Minerva to preserve them from that divinity, which, without sword or buckler, strews the Theban streets with corpses, and is more invincible than Mars himself. Lucretius describes the plague of Athens as a holy fire,—

Et simul, ulceribus quasi inustis, omne rubore
Corpus, ut est, per membra *sacer* quum diditur *ignis*.

The plague was known in an early era both to the Israelites and to the Greeks, and its ancient and modern histories have descended to us depicted in the most terrific colours, in a regular stream of Hebrew, Greek, Arabic, and Roman writers, in most instances offering little variety from the descriptions of neoteric observers.

The pestilences that visited the Israelites were, however, of a different character. They were also considered as a Divine chastisement of the sins of that stiff-necked nation. This visitation, accurately described in Holy Writ, has led to the most curious disquisitions. Bryant has endeavoured by the most recondite researches to give us the reasons why the Creator thought proper thus to visit his disobedient people. It has been truly observed that the sublime is not far removed from the ridiculous; and it may be said with equal correctness, that enthusiasm in religion too frequently borders upon impiety. Bryant, in his erudite labour, has unhappily fallen into this extreme, in assigning human motives to the decrees of the Deity. This matter is treated in so curious a manner that it will not be irrelevant to notice his bold assertions.

In the first instance, taking the language of the Exodus in the most literal sense, he tells us that the river was turned into blood, *because* it was a punishment particularly well adapted to that blinded and infatuated people, as a warning to the Israelites of the insufficiency of the false gods that the Egyptians worshipped. They had rendered divine homage to the Nile; and Herodotus informs us that the Persians held their rivers in the highest veneration; while the same worship obtained among the Medes, the Parthians, and the Sarmatians. The Greeks adored the Spercheius, to whose god Peleus vowed the hair of his son; the laureated Peneus, the earth-born Achelous, and the loving Alpheus. For, although it may be said that these streams were merely venerated as the symbols of their respective gods, it is possible that the Greeks might have fallen into the same errors as the worshippers of saintly images in more modern and enlightened times. Therefore, says our learned author, there was a great propriety in the judgment brought upon this people by Moses. They must have felt the utmost astonishment and horror when they beheld the sacred stream changed and polluted, and the divinity which they worshipped so shamefully soiled and debased. Moreover, he tells us that the Egyptian priests were particularly nice and delicate in their outward habits, making constant ablutions; and abhorred blood, or any stain of gore. In this plague the fish that were in the river died, and the river stunk. Now the priests and holy men not only never tasted fish, but looked upon them as deities. A city was built in honour of the god-fish, Oxyrunchus; the Phagrus[12] was worshipped at Syene, the Mæotis at Elephantis, and Antiphanes tells us that the Egyptians equally reverenced the eel.

[12] According to Ælian, the presence of this fish indicated the approaching overflow of the Nile.

The second plague were frogs, *because*, further saith our sapient authority, they added to the stink of the land, as they "died out of the houses, out of the villages, and out of the fields, and were gathered together in heaps, and the land stunk," Exodus viii. 13, 14. Bryant candidly confesses that he is rather uncertain if this reptile was an object of reverence, or of abhorrence to the Egyptians; nevertheless, he draws the conclusion that, as the ancients worshipped many deities of dread, and others that they despised, (such as Priapus, Fatua, Vacuna, Cloacina,) Mephitis, or foul effluvia, was held in religious awe,—and, to use his own expressions, since Mephitis "signified stink in the abstract," and had a temple at Cremona, the pestilential emanation from the dead frogs might have been considered as entitled to some reverence.[13] Plutarch tells us that the frog was an emblem of the sun in Egypt, and that the brazen palm-tree at Delphi had many of these animals engraved on its basis. On the Bembine table we find it sitting upon the lotus, a circumstance observed in various ancient gems; the water-lily being, perhaps, congenial to this aquatic tribe, which were denominated the attendants of the deities of streams and fountains. It is also alleged that the frog was deemed an emblem of Apollo and Osiris, from its habit of inflation, which was looked upon as being typical of inspiration. That frogs were considered as evil symbols further appears in the Apocalypse, where we find that "three unclean spirits like frogs come out of the mouth of the dragon, and out of the mouth of the beast, and out of the mouth of the false prophet; they are the spirits of devils working miracles."

The third plague was lice, *because* the Egyptian priests affected great external purity, wore linen under their woollen garments, and shaved their heads, according to Herodotus, every third day, to prevent any louse, or any other detestable object, from finding a comfortable shelter. Some scholastics have ventured to insinuate that this insect was a species of gnat; but St. Jerome and Origen very properly observe that this would have been a presumptious anticipation of the plague of flies, which constituted the *fourth* visitation, *because* flies were also held sacred by the Egyptians, and were worshipped under the name of *Achon*, *Acoron*, and *Zebub*, more particularly in the city of *Acaron* or *Accoron*. Baal was the god of flies, and the fly was worshipped at *Ekron*, where it was called *Baal-ze-bub*,—hence *Belzebub*.

The next plague was the murrain of beasts; *because* it was necessary that the Israelites should not only see that the cattle of the Egyptians were all infected, while theirs were exempted from the evil; but that their very living symbol of the bull Apis, in whom the soul of Osiris had taken up its dwelling, was affected with epizooty in common with other herds of horned deities, who were called *Dii Stercorei*; though it appears that the ass and the camel were involved in the same calamity.

Our commentator attempts to account for the sixth plague of boils and blains with equal ingenuity. He affirms that this cruel disorder was sent among the Egyptians to show the Israelites that the medical men to whom they attributed divine powers, could neither cure nor alleviate the disease. The science of medicine bequeathed by Isis to her son Orus was of no avail, and the learned records of Tosorthrus yielded no information. In vain did their leeches search their cryptæ and sacred caverns, or consult their mystic obelisks, which, according to Manetho, were inscribed with the aphorisms of medical experience; their physicians only increased the number of the *botches* of the land. The Scriptures state that this pestilential malady was produced by the ashes that Aaron and Moses scattered up towards heaven to be wafted over the country. Bryant also accounts for this circumstance, and attributes this method of extending the calamity to the barbarous practice of the Egyptians of burning human victims and scattering the ashes in the air, in a like manner to propitiate their gods.

[13] The Irish, in their metaphorical language, give a corporeal form to foul effluvia, and one of them assured me that he had a terrier who would always cock up his tail and bark whenever he *saw* a stink.

The fall of rain, hail, fire, and thunder, that constituted the seventh plague, was a chastisement inflicted on the worshippers of these supposed elements. Their Isis presided over the waters, and Osiris and Hephaistus governed fire. Moreover the flax was smitten, whereby the Egyptians were deprived of the means of making linen, the finest of which was their boast and their pride. The barley was also destroyed, and they had no materials for brewing their favourite potation, barley-wine; a species of beer which constituted their chief beverage when the waters of the Nile were turbid and not potable.[14]

But, according to Jacob Bryant, this destruction was not deemed sufficient, since the fecundity of Egypt would soon have replenished their granaries, manufactures, and breweries; therefore locusts were sent to devour every thing that the former devastation had spared; and this plague was a punishment of their belief that Hercules and Apollo had the power of controlling these ravenous insects, which were called *Parnopes* and *Cornopes*, whence Apollo was named *Parnopius*, and Hercules *Cornopion*. It also appears that the grasshoppers, or *cicadæ*, were venerated, both as sacred and musical; and the Athenians wore golden ones in their hair, to denote the antiquity of their race of earth-born breed.

Now it is somewhat singular, that while our ingenious author makes such learned inquiries to account for the motives that induced God thus to visit the Egyptians, he does not venture to assign motives for similar calamities which befel other nations and countries; although his researches on the subject are so curious and interesting, that they deserve insertion.

The following is the account given by Beauplam of the destructive inroad of these devourers in the Ukraine:—"Next to the flies, let us talk of the grasshoppers or locusts, which here are so numerous, that they put one in mind of the scourge of God sent upon Egypt when he punished Pharaoh. These creatures do not only come in legions, but in whole clouds, five or six leagues in length, and two or three in breadth, eating up all sorts of grain or grass, so that wheresoever they come, in less than two hours they crop all they can find, which causes great scarcity of provisions. It is not easy to express their numbers, for all the air is full and darkened; and I cannot better represent their flight to you, than by comparing it to the flakes of snow driven by the wind in cloudy weather; and when they alight to feed, the plains are all covered. They make a murmuring noise as they eat, and in less than two hours they devour all close to the ground; then rising, they suffer themselves to be carried away by the wind. When they fly, though the sun shines never so bright, the air is no lighter than when most clouded. In June 1646, having stayed in a new town called Novogorod, I was astonished to see so vast a multitude. They were hatched here last spring; and being as yet scarcely able to fly, the ground was all covered, and the air so full of them, that I could not eat in my chamber without a candle, all the houses being full of them, even the stables, barns, chambers, garrets, cellars, &c. I have seen at night, when they sit to rest themselves, that the roads have been four inches thick of them, one upon another. By the wheels of the carts and the feet of our horses bruising these creatures, there came from them such a stink, as not only offended the nose but the brain. I was not able to endure the stench, but was forced to wash my nose with vinegar, and to hold a handkerchief dipped in it to my nostrils perpetually. These vermin increase and multiply thus: they generate in October, and with their tails make a hole in the

[14] Diodorus, Strabo, and other ancient writers, state that the beer of the Egyptians called *Zythus* was scarcely inferior to wine. This beer was made with barley, to which was added the lupin, the skirret, and the root of an Assyrian plant. We find the following in Columella:
"Jam siser, Assyriaque venit quæ semine radix
Sectaque præbetur madido satiata lupino,
Ut Pelusiaci proviset pocula zythi."
The vicinity of Pelusium was famed for this beverage and its lentils.

ground, and having laid three hundred eggs in it, and covered them with their feet, die; for they never live above six months and a half. And though the rains should come, they would not destroy the eggs; nor does the frost, never so sharp, hurt them. But they continue to the spring, which is about mid-April; when the sun warming the earth, they are hatched, and leap about, being six weeks old before they can fly; when stronger, and able to fly, they go wherever the wind carries them. If it should happen that a north-east wind prevails, it carries them all into the black sea; but if the wind blows from any other quarter, they go into some other country to do mischief. I have been told by persons who understand the languages well, that the words *Boze Guion*, which mean the scourge of God, are written in Chaldee characters upon their wings."

Norden mentions that there were supposed to be hieroglyphic marks upon the heads of these insects. Such was the pestilential scourge of the Ukraine; although I do not apprehend that its inhabitants ever worshipped *Parnopius* or *Cornopion*, or decorated their filthy heads with golden grasshoppers. Other regions were occasionally visited by these insects. Ludolphus, in speaking of Ethiopia, says, "But much more pernicious than these (the numerous serpents) are the locusts, which do not frequent the desert and sandy places, like the serpents, but the places best manured, and orchards laden with fruit. They appear in prodigious multitudes, like a cloud which obscures the sun; nor plants, nor trees, nor shrubs appear untouched, and wherever they feed, what is left appears as it were parched with fire. A general mortality ensues; and regions lie waste for years."

Francis Alvarez thus speaks of the same calamity in the country of Prester John. "In this country, and in all the dominions of Prete Janni, there is a very great and horrible plague: this arises from an innumerable number of locusts, which eat and consume all the corn and the trees. And the number of these creatures is so great as to be incredible, and with their numbers they cover the earth, and fill the air in such wise, that it is a hard matter to see the sun. And if the damage they do were general through all the provinces, the people would perish with famine. But one year they destroy one province, sometimes two or three of the provinces; and wherever they go the country remaineth more ruined and destroyed than if it had been set on fire." The author adds, that he exorcised them upon their invading a district in which he resided, when they all made off; but in the mean time, he adds, "there arose a great storm and thunder towards the sea, which came right against them. It lasted three hours, with an exceeding great shower and tempest. It was a dreadful thing to behold the dead locusts, (whom, by the way he had exorcised,) which we measured to be above two fathoms high upon the banks of the rivers."

Barbot, in describing Upper Guinea, tells us that "famines are some years occasioned by the dreadful swarms of grasshoppers or locusts, which come from the eastward, and spread all over the country in such prodigious multitudes, that they darken the air, passing over our heads like a mighty cloud."

Orosius states that in the consulship of Marcus Plautius Hypsæus and Marcus Fulvius Flaccus, a.r. 628, Africa was desolated by a swarm of these insects, which for a while were supported in the air, but were ultimately cast into the sea. "After this," he adds, "the surf threw up upon that long extended coast such numerous heaps of their dead and corrupted bodies, that there ensued from putrefaction a most unsupportable and poisonous stench. This soon brought on a pestilence, which affected every species of animals, so that all birds, and sheep, and cattle, also the wild beasts of the field died, and their carcases being soon rendered putrid by the foulness of the air, added greatly to the general corruption. In respect to men, it is impossible, without horror, to describe the shocking devastation. In Numidia, where at the time Micipsa was king, eighty thousand persons perished. Upon that part of the sea-coast

which bordered upon the regions of Carthage and Utica, the number of those carried off by this pestilence is said to have been two hundred thousand."

Now when man in all his proud ignorance dares to assume the power of canvassing the acts of the Almighty, and to attribute to his inscrutable will human motives, which generally arise from mortal frailty, he might as well endeavour to account for similar casualties which visited other nations than the Egyptians, and seek for the causes of the scourges of Carthage, Ethiopia, and Tartary. It is grievous to see the intellectual faculties of man perverted in such idle, one might venture to say, in such impious researches. It is strange that the learned Bryant did not associate the death of the first-born with ideas of primogeniture!

The ninth plague of darkness he attributes to the prevalence of the worship of the sun, under the title of Osiris, Ammon, Orus, Isis, and the like. *Because* the Egyptians, the Ethiopians, Persians, Phœnicians, Syrians, Rhodians, and various other nations, considered themselves Heliadæ, or descendants of the sun. "What, then, can be more reasonable," continues our antiquary, "than for a people who thus abused their faculties, who raised to themselves a god of Day, their Osiris, and instead of that intellectual light, the wisdom of the Almighty, substituted a created and inanimate element as a just object of worship,—what could be more apposite than for people of this cast to be doomed to a judicial and temporary darkness?" Unfortunately, in the very next paragraph we are told that the Egyptians showed an equal reverence to night and darkness: obscurity, therefore, was only replacing one false god by another. They paid a religious regard to the *mugall*, a kind of mole, on account of its supposed blindness; and night was conceived more sacred than day, from its greater antiquity, since, according to the Phœnician theology, the wind *Copias* and his wife *Baan* were esteemed the same as night, and were the authors of the first beings. In the poems of Orpheus, Night is considered as the creative principle; and in the Orphic hymns we find Night invoked as "the parent of gods and men, and the origin of all things."

This attempt to show an analogy between the crimes and sins of the Egyptians and the punishment they received, is too curious to be overlooked. The mania of seeking for the cause of every thing, reminds one of a singular character in Trinity College, Dublin, formerly well known, who invariably gave a reason for every direction he thought proper to issue; and he was once heard to address a servant in the following words: "Pat, put a cover upon that mutton. It is not for the purpose of keeping it hot, *because* it is cold, but it is *because* I do not wish the flies to get at it, *because* fly-blown meat is both unpleasant to the taste and injurious to the health."

It appears probable that the plague originated in Egypt. From time immemorial to the present day the lower provinces have been subject to this cruel scourge. Wars, intestine commotions, and misrule have too frequently prevented the local authorities from paying proper attention to measures of public salubrity. Herodotus tells us, that when he was at Memphis, Egypt was just liberated from a long-protracted war, during which political economy had been neglected, canals had been abandoned and choked up, and the frontiers of the land were infested with banditti, while the interior was desolated by pestilential disorders. My much esteemed friend Baron Larrey, in his valuable work upon Egypt, has given a topographical description of the country; and the influence that the seasons exercise upon it, must be evident. He informs us that after the spring equinox, and especially towards the beginning of June, the southerly winds are prevalent for about fifty days. Their scorching influence is experienced for upwards of four hours, while they waft with fatal rapidity putrid emanations exhaled by animal and vegetable bodies decomposed in the lakes formed by the receding waters of the Nile. From various observations it has been concluded that the plague is both an endemic and contagious disease in Lower Egypt, but simply contagious in Upper Egypt,

Syria, the other Turkish provinces, and Europe. No account of the plague in Abyssinia, Sennaar, or the interior of Africa, is given by any traveller.

The most fatal European plagues were probably those that desolated London in 1664, and Marseilles in 1720. The accounts of these fearful visitations are as curious as they are appalling. In London it broke out in the beginning of December, when two foreigners (Frenchmen it was reported) died of this disorder in Long-Acre, near Drury Lane. The cold weather and frost that followed, seemed to check its progress, until the month of April, when it appeared with intensity in the parishes of St. Andrew, Holborn, and St. Clement Danes. In May, the parish of St. Giles buried a great number. Wood Street, Fenchurch Street, and Crooked Lane, were soon visited, until terror was so general, that crowds of inhabitants panic-struck, on foot, on horse, in coaches, waggons, and carts, were thronging Broad Street and Whitechapel, fleeing from the calamity. To such an extent was migration carried, that not a horse could be bought or hired. Many fugitives, fearful of stopping at inns, carried tents to lie in the fields, and people moved in the centre of the streets, in dread of coming into contact with others sallying forth from their houses. During this state of universal panic, it may be easily imagined that hypocrisy and roguery were busily employed in increasing the evil, at the expense of the credulous. Pretended wizards and cunning people affirmed that a comet had appeared several months previous to the increase of the malady, as a similar meteor had visited London before the great fire; only the fire comet was bright and sparkling, and the plague comet was dull, and of a languid colour. Lilly's Almanac and Gadbury's Astrological Predictions were in general demand; while pamphlets, entitled "Come out of her, my people, lest you be partakers of her plagues," "Fair Warning," and "Britain's Remembrancer," were eagerly circulated, as they denounced the utter ruin of the city. One of these prophets ran about the streets, without the encumbrance of any garment, roaring out, "Yet forty days, and London shall be destroyed;" while another, equally divested of raiment, bellowed out, "Oh! the great and the dreadful God!" Some asserted that they had seen a hand with a flaming sword coming out of the clouds, while others beheld hearses and coffins floating in the air.

The following is a quaint narrative of these absurdities: "One time before the plague was begun, I think it was in March, seeing a crowd of people in the street, I joined with them to satisfy my curiosity, and I found them all staring up in the air to see what a woman told them appeared plain to her, which was an angel clothed in white, with a fiery sword in his hand, waving it and brandishing it over his head. She described every part of the figure to the life, showed them the motions and the form; and the poor people came into it readily. 'Yes, I see it all plainly,' says one; 'there's the sword as plain as can be.' Another saw his very face, and cried out, 'What a glorious creature he was!' One saw one thing, and one another. I looked as earnestly as the rest, and said I could see nothing but a cloud. However, the woman turned from me; called me a profane fellow and a scoffer; told me that it was a time of God's anger, and dreadful judgments were approaching, and that despisers such as I should *wonder and perish*. Another encounter I had in the open day also, in going through a narrow passage from Petty-France into Bishopsgate churchyard. In this narrow passage stands a man looking through between the palisadoes into the burying-place, and he was pointing now to one place, then to another, and affirming that he saw a ghost walking upon such a grave-stone; he described the shape, the posture, and the movement of it so exactly, crying on a sudden, 'There it is—now it comes this way—now 'tis turned back!' till at length he persuaded the people into so firm a belief of it, that they fancied they saw it; and thus he came every day, making a strange hubbub, till Bishopsgate clock struck eleven, and then the ghost would start and disappear on a sudden."

Such sanctimonious tricks are historical. Don Bernal Dias del Castello tells us, in his account of the Mexican conquest, that St. Jago appeared in the van of the army, mounted on a white

horse, and leading the troops on to victory. He frankly owns that he did not see this blessed vision; nay, that a cavalier, by name Francisco de Morla, mounted on a chestnut steed, was fighting in the very place where the patron of Spain was said to have appeared; but, instead of drawing the natural conclusion, that the whole business was got up as an illusion, he devoutly exclaims, “Sinner that I was, what am I that I should have been permitted to behold the blessed apostle!”

These impostures remind us of the story of the wag who, fixing his eyes upon the lion over Northumberland House, exclaimed, “By heaven! it wags—it wags!” and contrived by these means to collect an immense mob in the street, many of whom swore that they did absolutely see the lion wagging his tail.

Crowds of pretended fortune-tellers, and astrologers and cunning men, were soon in good business, and their trade became so generally practised, that they had signs denoting their profession over their doors, with inscriptions announcing, “Here lives a fortune-teller,”—“Here you may have your nativity cast;” and the head of Friar Bacon, Mother Shipton, or Merlin, were their usual signs: and if any unfortunate man of grave appearance, and wearing a black cloak, went abroad, he was immediately assailed by the mob as a necromancer, and supplicated to reveal futurity. At such a period, it may be easily imagined that quacks were not satisfied with mere gleanings; and *infallible pills*, *never-failing preservatives*, *sovereign cordials*, and *incomparable drinks*, against the plague, were announced in every possible manner; and *universal remedies*, *the only true plague-water*, and *the royal antidote*, became themes of universal discourse. An eminent *High* Dutch physician, newly come over from Holland, where he resided during all the time of the plague,—an Italian gentlewoman, having a choice secret to prevent infection, and that did wonders in a plague that destroyed twenty thousand people a-day, were announced by bills at every corner.

One ingenious mountebank realized a fortune by announcing *that he gave advice to the poor for nothing*: crowds flocked to consult him; but he took half-a-crown for his remedy, on the plea that, although his advice was given gratis, he was obliged to sell his physic. While these speculations were going on, all “plays, bear-baiting, games, singing of ballads, and buckler-play,” were prohibited; all feasting, “particularly by the companies of this city,” was punished; watchmen guarded the doors of the pestiferated, to prevent their egress, and a red cross was painted on their houses. The inhabitants, thus shut up to suffer the pangs of starvation in addition to those of pestilence, made the best of their way out of their prison by every possible stratagem and bribery. While fervent prayers and loud ejaculations for mercy were heard amongst distracted families, the most offensive blasphemy and ribaldry prevailed amongst the gravediggers, dead-cart drivers, and their wanton companions. If any one ventured to rebuke them, he was asked, with a volley of oaths, “what business he had to be alive, when so many better fellows were shovelled in their graves?” to which was added a salutary recommendation to go home and pray, until the dead-cart called for him. The watchmen got their share of ill-usage and abuse.

All the guards had been marched out of town, with the exception of small detachments at Whitehall and the Tower. Robbery of every description was of course in full vigour, and every vice indulged in with impunity, while despair drove many to madness and suicide,—several individuals rushing naked out of their houses, and running to the river to drown themselves if not stopped by the watch. People fell dead while making purchases of provisions in the market; where, instead of receiving the meat from the butcher’s hands, each buyer unhooked his purchase, and paid for it by throwing the value in a vessel filled with vinegar. Mothers destroyed their children, and nurses smothered their patients, while the bedclothes were stolen from the couch of the dead.

Among the curious anecdotes of the time, the following is worth insertion: “A neighbour of mine, having some money owing to him from a shopkeeper in Whitecross-street, sent his apprentice, a youth of eighteen years of age, to get the money; he came to the door, and finding it shut, knocked pretty hard until he heard somebody coming down stairs. At length the man of the house came to the door; he had on his breeches or drawers, a yellow flannel waistcoat, no stockings, and a pair of slipt shoes, a white cap on his head, and death in his face. When he opened the door, he said, ‘What do you disturb me thus for?’—‘I come from such a one, my master,’ replied the boy, ‘to ask for the money you owe him.’—‘Very well, my child,’ returns the living ghost; ‘call as you go by at Cripple-gate church, and bid them toll the bell.’ So saying, he went up stairs again, and died the same hour.”

The story of the piper is founded on fact. This poor fellow having made merry in a public-house in Coleman-street, fell fast asleep under a stall near London Wall, Cripplegate; the under-sexton of St. Stephen’s, one John Hayward, was going his rounds with his dead-cart, when he espied the piper, and, conceiving him to be a dead man, tumbled him on his heap of corpses, till, arrived at the burying-pit at Mount Hill, as they were about shooting the cart, the musician awoke, and, to the utter terror of the sexton and his comrades, began to set up his pipes.

The following relation of a case of grief is rather remarkable. “A man was so much affected by the death of all his relations, and overcome with the pressure upon his spirits, that by degrees his head sunk into his body so between his shoulders, that the crown of his head was very little seen above the bones of his shoulders, and, by degrees losing both voice and sense, his face looking forward, lay against his collar-bone, and could not be kept up any otherwise unless held up by the hands of other people; and the poor man never came to himself again, but languished near a year in this condition, and died.” This was *depression* with a vengeance!

Some of these unfortunate victims of the pestilential disease seem to have had poetical inspirations, for one of two men who had fled to the country was found dead with the following inscription cut out with his knife on a wooden gate near him:

OmIsErY
WE. BoTH ShaLL. DyE
WoE. WoE:

and our historian, who fortunately escaped the calamity, terminates his work with the following lines:

A dreadful plague in London was
In the year sixty-five,
Which swept an hundred thousand souls
Away; yet I alive.

Astrologers were of opinion that the plague of London arose from a conjunction of Saturn and Jupiter in Sagittarius on the tenth of October, or from a conjunction of Saturn and Mars in the same sign on the twelfth of November.[15]

Great as the mortality was during this affliction, the history of various other pestilences in foreign countries presents as melancholy a result. In Moscow, the plague introduced by the Turkish army carried off 22,000 inhabitants in a single month, and sometimes 12,000 in twenty-four hours. In Morocco, the mortality amounted to 1000 daily; in Old and New Fez,

[15] Diemerbrook states that, in the Plague of Nimeguen all those who were taken ill about new and full moon rarely escaped.

to 1500; in Terodant to 800. The total loss sustained in these cities and in the Mogadore was estimated at 124,500 souls.

The black pestilence of the fourteenth century also caused the most terrific ravages in England. It has been supposed to have borne some resemblance to the cholera, but that is not the case; it derived its name from the dark livid colour of the spots and boils that broke out upon the patient's body. Like the cholera, the fatal disease appeared to have followed a regular route in its destructive progress; but it did not, like the cholera, advance westward, although like that fearful visitation it appears to have originated in Asia.

The black pestilence descended along the Caucasus to the shores of the Mediterranean, and instead of entering Europe through Russia, first spread over the south, and after devastating the rest of Europe penetrated into that country. It followed the caravan, which came from China across Central Asia, until it reached the shores of the Black Sea; thence it was conveyed by ships to Constantinople, the centre of commercial intercourse between Asia, Europe, and Africa. In 1347 it reached Sicily and some of the maritime cities of Italy and Marseilles. During the following year it spread over the northern part of Italy, France, Germany, and England. The northern kingdom of Europe was invaded by it in 1349, and finally Russia in 1351,—four years after it had appeared in Constantinople.

The following estimate of deaths was considered far below the actual number of victims:

Florence lost 60,000 inhabitants
Venice lost 10,000 inhabitants
Marseilles lost in one month 56,000 inhabitants
Paris lost 50,000 inhabitants
Avignon lost 60,000 inhabitants
Strasburg lost 16,000 inhabitants
Basle lost 14,000 inhabitants
Erfurth lost 16,000 inhabitants
London lost 100,000 inhabitants
Norwich lost 50,000 inhabitants

Hecker states that this pestilence was preceded by great commotion in the interior of the globe. About 1333, several earthquakes and volcanic eruptions did considerable injury in upper Asia, while in the same year, Greece, Italy, France, and Germany suffered under similar disasters. The harvests were swept away by inundations, and clouds of locusts destroyed all that the floods had spared, while dense masses of offensive insects strewed the land.

As in the recent invasion of cholera, the populace attributed this scourge to poison and to the Jews, and these hapless beings were persecuted and destroyed wherever they could be found. In Mayence, after vainly attempting to defend themselves, they shut themselves up in their quarters, where 1200 of them were burnt to death. The only asylum found by them was Lithuania where Casimir afforded them protection; and it is perhaps owing to this circumstance that so many Jewish families are still to be found in Poland.

A curious monumental record of the plague is to be seen at Eyam, an insignificant village in Derbyshire, to the eastward of Tideswell. It is an ancient stone cross of curious form and workmanship, erroneously stated to have been erected to commemorate the extinction of the pestilence which was supposed to have been brought there in a bag of woollen clothes, sent from London to a tailor of the place. The hamlet was soon infected, and its panic-struck inhabitants fled in every direction, scattering death in their flight, until driven back within their boundaries. During the prevalence of this scourge, tradition makes honourable mention

of the rector of the parish, William Mompesson. Determined not to abandon his flock in the hour of need, he never quitted the devoted spot. In vain he entreated his wife to remove from the pestilential sphere of action—she would not leave him. Eyam was now cut off from all communication with the neighbourhood. The worthy clergyman addressed the Earl of Devonshire, then residing at Chatsworth, acquainting him with his resolution, and requesting that regular supplies of provisions might be duly placed in certain points of the adjacent hills. If this request was attended to, he pledged himself that none of his parishioners should transgress a given boundary. Troughs and wells, which are still there, were dug to secure water supplied by a stream, which to this day bears the hallowed name of *Mompesson brook*. The following account of this benevolent pastor's conduct in this emergency is not without interest:

"Aware that any assemblage of people breathing the same air under a confined roof, and coming into immediate contact with each other, must be highly dangerous, he closed the door of the church, availing himself of a nobler substitute "not made with hands,"—a rock that projected from the side of a steep hill, near the village, in a deep and narrow dingle. This rock is excavated through in different directions, the arches being from 12 to 19 feet high. In the middle of this romantic dell, from one of these natural porticoes, three times a week did he read prayers, and twice on Sundays did he address to his death-stricken congregation, the words of eternal life. By his own immediate directions, they arranged themselves on the declivity near the bottom, at the distance of a yard asunder. This spot is deservedly still held sacred, and known by the name of *Cucklet church*."

The following letter from this worthy clergyman, dated 20th November, 1666, energetically describes the calamity:

"The condition of this place has been so sad, that I persuaded myself it did exceed all history and example. I may truly say that our place has become a Golgotha—the place of a skull; and had there not been a small remnant of us left, we had been as Sodom, and been made like unto Gomorrha; my ears never heard, my eyes never beheld such ghastly spectacles. Now, blessed be God, all our fears are over, for none have died of the infection since the 11th of October, and all the pesthouses have been long empty. I meant, God willing, to spend most of this week in seeing all woollen clothes fumed and purified, as well for the satisfaction as the safety of the country.

"Here has been such burning of goods, that the like I think was never known. I have scarcely left myself apparel to shelter my body from the cold, and have wasted more than needed, merely for example. As for my part, I cannot say that I had ever been in better health than during the time of this dreadful visitation, neither can I say that I have had any symptoms of the disease."

During a considerable time the benevolent man and his wife had escaped the malady, but at last his excellent wife was smitten, and died in his arms at the age of 27—far from her children, who had been sent away at the commencement of the invasion.

In 1813, Malta was visited with this fatal malady; when the scenes of the plague that desolated the island in the sixteenth century were renewed, notwithstanding all the sanitary precautions adopted by various governments since that period.

Count Ciantar in his "*Malta illustrata*," gives an interesting account of the introduction of the plague at four different periods in that island. The first was in 1592; when, in the month of May, four galleys belonging to the Grand Duke of Tuscany, entered the port to procure pilots for the service. By permission of the Grand Master, Cardinal Verclula, a pilot was obtained, and the vessels steered towards the Egyptian coast. In the vicinity of Alexandria, they

captured a galley bound to Constantinople, having on board 150 Turks. On hearing that the plague was raging at Alexandria, they returned to Malta with their prize, which was discovered to be infected, and for the first time the plague was brought into the country.

The second plague broke out in 1623, and originated in the house of Paulus Emilius Ramadus, guardian of the port. But the whole of the infected persons having been immediately sent to the Lazaretto, the progress of the disease was checked, and it only carried off forty-five persons.

The third plague took place in 1633, and broke out at the Marina gate, where vessels from the Levant usually anchored. The proprietor of a house in that quarter, having had some communication with one of these ships, contracted the disease, and infected his sister, who resided in the country at Casal Zeitun, and shortly after the whole family was attacked, their speedy removal to the Lazaretto, however arrested the disease.

The fourth appearance of this malady in Malta, was far more destructive than it had been in the preceding years, even in 1675, and it continued its ravages for seven months. This circumstance has been attributed to a difference of opinion that prevailed among the members of the commissioners appointed to take the necessary steps for checking the progress of the disease. It appears that doubts were entertained as to the nature of the malady, hence the requisite precautions were not enforced; and instead of separating the diseased from the healthy part of the community, with the utmost rigour, prayers were put up, vows and offerings were made, and processions paraded the streets, nor it was not until the Grand Master had sent to France for medical aid, that the scourge was mitigated. On their arrival the first steps adopted by these physicians was to confine the inhabitants to their homes, and to remove the sick to the Lazaret. The ravages of the disease must have been very great, since out of a population of about 60,000, there died in Valetta 4000, in Burgo 1800, Senglen 2000, Burmola 1200, and in the villages upwards of 200.

The last plague was supposed to have been brought in by a vessel from Alexandria, that entered the port on the 28th of March, 1813. It appeared that two of the crew had been seized during the voyage with symptoms of plague, then prevailing in Alexandria, which place the vessel had left with a foul bill of health. On the same day another vessel, the Nancy arrived from the same port, having also on board two men labouring under the disease, and she was followed by a Spanish polacca, the Bella Maria, from the same quarter. It was on the 16th of April that the disease first appeared in the island, in the case of a shoemaker in the Strada St. Paolo. The increase of the disorder was gradual, and from Valetta it spread to Citta Vecchia Bircharcara.

My late friend, staff-surgeon Tully, thus describes the situation of the Island at this period: “The warm season was now rapidly advancing, the thermometer having risen several degrees at the latter end of May, and unfortunately, through the superstitious prejudices of the natives, considerable dependence was placed upon the anxiously-looked-for alteration in the state of the atmosphere, and every day was consequently expected to diminish the danger. This belief was too generally inculcated not to be productive of much mischief, as most persons felt assured that, if they could avoid danger until the summer heat set in, the evil would cease, and that the greatly-dreaded disease would then die a natural death. The consequence of this unfortunate belief was fatal—the freedom of intercourse produced by this blind confidence, led to a very general contamination, and men every where exposed to the baneful influence of the plague, became the active agents of the dissemination throughout the whole island.”

While the plague was thus raging at Malta, it made its appearance amongst the inhabitants of the Morea, having, it is supposed, been introduced from Romelia, by a man of the name of

Kalangi, who was taken ill on his arrival, and died in two days. The following day his wife and daughter were attacked by the malady, which rapidly extended to Tornovo, and all the neighbouring towns. During the years 1813 and 1814, the banks of the Lepanto and the shores of Albania were nearly depopulated.

In 1815 the fatal scourge broke out in the island of Corfu, in the village of Marathia. None of the medical men who attended the sick during this period, attributed the invasion of the disease to contagion.

The doubt that had arisen in the minds of several experienced practitioners in regard to the non-contagious nature of the plague, is a matter of vital interest, since it not only concerns the health of nations, but in a commercial point of view it becomes a question of political economy of the utmost importance, as the severity of the quarantine laws, which must materially effect the prosperity of trade, would become useless if it could be proved that no contagion is to be apprehended from a free intercourse. It is somewhat curious that Dr. Mead long ago expressed his decided opinion that whenever the doctrine of non-contagion should be revived in England, (and it will be so, he adds, even a hundred years hence,) it will always excite alarm amongst those nations who are more prudent than ourselves, and less eager to entertain every kind of wild and visionary speculation.

The contagionists affirm that the destructive ravages of the plague of Marseilles in 1720, when 60,000 inhabitants were carried off, arose from neglect in enforcing a rigid separation of the diseased from the healthy part of the community. The mortality in the plague of Messina, in 1743, during which 43,000 people fell victims to the disorder, is also referred to similar causes. They also maintain that the London plague of 1593, which destroyed 11,503 persons, was ascertained to have been introduced from Alkmaer; that the pestilence of London in 1603, which carried off 36,269 inhabitants, was brought from Ostend, and further that in 1636, the scourge which destroyed 13,480 victims in our metropolis, had been imported from Leyden. In 1665, when its still more fatal ravages swept away 68,596 citizens, it had also been traced to our foreign intercourse. Dr. Merlens who has accurately described the plague that raged at Moscow in 1771, asserts that it was introduced by a communication with the Turkish army. Notwithstanding which, by keeping the patients strictly guarded, the city was maintained free from infection, while the disease raged around in every quarter.

Mr. Jackson gives a similar account of the plague at Morocco; and he adds, that daily observations convinced him that the epidemic was not caught by approach, unless that approach was accompanied by an inhaling of the breath, or by tending upon the infected person. With such a discrepance of opinion, we cannot be surprised at this anxiety to impugn the doctrine of those practitioners who maintain, that contagion is not to be dreaded, and that severe sanitary precautions are therefore vexatious and oppressive. If the progress of the disease, say the non-contagionists, depends upon personal contact with infected persons or goods, its ravages would never cease in those countries where no precautionary measures are taken to prevent communication between the infected and the healthy; that in Turkey for instance, where these precautions are not resorted to, there would be no cessation of the malady until it had swept away the whole of the population.

To these arguments, plausible as they may appear in theory, it has been replied, that the plague to a certain extent has never ceased to exist in the Ottoman empire, but breaks out occasionally after temporary intermissions. As to the permanence of the diseases it is well known that like all other epidemic or endemic diseases, the plague may also be subject to atmospheric influence and be arrested in its progress without human aid. Sir James M'Grigor illustrates this fact in his "Sketches of the Expedition of the Indian Troops to Egypt." When the disease first broke out in the army, the cases sent from the regiments were from the

commencement attended with typhoid symptoms; while those from the Bengal volunteer battalion, and the other corps encamped near the marshes of El Hamed, were of an intermittent and remittent type. The cases that occurred in the cold and rainy months of December and January, were of an inflammatory character, after which, as the weather became warmer, the disease at Cairo, Ghiza, Boula, and the isthmus of Suez assumed the form of a mild continual fever. The plague of London in 1665, was in like manner distinguished by a peculiar constitution of the atmosphere.

It has also been doubted whether the plague be contagious in every instance of its appearance. Various persons have inoculated themselves with its virus with impunity, though several were ultimately victims of the bold experiment. In Egypt Dr. White inoculated himself ten times, but died of the disease after the eleventh trial.[16]

The atmosphere of contagion it appears is limited, and strict attention to keep up a line of separation generally proves effectual in arresting or checking its progress. Contact appears necessary to extend the malady, and a direct absorption through the skin forms the ordinary means of transmission. When the cutaneous pores are closed by oil, or any other substance of the kind, an exemption from the fatal scourge has been frequently observed. Mr. Baldwin states, that among upwards of a million of inhabitants carried off by the plague in Upper and Lower Egypt during the space of four years, not a single oil-man, or dealer in oil, had suffered. Mr. Jackson made the same observation in the plague of Tunis. Dr. Assalini, an intelligent medical officer of the French army in Egypt, does not attribute this exemption to the stoppage of the pores, but as the result of profuse perspiration which the inunction of oil produces. The *zeit jagghy* or olive oil, is considered a specific by most of the Asiatics; and my late friend Mr. Tully observed that all the attendants upon patients suffering from the plague, who carefully smeared their persons and their clothes with this substance, were exempt from the infection. The same observation was corroborated by Sir Brooke Faulkener, during the plague of Malta.

Various have been the remedial means proposed in this terrific malady, and preservatives against it have been recorded in the following distich:

Hæc tria labificum tollunt adverbia pestem;
Mox, longè, tardè,—cede, recede, redi.

The celebrated plague-water was composed of master-wort, angelica, peony, and butter-bur, viper-grass, Virginia snake-root, rue, rosemary, balm, carduus, water-germander, marygold, dragon-blood, goats'-rue, and mint, infused in spirits of wine.

It appears manifest from all the evidence adduced by the contending theorists, that we may come to the following corollaries:

1. Plague may generally be considered as arising from contagion.

2. The spread and decline of the disease is influenced by local peculiarities and revolutions in atmospheric constitution.

[16] Dr. Desgenettes, physician to the French army, in order to inspire confidence among the troops, inoculated himself twice without experiencing any other consequence than a slight inflammation of the inoculated parts. Sonnini mentions a Russian surgeon, who was a prisoner in Constantinople with a number of his countrymen, and who took it into his head to inoculate his comrades, with a view of protecting them from the contagion; but, unfortunately, two hundred of them died, and, fortunately perhaps for the survivors, the operator himself died of his own treatment.

3. It appears probable, that under peculiar local circumstances, it may have arisen spontaneously, without having been introduced by contagion; but this invasion must be considered of very rare occurrence.

4. Although transmitted by contagion, a certain distance preserves the healthy from the contamination of the diseased.

5. The enforcement of a limit of separation must be considered indispensable in all our sanitary regulations, in the framing of which great attention must be paid to discriminate between contagion and infection—two sources of distemper essentially different from each other.

Although these precautions are pointed out by the result of long and unbiassed experience, they will in all probability be solely applicable to the plague: for we have every reason to believe that these sanitary measures will not prove efficient against the invasion of cholera, the yellow fever, and other diseases, which are by no means proved to be infectious or contagious. Without entering into the discussion, I feel no hesitation in giving it, as my decided opinion, that the cholera and yellow fever are not contagious.

Abstinence

Hippocrates asserted that most individuals who abstain from food for seven days, die within that period; or, if they survive this time, and are even then prevailed upon to eat or drink they still perish. Various instances of persons who have lived much longer without sustenance have been observed. In the records of the Tower we find the history of Cicely de Ridgeway, who was condemned to death for the murder of her husband in the reign of Edward III., and who remained for forty days without food or drink. This being ascribed to a miracle, she was of course pardoned. From the result of this starvation, the story may be considered fabulous for two reasons: first, from the improbability of the alleged abstinence; and, secondly, from the selection of forty days, a period clearly fixed upon for miracle-making, being the exact number of days our Saviour fasted.

We have a better authenticated case in the one mentioned by Dr. Eccles in the Edinburgh Medical Essays for 1720. The starved person was a beautiful young lady, about sixteen years of age, who, in consequence of the sudden death of her father, was thrown into a state of tetanus (lock-jaw) so violent as to render her incapable of swallowing for two long and distinct periods,—the first of thirty-four, and the second of fifty-four days,—during which she neither experienced a sense of hunger nor of thirst, and when she recovered, she was scarcely reduced in size. Sir William Hamilton saw a girl, sixteen years of age, who was extricated from the ruins of a house at Oppido, in which she had remained eleven days: an infant in her arms, but a few months old, had died on the fourth day, as the young are not so able to endure abstinence. Dr. Willan attended a young man who had abstained from any sustenance except a little water flavoured with orange-juice for sixty days: death ensued a fortnight after. Foderé mentions some workmen who were extricated alive from a cold damp cavern, in which they had been immured under a ruin for fourteen days. Cetois, a physician of Poitiers, relates a still more singular case of total abstinence in a girl, who, from the age of eleven to that of fourteen, took no nourishment.

Ann Moore, called the fasting woman of Tutbury, was to a certain extent an impostor, for although there was no truth in her assertion that she lived an incredible time without food, yet it appeared evident that her chief, if not her only support, was tea. That fluid is sufficient to maintain life appears evident from two papers inserted in the Philosophical Transactions; one of them giving an account of four men who were compelled to subsist upon water for twenty-four days, and the other of a young man who tasted nothing but the same fluid for eighteen years. An imposition having been suspected, he was shut up in close confinement for twenty days as a trial, when he uniformly enjoyed good health.

Another wonderful instance of the same kind is that of Janet M’Leod, published by Dr. M’Kenzie. She was at the time thirty-three years of age, unmarried, and from the age of fifteen had had various attacks of epilepsy, which had produced so rigid a lock-jaw that her mouth could rarely be forced open by any contrivance; she had lost very nearly the power of speech and deglutition, and with this all desire to eat or drink. Her lower limbs were retracted towards her body; she was entirely confined to her bed, slept much, and had periodical discharges of blood from the lungs, which were chiefly thrown out by the nostrils. During a few intervals of relaxation, she was prevailed upon with great difficulty to put a few crumbs of bread comminuted in the hand into her mouth, together with a little water sucked from her own hand, and, in one or two instances, a little gruel; but, even in these attempts, almost the whole was rejected. On two occasions, also, after a total abstinence of many months, she made signs of wishing to drink some water, which was immediately procured for her. On the

first experiment the whole seemed to be returned from her mouth, but she was greatly refreshed in having it rubbed upon her throat. On the second occasion she drank off a pint at once, but could not be prevailed upon to drink any more, although her father had now fixed a wedge between her teeth. With these exceptions, however, she seemed to have passed upwards of four years without either liquids or solids of any kind, or even an appearance of swallowing; she lay for the most part like a log of wood, with a pulse scarcely perceptible from feebleness, but distinct and regular. Her countenance was clear and pretty fresh; her features neither disfigured nor sunk; her bosom round and prominent, and her limbs not emaciated. Dr. M'Kenzie watched her with occasional visits for eight or nine years, at the close of which period she seemed to be a little improved.

A Dutch girl of the name of Eve Hergen is reported to have lived from the year 1597 to 1611 with no other support than the scent of flowers. The magistrates of Meurs suspecting imposition, had her closely watched for thirteen successive days, without being able to detect any fraud. Over her picture were affixed some Latin verses, of which the following translation was given in a book called "An Apologie or Declaration of the Power and Providence of God, by George Hakewell, 1635:"

This maid of Meurs thirty-six yeares spent,
Fourteen of which she tooke no nourishment;
Thus pale and wan, she sits sad and alone,
A garden's all she loves to looke upon.

According to Pliny, the *Astoni* had no other food than this Batavian maiden, being unfortunately born without mouths. Sauvages mentions an academician of Toulouse who never thirsted, and passed his summers, notwithstanding the intense heat, without drinking. In most of the recorded cases of total or nearly total abstinence, water has been found more or less necessary, but not invariably.

That some animals can thrive upon water, and even upon air, is demonstrated by naturalists. Snails and chameleons have been known to exist upon air for years. Garman has found that this nutriment is sufficient for the support of spiders; and Latreille has confirmed the experiment by fixing a spider to a piece of cork, and precluding it from any communication. Every entomologist repeatedly sees insects living in their cases, although pinned down for an incredible length of time. Mr. Baker relates that he kept a beetle shut up for three years without any food. Mr. Bruce kept two cerastes, or horned snakes, in a glass jar for two years, without any apparent food; he did not observe that they slept in the winter season, and they cast their skin as usual on the last day of April.

Rudolphi kept a *Proteus Anguinus* five years, and Zoys had one for ten years living on spring water renewed from time to time. Redi found that birds could sustain the want of food from five to twenty-eight days. A seal lived out of the water and without nourishment for four weeks. Four individuals of a large species of larval shell, (*Bulimus*,) from Valparaiso, were brought to England by Lieut. Graves. They had been packed up in a box, and enclosed in cotton; two for a space of thirteen, one for seventeen, and a fourth for upwards of twenty months; but on being exposed to the warmth of a fire in London, and provided with tepid water and leaves, they revived and lived for several months in Mr. Loddige's palm house, till accidentally drowned. Dogs can live without food from twenty-five to thirty-six days, but man does not easily support starvation more than a week, except in disease or insanity.

The general effects of long fasting, however, are highly injurious when not destructive. They are chiefly feelings of great debility, fever, delirium, violent passion alternating with deep despondency. In general the temperature of the body falls several degrees, although Currie

observed the contrary in a patient who died of inanition in consequence of a stricture of the œsophagus; the respiration becomes fetid, the secretion of the kidneys acrid and burning, and according to Magendie and Collard bloody, and the stomach is found contracted after death. Experiments on the duration of life in man and animals deprived of food, show that the warm-blooded animals are best able to support the want of food.

But a phenomenon still more wonderful is the faculty that animals have been known to possess of living when deprived of atmospheric support. A hog, weighing about one hundred and sixty pounds, was buried in his sty under thirty feet of the chalk of Dover cliff for one hundred and sixty days. When dug out, it weighed but forty pounds, and was extremely emaciated, but clean, and white. The animal had nibbled the wood of the sty, and eaten some loose chalk. Lizards, especially the Newt, have been found embedded in chalk-rock, apparently dead, but have reassumed living action on exposure to the atmosphere. On their detection in this state, the mouth is usually closed with a glutinous substance so tenaciously, that they are often suffocated in their efforts to extricate themselves from confinement. Toads have been repeatedly discovered in a similar situation, embedded in blocks of stone, or in the very heart of trees. Dr. Edwards, a learned physiologist in Paris, has ascertained that blocks of mortar and heaps of sand possess sufficient porosity to admit enough air to support the life of reptiles; but they all perish if immersed in water or mercury, when surrounded by an exhausting receiver. The duration of existence of the amphibials of the Batrachian family, when plunged in water, depends in a great measure on its temperature. They die speedily if the water be lower than 32° Fahrenheit, or higher than 108°; and the longest duration of life is under 32°.

How can we account for these anomalies? Various solid substances are known to proceed from invisible elementary principles. Do water and air contain them? Metallic stones of large volume fall from the air: how are they produced? whence come they? How vain and feeble are our pursuits, when the vanity of science seeks to penetrate into the arcana of nature; searching and endeavouring to account for the causes of causation! What absurd and impertinent hypotheses have not been broached on scholastic benches! They remind us of an anecdote related of the old Parisian Academy, when one of its sapient members read a voluminous memoir to prove that tides were provided by the Creator for the purpose of bringing vessels in and out of harbour; when one of the Encyclopedian wits gravely observed, that he had no doubt of the fact, since he had discovered, after unceasing and laborious research, that noses were made for the purpose of wearing spectacles!

Although total abstinence from food for any length of time, excepting with hibernating animals, is a wondrous phenomenon, yet it is singular how little aliment is necessary for the purpose of sustaining life, and even health. Many instances of a frugality bordering upon starvation are known. The most economical housekeeper on record was Roger Crabb, the Buckinghamshire hermit, who allowed himself three farthings a week.

Dr. Gower of Chelmsford had a patient who lived for ten years on a pint of tea daily, now and then chewing half a dozen raisins and almonds, but without swallowing them; once a month, by way of a treat, she ate a morsel of bread the size of a nutmeg.

The late Duke of Portland, after a long illness, during which he was attended by Dr. Warren, lived on bread and water for six weeks, at the expiration of which he was allowed *one boiled smelt*. Numerous persons have been known to live to old age, in perfect health, who never used animal food or wine; such was Dr. Hecquet, the Sangrado of Lesage, who published a curious treatise on fasting in Lent: Paris, 1709.

The following lines were written on a man named Offley:

Offley three dishes had of daily roast;
An egg, an apple, and the third a toast.

Most unquestionably, if this Offley was not a man of hard labour, or who took much exercise, this diet, scanty as it may appear, would have been quite sufficient to support life, for his fare was sumptuous, compared to the diet prescribed by St. Theresa to her Carmelite nuns, and which consisted of one egg, herb-soup, with wormwood ashes and aloes. However, in regard to the wondrous fasting of various hermits and holy men, we must take their histories *cum grano salis*. They clearly belonged to two classes,—enthusiasts or impostors: enthusiasm, which is little short of lunacy, enables the monomaniac to endure starvation with ease; and as to impostors, it is probable that, like Friar Tuck they had a *bonne bouche* in a corner of their cells.

Poison Of The Upas, Or Ipo

Such are the names given by the natives of the Molucca Islands and in the Indian Archipelago to a deadly poison which is used to impregnate the heads of their arrows. The tree from which it is extracted is named *Bohou Upas*, *Boa Upas*, and *Pohou Antiar*. Various accounts of its deleterious nature have been given by ancient travellers. Cleyer and Spielman described it upwards of a century back, and state that no antidote to its dreadful action is known, though vomiting, produced by the most disgusting means, was considered the only method of arresting its dire effects. Spielman asserts that the land for several miles round these trees is desolate and barren, for no plant can grow under their influence. The poison, he states, flows in a milky form from the tree, and no one can approach it at this period, as one drop of the fatal juice falling upon the face or hands produces instant stiffness of every limb, followed by rapid death; it is therefore obtained at the end of long bamboo canes, armed with a pointed tube to receive it when plunged into the bark. Rumphius confirms in a great measure the above statements, and describes the tree, which he divides into male and female: he adds, that they only grow in the island of Celebes, and that all around the dreaded spot is desert and consumed. A more recent Dutch traveller, Foersech or Foœrch, did not let so fertile a subject escape, and has cultivated most industriously this dreary desert in the following account.

Sterility prevails for upwards of ten miles round this dreadful tree on the part of the island of Java where it grows. When criminals are sentenced to death, they are offered a free pardon if they consent to seek a small boxful of this valuable yet terrific poison. They are first sent to the dwelling of a priest who resides at a safe distance from the spot; there they arrive, accompanied by their disconsolate and wailing families. They remain with this holy man for a few days, during which he affords them both spiritual comfort and good advice; the latter urging the precaution not to set out until the wind blows in such a direction as to waft from them the floating emanations. On their departure on this dreaded expedition he gives them a small box of silver or tortoise-shell, covers their head and face with a leathern hood with glass eyes, and protects their hands with a thick pair of gloves of the same material. He then accompanies them about two miles on their sad journey, and then he describes the hellish spot where this treasure is to be found as minutely as any one can describe what he has not seen; then, giving the poor pilgrim his blessing, he departs on his return. This worthy man informed our traveller that, during thirty years which he had held that enviable situation, he had sent off no less than seven hundred criminals, of whom only twenty-two returned: and he confirmed the statement by exhibiting a list bearing their names and the offences for which they had been tried. Mynheer Foersech further assures his gentle readers that he witnessed several of these expeditions, and entreated the culprits to bring him some branches of the tree; but two withered leaves were the only specimens he could obtain from the solitary wretch who had the good fortune to escape, and who described the tree as growing on the borders of a rivulet, being of moderate height, and surrounded by a cluster of young ones. The ground around them was of a brown sandy nature, and strewed with the remains of human victims. He also clearly ascertained that no living creature can exist within fifteen miles of the spot. The streams that flow near it yield no fish, and the birds that fly over it fall to the ground; several of the latter were occasionally brought to the priest,—whether he ate them, or not, the Dutchman does not inform us. Amongst various offenders doomed to death by this poison he relates the case of thirteen ladies, who, for the crime of infidelity, were inoculated in the bosom with the point of a kritz or Malayan dagger dipped in the upas; and in sixteen minutes they had ceased to live. By recent experiments upon animals this part of his narration may be credited; but, in regard to the other account, we must apply to it the French

saying, "*Il vaut mieux y croire que d'y aller voir*." Indeed the whole of Foersech's account is justly considered a fiction.

However, some French travellers thought otherwise; and Mr. Deschamps, physician and naturalist attached to the expedition of Mr. D'Entrecasteaux, when in Java, ascertained that this wonderful tree was not uncommon in the forests of the country, nor was the approach to it in the slightest degree apprehended. The juice procured by incisions in the bark was called by the natives *upas* or *oupas*, and was of so active a nature that it caused immediate death when thrown into the circulation. The Malays mixed it with various other ingredients more especially galanga and garlic, when they employed it. The Javanese only impregnated their arrows with it for the chase: a proof that they did not consider it as affecting the system of the slain animal. Most probably Foersech's priest was aware of this circumstance when he accepted from the privileged malefactors the game killed by the tree they had sought.

This tree, according to Deschamps, is named in the country, *pohou antiar*; it frequently rises to the height of thirty or forty feet. When one of its branches is broken, or its bark incised, a milky juice exudes, which becomes inspissated when in contact with the atmosphere. In appearance this tree bears some resemblance to our elm. Mr. Deschamps confirms the relation of Rumphius, who stated that the Dutch, in their wars with the natives, were obliged to wear thick buff cuirasses to protect them against their poisoned missiles, the wounds of which were inevitably fatal.

Further information relative to the upas has been afforded by the ingenious Mr. Leschenault, who, during his residence in Java, procured two specimens of the poisonous substance obtained in Java, and of that brought from the islands of Borneo and Macassar. In Borneo, the mountaineers of the interior, who are called *Orang-Daias*, collect it, and keep its preparation a profound secret. They carry it carefully wrapped up in palm-leaves. Their hunting arrows have heads spear-pointed, and impregnated with this substance; those that are prepared for war bear a shark's tooth fixed in a brass socket, and merely attached to the shaft by the gum resin of the ipo; the barbed point remaining rankling in the wound it has inflicted, the gum dissolves, and speedily brings on death. Mr. Leschenault tried these arrows on dogs and other animals, and they expired shortly after in horrible convulsions.

But the latest account of this celebrated tree is given by Dr. Horsfield who was in Java during its occupation by our troops. He informs us that although the Dutch surgeon Foersech's account must have been a fabrication, yet there did exist a tree called the *Anchar* from the sap of which the natives prepared a fatal poison. The tree belongs to the 21st class of Linnæus, the *Monœcia*. The male and female flowers are produced on the same branch at no great distance from each other, the females being in general above the males. The seed-vessel is an oblong drupe, covered with the calyx; the seed an ovate nut with cells. The top of the stem sends off a few stout branches, which spreading nearly horizontally with several irregular curves, divide into smaller branches, and form a hemispherical, not very regular crown. The stem is cylindrical, perpendicular, and rises completely naked to the height of sixty or seventy, and even eighty feet. Near the surface of the ground it spreads obliquely like many of our large forest trees. The bark is whitish, slightly bursting into longitudinal furrows. Near the ground this bark is, in old trees, more than half an inch thick, and when wounded yields copiously the milky juice from which the poison is prepared. This juice is yellowish, frothy, and becomes brown when exposed to the air.

In making these researches Dr. Horsfield had some difficulty with the native labourers, who feared a contagious eruption, but nothing more. The Doctor further informs us that it is fatal to animals,—destroying dogs in an hour, mice in ten minutes, monkeys in seven, and cats in fifteen, while a buffalo subjected to the experiment was two hours and ten minutes dying.

The natives of Macassar also call this venomous production *ipo*. They have two varieties of the tree, as in Java; the one called *upas antiar*, and the other, much more violent and prompt in its action, *upas tieute* In the preparation of the poison for use much mystery is observed by the natives, and various ingredients are mixed up with it; but as they are known to be harmless, such as onion and garlic juice, pepper, ginger, galanga, they are most probably employed to deceive the curious who might wish to ascertain the nature of this deadly composition.

Mr. Leschenault having brought home a small quantity of this poison, it was tried by Messrs. Delile and Magendie in several experiments, when it was found to act more or less violently, according to the age and size of the individual, or the quantity of the upas. One grain and a half inoculated in a young dog killed it in four minutes, only producing one convulsive fit. In a dog weighing fourteen pounds, half a grain of upas occasioned death at the expiration of one hour and fifty-seven minutes, during which the animal experienced several violent convulsions. A few drops of diluted upas, injected in the chest of a dog, weighing twenty pounds, occasioned a lock-jaw, which destroyed him in a minute and a half. Eight drops injected in the jugular vein of a horse produced immediate tetanus and speedy death. For further information regarding these cruel experiments we must refer to the experimenter's publication. It appears, however, that the power of this venomous substance is so intense that time does not weaken it; for the upas employed in these experiments had been collected and kept for upwards of seven years, when its effects were as prompt as when tried in a recent state. The natives of Java consider sea-salt as the best antidote, but Mr. Delile found it quite inert: various experiments induced him to think that in these cases death is produced by asphyxia; and he considers the means employed to restore suspended animation in persons supposed to have been drowned, as the most likely to save the life of individuals who might be wounded with this substance. The rapidity with which poisonous substances are absorbed in the system is truly terrific, more especially in such as are of a narcotic nature. The latter act by abolishing all nervous energies, but when applied locally their effects are also local, as is shown by the following experiments of Müller:

"I held the nerve of a frog's leg which was separated from the body, in a watery solution of opium for a short time, and that portion of the nerve lost its irritability, i.e. its property of exciting twitchings of the leg when it was irritated; but below the part that the poison had touched the nerve still retained this function."

It is therefore evident that before narcotic poisons can exert a general influence they must be carried into the circulation. Duprey and Brachet, two French physiologists, have sought to prove that animals cannot be destroyed by narcotic poisons, introduced in the stomach, if the *nervus vagus* has been divided on both sides; at least, that they do not die so soon. However, Wernscheidt, in thirty experiments on mammalia, could not perceive this difference, provided the animals were of the same size and species.

Prussic acid exerts its influence so rapidly that it cannot be supposed to have been thrown into the circulation. The spirituous solution of the extract of nux vomica introduced in the mouth of a rabbit, produces immediate death, whereas when applied to any nerve distant from the brain it produces no general symptoms.

This rapid effect of prussic acid is supposed to arise from its great volatility and powers of expansion, by which it is diffused more quickly through the circulation than the blood. According to Schrader one drop of this substance introduced in the bill of a bird killed it in four or five minutes. Hydrocyanic acid gas mixed with atmospheric air has when inhaled destroyed dogs, cats, rabbits, and various birds, in from two to ten seconds. Magendie found that the introduction of one drop of the acid in the jugular vein caused instantaneous death; a

glass tube dipped in this perilous substance applied to the tongue of a dog, produced a similar effect, which was also the result when applied to the eye.

It is not generally known that tobacco and its preparations are deadly poisons, one drop of oil of tobacco introduced in the mouth of a dog produced violent convulsions with hurried breathing; a quarter of an hour after, the unfortunate animal seemed to be recovered, when the introduction of another drop killed it in two minutes. M'Cartney and Orfila obtained similar results, though no such effects were produced when it was applied to a nerve or the surface of the brain.

The French poet Santeuil died from having drank wine in a glass containing some snuff. In all cases of death produced by this substance the lungs are found dense and livid.

It is not only in the upas that the Indians seek the means of poisoning their missiles. In America they employ the *Ticronas* a juice extracted from various plants, and the preparation of which, transmitted from one generation to another is considered a valuable secret. La Condamine asserts that its mere odour is sufficient to destroy the criminals doomed to smell it, but Fontana has found by many experiments that this assertion was made upon report, which travellers too frequently rely upon to save themselves the trouble of investigation. Arrows saturated with this poison, become more active after having been dipped in hot water.

The Indians of Guiana dip their arrows in the juice of the *Woorara*, and the *Curara*, which also occasions rapid death and decomposition of the lungs. Humboldt informs us that the *Curara* is obtained from the bark of a tree called *Vejuco* de *Mavacure*; it is inspissated over a slow fire and then mixed with a gum drawn from the *Kiracagnero*. The Abbé Salvador Gilii tells us in his history of America, that he has seen the strongest animals succumb instantly when thus wounded, but the poison does not produce any effect on their meat.

Homophagous And Polyphagous

These are appellations given to certain individuals of a depraved appetite, that enables them to devour raw meat, and various other substances which most unquestionably would destroy any person not gifted or cursed with such an omnivorous digestion.

Various are the ancient stories related of such voracious wretches. Ovid describes one Erisichthon, who, as a punishment for cutting down the groves of Ceres, (very possibly to obtain fuel to cook his food,) was sentenced to perpetual hunger, and terminated his gluttonous career by eating up his own limbs. Theagenes thought nothing of an ox for his dinner; and the famed Crotonian athlete, Milo, knocked down bullocks with his fist for his daily meals, which usually consisted of twenty *minæ* of meat and the same ration of bread. Vopiscus relates that a man was brought before the Emperor Maximilian, who devoured a whole calf, and was proceeding to eat up a sheep, had he not been prevented. To this day, in India, some voracious mountebanks devour a live sheep as an exhibition. Dr. Boehmen of Wittenberg witnessed the performance of one of these polyphagous individuals, who commenced his repast by eating a raw sheep, a sucking-pig, and, by way of dessert, swallowed sixty pounds of prunes, stones and all. On another festive occasion, he ate two bushels of cherries, with several earthen vases, and chips of a furnace. This meal was followed up by sundry pieces of glass and pebbles, a shepherd's bagpipe, rats, various birds with their feathers, and an incredible number of caterpillars. To conclude his dinner, he swallowed a pewter inkstand, with its pens, a pen-knife, and a sandbox. During this deglutition he seemed to relish his food, but was generally under the influence of potations of brandy. His form was athletic, and he could carry four heavy men on his shoulders for a league. He lived to the age of seventy-nine, but died in a most emaciated state, and, as might be imagined, toothless.

Helwig knew an old man who was in the habit of eating eighty pounds of different articles of food daily. Real Colomb mentions an omnivorous glutton, who, in the absence of any salutary aliment, satisfied his cravings with any other substance, and was once known, when hungry, to eat the contents of a sack of charcoal, and then to swallow the bag to facilitate its digestion. One of the attendants on the menagerie of the Botanical Gardens in Paris, who bore the euphonious name of *Bijou*, used to devour all the offals of the theatre of Comparative Anatomy, and ate a dead lion in one day. He was active, and lived to the age of sixty. A cannibal once desolated the Vivarais, by dragging human victims to his den, where he devoured them. On the opening of the corpse of a convict in the galleys of Brest, there were found in his stomach about six hundred pieces of wood, pewter, and iron.

All these accounts might appear most exaggerated, perhaps fabulous, had not many physicians in Paris known the celebrated Tarrare. The history of this monster is as curious as his habits were disgusting. He commenced his career in life in the capacity of clown to an itinerant quack, and used to attract the notice of the populace by his singular powers of deglutition, swallowing with the utmost ease corks, pebbles, and basketsful of apples. However, these experiments were frequently followed by severe pain and accidents, which once obliged him to seek assistance in the Hôtel Dieu of Paris. His sufferings did not deter him from similar experiments; and he once tried to exhibit his wonderful faculties by swallowing the watch, chain and seals, of Mr. Giraud, then house-surgeon of the establishment. In this repast he was foiled, having been told that he would be ripped up to recover the property. In the revolutionary war, Tarrare joined the army, but was soon exhausted on the spare diet to which the troops were obliged to submit. In the hospital of

Sultzen, although put upon four full rations, he was obliged to wander about the establishment to feed upon any substance he could find however revolting, to subdue his voracious hunger. These singular powers induced several physicians to ascertain how far these omnivorous inclinations could carry him in his unnatural cravings. In presence of Dr. Lorentz he devoured a live cat, commencing by tearing open its stomach, and sucking the animal's blood with delight. What was more singular, after this horrible feast, like other carnivorous brutes, he rejected the fur and skin. Snakes were to him a delicious meal, and he swallowed them alive and whole, after grinding their heads between his teeth. One of the surgeons, Mr. Courville, gave him a wooden lancet-case to swallow in which a written paper had been folded. This case was rejected undigested, and the paper being found intact, it became a question whether he might not be employed to convey secret correspondence; but having been taken up at the Prussian outposts as a spy, being disguised as a peasant without a knowledge of the language, he received a severe bastinado, which effectually cured him of an appetite for secret service, and on his return he had recourse to the safer means of obtaining food in kitchens, slaughter-houses, and dunghills. At last, a child of fourteen months old having disappeared under suspicious circumstances, he was driven out of the hospital, and lost sight of for four years, when he applied for admission into the hospital of Versailles, in a state of complete exhaustion, labouring under a violent diarrhœa, which terminated his hateful existence in his twenty-sixth year. He was of the middle size, pale, thin, and weak; his countenance was by no means ferocious, but, on the contrary, displayed much timidity; his fair hair was remarkably fine and soft; his mouth was very large, and one could scarcely say that he had any lips; all his teeth were sound, but their enamel was speckled; his skin was always hot, in a state of perspiration, and exhaling a constant offensive vapour. When fasting, the integuments of his abdomen were so flaccid that he could nearly wrap them round him. After his meals the exhalation from his surface was increased, his eyes and cheeks became turgid with blood, and, dropping into a state of drowsiness, he used to seek some obscure corner where he might quietly lie down and digest. After his death, all the abdominal viscera were found in a state of ulceration.

Instances are recorded where a similar facility to swallow fluids had been observed. At Strasburg the stomach of a hussar was exhibited who could drink sixty quarts of wine in an hour. Pliny mentions a Milanese, named *Novellus Torquatus*, who, in presence of Tiberius, drank three *congii* of wine. Seneca and Tacitus knew a man of the name of Piso who could drink incessantly for two days and two nights; and Rhodiginus mentions a capacious monster called *the Funnel*, down whose throat an amphora of liquor could be poured without interruption.

To what are we to attribute these uncommon, nay, these unnatural faculties? Neither physiological experiments during life, nor anatomical investigation after death, have hitherto enabled us to form an opinion. Great as the progress of science has been, we are still doubtful as to the nature of the digestive process. All the hypotheses on the subject are liable to insuperable objections. Hippocrates and Empedocles attributed digestion to the *putrefaction* of food. Experiments have clearly demonstrated the fallacy of this doctrine: rejected food is never in a state of putridity; on the contrary, meat in a perfect state of putrescence has been restored to sweetness and freshness on being received into the stomach. Dead snakes have been found with animal substances, part of which had been swallowed and the remainder hanging out of their mouths; when the swallowed portion was fresh, and the portion exposed to the atmosphere in a state of corruption. Galen, and after his school, Grew and Santarelli, ascribed digestion to a *concoction*, during which, food was maturated by the stomach's heat, like fruit by the solar rays. Pringle and Macbride advocated the doctrine of *fermentation*; while Borelli, Keil, and Pitcairn resolved the question by the mechanism

of *trituration*, making a mill of the stomach, which ground down food, according to Pitcairn's calculations, with a pressure equal to a weight of one hundred and seventeen thousand and eighty pounds. Boerhaave endeavoured to reconcile the opinions of the *concocters* and *grinders*, by combining the supposed theory of *concoction* and *trituration*. Lastly, Cheselden fancied that digestion was operated by a peculiar secretion in the stomach, called *gastric juice*; and Haller, Réaumur, Spallanzani, Blumenbach and most other modern physiologists, concur with him in the same opinion, although admitting that this function is most probably assisted by various accessory circumstances.

This juice was found, upon experiment, to be endowed, not only with the antiseptic power of preserving the contents of the stomach from putrefaction, but with the property of being a most powerful solvent. Pieces of the toughest meats and bone have been enclosed in perforated metallic tubes, and thrust down the stomach of carnivorous birds, and in the space of about twenty-four hours the meats were found to be diminished, or, in other words, digested to three-fourths of their bulk, while the bones had totally disappeared. Dr. Stevens had recourse to a similar experiment on the human stomach, by means of a perforated ivory ball, and with the same result. The gastric juice of the dog dissolves ivory; and that of a hen has dissolved an onyx, and diminished a golden coin. Not long since, upon examining the stomach and intestines of a man who died in a public-house, he was found to have been a *polyphagous* animal, since several clasp-knives that he had swallowed were discovered with their blades blunted and their handles consumed. Since these experiments, however, Dr. Montegre of Paris, who was gifted with the faculty of discharging the contents of his stomach at will, has fully proved that this gastric juice, when not in an acid state, is subject to putrefaction when submitted to external animal heat; that this corruption did not occur when an acid prevailed, and saliva intermixed with vinegar was equally free from a similar decomposition. He moreover asserts, that he had recourse to numerous experiments to digest food artificially in this supposed solvent, but without obtaining results similar to those advanced by Spallanzani; and, finally, he found little or no difference between the gastric juice and saliva. This acid, which generally exists in the gastric juice, has been ascertained by Dr. Prout to be the muriatic, both free and in combination with alkalis: while Tiedemann and Gmelin maintain that, in its natural state, no acid is to be met with; but that, when food is commingled, an acid which they consider the acetic acid is produced in considerable quantity.[17]

The ostrich, that may be considered a connecting link between birds and quadrupeds, is gifted with powerful digestive organs, and is known to swallow stone, glass, and iron; but this faculty appears to be a gift of all-bounteous Providence, to enable the creature to digest the various substances it meets with when traversing burning deserts for hundreds of miles, when these hard bodies actually perform the function of teeth in the animal's stomach, by aiding the comminution of its indigestible food. The structure of the ostrich has a near resemblance to that of the camel, destined to perform the same dreary journeys. The wings are not designed for flight, and in speed he equals the horse. Adanson affirms that he had seen two ostriches at the factory of Podore, that were broken in to carry single or double riders, and the strongest and youngest would run more swiftly with two negroes on his back than the fleetest racer.

Spallanzani endeavoured to prove that the pebbles and gravel swallowed by various birds were of no use in the process of digestion; but Hunter, who had found two hundred pebbles in the gizzard of a turkey, and one thousand in that of a goose, demonstrated their utility in the

[17] On this subject see what has been already said in the preceding article of *Food, its use and abuse*, in Dr. Beaumont's experiments.

trituration of their food, since these birds were found to be unable to digest, and consequently to thrive upon their nourishment when deprived of this mechanical aid. It is curious that the owl, which easily digests meat and bones, cannot be made to digest bread or grain, and yet dies if confined to animal food. The eagle, and other birds of prey, can dissolve both. A singular process of digestion is observed in the stormy petrel, which lives entirely on oil and fat substances whenever it can obtain them; but when fed with other articles of food, Nature, true to her laws, converts them into oil; the bird still discharges pure oil at objects that offend him, and feeds his young with the same substance. The petrel must, no doubt, be a bilious subject, for he delights in misery, and his presence is a sure presage of foul weather to the experienced seamen; and when

The wrathful skies
Gallow the very wanderers of the dark,
And make them keep their caves,

he is seen riding triumphantly on the whirlwind, and skimming the deepest chasms of the angry waves. This bird is said to be named ‘petrel’ from Peter, since, like that saint, he is supposed to have the power of walking on the waters.

The singular appetites which have been noticed seem to have been individual peculiarities, uninfluenced by a morbid condition; but there are cases in which a depraved appetite is symptomatic of disease, where we see persons otherwise possessed of sound judgment longing, not only for the most improper and indigestible food, but for substances of the most extraordinary and even disgusting nature. Thus we have seen patients, more especially young females and pregnant women, devouring dirt, cinders, spiders, leeches, hair, tallow, and paper. An ingenious writer affirms that “more literature in the form of paper and printed books has been thus devoured, than by the first scholars in Christendom.”

Dr. Darwin tells us that he saw a young lady about ten years of age that used to fill her stomach with earth out of a flowerpot, and then vomited it up, with small stones, bits of wood, and wings of various insects. John Hunter has described an endemic disease among the Africans in Jamaica, in which they devoured dirt. Mason Good, when speaking of this affection, says, “that the longing for such materials is, in this disease, a mere symptom, and rarely shows itself till the frame is completely exhausted by atrophy, dropsy, and hectic fever, brought on by a longing of a much more serious kind,—a longing to return home, a pining for the relations, the scenes, the kindnesses the domestic joys, of which the miserable sufferers have been robbed by barbarians less humanized than themselves, and which they have been forced or trepanned to resign for the less desirable banquet of whips, and threats, and harness, and hunger.”

Roderic à Castro relates the case of a lady who could eat twenty pounds of pepper, and another who lived upon ice. Tulpius mentions a woman who, during her pregnancy, longed for salt herrings, and ate fourteen hundred at the rate of five herrings per diem. Longius affirms that a lady in Cologne, who was in that state that ladies wish to be who love their lords, took such a fancy to taste the flesh of her husband that she actually assassinated him, and, after indulging in as much fresh meat as the weather permitted, salted the remainder for further use. This cannibal inclination seems not to be uncommon. The said Roderic à Castro knew a woman in the same thriving condition, who felt an inexpressible desire for a bit of the shoulder of a neighbouring baker, and her husband was persecuted by her constant prayers and lamentations to prevail on the worthy man to allow her one bite for charity’s sake: but the first bite was so heartily inflicted, that the crusty baker would not submit to a second.

In the Philosophical Transactions there is a case related of a woman whose fancies were not quite so solid, and who used to gratify her aerial appetites by putting the nozle of a bellows down her throat, and blowing away until she was tired. These longings of parturient women are most common; but it is rather curious, that, among our negroes in the West Indies, the husbands pretend to long for their wives, and endeavour to gratify them by proxy. Possibly such might have been the fancy of Cambes, the Lydian prince, who, according to Ælian, took it into his head one night to eat up his beloved wife.

Causes Of Insanity

Madness is attributed to moral and physical causes. Physicians do not agree as to the prevalence of either of these sources of human misery. Some of them, most unjustly accused of materialism, seem to lean to the opinion that, generally speaking, physical causes can be traced in *post mortem* examination; while others, equally skilled in accurate anatomical investigations, maintain that these organic derangements are very seldom met with.

Lawrence affirms that he had “examined after death the heads of many insane persons, and had hardly seen a single brain which did not exhibit obvious marks of disease;” and he further states, “that he feels convinced from his own experience, that very few heads of persons dying deranged will be examined after death without showing diseased structure, or evident signs of increased vascular activity.” The celebrated Morgagni gives similar results of his extensive dissections. Meckel and Jones are of the same opinion. However, Pinel, whose anatomical pursuits on the subject were most extensive, clearly declares that he never met with any other appearance within the cavity of the skull than are observable in opening the bodies of persons who have died of apoplexy, epilepsy, nervous fevers and convulsions. Haslam, whose experience in this matter was also very great, asserts that nothing decisive can be obtained in reference to insanity from any variations of appearance that have hitherto been detected in the brain. Greding observed in two hundred and sixteen maniacal cases which he examined, the whole of whom died of disorders unconnected with their mental ailments, that three of the heads were exceedingly large, two exceedingly small; some of the skull bones were extremely thick, others peculiarly thin; in some the frontal bones were small and contracted, in others the temporal bones compressed and narrow.

In this confusion and clashing of opinions, when unfortunately each theorist views, or fancies that he views, functional or organic derangements sufficiently evident (in his eyes at least) to support his doctrine, it is no easy matter to come to a fair conclusion. It can only be observed, that, as the wonderful sympathies of the brain with other organs especially the viscera of the abdomen, are universally acknowledged, the morbid condition in which the brain is occasionally found may have arisen from a primary morbid condition of some other organ. Hence it is difficult to say whether insanity is most generally a primary or a secondary affection. Physical causes act both upon the brain and the abdominal system. Concussion and compression of the brain will occasion nausea, vomiting, and hepatic affections, and the presence of worms in the intestines will excite convulsions and epilepsy. In regard to moral causes, they may also act directly or indirectly upon the brain, or the parts that sympathize with it. Sudden or violent emotions are known to produce an immediate effect upon our digestive functions, which may in turn by their sympathetic connexion act upon the brain and the mind, although the connexion between brain and mind is not yet proved in any conclusive manner.

However, in a practical point of view, whatever discrepancy of opinion may prevail on this subject, I think it will be found advisable to consider most, if not all recent cases of insanity, as arising from physical causes, and therefore to submit the patient to such a medical treatment in addition to moral aid, as the prevalence of morbid symptoms of local derangement are more or less evident. My own experience has fully convinced me that a morbid condition of the cerebral organ, and the viscera of the thorax and abdomen, are invariably met with, and must have proved of sufficient importance to develop symptoms which the slightest observations might have detected. How far the organic

derangement may have been either the cause or the result of insanity I am not prepared to say, but they have generally borne the appearance of having originated in undue excitement.

On this most important subject I feel much gratification in quoting the following opinion of the experienced Pinel: “It appears in general that the primitive seat of insanity is in the region of the stomach and intestinal canal, and it is from this central part that mental aberration is propagated as by irradiation.” Esquirol is of opinion that insanity arises from a lesion of the vital functions of the brain, and not unfrequently from a disturbance in the various points of sensibility in different parts of the system.

That mental emotions, whether producing any alteration in the physical condition of the individual, or not, occasion various degrees of insanity, is proved by experience. The French revolution, during its execrable phases, offered a wide and fertile field of observation on this subject; and the various events that marked those fearful times were certainly well calculated to affect any brain capable of becoming deranged. The following results of these observations are curious: “Among the lunatics confined at Bicêtre,” says Pinel, “during the third year of the Republic, I observed that the exciting causes of their maladies, in a great majority of cases, were extremely vivid affections of the mind; such as ungovernable or disappointed ambition, religious fanaticism, profound chagrin, and unfortunate love. Out of one hundred and thirteen madmen with whose history I took pains to make myself acquainted, thirty-four were reduced to this state by domestic misfortunes, twenty-four by obstacles to matrimonial union, thirty by political events, and twenty-five by religious fanaticism. Those were chiefly affected who belonged to professions in which the imagination is unceasingly or ardently engaged, and not controlled in its excitement by the exercise of the tamer functions of the understanding, which are more susceptible of satiety and fatigue. Hence the Bicêtre registers were chiefly filled from the professions of priests, artists, painters, sculptors, poets, and musicians, while they contained no instances of persons whose line of life demands a predominant exercise of the judging faculty,—not one naturalist, physician, chemist, or geometrician.”

The following is a return of the supposed moral causes of insanity observed in the Salpétrière. In the years 1811 and 1812

Domestic affliction 105
Disappointed love 46
Political events 14
Fanaticism 8
Fright 38
Jealousy 18
Anger 16
Misfortunes in circumstances 77
Offended vanity 1
Total 323

In Mr. Esquirol’s private establishment during the same period:

Domestic affliction 31
Disappointed love 25
Political events 32
Fanaticism 1
Fright 8
Jealousy 14
Misfortunes 14

Offended vanity 16
Baffled ambition 12
Intense study 13
Misanthropy 2
Total 168

It must be observed that the latter return, in which we find twenty-eight persons maddened by disappointed ambition and offended pride, is of a private establishment, whose inmates of course belonged to the better classes of the community.

By the return from Pennsylvania, out of fifty lunatics, thirty-four cases arose from moral causes. Of physical causes hereditary madness is the most prevalent, as appears clearly from the following table extracted from the registers of the Salpétrière.

Hereditary insanity 105
Convulsion during gestation 11
Epilepsy 11
Female derangements 55
Diseases of child-birth 52
Critical periods 27
Old age 60
Insolation 12
Injuries of the head 14
Fever 13
Syphilis 8
Effects of mercury 14
Worms 24
Apoplexy 60

When speaking of hereditary madness, Dr. Abercrombie is of opinion that where a tendency to insanity exists, there may be in many cases, circumstances in mental habits or mental discipline calculated to favour or to counteract the tendency, when the mind wanders away from the proper duties of life or luxuriates amid scenes of imagination, thus permitting mental emotions, of whatever kind, to be excited in a manner disproportional to the true relation of the object which gave rise to them; allowing the mind to ramble among imaginary events, or to be led away by slight and casual relations, instead of steadily exercising the judgment in the investigation of truth.

These observations are no doubt most luminous, yet as I have elsewhere remarked, hereditary predisposition to insanity may be brought into action, by the constant scenes that pass in the presence of those individuals who may daily have to witness the aberrations of an unhappy relative. The mind dwells on the sad subject, and it becomes a source of constant apprehension, when the mere dread of an hereditary evil is perhaps sufficient to drive to madness. So powerful is the sway even of imaginary terror, that we need not wonder that natural fear should be productive of results still more injurious to our intellects. There seems to exist a certain fascination in what we should dread and avoid; instead of resisting evil, by a strange fatality we seem to be self-impelled to court it. We indulge in thoughts, in hopes and fears, too often chimerical, instead of endeavouring to dismiss them from our mind, by other pursuits and busy occupation; and we brood upon future and ideal miseries until we actually, from supineness and timidity, sink under their overwhelming influence.

Esquirol relates some curious coincidences of hereditary insanity. A Swiss merchant lost both his sons in a state of mania at the age of 19. A lady lost her senses after childbirth at the age

of 25. Her daughter became insane in her 25th year. In one family, the grandfather, the father, and the son, destroyed themselves at the age of 50. Near Newton, seven insane sisters had been observed in one family. An unfortunate female in the Salpétrière, under the influence of liquor, threw herself three times in the river and her sister in a state of intoxication drowned herself. A gentleman whose intellects became deranged in consequence of the misfortunes of the revolution remained for ten years secluded in his chamber. His daughter became insane about the same period, and with equal obstinacy could not be prevailed upon to leave her room.

There is no doubt, but that were these early predispositions attended to and watched, an active course of education adopted, and change of locality resorted to, much future misery might be avoided, and possibly the invasion of the malady arrested.

If the observations of the phrenologist are entitled to consideration, the mind may become mainly instrumental in attaining this *desideratum*, as the detection of certain propensities may place us upon our guard in the education of youth. This would be a point of still greater importance, were these organs innate, dooming us to the blind law of fatality; but the phrenologists maintain, that the development of these organic inequalities on the surface of the cranium are produced and developed by a corresponding enlargement of the brain, which is greater or lesser in the ratio of the preponderance of the organ as the indulgence in the propensities which they indicate.

Pinel relates a curious case of hereditary mania in a man who, up to the age of fifty, fulfilled with intelligence and activity the duties of an important office which he held. At this period he indulged in various excesses, and sunk in the debasement of the lowest society. These excesses he represented to his wondering friends and acquaintances as the source of divine pleasure and celestial enjoyment. He declared that he would erect a temple to the god of love, and officiate himself as high priest at his altars; he compared the very lowest of women to angelic creatures; and finally was confined, a furious and desperate maniac.

Education carried on upon mistaken principles has also been known to prepare the way to insanity, and La Bruyere has justly observed, that there are parents, the study of whose life appears to have been, their giving their children just reason not to regret their loss. Pinel has given us the interesting history of two orphan brothers, who had been brought up in a most anomalous manner—with extreme kindness and effeminacy by a nurse, and with much harshness and injustice by a tutor. The result of this erroneous management was a deficient development in their intellectual faculties, and a debilitated frame, which gradually led to a state of imbecility. When examined by Pinel at the age of twenty and twenty-two, their conversation was puerile in the extreme, and they both displayed a taste for infantile sports and pastimes, befitting children of three or four years old. They sought to express themselves with great volubility, but their language, consisting chiefly of broken syllables, was scarcely intelligible. Notwithstanding their apathic appearance, by a sort of automatic habit, every evening brought on an absurd scene of sentimentality. They would join each other in earnest conversation in a corner of the room; and, with bitter tears and deep sighs, bewail the loss of their parents, who had thus left them in a helpless orphan condition, in their tender years, expressing the sincerest affection for their nurse, but speaking of their tutor with bitter imprecations. A great partiality shown to one sister has driven another one to a state of dementia, that arose from her continually dwelling on the wrongs she experienced, which, of course, were exaggerated by jealousy.

External agents producing sudden terror have been frequently known to bring on insanity. It is related of a child of three years of age, who was so terrified on being brought into a madhouse, that he was subject to horrible dreams and visions until his seventeenth year, when

he became a perfect lunatic. Women frightened during pregnancy have often become alienated; and there are two cases reported of young ladies who were found insane the day after their nuptials.

While disappointments and misfortunes are often the origin of insanity, a sudden melioration in circumstances, and unexpected pleasing intelligence have been also known to derange the intellects. A man who came into the possession of a large fortune, after having lived for many years in penury, was so alarmed at the thought of losing this property, that the apprehension of the evil deprived him of his senses. An instance is recorded of a young girl, long separated from her lover by parents averse to their union, who became insane immediately after her marriage.

Children are generally exempted from this calamitous visitation; yet Frank relates the case of a child at St. Luke's who had been deranged since he was two years old. Age, to a certain extent, seems to influence insanity, and most individuals are alienated between their twentieth and fiftieth years. Haslam states, that out of one thousand six hundred and sixty-four patients admitted into Bedlam, nine hundred and ten came within this period of life. In France it appears that most cases of insanity are noticed between the ages of twenty-five and thirty-five. One-fifteenth of these cases among men, and one-sixth among women, are observed before their twentieth year; and in the wealthy classes of society one-fourth occur before the same period.

Thus it would appear that the astounding events which took place in France, but more especially in Paris, from the year 1789, the breaking out of the revolution, to 1793, the reign of terror, had no effect upon the intellects of the population; unless it is supposed that the entire nation being in a state of insanity, either madmen were not noticed as any peculiarity, or rushed into mischief and were murdered.

Therefore one might fairly conclude that the taking of the Bastille, the execution of Louis XVI., the bloody sway of the Jacobins, the ambitious wars of Napoleon, and the restoration of Louis XVIII., did not in the slightest degree affect the brains of our happy and philosophical neighbours.

It has been generally imagined that women are more subject to mental alienation than men; this, however, is by no means proved by observation in other countries.

In the Lunatic Asylum of Hanwell I have now under my care 265 males, and 351 females.

It has long been a current opinion that madness is a more common disease in our country than any where else. This may possibly arise from the greater number of our eccentric countrymen that are widely scattered over the globe; and whenever an individual is observed whose manners and conduct are totally at variance with the habits of any other member of the community, he is generally considered an Englishman. Voltaire came to the sweeping conclusion that one half of the nation was scrofulous, and the other moiety insane.

However, it would appear that insanity is on the increase; for in the report of the commissioners for licensing lunatic establishments we find the following statement: "Insanity appears to have been *considerably* on the increase; for if we compare the sums of two distant lustra, the one beginning with 1775, and the other ending with 1809, the proportion of patients returned as having been received into lunatic asylums during the latter period, is to that of the former nearly as one hundred and twenty-nine to one hundred." Dr. Burrows has endeavoured to impugn the correctness of this statement by proving that suicide is more frequent in other countries; now, unless Dr. Burrows can prove that suicide is always an act of insanity, which will by no means be admitted, his observation can bear no weight.

It is but too true that in melancholy madness we often observe a prevailing propensity to self-destruction. Dr. Abercrombie's views on this subject are so luminous that I shall transcribe them.

"When the melancholic hallucination has fully taken possession of the mind, it becomes the sole object of attention, without the power of varying the impression, or of directing the thoughts to any facts or considerations calculated to remove or palliate it. The evil seems overwhelming and irremediable, admitting neither of palliation, consolation, nor hope. For the process of mind calculated to diminish such an impression, or even to produce a hope of the palliation of the evil, is precisely that exercise of mind which in this singular condition, is lost or suspended; namely, a power of changing the subject of thought, of transferring the attention to other facts and considerations, and of comparing the mental impression with these, and with the actual state of external things. Under such a conviction of overwhelming and hopeless misery, the feeling naturally arises of life being a burden, and this is succeeded by a determination to quit it. When such an association has once been formed, it also fixes itself upon the mind, and fails to be corrected by those considerations which ought to remove it. That it is in this manner the impression arises, and not from any process analogous to the determination of a sound mind, appears, among other circumstances, from the singular manner in which it is often dissipated, namely by the accidental productions of some new impression not calculated in any degree to influence the subject of thought, but simply to give a momentary direction of the mind to some other feeling. Thus a man mentioned by Pinel had left his house in the night, with the determined resolution of drowning himself, when he was attacked by robbers. He did his best to escape from them, and having done so, returned home, the resolution of suicide being entirely dissipated. A woman mentioned, I believe by Dr. Burrows, had her resolution changed in the same manner, by something falling on her head, after she had gone out for a similar purpose.

"A very irregular modification occurs in some of these cases. With the earnest desire of death, there is combined an impression of the criminality of suicide; but this instead of correcting the hallucination, only leads to another and most extraordinary mode of effecting the purpose; namely by committing murder, and so dying by the hand of justice. Several instances are on record in which this remarkable mental process was distinctly traced and acknowledged; and in which there was no mixture of malice against the individuals who were murdered. On the contrary, these were generally children; and in one of the cases, the maniac distinctly avowed his resolution to commit murder, with the view of dying by a sentence of law; and at the same time his determination that his victim should be a child, as he should thus avoid the additional guilt of sending a person out of the world in a state of unrepented sin. The mental process in such a case presents a most interesting subject of reflection. It appears to be purely a process of association, without the power of reasoning. I should suppose that there had been at a former period, during a comparatively healthy state of the mental faculties, a repeated contemplation of suicide which had been always checked by an immediate contemplation of its dreadful criminality.

In this manner a strong connexion had been formed, which when the idea of suicide afterwards came into the mind, during the state of insanity, led to the impression of its heinousness, not by a process of reasoning, but by simple association. The subsequent steps are the distorted reasonings of insanity, mixed with some previous impression of the safe condition of children dying in infancy. This explanation I think is strongly countenanced by the consideration that, had the idea of the criminality of suicide been in any degree a process of reasoning, a corresponding conviction of the guilt of murder must have followed it. I find, however, one case which is at variance with this hypothesis. The reasoning of that unfortunate individual was, that if he committed murder, and died by the hand of justice,

there would be time for his making his peace with the almighty between the crime and his execution, which would not be the case if he should die by suicide. This was a species of reasoning but it was purely the reasoning of insanity."

Still these remarks do not go to prove that suicide is always the result of insanity, since it can in most instances be attributed to a moment of despair and impatience under a heavy visitation of calamity, or the dread of contempt of society. The frequency of this rash act, cannot therefore be adduced as a proof of the greater prevalence of madness in any country. With greater reason, self-destruction is to be referred to the want of a proper religious education and feeling, which will enable man to bear up against the world's vicissitudes, and deem life a more or less painful journey to a peaceful abode.

Montesquieu was one of the many writers who attributed this propensity as being nearly exclusive to the English. "Les Anglais," he says, "se tuent sans qu'on puisse imaginer aucune raison qui les y détermine; ils se tuent dans le sens même du bonheur. Cette action, chez les Romains était l'effet de l'éducation, elle tenait à leur manière de penser et à leurs coutumes; dans les Anglais c'est l'effet d'une maladie, elle tient à l'état physique de la machine."

Two very curious works on suicide have been lately published in Germany by Dr. Arntzenius and Dr. Schlegel. The former writer divides this fatal propensity into acute and chronic; the first marked by great physical excitement, the latter accompanied or preceded by sadness, moroseness, and love of solitude. Curious cases are related in illustration of this doctrine, amongst others we remark that of an English nobleman who cast himself into the crater of Vesuvius. A German in the same year, not being able perhaps to travel so far, threw himself into a smelting furnace. Several cases are recorded of individuals who formed the desperate resolution of starving themselves. It appears that in many instances the most trifling circumstance has driven these reckless beings to the commission of this desperate action. The case of a young Parisian author of the name of Escoupe, who suffocated himself because one of his dramatic productions had been severely criticised, is well known. A German student destroyed himself because he had a club-foot, and another youth put an end to his existence in consequence of his not having been allowed to put on his Sunday clothes.

In classing 9000 cases of suicide which happened in Paris between the years 1796 and 1830, Dr. Schlegel concludes that what he terms the "philosophic suicide," is that which is perpetrated after deliberation, during the night or shortly before sunrise; whilst when it is not the result of premeditation, it occurs during the day.

The choice between shooting and hanging may be accounted for on the same grounds. A young man, in a fit of frantic passion, from disappointed love, or losses at play, will probably, on his return home, seize a pistol and blow out his brains; whereas hanging needs reflection and some preparation and precaution, which would alone suffice to bring a reflective creature to a proper sense of his folly, unless predetermined to destroy himself by "philosophic suicide."

It appears in these accounts that suicide in France has greatly increased since the revolution. The average number during the last forty-two years being 409⅝, the number in Paris being 1639 annually. Dr. Schlegel informs us that there exists a society in Paris called, "Society of the Friends of Suicide." It consists of twelve members, and a lot is cast annually to decide which of them is to destroy himself in the presence of the others. Certain qualifications and testimonials were required before a candidate could be admitted into this amiable club:

1. He must prove himself a man of honour.

2. He must have experienced the injustice of mankind, been injured by a dear friend, or betrayed by a mistress or a wife.

3. He must have experienced, for some considerable time, a miserable vacuity of soul, and a discontent with every thing in the world.

This association reminds me of a ball that was established in Paris after the reign of terror, called *Le Bal des Victimes*, to which no person could be admitted unless they had had a near relation guillotined.

According to our ingenious author, drunkenness is the chief cause of suicide in England, Prussia, and Germany; love and gambling in France; whilst bigotry, or the fear of dying without having received the sacrament, he supposes, prevents it in Spain, where, comparatively speaking, suicide is seldom heard of.

The same remark may apply to Italy, where a Roman lady, having heard of such an action, exclaimed, "*Dev' essere un forestiere; gli Italiani non sono tanto matti*." She was right, the suicide was a melancholy German tailor.

In India, where the doctrine of predestination is generally prevalent, it is calculated that in one year there were forty suicides in a population of 250,000, twenty-three of which were females.

Arntzenius quotes Gall's opinion, that suicide arises from too great a predominance of the organ of cautiousness. Combe and other phrenologists are of opinion, that with this predominance a deficient development of hope and a large destructiveness must be conjoined.

It has been remarked that in Spain and Portugal, where insanity is comparatively rare, malconformation of the brain and consequent idiotism are very frequent.

Since the peace it may be more difficult to arrive at any conclusion on the subject of increase of lunacy, founded on the admission of lunatics into public and private establishments, since emigration has carried so many families and operatives of every description abroad, many of whom, from various disappointments and vexations, might have been predisposed to insanity.

It appears that in 1836 there existed in England and Wales 6402 lunatics, 7265 idiots—13,667 lunatics and idiots. Of paupers alone, or lunatics and idiots, there were 1.00098 of the total population, or 1 in 1024.

However, according to the most probable calculation, the number of lunatics in England amounts to about 14,000, out of which about 11,000 are paupers. Idiots are nearly as numerous as lunatics. Sir A. Halliday states the former to amount to 5741, and the latter to 6806. To this it must be observed that many harmless idiots are allowed to remain in their usual residence. In Wales it appears that idiots are to lunatics in the proportion of seven to one. The difficulty of obtaining any certain information on this subject, however, is such, that it is scarcely possible to decide the question with any chance of a probable certainty.

In regard to the prevalence of lunacy in other countries, the following are curious statistical statements:

In Spain, in 1817, according to the report of Dr. Luzuriaga, there only existed in the asylums of Toledo, Granada, Cordova, Valencia, Cadiz, Saragossa, and Barcelona, 509 lunatics—only fifty were in the hospitals of Cadiz, sixty in that of Madrid, and thirty-six in the kingdom of Granada.

In Italy, in twenty-five asylums in Turin, Genoa, Milan, Brescia, Verona, Venice, Parma, Modena, Bologna, Ferrara, Florence, Sienna, Lucca, and Rome, Mr. Brierre only found 3441 patients. The population of these parts of Italy amounting to about 16,789,000 inhabitants, which gives one lunatic to 4879 persons.

Scott, who accompanied Lord Macartney's embassy to China, observed that very few insane persons were to be found there. Humboldt states that madness is rare amongst the natives of South America. Carr made the same remark in Russia. In Spain and Italy, religious melancholy, and that most vexatious species of insanity called *erotomania*, are the more common.

In the savage tribes of Africa and America insanity is very rare. Dr. Winterbotham affirms, that among the Africans near Sierra Leone, mania is a disease which seldom if ever occurs. Idiotism was likewise a rare phenomenon among them. Among the negro slaves in the West Indies it is scarcely known, and during three years' residence in the Bahamas, only one case of monomania fell under my observation. Amongst the native races of America it scarcely exists. From these observations we may conclude, with Esquirol, that insanity belongs almost exclusively to civilized races of men, that it scarcely exists among savages, and is rare in barbarous countries. To what circumstance are we to attribute this exemption? Possibly it may be attributed to simplicity in living, which predisposes to less disease and morbid varieties of organization, and to the absence of that refined education which exposes man to the artificial wants and miseries of high civilization. It is moreover probable that the constant occupation which the existence of the savage requires to satisfy his absolute necessities, does not leave him leisure time to ponder over gloomy ideas and fictitious sufferings. In addition to these circumstances, Dr. Pritchard has justly remarked, that we might also conjecture that congenital predisposition is wanting in the offspring of uncivilized races. The same author admits the probability of the brain receiving a different development in the progeny of cultivated races, or of those whose mental faculties have been awakened.

According to the prevalence of the ideas connected with their former pursuits do we observe the hallucination of these unfortunate persons to be of a different character. Dr. Abercrombie relates the case of a Scotch clergyman, who was brought before a jury to be what is called in Scotland *cognosced*, or declared incapable of managing his affairs. Amongst the acts of extravagance alleged against him was, that he had burnt his library. When he was asked by the jury what account he would give of this part of his conduct, he replied in the following terms: "In the early part of my life I had imbibed a liking for a most unprofitable study, namely, controversial divinity. On reviewing my library, I found a great part of it to consist of books of this description, and I was so anxious that my family should not be led to follow the same pursuits, that I determined to burn the whole." He gave answers equally plausible to questions which were put to him respecting other parts of his conduct; and the result was, that the jury found no sufficient ground for cognoscing him; but in the course of a fortnight from that time, he was in a state of decided mania.

What a school of humility is a lunatic asylum! What a field of observation does it not present to the philosopher who ranges among its inmates! We find the same aberrations that obtain in society; similar errors, similar passions, similar miserable self-tormenting chimeras, empty pride, worthless vanity, and overweening ambition. There we

See that noble and most sovereign reason,
Like sweet bells jangled, out of tune and harsh.

Each madhouse has its gods and priests, its sovereigns and its subjects, terrific mimicry of worldly superstitions, pomp, pride, and degradation! There, tyranny rules with iron sway, until the keeper's appearance makes tyrants know there does exist a power still greater than their own. In madhouses egotism prevails as generally as in the world, and nothing around the lunatic sheds any influence unless relating to his wretched self. In this struggle between the mind and body, this constant action and reaction of the moral and the corporeal energies, when reason has yielded to the brute force of animal passions, and the body with all its

baseness has triumphed over the soul, one cannot but think of Plutarch's fanciful idea, that, should the body sue the mind for damages before a court of justice, it would be found that the defendant had been a ruinous tenant to the plaintiff.

In many cases of insanity we observe a singular fertility of glowing imagination and a vivacity of memory which is often surprising. Dr. Willis mentions a patient who was subject to occasional attacks of insanity, and who assured him that he expected the paroxysms with impatience, as they proved to him a source of considerable delight. "Every thing," he said, "appeared easy to me. No obstacles presented themselves either in theory or in practice. My memory acquired of a sudden a singular degree of perfection. Long passages of Latin authors occurred to my mind. In general I have great difficulty in finding rhythmical terminations, but then I could write verse with as much facility as prose."

Old associations thus recalled into the mind are often mixed up with recent occurrences, in the same manner as in dreaming. Dr. Gooch mentions a lady who became insane in consequence of an alarm of fire in her neighbourhood. She imagined that she was transformed into the Virgin Mary, and that a luminous halo beamed round her head.

It is said that the Egyptians placed a mummy at their festive board, to remind man of mortality. Would not a frequent visit to a lunatic asylum afford a wholesome lesson to the reckless despot, the proud statesman, and the arbitrary chieftain? There they might converse with tyrants, politicians, and self-created heroes, in all the naked turpitude of the evil passions, who in their frantic gestures would show them that which they wish to be—that which the world considers they are! Often would they hear the maniac express the very thoughts that ruffle their own pillows, until the dreaded bell that announces the doctor's visit, and which with one loud peal destroys his fond illusions, herald of that knell which sooner or later must call them from the busy world they think their own. How beautifully has Filmer expressed the madman's fears!

See yon old miser laden with swelling bags
Of ill-got gold, with how much awkward haste
He limps away to shelter! See how he ducks,
And dives, and dodges with the gods; and all
Only in hope to avoid, for some few days
Perhaps, the just reward of his own sad extortions.
The hot adulterer, now all chill and impotent
With fear, leaps from the polluted bed,
And crams himself into a cranny!
There mighty men of blood, who make a trade
Of murder, forget their wonted fierceness;
Out-nois'd, they shrink aside, and shake for fear
O' th' louder threat'nings of the angry gods.

Whatever may be the nature of insanity or our fallacious views regarding it, it is a matter of great consolation to find that our mode of treating it is at last founded on rational and humane principles. The unfortunate lunatic is no longer an object of horror and disgust, chained down like a wild beast, and sunk by ignorance or avarice, even below the level of that degradation in the scale of human beings, to which it had pleased Providence to reduce him,—we no longer behold him rising from his foul and loathsome bed of straw, scantily covered with filthy tatters, his hair and beard wild and grisly—his eyes under the influence of constant excitement, darting menacing looks—the foam bubbling through his gnashing teeth—clanking his fetters with angry words and gestures, threatening heaven and earth—gazed at with dismay, through massive bars—the very female seeming of doubtful sex:

Her unregarded locks
Matted like fury-tresses, her poor limbs
Chain'd to the ground; and stead of those delights
Which happy lovers taste, her keeper's stripes,
A bed of straw, and a coarse wooden dish
Of wretched sustenance.[18]

Now, the unfortunate persons are restored to social life as much as their sad condition allows; they enjoy every comfort that can solace them in their lucid intervals, when their hallucinations cease; in illness they are treated with kindness and liberality, and in health, their former associations with the busy world, are recalled by labour, voluntarily performed or stimulated by the incentive of some additional comfort. No coercion is resorted to, except to prevent the furious maniac from injuring himself and others, and then, such means are adopted that restrain his violence without a painful process. Even the straight waistcoat, which impedes respiration, is generally banished in all well-regulated establishments, and belts, sleeves, and muffs, which merely secure the hands, without preventing a free motion of the articulations, are usually resorted to. To such an extent is healthy occupation carried on in lunatic asylums, that at this moment at Hanwell, out of upwards of 600 inmates under my care, 421 are at work.

Hanwell may be said to be an asylum for incurables, since it is doomed to receive old cases that scarcely ever afford a chance of recovery; to which are added a large proportion of the idiots and epileptics of Middlesex, whose families cannot support them.

Let us hope from this gradual amelioration in the condition of this illfated class of our fellow-creatures, that every institution, both public and private, will shortly be conducted upon a similar plan, having sufficient grounds attached to it, to give occupation to such of their inmates as may still be able to enjoy some share, however trifling it may be, of the blessings of this life.

[18] Otway.

Leprosy

Bontius informs us that this disease was observed on the banks of the Ganges, where it was known by the name of *Cowrap*. Kaempfer noticed it in Ceylon and Japan. In Sumatra, whole generations are infected with both leprosy and elephantiasis; and those who are labouring under the latter disease, although it is not contagious, are driven into the woods. Christopher Columbus found lepers in the island of Buona Vista in 1498, and frictions of turtle blood were used to relieve them.

In our days it is a disease of rare occurrence, at least in Europe; yet it was observed at Vetrolles and Martignes, in France, in 1808, and at Pigua and Castel Franco, in Italy, in 1807. The elephantiasis still prevails in our West India colonies, more especially that species which is called "elephant leg," and which is not uncommon at Barbadoes, St. Christopher, and Nevis. Parsons, in his Travels in Asia and Africa, informs us that a similar complaint exists on the coast of Malabar, where it is called the "Cochin leg." The Hindoo physicians treat it with pills of arsenic and black pepper.

A curious species of leprosy appeared in Rome under the reign of Tiberius, which was brought thither from Asia. The eruption first broke out upon the chin, whence it was called *Mentagra*, and is thus alluded to by Martial:

Non ulcus acre, pustulæve lucentes;
Nec triste mentum, sordidive lichenes.

From the chin it extended over the entire body, and on its disappearance left scars more unsightly, if possible, than the former disease. Its virulence and difficulty of cure induced the Romans to send to Egypt for attendance. The same disease prevailed in the second century, and Soranus, a physician of Aquitania, was sent for to heal it. Crispus, a friend of Galen, is said to have discovered the best method of cure. Pliny has given an accurate account of the mentagra in his Natural History, lib. xxvii. cap. 1. According to the same writer, elephantiasis was brought to Rome by Pompey's troops. Plutarch fixes its apparition to the time when Asclepiades of Bithynia flourished as one of his disciples. Themison wrote a treatise on the disease, which is mentioned by Cælius Aurelianus, but has not been preserved from the ravages of time. Lucilius called the affection *odiosa Vitiligo*. The *Gemursa* of Pliny appears to have been a similar complaint; and Triller thinks that it was the *Gumretha* of the Talmud.

Formerly, in England, the causes of lepers were committed to the ecclesiastical courts, as it was prohibited to prosecute a leper before a lay judge, as they were under the protection of the church, which separated them from the rest of the people by a ritual. At this period a law existed, called *Leproso amovendo*, for the removal of lepers who ventured to mix in society. Thus leprosy may be considered one of the most terrific maladies inflicted on mankind. Holy Writ affords us abundant proofs of its fatal character. It is probable that this disease was first observed under the scorching sun of Egypt, whence it spread its ravages to Greece and Asia; and when the East was obliged to submit to the Roman legions, the conquerors carried the scourge of the vanquished to their own country. From Italy the disorder extended to France; and in the reign of Philip I. we find some members of the church militant, called *hospitaliers*, who spent their arduous life in attending upon lepers, and waging war against the infidels.

The Hebrew tribes, on quitting Egypt, were subject to three kinds of leprosy; all of them were distinguished by the name of *Berat* (בחרת), or "bright spot." One called *Boak* (חקב), of a dull white; and two named *Tsorat* (צרעה), or "venom or malignity:" the first variety of the latter

being the *Berat Lebena*, or bright white berat; and the next the *Berat Cecha*, or the dark and dusky berat; both of which were highly contagious, and rendered those who laboured under their attack unclean, and dangerous to society.

Manetho, Justin, and several historians, pretend that the Hebrews were expelled from Egypt in consequence of their being infected with this formidable disease; a reproach from which Josephus attempted to exculpate his countrymen. It appears, however, that, during their captivity of one hundred and thirty-four years, the Israelites laboured under this awful visitation; and, three thousand years after their migration we find Prosper Alpinus describing the banks of the Nile as the principal seat of the disease. Lucretius gives the same account of it:

Est Elephas morbus, qui, propter flumina Nili
Gignitur, Ægypto in mediâ, neque præterea usquam.

Pliny and Marcellus Empiricus refer the calamity to the same source. They state, however, that it was more general in the lower classes, although it sometimes attacked their sovereigns; an event which added to the horrors of the infliction, since it appears that royalty had the privilege of bathing in human blood as one of the most effectual curative means. Gaul and Avicenna attribute its fatal prevalence in Alexandria to the influence of the climate, and the quality of their food. The Persian writer thus expresses himself: “Et quando aggregatur caliditas aëris cum malitiâ cibi, et ejus essentia ex genere piscium, et carne salitâ, et carne grossâ, et carnibus asinorum, et lentibus, procul dubio est ut eveniat lepra, sicut multiplicatur in Alexandriâ.”

The *Boak*, or slighter berat, which is not considered to be contagious, still bears the same denomination amongst the Arabs, and is the λεπρα αλφὸς or dull white leprosy of the Greeks. The bright white and dusky berats of the Hebrews were distinguished on account of their malignity, and with the *Tsorat* (צרעת) are still called among the Arabians by the Hebrew generic term with a very slight alteration, for the *Berat Lebena* is their *Beras Bejas*, and the *Berat Cecha*, the *Beras Asved*.

While the Arabians borrowed the Hebrew terms, the Greeks took their denominations from the same source; and from *Tsorat* they adopted the word *Psora*. The *Tsorat* is restrained by the Hebrews to the contagious form of leprosy. Amongst the Greeks Lepra was a generic synonyme of *Berat* or *Beras*.

This confusion in the adaptation of the names given to the varieties of leprosy has occasioned much perplexity in the study of the disease. Actuarius, in endeavouring to rectify these errors, has produced a greater confusion. According to him, they are different forms of a common genus. However, the most important distinction was that which defined the contagious and the non-contagious forms. The leprosy described by Moses under the name of *Boak* or *Bohak* was the αλφὸς of Hippocrates; *Seeth* the φακος; *Saphachath* and *Misphachath* the λειχην; and *Bahereth* the λευκη; and according to Carthenser and other writers, this leprosy was the *Leucé* of the Greeks.

The elephantiasis was long confounded with leprosy; but the former is a tubercular affection of the skin, widely different from the scaly leprosy, and certainly not contagious. Its singular name was derived from the condition of the surface of the huge misshapen limbs of those who were affected with the malady, and which bore some resemblance to the leg of an elephant. This morbid state is not uncommon in the island of Barbadoes, and in England it has been called “the Barbadoes leg.” The original Arabic name for this affection was *Dal Fil*, or “the elephant’s disease,” which is now the common denomination; although it is frequently abridged into *Fil* alone, literally *Elephas*. The elephantiasis is not even alluded to by Moses

in his descriptions of leprosy. However, the elephant leg of the Arabians is a disease totally different from the specific elephantiasis, which is a disorder of the skin, the roughness of which led to the name, and which the Arabians called *Juzam* or *Judam*.

These errors of description amongst medical writers have of course occasioned much obscurity and perplexity in the productions of travellers and historians, who have generally confounded all these diseases with the Hebrew leprosy, or the leprosy which for so long a period desolated the fairest portions of Europe, where every country was crowded with hospitals established for the exclusive relief of the malady. The number of leper-houses, as they were denominated, has been singularly exaggerated. Paris has been made to assert that there were nineteen thousand of these hospitals, whereas he merely stated that the Knights Hospitalers, under various patron saints, but more particularly St. Lazarus, were endowed with nineteen thousand manors to support their extensive establishments; and he thus clearly expressed himself: "*Habent Hospitalarii novemdecim millia maneriorum in Christianitate*." It appears that in the reign of Louis VIII., France had no less than two thousand of these hospitals. Leprosy was well known in the eighth century, and St. Ottomar and St. Nicholas, were considered the first founders of establishments for its treatment in France and in Germany. The Crusaders, however, by their connexions with the East, materially increased its inroads in Europe, and the disgusting malady appears to have been considered as a proof of holiness. Mœhser, in his work "*De medicis equestri dignitate ornatis*," informs us that the Knights of the order of St. Lazarus were not only intrusted with the care of lepers, but admitted them into their noble order: their Grand Master was himself a leper. The Crusaders, returning from their useless wars, eaten up with the disease, received the honourable distinction of being *pauperes Christi, morbi beati Lazari languentes*. The most distinguished individuals in the land attended upon them with the utmost humility; and Robert, King of France, used to wash and kiss their filthy feet to keep himself in odour of sanctity. All these attentions, however, did not always prevent the lepers from complaining of their complicated sufferings, but they were exhorted by holy men (who of course had never experienced the miseries of the malady) to be of good comfort, as their illness was a blessed favour conferred upon them as the elect of the land. St. Louis thought the Sire de Joinville an unbeliever; for having once asked him which he would prefer, being a *mezieu* or *laide* (a leper), or having to reproach his conscience with any mortal sin, his favourite replied to the singular question, that he would rather be guilty of thirty deadly sins; whereupon the sanctified monarch severely rebuked him by telling him in the quaint language of the times, "Nulle si laide mezeuerie n'est, comme de estre en péché mortel."

Notwithstanding the sanctity of their disease, lepers were by various laws separated from the healthy portion of the community. The ceremonies used on these occasions were curious; and we find the following description of them in the History of Bretagne: A priest in his sacerdotal robes went to the leper's dwelling, bearing a crucifix. He was then exhorted to submit with resignation to the affliction: he afterwards threw holy water upon him, and conducted him to church. There he was stripped of his ordinary vestments, and clothed in a black garment; he then knelt down to hear mass, and was again sprinkled with holy water. During these ceremonies, the office for the dead was duly sung, and the leper was finally led to his destined future residence. Here he again knelt, received salutary exhortations to be patient, while a shovelful of earth was thrown on his feet. His dwelling was most diminutive: his furniture consisted of a bed, a water-jug, a chest, a table, a chair, a lamp, and a towel. He further received a cowl, a gown, a leathern girdle, a small cag with a funnel, a knife, a spoon, a wand, and a pair of *cliquettes*, (a sort of castanets,) to announce his approach. Before leaving him, the priest added another blessing to these gifts, and departed, after commanding him under the severest penalties never to appear without his distinctive apparel, and

barefooted; never to enter a church, a mill, or a baker's shop; to perform all his ablutions in streams and running waters; never to touch any article he wanted to purchase, except with his wand; never to enter drinking-houses, but to buy his liquor at their doors, having it poured into his barrel by means of the funnel graciously given him for that purpose; never to answer any question unless he was to windward of his interlocutor; never to presume to take a walk in a narrow lane; never to touch or go near children, or look at a good-looking wench; and only to eat, drink, and junket with his brother lepers; and invariably to announce his unwelcome approach by rattling his castanets.

The offsprings of these sequestrated creatures were seldom baptized; and when this rite was performed, the water was thrown away. After this oration his ghostly adviser took his final leave, and the patient's former dwelling was burnt to the ground. The sepulchre of St. Mein, in Britanny, was frequently visited by these poor creatures; and on such occasions they were obliged to have both their hands covered with woollen bags, as a distinguishing mark amongst the other pilgrims. Lepers were only allowed to intermarry with fellow-sufferers; yet we find in one of the Decretals of St. Gregory, that any woman who chose to run the chances of contagion could please her fancy. St. Gregory perhaps thought this the most effectual method of preventing the dreaded intercourse, as most probably, had it been prohibited, lepers would have been in great request, they having always been notorious for their amorous propensities. Muratori informs us that these unfortunate persons did not always submit quietly to these severe regulations, but several times joined the Jews in a revolt against the authorities.

This affliction has been observed in various countries. In Iceland it is called *Likraa*; in Norway, *Radesyge* or *Spedalskhed*. It is to be apprehended that many of these cases of leprosy belong more particularly to the elephantiasis: such is the red disease of Cayenne, and the *Boasi* of Surinam.

It is especially in the East, its probable original seat, that leprosy is observed. In Damascus there are two hospitals for its treatment. The waters of the Jordan are still considered efficacious in its cure, and the waters of Abraham's well are looked upon as a specific. In Candia the disease was common, and lepers were noted for their obscene profligacy. From Crimea it has also been carried to Astracan, whence it infected the Cossacks of Jaïck. Pallas and Gmelin have given an accurate account of its invasion.

The Aspic

Various opinions are entertained respecting the reptile that inflicted the fatal sting on Cleopatra. According to Pliny, it had hollow fangs, which distilled the venom in the same manner as the tail of the scorpion. Ælian states it to have been a snake that moves slowly, covered with scales of a reddish colour, his head crowned by callous protuberances, his neck becoming swollen and inflated when he sheds his poisonous secretion. Other naturalists affirm that the scales are shining, and the eyes of a dazzling brightness; while some authorities maintain that the reptile's hue is of a dark brown colour, and that, like the chameleon, it can assume the colour of the ground on which it drags its writhing form. However, later observers have now clearly ascertained that the aspic of the ancients is the *coluber haje*, called by the Arabs *nascher*, and classed by Lacepède as the Egyptian viper. Lucan seems to have described this serpent in the following lines:

Hic, quæ prima caput movit de pulvere tabes
Aspida somniferum tumida cervice levârit.

According to Hasselquist, the aspic's head is raised in a protuberance on both sides behind the eyes; the scales which cover the back are small, of a dirty white colour, and speckled with reddish spots. The lower surface of the reptile is striated with one hundred and eighteen small parallel zones, and forty-four smaller ones are under the tail. The teeth resemble in their structure those of other vipers; and, when the animal is irritated, its neck and throat are swelled up to the size of the body. Authors vary in regard to its length. Hasselquist, from whom we have derived the above description, says that it is a short reptile; while Savary assures us that it sometimes measures six feet.

The ancients stated that the poison of the aspic did not occasion any pain, but that the person it had stung gradually sunk into a calm and languid state, which was followed by a sound sleep, the forerunner of dissolution. Modern travellers assure us, on the contrary, that this venom is most active; and Hasselquist has observed an aspic in Cyprus, the bite of which brought on a rapid mortification, which generally proved fatal in a very few hours.

In Egypt the viper is still made use of in medicinal preparations; and a great number of them are sent to Venice for the confection of the celebrated *Theriaca*. Under Nero, we are told, that these reptiles were imported into Rome for pharmaceutical purposes.

In the above description, and endeavour to ascertain the nature of the aspic of the ancients, there must be some error. The *coluber aspis* of Linnæus is not venomous, and we may therefore conclude that the aspic was of the same species as our viper. The venom of this animal is of a yellow tinge, and small in quantity, seldom exceeding two grains in weight. In hot weather it becomes more active in its effects. Time does not seem to deprive it of its fatal properties; for instances have been known of persons having pricked their fingers with the pointed fangs of a viper preserved in spirits, when the most serious accidents have followed. The dried teeth lose this noxious power. The venom of the viper may be swallowed without any risk, provided there is not an ulcer in the mouth. Fontana has made upwards of six thousand experiments to prove the activity of this substance. A sparrow died under its influence in five minutes, a pigeon in eight or ten; a cat sometimes did not experience any inconvenience, a sheep seldom or never; and the horse appears to be proof against its action.

Some naturalists have affirmed that the female viper, in cases of sudden alarm, possesses the faculty of securing the safety of her young by swallowing them and keeping them concealed

in her stomach, as the kangaroo secures her offspring in her pouch. This assertion, although fabulous, was credited by Sir Thomas Brown, and since by Dr. Shaw. Stories equally absurd have been circulated of this reptile. The Egyptians considered the viper as a typification of a bad wife, since they believed that during their union the female was in the habit of biting off her partner's head. They also looked upon it as the emblem of undutiful children, from the idle belief that the viper came into the world by piercing an opening in its mother's side.

Selden’s Comparison Between A Divine, A Statesman, And A Physician

If a physician sees you eat any thing that is not good for the body, to keep you from it he cries out “It is *poison*!” If the divine sees you do any thing that is hurtful to your soul, to keep you from it he cries out “You are *damned*!”

To preach long, loud, and damnation, is the way to be cried up. We love a man who damns us, and we run after him again to save us. If a man has a sore leg, and he should go to an honest and judicious surgeon, and he should only bid him keep it warm, or anoint it with some well-known oil that would do the cure, haply he would not much regard him, because he knows the medicine beforehand to be an ordinary medicine. But if he should go to a surgeon that should tell him, “Your leg will be gangrene within three days, and it must be cut off; and you will die, unless you do something that I could tell you,” what listening there would be to this man! “Oh! for the Lord’s sake, tell me what this is:—I will give you any contents for your pains.”

This ingenious antiquary has also made some quaint comparisons between doctors of the body and doctors of the public interests. “All might go on well,” he says, “in the commonwealth, if every one in the parliament would lay down his own interest and aim at the general good. If a man was rich, and the whole college of physicians were sent to him to administer to him severally; haply, so long as they observed the rules of art, he might recover. But if one of them had a great deal of scammony by him, he must put off that; therefore will he prescribe scammony; another had a great deal of rhubarb, and he must put off that; therefore he prescribes rhubarb: and they would certainly kill the man. We destroy the commonwealth, while we preserve our own private interests and neglect the public.”

Grotius called John Selden “the honour of the English nation;” and Bacon had such an implicit faith in his judgment, that he desired in his will that his advice should be taken respecting the publication or suppression of his posthumous works.

The Lettuce

Various species of this plant were known to the ancients. Its type is supposed to be the *Lactuca quercina*, or the *Lactuca scariola*; both of Asiatic origin. Many powerful effects were formerly attributed to its use. It was considered as producing sleep, and recovery from intoxication; it was in consequence of this belief that this salad was served up after meals. Thus Martial tells us,

Claudere quæ cœnas Lactuca solebat avorum,
Die mihi cur nostras inchoat illa dapes.

Columella thus describes its properties:

Jamque salutari properet Lactuca sapore
Tristia quæ relevet longi fastidia mori.

This belief in its narcotic qualities induced the ancients to esteem it as an aphrodisiac: the Pythagoreans had therefore named it ευνουχιον; and Eubulus calls it the food of the dead, *mortuorum cibum*. Venus covered the body of her beloved Adonis with lettuce-leaves to calm her amorous grief; and vases, in which they were planted, were introduced in the Adonian festivals. Galen, who had faith in its powers, called it the herb of sages, and in his sleepless nights sought its influence by eating it at supper. It was also frequently put under the pillow of the rich to lull them to repose. Its cooling qualities were so much dreaded by the Roman gallants, that its use was abandoned; but Augustus's physician, Antonius Musa, having calmed by its prescription his master's uneasiness in a hypochondriac attack, lettuce recovered its popularity: a statue was erected to the doctor, and salad once more became the fashion, although the prejudices against it could not be removed. Lobel informs us that an English nobleman, who had long wished for an heir, but in vain, was blessed with a numerous family by leaving off this Malthusian vegetable.

Medical Fees

Such is the perversity of our nature, that the remuneration given with the greatest reluctance is the reward of those who restore us, or who conscientiously endeavour to restore us to health. The daily fees, it is true, are not handed with regret, for the patient is still suffering; but if they were to be allowed to accumulate to a considerable amount, they would be parted with, with a lingering look. The lawyer's charges for a ruinous litigation, the architect's demands for an uncomfortable house, are freely disbursed, though if exorbitant they may be taxed; but the doctor's—a guinea a visit!—is sheer extortion. 'Send for the apothecary: the physician merely gives me advice; the apothecary will send me plenty of physic: at any rate I shall have something for my money.'

To what can this unjust, this illiberal feeling be attributed? Simply to vanity and pride. Illness and death level all mankind. The haughty nobleman, who conceives himself contaminated by vulgar touch, can scarcely bring himself to believe that he is placed upon the same footing as a shoe-black. All *prestiges* of grandeur and worldly pomp vanish round the bed of sickness; and the suffering peer would kneel before the humblest peasant for relief. Then it is that money would be cheerfully lavished to mitigate his sufferings. But how soon the scene is changed! The patient is well, thrown once more in the busy vortex of business or of pleasure. He had been slightly indisposed; his natural constitution is excellent: the doctors mistook his case; thought him very ill, forsooth; but nature cured him.

Could the ambitious mother admit for one moment that her daughter had been seriously ill?—a sick wife is an expensive article! If her medical attendant unfortunately hinted that the young lady had been in danger, he is considered a busy old woman, exaggerating the most trifling ailment to obtain increase of business; in fact, a dangerous man in a family where there are young persons—to be provided for. Nor can we marvel at this. No one likes to be considered morally or physically weak, excepting hypochondriacs, who live upon groans, and feel offended if you tell them that they do not look miserable. The soldier will describe the slightest wound he received in battle as most severe and dangerous; a feeling of pride is associated with the relation. The bold hunter will boast of a fractured limb; the accident showed that he was a daring horseman. Nay, the agonizing gout is a fashionable disease, which seems to proclaim good living, good fellowship, and luxury: it is, in short, a gentlemanly disease. But the slow ravages of hereditary ailments, transmitted from generation to generation with armorial bearings, the development of which may be averted by proper care, or hurried on by fashionable imprudence! how difficult even to hint to a family the presence of the scourge, when, through the transparent bloom of youth and beauty, our experienced eye reads the fierce characters of death in the prime of years. The aerial coronet floats in fond visions before the doting mother's ambitious eyes. A man would be a barbarian, nay, a very brute, to deprive the darling girl of the chances of Almacks, the delights of the pestiferous ball-room, or the galaxy of court or opera!

To attend the great is deemed the first stepping-stone to fortune, and patronage is considered as more than an equivalent of remuneration. Too frequently does the physician placed in that desirable situation forget what Hippocrates said of the profession. "The physician stands before his patient in the light of a demi-god, since life and death are in his hands."

Curious anecdotes are related of this unbecoming subserviency. A courtly doctor, when attending one of the princesses, was asked by George III. if he did not think a little ice might benefit her. "Your majesty is right," was the reply; "I shall order some forthwith." "But

perhaps it might be too cold," added the kind monarch. "Perhaps your majesty is right again; therefore her royal highness had better get it warmed."

This absurd deference to rank and etiquette by a physician who at the moment is superior to all around him, reminds one of an account given by Champfort of a fashionable doctor. "D'Alembert was spending the evening at Madame Du Deffand's, where were also President Hénault and M. Pont de Vesle. On this flexible physician's entering the room, he bowed to the lady with the formal salutation, '*Madame, je vous présente mes très humbles respects*.' Then, addressing M. Hénault, '*J'ai bien l'honneur de vous saluer*.' Turning round to M. de Vesle he obsequiously said, '*Monsieur, je suis votre très humble serviteur*;' and at last, condescending to speak to D'Alembert, he nodded to him with a '*Bonjour, Monsieur*!'" On such occasions a condescending smile from power is considered a fee.

Reluctance in remunerating medical attendants was also manifested by the ancients; and Seneca has treated the subject at some length. The difficulty in obtaining remuneration has unfortunately rendered many physicians somewhat sordid, and loth to give an opinion unless paid for. In this they are unquestionably right, as gratuitous advice is seldom heeded; and one of the most distinguished practitioners used to say, that he considered a fee so necessary to give weight to an opinion, that, when he looked at his own tongue in the glass, he slipped a guinea from one pocket into another.

To consider themselves in proper hands, patients must incur expenses, and as much physic as possible be poured down. Malouin, physician to the Queen of France, was so fond of drugging, that it is told of him, that once having a most patient patient, who diligently and punctually swallowed all the stuff he ordered, he was so delighted in seeing all the phials and pill-boxes cleaned out, that he shook him cordially by the hand, exclaiming, "My dear sir, it really affords me pleasure to attend you, and you *deserve* to be ill." Our apothecaries must surely meet with incessant delight!

The most extraordinary remuneration was that received by Levett, Dr. Johnson's friend and frequent companion. It was observed of him that he was the only man who ever became intoxicated from motives of prudence. His patients, knowing his irregular habits, used frequently to substitute a glass of spirits for a fee; and Levett reflected that if he did not accept the gin or brandy offered to him, he could have been no gainer by their cure, as they most probably had nothing else to give him. Dr. Johnson says "that this habit of taking a fee in whatever shape it was exhibited, could not be put off by advice or admonition of any kind. He would swallow what he did not like, nay, what he knew would injure him, rather than go home with an idea that his skill had been exerted without recompence; and had his patients," continues Johnson, "maliciously combined to reward him with meat and strong liquors, instead of money, he would either have burst, like the dragon in the Apocrypha, through repletion, or been scorched up, like Portia, by swallowing fire." But though this worthy was thus rapacious, he never demanded any thing from the poor, and was remarked for his charitable conduct towards them.

Various professional persons have sometimes endeavoured to remunerate their medical attendants by reciprocal services: thus an opera-dancer offered to give lessons to a physician's daughters for their father's attendance upon him; and a dentist has been known to propose to take care of the jaws of a whole family to liquidate his wine bill. One of the wealthiest merchants of Bordeaux wanted to reduce the price of a drawing-master's lessons, on the score of his taking his children's daubs with him to sell them *on account*. This arrangement, however, did not suit the indignant artist, who left the Crœsus in disgust.

A singular charge for medical attendance was lately brought before the court of requests of Calcutta, by a native practitioner. He demanded 314 rupees for medicine alone, and in the items of drugs appeared pearls, gold leaf, and monkeys' navels!

In one of the old French farces there is an absurd scene between Harlequin and his physician. The motley hero had been cured, but refused to remunerate his Esculapius, who brought an action for his fees, when Harlequin declares to the judge that he would rather be sick again; and he therefore offers to return his health to the doctor, provided he would give him back his ailments, that each party might thus recover their own property. This incident was perhaps founded on an ancient opinion of Hippocrates, who frequently mentioned salutary diseases. In 1729, a Dr. Villars supported a thesis on this subject, entitled "*Dantur-ne morbi salutares?*" and Theodore Van Ween has also written a learned dissertation on the same subject.

A celebrated Dublin surgeon was once known to give a lesson of economy to a wealthy and fashionable young man remarkably fond of his handsome face and person. He was sent for, and found the patient seated by a table, resting his cheek upon his hand, whilst before him was displayed a five-pound note. After some little hesitation he removed his hand, and displayed a small mole on the cheek. "Do you observe this mark, doctor?"—"Yes, sir, I do."—"I wish to have it removed."—"Does it inconvenience you?"—"Not in the least."—"Then why wish for its extirpation?"—"I do not like the look of it."—"Sir," replied the surgeon, "I am not in the habit of being disturbed for such trifles; moreover, I think that that little excrescence had better remain untouched, since it gives you no uneasiness; and I make it a rule only to take from my patients what is troublesome to them." So saying, he took the five-pound note, slipped it into his pocket, and walked out of the room, leaving the patient in a state of perfect astonishment.

It is related of a physician who received his daily fee from a rich old miser, who had it clenched in his fist when he arrived, and turned his head away when he opened his hand for the doctor to take it, that, on being informed his patient had died in the morning, not in the least disconcerted he walked up to the dead man's chamber, and found his clenched fist stretched out as usual; presuming that it still grasped the accustomed remuneration, with some difficulty he opened the fingers, took out the guinea, and departed.

The Egyptian physicians of old were paid by the state, but they were not prevented from accepting remuneration from individuals, and they were allowed to make demands for their attendance except on a foreign journey, and during military services.

When we compare the value of money it appears probable that the fees of olden practitioners were more considerable than the remuneration of the present day. Attendance upon royalty and the court seems also to have been more profitable. Dr. Radcliffe says, that he received from King William 200*l.* a year more than any other physician in ordinary—this monarch upon his appointment, gave him moreover, 500 guineas out of the privy purse for his attendance on the Earl of Portland, and the Earl of Rochford. When the same physician went to Hanau to attend Lord Albemarle, he received 1200*l.* from the king, with 400 guineas from his patient, besides a valuable diamond ring.

Dr. Radcliffe's fortune must have been considerable, as appears from his legacies, bequeathing 5000*l.* for the improvements of University College—4000*l.* for the building of a library at Oxford—and 500*l.* yearly for the amelioration of the diet of St. Bartholomew's hospital. Radcliffe had not been a year in London when he received 20 guineas daily, and he mentions that his fee for a visit from Bloomsbury Square to Bow, was five guineas.

We do not exactly know what was the exact honorarium of Doctors in former days, yet Baldwin Hammey informs us that in 1644, Dr. Robert Wright who had only been settled three years in London, was in the habit of receiving a thousand broad pieces (22 shillings) in the course of the year.

The following is a curious account of a puritan's consultation with Dr. Hammey.

"It was in the time of the civil wars when it pleased God to visit him with a severe fit of sickness, or peripneumonia, which confined him a great while to his chamber, and to the more than ordinary care of his tender spouse. During this time he was disabled from practice; but the very first time he dined in his parlour afterwards, a certain great man in high station came to consult him on an indisposition—(*ratione vagi sui amoris*,) and he was one of the godly ones too of those times. After the doctor had received him in his study, and modestly attended to his long religious preface, with which he introduced his ignominious circumstances, and Dr. Hammey had assured him of his fidelity, and gave him hopes of success in his affair, the generous soldier (for such he was) drew out of his pocket a bag of gold and offered it all at a lump to his physician. Dr. Hammey, surprised at so extraordinary a fee, modestly declined the acceptance of it; upon which the great man, dipping his hand into the bag himself, grasped up as much of his coin as his fist could hold, and generously put it into the doctor's coat-pocket, and so took his leave. Dr. Hammey, returned into his parlour to dinner, which had waited for him all that time, and smiling (whilst his lady was discomposed at his being absent so long), emptied his pocket into her lap. This soon altered the features of her countenance, who telling the money over, found it to be thirty-six broad pieces of gold: at which she being greatly surprised, confessed to the doctor that surely this was the most providential fee he ever received; and declared to him that during the height of his severe illness, she had paid away (unknown to him) on a state levy towards a public supply, the like sum in number and value of pieces of gold; lest under the lowness of his spirits, it should have proved a matter of vexation, unequal to his strength at that time to bear; which being thus so remarkably reimbursed to him by Providence, it was the properest juncture she could lay hold on to let him into the truth of it." It has been supposed, that the sanctimonious sufferer was no other than Ireton, Cromwell's son-in-law.

During the imprisonment of Dr. Friend in the tower, Dr. Head attended his patients, and on his liberation he presented him with 5000*l.* the amount of the fees received on his account. Dr. Meade's practice averaged from 5000*l.* to 6000*l.* per annum. It is somewhat strange, that this celebrated physician whose evenings were generally spent in convivial meetings at Batson's Coffee-house, used in the forenoon to receive consulting apothecaries at a tavern near Covent-garden, prescribing for the patients without seeing them at half-a-crown fee.

Enthusiasm

Enthusiasm, from its derivation, might in strictness be called a *fixity of idea in divinity*; but Locke has given a better definition of this morbid state of our intellectual faculties in considering it as a heated state of the imagination, "*founded neither on reason nor divine revelation, but arising from the conceits of a warmed or overweening brain*." I shall not venture to take the field of controversy to support this doctrine against that of some metaphysicians, who most probably would consider this mental aberration as an original and natural judgment inspired by the Almighty, founded not on reason or reflection, but an instinctive impulse of the powers of the mind.

The Hebrews named this impulse *Nabi* נבוא, (plural *Nebiim*,) "to approach or enter," on the surmise that the spirit pervaded the prophets, who were called *Roeh* הרואה, or *Seeing*, hence *Seers*.

Plato divided enthusiasm into four classes. I. *The Poetical*, inspired by the Muses. II. *The Mystic*, under the influence of Bacchus. III. *The Prophetic*, a gift of Apollo; and IV. *The Enthusiasm of love*, a blessing from Venus Urania. This immortal philosopher was not the visionary speculatist which some writers have represented him; his logic did not consist of frivolous investigations, but embraced the more useful subject of correct definition and division, as he sought to reconcile practical doctrines of morality with the mysticism of theology by the study of Divine attributes. Whatever some of the Eclectic philosophers might have asserted, Plato considered that our ideas were derived from external objects, and never contemplated the extravagant doctrine of imbodying metaphysical abstractions, or personifying intellectual ideas.

To this day, the attentive observer will find Plato's classification of enthusiasm to be correct. The ecstatic exaltation of religion and of love are not dissimilar; only the latter can be cured, the former seldom or never admits of mitigation: the fantastic visions of the lover may be dispelled by infidelity in the object of his misplaced affection; the phantasies of fanaticism can only yield to an improbable state of infidelity. Shaftesbury has justly observed, "There is a melancholy which accompanies all enthusiasm, be it of love or religion; nothing can put a stop to the growing mischief of either, till the melancholy be removed, and the mind be at liberty to hear what can be said against the ridiculousness of an extreme in either way."

Our poet Rowe has beautifully pointed out the facility with which a noble and martial soul can free itself from love's ignoble trammels.

Rouse to the combat,
And thou art sure to conquer; war shall restore thee:
The sound of arms shall wake thy martial ardour,
And cure this amorous sickness of thy soul,
Begot by sloth, and nurs'd by too much ease.
The idle God of Love supinely dreams
Amidst inglorious shades and purling streams;
In rosy fetters and fantastic chains
He binds deluded maids and simple swains;
With soft enjoyment woos them to forget
The hardy toils and labours of the great:
But if the warlike trumpet's loud alarms
To virtuous acts excite, and manly arms,

The coward Boy avows his abject fear,
On silken wings sublime he cuts the air,
Scar'd at the noble horse and thunder of the war.

The only trumpet that can arouse the religious enthusiast from his ascetic meditations is the war-whoop that calls him to destroy all those who impugn his doctrines in a battle-field, where each champion seeks pre-eminence in cruelty, and rancorous persecution.

When we contemplate the miseries that have arisen from fanaticism, or fervid enthusiasm, although it is but a sad consolation, yet it affords some gratification in our charitable view of mankind, to think, nay to know, that this fearful state of mind is a disease, a variety of madness, which may in many instances be referred to a primary physical predisposition, and a natural idiosyncrasy. It is as much a malady as melancholy and hypochondriacism. In peculiar constitutions it grows imperceptibly. Lord Shaftesbury has made the following true observation: "Men are wonderfully happy in a faculty of deceiving themselves whenever they set heartily about it. A very small foundation of any passion will serve us not only to act it well, but even to work ourselves in it beyond our own reach; a man of tolerable goodnature, who happens to be a little piqued, may, by improving his resentment, become a very fury for revenge."

Thus it is with enthusiasm, a malady which in its dreadful progress has been known to become contagious, one might even say epidemic. Vain terrors have seized whole populations in cities and in provinces; when every accident that happened to a neighbour was deemed a just punishment of his sins, and every calamity that befel the fanatic was considered the hostile act of others. Jealousy and dark revenge were the natural results of such a state of mind, when the furious fire of bigotry was fanned by ambition until monomania became dæmonomania of the most hideous nature, and every maniac bore in his pale and emaciated visage the characteristic of that temperament which predisposes to the disease. Seldom do we observe it in the *sanguineous temperament*, remarkable for mental tranquillity, yet determined courage when roused to action. The *choleric* and *bilious*, impetuous, violent, ambitious, ever ready to carry their point by great virtues or great crimes, may no doubt rush into a destructive career; but then they lead to the onset the atrabilious, men saturated with black bile, and constituting the *melancholy temperament*. Here we behold the countenance sallow and sad; the visage pale and emaciated, of an unearthly hue; gloom, suspicion, hate, depicted in every lineament; the mirror of a soul unfitted for any kind sentiment of affection, pity, or forgiveness. Detesting mankind, and detested, they seek solitude, to brood upon their wretchedness, or to derive from it the means to make others as miserable as themselves. Such do we usually find the enthusiastic monomaniac. His ideas are concentrated into a burning focus, which consumes him like an ardent mirror. His life of relation is nearly extinguished. His external senses are rendered so obtuse and callous that he becomes insensible to hunger and thirst, to heat and cold however intense; and bodily injuries, which would occasion excruciating agonies in others, he bears without any apparent feeling. On this subject of religious enthusiasm the remarks of Evagrius are worthy of notice. "Contrarieties," he says, "are in themselves so tempered, and the grace of God maketh in them such an union of discordant things, that life and death, which are in essence so opposite to each other, seem to join hands and dwell together in them. Happy are they while they live, and happier still when they depart." It has been known amongst these rigid ascetics that when a stranger visited them, they mortified themselves by entertaining him and partaking of the good cheer. Thus inventing a novel kind of fasting—eating and drinking against their will.

It is related of St. Macarius, that one day having killed a gnat that had stung him, he was struck with such compunction at the sight of blood, that by way of atonement, he threw off

his clothes, and remained in a state of nudity for six months in a marsh exposed to the bites of every noxious insect. Sozomen in praising this mortification, assures us that this exposure to the inclemency of the weather, did so harden and tan him that his beard could not make its way through the skin.

It has been erroneously supposed that such individuals, being hostile to mankind, are prone to do evil,—this is not generally the case; they seem satisfied with their own sufferings, and only seek to inflict them upon others when roused from their concentration by fanaticism.

A late ingenious writer, in his work entitled “The Natural History of Enthusiasm,” has somewhat overdrawn the portrait of these unfortunate but dangerous beings when labouring under the disease, which he thus defines: “It will be found that the elementary idea attached to the term in its manifold applications, is that of fictitious fervour in religion, rendered turbulent, morose, or rancorous by junction with some one or more of the unsocial emotions; or, if a definition as brief as possible were demanded, we should say that fanaticism is enthusiasm inflamed by hatred. Fanaticism supposes three elements of belief: the supposition of malignity on the part of the object of our worship; a consequent detestation of mankind at large, as the subjects of malignant power; and then, a credulous conceit of the favour of Heaven shown to the few, in contempt of the rules of virtue.”

Shaftesbury had already said, that “nothing besides ill-humour, either natural or forced, can bring a man to think seriously that the world is governed by any devilish or malicious power.” Such a fearful conviction constitutes a clear case of dæmonomania. Patients labouring under that malady are ever prone to injure themselves and others, prompted, as they constantly avow, by an evil spirit; but enthusiasts, who live in solitary mortification until a paroxysm of fanaticism draws them from their retreat, seldom or never meditate mischief to others, or indeed that hatred to mankind which our author considers a feature of their condition. Society may become irksome, and may be shunned for ever, without a sentiment of hate. The gayest of the gay may be impelled by feelings more or less morbid to seek a voluntary endurance, to expiate real or imaginary offences, without experiencing a desire of a uselessly vindictive sentiment towards the former companions of their vices or follies. Extremes of depravity and contrition do not infrequently meet; and it has been remarked in Eastern countries, where asceticism arose, that the gates of the most splendid and luxurious cities open upon desert wilds or mountainous solitudes, to which the penitent may flee from his former scenes of ambition and enjoyment.

Such enthusiasts, excepting when enjoying the beatitude of ecstatic exaltation, are more to be pitied than feared. Persecution would most probably drive them to a dangerous state of fanatic rage; and the noble philosopher whom I have already quoted, very justly observes, “They are certainly ill physicians in the body politic who would needs be tampering with these mental eruptions, and, under the specious pretence of healing the itch of superstition, and saving souls from the contagion of enthusiasm, should set all nature in an uproar, and turn a few innocent carbuncles into an inflammation and a mortal gangrene.”

Enthusiasts are supposed by their followers to be gifted with the faculty of prophecy; and it is somewhat strange that the ancients considered certain temperaments as best fitted for this inspiration. The atrabilious temperament took the lead; and this melancholy state was to be increased by abstinence, mortification, and more especially rigid continence. The latter privation, indeed, was deemed indispensable for prophets; and the Jewish Rabbins inform us that Moses abandoned his wife Zipporah the very moment that he was prophetically inspired. A physical reason has been adduced to prove the necessity of a chaste life, which I here must be allowed to pass over; but upon the same principle, emasculation was considered as rendering man totally unfit for prophetic revelation, or indeed any holy inspiration; and we

find in the first of Deuteronomy that such subjects were not admissible to the service of the Temple.

Jesaias, and some other Jewish writers, have affirmed that Daniel belonged to that class of beings; but it has been shown that the name of *Spado*, which he bore, merely gave him the high rank that eunuchs held at the Assyrian court. Potiphar bore the same title among the Pharaohs. Baruch Spinosa maintained that temperaments should vary according to the nature of the prophecy; thus, a gay prophet would predict victory and happiness, a gloomy one misery and wars; peace and concord, if he is human; destruction and merciless events, if he were sanguinary: and, in support of his doctrine, he quotes the passage in Kings, where Elisha, when brought before Jehosophat, called for a minstrel ere he predicted that victory should crown the arms of Judah.

Various artificial means have been resorted to at all periods to prepare the intellects for inspirations, by creating a heated imagination. Pliny informs us that, in his days, the root of the *Halicacabum*, supposed to be a species of hyoscyamus, was chewed by soothsayers. Christopher D'Acosta relates that the Indians employ a kind of hemp called *Bangue* for the same purpose: and in St. Domingo their supposed prophets masticate a plant called *Cohaba*. The priestesses of Delphi were also in the habit of chewing laurel-leaves before they ascended the tripod, which it is stated was originally formed of a laurel-tree root with three branches. Sophocles calls the Sibyls δαφνηφαγος, laurel-eaters; and thus Tibullus,

Vera cano, sic usque sacras innoxia lauros
Vescar, et æternùm sit mihi virginitas.

Auguries were drawn from the burning of the laurel-leaf. If it crackled and sparkled during combustion, the inference was favourable; the reverse, if it was consumed in silence. Propertius alludes to this belief:

Et tacet extincto laurus adusta foco.

Yet so far from possessing exhilarating qualities, laurel-leaves were supposed to diminish the excitement produced by wine; and Martial affirms that the Roman ladies made use of them to drink large potations with impunity:

Fœtere multo Myrtale solet vino;
Sed fallat ut nos, folia devorat lauri,
Merumque, cautâ fronde, non aquâ miscet.

May it not be inferred that the leaves given to the Pythia might have been those of the *Lauro-cerasus*, the effects of which are similar to those of prussic acid, producing vertigo, dizziness, and various convulsive symptoms? This tree was first observed by Bélon, who discovered it in his eastern voyages in 1546; but it might have been well known to the ancients. We may thus account for the violent convulsions in which the priestesses of Apollo were thrown on these mystic occasions, and which were said to arise from the gas over which they were seated. Although the tree from which the leaves were gathered grew near the temple, and was the common *Lauros nobilis*, yet the leaves of the *Lauro-cerasus* might have easily been substituted on the occasion; since, always green and shining, they are not very unlike each other, and the flowers of both trees are pedunculate; and, no doubt, the priests well knew to what extent they could carry the dose to serve their purposes; possibly the modern preparation of *noyau* might have been a Pythian dram.

The effects of enthusiasm in rendering its victims insensible to all external agents is truly surprising, and cannot be better illustrated than by a relation of the horrors which the famous

Convulsionists of Paris and other parts of France underwent, not only voluntarily, but at their most earnest prayer and solicitation.

This work of miracles, as it was called, was first performed by a priest of the name of Paris, in 1724, and strange to say, the aberration continued for upwards of twelve years. Paris having departed this life in the odour of sanctity, (at least according to the conviction of the Jansenists, who had opposed with no little violence the famous bull *Unigenitus*), the Appellants, for such they thought proper to denominate their sect, appealed to the remains of their beatified companion to operate miracles in support of their common cause. The Appellants were absurdly persecuted, therefore miracles became manifestations easy to obtain. Having succeeded in finding credulous dupes, the next step was to work their credulity into a useful state of enthusiasm. They therefore summoned all the sick, lame, and halt of their sectarians to repair to the tomb of St. Paris for radical relief. Crowds were soon collected round his blessed sepulchre. It is now generally supposed that animal magnetism was resorted to in these curative operations, or rather religious ceremonies. Had not the means thus employed for the purpose been recorded and authenticated by the most irrefragable authorities, the sceptic might long pause before he would yield them credence.

The patient (a female) was stretched on the ground, and the stoutest men that could be found were directed to trample with all their might and main upon her body; kicking the chest and stomach, and attempting to tread down the ribs with their heels. So violent were these exertions, that it is related a hunchbacked girl was thus kicked and trampled into a goodly shape.

The next exercise was what they called the plank, and consisted in laying a deal board upon the patient while extended on the back, and then getting as many athletic men as could stand upon it, to press the body down; and in this endeavour they seldom showed sufficient energy to satisfy the supposed sufferer, who was constantly calling for more pressure.

Next came the experiment of the pebble, a diminutive name they were pleased to give to a paving-stone weighing two-and-twenty pounds, which was discharged by the operator upon the patient's stomach and bosom, from as great a height as he could well raise the weighty body. This terrific blow was frequently inflicted upwards of a hundred times, and with such violence, that the house, and the furniture of the room, vibrated under the concussion, while the astonished bystanders were terrified by the hollow sound re-echoed by the enthusiast at every blow.

Carré de Montgeron affirms that the *pebble* was not found sufficiently powerful, and the operator was obliged in one case to procure an iron fire-dog (*chenet*), weighing about thirty pounds, which was discharged as violently as possible on the pit of the patient's stomach at least a hundred times. This instrument having for the sake of curiosity been hurled against a wall, brought part of it down at the twenty-fifth blow. The operator further states, that he had commenced according to the usual practice, by inflicting moderate blows, until he was induced by her lamentable entreaties to redouble his vigour, but all to no purpose; his strength was unavailing and he was obliged to employ a more athletic surgeon, who fell to work with such energy that he shook the whole house. The convulsionist, who was of the gentle sex, would not allow sixty blows she had received from her first doctor to be included in the calculation of the dose, but insisted upon having her whole hundred as prescribed. It further appears, that at each stroke the delighted enthusiast would exclaim in ecstacy, "Oh, how nice!" "Oh, what good it does me!" "Oh, dear brother, hit away—again—again!" For be it known, these operators were called by the affectionate name of brothers, whose claims to fraternal affection were in the ratio of the weight of their kindness towards the sisterhood.

One of these young ladies, who was not easily satisfied, wanted to try her own skill, and jumped with impunity into the fire, an exploit which obtained her the glorious epithet of Sister Salamander. The names that these amiable devotees gave to each other were somewhat curious. They all strove to imitate the whining and wheedling of spoiled children, or petted infants; one was called *L'Imbécile*, another *L'Aboyeuse*, a third *La Nisette*, and they used to beg and cry for barley-sugar and cakes; barley-sugar signified a stick big enough to fell an ox, and cakes meant paving-stones. The excesses of these maniacs were at last carried to so fearful an extent, and their religious ceremonies were so debased by obscenities that the police was obliged to interfere, and forbid these detestable practices; hence it was affirmed that the following somewhat impious notice was suspended over the church-door:

De par le Roi, défense à Dieu,
De faire miracle en ce lieu.

These lunatics, for such they must be considered, were not impostors. They had been worked to this degraded state by the plastic power of superstition, and implicit reliance was placed in their assertions; for, as Pascal said, "we must believe people who are ready to have their throats cut." Whether the Jansenist priests belonged to the same class, I leave to the reader to decide.

Cabanis, in his interesting work, "Rapports du Physique et du Moral de l'Homme," offers the following remarks on this most curious subject: "Sensibility may be considered in the light of a fluid the quality of which is determined, and which, when carried to certain channels in greater proportion than to others, must of course be diminished in the latter ones. This is evident in all violent affections, but more especially in those ecstasies where the brain and other sympathetic organs are possessed of the highest degree of energetic action, while the faculty of feeling and of motion—in short, the vital powers—seem to have fled from the other parts of the system. In this violent state, fanatics have received with impunity severe wounds, which, if inflicted in a healthy condition, would have proved fatal or most dangerous; for the danger that results from the violent action of external agents on our organs depends on their sensibility, and we daily see poisons, which would be deleterious to a healthy man, innocuous in a state of illness. It was by availing themselves of this physical disposition that impostors of every description, and of every country operated most of their miracles; and it was by these means that the Convulsionists of St. Medard amazed weak imaginations with the blows they received from swords and hatchets, and which in their ascetic language they called *consolations*. This was the magic wand with which Mesmer overcame habitual sufferings, by giving a fresh direction to the attention, and establishing in constitutions possessed of great mobility a sense of action to which they had been unaccustomed. It was thus also that the *Illuminati* of France and Germany succeeded in destroying external sensations amongst their adepts, depriving them in fact of their relative existence."

In these phenomena we do not witness miracles or supernatural agency. Enthusiasts are simply maniacs. Like maniacs, their vital endowments are deranged; they lose the faculty of feeling, of reasoning, of comparing, of associating their ideas; their volition, their memory have fled, and all the functions of organic life are more or less disturbed. Rousseau never proved more clearly that his own intellectual faculties were occasionally impaired, than when he stated "that the state of reflection is unnatural, and that the man who meditates is a depraved animal."

Insanity may be divided into four species:

1st, *Monomania*, and *melancholy*, in which the delirium is confined to one or few objects.

2nd, *Mania*, where the delirium embraces a variety of impressions, and is accompanied with violence.

3rd, *Dementia*, or insanity in the full acceptation of the word, where the senses are totally bewildered, and the faculty of thinking destroyed.

4th, *Imbecility* or *idiotcy*, where, from imperfect organisation, ratiocination cannot be correct.

To the first of these categories enthusiasts generally belong. Delirium, or wandering, is to a certain extent applicable to all, being a want of correspondence between judgment and perception. Locke and Condillac characterize madness as a *false judgment*, or a disposition to associate ideas incorrectly, and to mistake them for truths. Hence it is observed by Locke that "Madmen err, as men do that argue right from wrong principles." Dr. Beattie refers madness to *false perception*; and Dr. Mason Good, justly remarks, that "the perceptions in madness seem, for anything we know to the contrary, to be frequently as correct as in health, the judgment or reasoning being alone diseased or defective."

I hope that I may not be accused of *materialism* when I venture to affirm that all these enthusiasts labour under a physical disease; but whether this state was originally brought on by a morbid condition of the intellectual or the empassioned faculties of the mind, or, in other words, whether a diseased state of the mind brought on a diseased state of the body, I shall not at present venture to decide, as the disquisition would be foreign to the nature of this work, and lead us into investigations of little interest to the generality of readers.

In the German Psychological Magazine we meet with a curious case of a patient who believed that he was supernaturally endowed with the power of working miracles. The man was a gend'arme of the name of Gragert, of a harmless and quiet disposition, but rather of a superstitious turn of mind. From poverty, family misfortunes, and severe military discipline, a series of sleepless nights and a mental disquietude were brought on that, according to his own report, nothing could dissipate but a perusal of pious works. In reading the Bible he was struck with the book of Daniel, and was so much pleased with it, that it became his favourite study; from that moment the idea of miracles so strongly possessed his imagination, that he began to believe that he could perform some himself. He was persuaded more especially that if he were to plant an apple-tree with the view of its becoming a cherry-tree, such was his power that it would bear cherries. He was wont to answer every question correctly, except when the subject concerned miracles, in regard to which he ever entertained his old notions; adding, however, that he would relinquish this thought if he could be convinced that the event of his trials did not correspond with his expectations.

That many enthusiasts, although incurable in their peculiar aberration, have possessed some amiable qualities, is undeniable. Such rare occurrences remind one of the curious case of madness recorded by Tidemann of a lunatic of the name of Moses, who was insane on one side, and who observed his insanity with the other; his better half constantly rebuking his worse half for its absurdities. This case was certainly typical of the married state.

In vain have physicians endeavoured to break through this morbid catenation of incongruous ideas by diversions, or what the French call *distractions*, which in general answered to our literal translation of the word, and *distracted* their patients. Dramatic performances were once allowed in a mad-house near Paris; but the violence of the maniacs, the moroseness of the melancholy, and the stupidity of the idiots, rendered the exertions of the actors perilous to some, and idle to all. Mr. D'Esquirol once took one of his patients to a play, and the man swore that every performer who came on was making love to his wife; and a young lady, placed in a similar situation, exclaimed that all the people were going to fight about her. Jealousy and vanity were, no doubt, the ruling passions in both these cases. Travel has been

recommended both by the ancients and the moderns. Seneca on this subject quotes Socrates, who replied to a melancholy wight who complained that his journeys had afforded him no amusement, "*I am not surprised at it, since you were travelling in your own company*."

The contagion of enthusiasm is a marvellous fact. Pausanias relates that the malady of the daughters of Prœtus, who ran about the country fancying that they were transformed into cows, was common amongst the women of Argos. Plutarch states that a disease reigned in Miletium, in which most of the young girls hung themselves; recent observations have confirmed this singular circumstance. Dr. Deslages, of St. Maurice, relates that a woman having hanged herself in a neighbouring village, most of her companions felt an invincible desire to follow her example. Primrose and Bonet tell us that at one period it was found difficult to prevent the young girls in Lyons from casting themselves into the river. Simon Goulard has recorded the prevalent madness amongst the nuns of the States of Saxony and Brandenburg, and which soon extended its influence to Holland, during which these religious ladies "predicted, capered, climbed up walls, spoke various languages, bleated like sheep, and amused themselves by biting each other." History has recorded the horrible judicial murder of Urbain Grandier, at Laudun, who was sacrificed for bedevilling a nunnery. The recent gift of tongues amongst the *Irvingites* is still in full vigour, and the *Southcotians* are still on the look-out in London, as the *Sebastianists* are in Lisbon.

Addison has remarked that an enthusiast in religion is like an obstinate clown, and a superstitious man like an insipid courtier. On this subject he quotes the following old heathen saying recorded by Aulus Gellius—*Religentem esse oportet, religiosum nefas*; for, as the author tells us, Nigidius observed upon this passage, that the Latin words which terminate in *osus* generally imply vicious characters, or the having any quality to excess. That we should enthusiastically admire all that is holy, sublime, or endowed with uncommon superiority in religion, in poetry, in the fine arts, is not only justifiable but praiseworthy. Genius cannot exist without a certain degree of fervour; its inspiration is a gift divine, naturally associated with a religious feeling. The man thus inspired must bend in humble admiration before the wondrous harmony that surrounds him. The poet, the painter, the musician, can only seek excellence by studying primitive perfection. Nothing that is not natural can be truly sublime or beautiful. A rigid observation of nature can alone lead to superiority, and we can only be taught to create by, endeavouring to imitate the beauties of the creation. How distant are these generous feelings from the low grovelling prejudices of bigotry! We admire perfection even in our enemies; and Erasmus was not a truant to his faith when, transported with Socrates's dying speech, he exclaimed, "O Socrates! I can scarce forbear kneeling down to thee, and praying,

Sancte Socrates, ora pro nobis."

While considering this interesting subject, a curious question arises: is enthusiasm more frequently excited by truth than by error? I sadly fear that the latter influence will in general be found to predominate, although falsehood then assumes the deceptive garb of veracity. The noble writer whom I have already cited,[19] has justly said, "that truth is the most powerful thing in the world, since even fiction itself must be governed by it, and can only please by its resemblance."

To what then are we to attribute this power that fallacy possesses of inspiring the mind with visionary hopes and fears? Simply because we cease to reason upon matter of fact, and soar in fanciful regions in search of a flittering phantom, a creature of our own imaginative faculties. What falls every day under our personal observation ceases to amaze, and one

[19] Shaftesbury.

might even become familiarized to miracles were they of frequent occurrence. Man is naturally disposed to admire what he cannot understand, and to venerate what is incomprehensible. The nature of the divinity being essentially incomprehensible, a religious character is attached to all other subjects that are equally beyond the limits of our understanding. Sir Thomas Brown has said, "Methinks there be not impossibilities enough in religion for an active faith. I love to lose myself in a mystery, to pursue my reason to an *O altitudo*! I can answer all the objections of Satan and my rebellious reason, with that odd resolution I learned from Tertullian, *Certum est quia impossibile est*." From our earliest infancy we are delighted with fictions, which we verily fancy to be relations of true facts, and whether we believe with the ancients in the metamorphoses of heathen mythology, the absurd papal stories of the miracles of their saints, or the wondrous incidents of a fairy tale, we listen to these rhapsodies with avidity; whether Jupiter is turned into a shower of gold, St. Denis and St. Livarius travel with their heads under their arm, or Tom Thumb pulls on his seven-league boots. These absurdities are our day thoughts, our night dreams—nay, busy fancy does so dwell on these enchanting phantasies, that, in some cases, the intellectual faculties become deranged, and I have at present under my care, a female who lost her reason by constantly reading the Arabian Nights, and who in her hallucinations, describes as many marvellous voyages as could have done the sailor Sinbad.

The foundation of incredulity no doubt is ignorance, but too often we find men of refined education and feeling the most easily imposed upon by incredible assertions; we seldom experience as much enthusiasm in the possession of any object as in the pursuit, more especially if that pursuit be vain. The merchant who has realized a splendid fortune in his commercial ventures, is satiated with his business, and becomes careless in the pursuit of greater riches, but let him for one moment contemplate the possibility of discovering the philosopher's stone, he will lose, and cheerfully too, all his past earnings in the chimerical pursuit, and the man who would doze over his ledger, will spend his sleepless nights contemplating his crucibles, and studying the black art.

What is there of an exciting nature in the common events of life and the usual course and uniformity of nature? Very little. However wondrous the works of the creation may be, habit has so accustomed us to behold them, that they are familiar to our eyes; they become matter of fact, and science has taught us to comprehend the nature of many phenomena, which might otherwise have appeared incredible: but when we seek for an unattainable object, however fallacious its attraction may be, the mind is roused to energetic action: if we strive to excel all others in the fine arts, in poetical productions, we become fired with an exalted zeal, which age and experience alone can temper. In our vain pursuit of ideal perfection, the mind may be compared to a focus in which our burning thoughts are concentrated, until we are consumed by disappointment: the love of Pygmalion was probably the most ardent passion that could fire the breast of man. Enthusiasm laughs to scorn the suggestion of the senses and common understanding, therefore all its priests and votaries are surrounded with a deceptive halo; and Plotinus maintained that a proper worship of the gods consisted in a mysterious self annihilation and a total extinction of every faculty. The same may be said of love, which, like all other enthusiastic passions, may be considered a temporary hallucination.

Moreover the language of fiction is not required to maintain the self-evident testimonies of facts.

As true as truth's simplicity,
And simpler than the infancy of truth.

Whereas false doctrines and fallacious opinions need all the aid of imagination's vivid colours to disguise their real form with a goodly outside. We may in general conclude that

enthusiasts are at first deceived themselves to become in turn deceivers. Seldom does man display sufficient humility to admit that he has erred in his favourite doctrines, and how much less will he be disposed to confess his deviation from rectitude, when imposture becomes the source of wealth and power, and hypocrisy a trade: to the ghostly speculator we may well apply the lines of Massinger:

Oh, now your hearts make ladders of your eyes,
In show to climb to heaven, where your devotion
Walks upon crutches.

It is, however, fortunate that errors generally assist the development of truth. The progress of the Christian faith was materially forwarded by the absurdities and fallacies of all other religions; and Helvetius has truly observed that if we could for a moment doubt the truth of Christianity, its divine origin would be proved by its having survived the horrors of popery. False theories led Columbus to correct geographic conclusions, and Galileo’s discoveries overthrew his own former theories.

Medicinal Effects Of Water

Amongst the various means resorted to by quackery to speculate upon the credulity of mankind, simple river or spring water, coloured and flavoured with inert substances, has not been the least productive; and many a time the Thames and Seine have been fertile sources of supposed invaluable medicines. Sangrado's doctrines on aqueous potations have long prevailed in the profession; and it has been stoutly maintained that a water diet can cure the gout and various other diseases. That relief, if not cures, have been obtained by this practice, there cannot be the least doubt. Are we to attribute these favourable results to the effects of the imagination, the beneficial efforts of nature, or the salutary abstinence which this prescription imposed? Possibly they all combined to assist the physician's efforts, or rather aid his effete treatment. Cold water and warm water have in turn been praised to the very skies by their eulogists, and become the subject of ridicule and persecution on the part of more spirited practitioners.

In surgery, water has ever been considered of great utility; it, no doubt, was instinctively used by man to cleanse and heal his wounds. Patroclus, having extracted the dart from his friend Eurypylus, washes the wound; and the prophet Elisha prescribes to Naaman the waters of Jordan. Rivers had various qualities, and were supposed to prove as different in their action on the economy as the mineral springs which from time immemorial, have been resorted to. These effects may in fact not be altogether doubtful; for, although these salutary streams may not possess sufficient active ingredients to be recognised by chemical tests, yet we know that substances which appear perfectly inert may prove highly active and effectual when combined and diluted naturally or artificially. Moreover, in the effects of watering-places on the invalid or valetudinarian, we must not forget the powerful influence of change of air and habit, the invigorating stimulus of hope, and the diversion from former occupations. To these auxiliaries many a remedy has owed its high reputation; and probably when Wesley attributed his recovery to brimstone and supplication, he in a great measure might have considered rest from incessant labour the chief agent in his relief. The exhilarating effects of the picturesque site of many of these salutary places of resort is universally acknowledged. Montaigne, Voltaire, Alfieri, acknowledged their influence on the imagination. Petrarch's inspirations flowed with the waters of Vaucluse, some of Sevigné's most delightful letters were written at Vichy, and Genlis and Staël were particularly happy in their epistolary elegance at Spa and Baden.

We owe to accident many valuable discoveries in medicine. It is said that several Indians, having used the waters of a lake in which a cinchona tree was growing, experienced the benefit which led to the use of the Peruvian bark; and the thermal properties of the baths of Carlsbad were first made known by the howling of one of Charles the Fourth's hounds, that had fallen in them in a hunt. It has been also observed, in various countries, that particular waters produced various morbid affections; and to this cause have been attributed goitres, cretinism, calculi, and other distressing diseases. The ancients dreaded the impurity of their rivers. The Romans boiled their water in extensive *thermopolia*, where not only potations were drunk hot, but occasionally refrigerated with ice and snow, and, when thus prepared, called *decocta*. Juvenal and Martial refer this custom to the Greeks. Herodotus informs us that the Persian monarchs were accompanied on their expeditions by chariots laden with silver vases filled with the water of the *Choaspes* that had been boiled, and which was solely destined for the king's use: Athenæus tells us that it was light and sweet. Many ancient coins and inscriptions have recorded these salutary properties of certain waters.

This real or supposed efficacy was scarcely discovered before it became the domain of priests: and common rain or river water became valuable and sanctified when blessed by them: hence the introduction of lustral water. The fluid extracted from the gown of Mahomet is the sacred property of the sultan. The moment the fast of the Ramazan is proclaimed, this holy vestment is drawn from a gold chest, and, after having been kissed with due devotion, plunged in a vase of happy water, which, when wrung from the garment, is carefully preserved in precious bottles, that are sent by the monarch as valuable presents, or sold at exorbitant prices as cures for any and every disease. Thus were the good effects of ablution, especially in wounds, attributed to some secret charm or quality conferred upon it by clerical benediction or the legitimacy of princes. When a quack of the name of Doublet cured the wounded at the siege of Metz in 1553, the water he used was considered to have been of a mystic nature; and Brantome describes his treatment in the following words: “Durant le susdit et tant mémorable siège, était en la place un chirurgien nommé Doublet, lequel faisait d’estranges cures avec du simple linge blanc, et belle eau claire venant de la fontaine ou du puit; mais il s’aidait de sortilèges et paroles charmées, et chacun allait à luy.” This Doublet, no doubt, was acquainted with an ingenious treatise on gun-shot wounds, written by Blondi in 1542, in which he strongly recommended the use of cold water; but, as his recommendation was not founded on any miraculous quality, he was forgotten, while Doublet was considered a supernatural being. Previous to this simple and sagacious method of healing wounds, various curious applications were in high repute; more especially the oil of kittens, which the celebrated Paré discovered to his great delight, was prepared by boiling live cats, coat and all, in olive oil, and was until then a valuable secret preparation, called *oleum catellorum*, and its use, with that of other nostrums, was known under the name of *secret dressing*.[20]

This simple mode of dressing wounds, especially those that were inflicted by fire-arms, was a great desideratum; for, up to this era in surgery, these injuries were healed by the application of scalding oil or red-hot instruments, under the impression that they were of a poisonous nature. Paré was one of the first army-surgeons who exploded this barbarous practice. Having, according to his own account, expended all his boiling oil, he employed a mixture of yolk of egg, oil, and turpentine, not without the apprehension of finding his patients labouring under all the effects of poison the following day; when, to his great surprise, he found them much more relieved than those to whom the actual cautery had been applied. In more recent times, armies have been unjustly accused of making use of poisonous balls; and this absurd charge was brought against the French after the battle of Fontenoy, when the hospital fever broke out among the wounded crowded in the neighbouring villages. Chewing bullets was also considered a means of imparting to them a venomous quality. Lead and iron, the metals of which these projectiles were usually cast, were also deemed of a poisonous nature. A sort of aristocratic feeling seemed to obtain in those days; and it is related that two Spanish gentlemen had procured gold balls to fire at Francis I. at the battle of Pavia, that so noble and generous a prince should not fall by the vile metal reserved for vulgar people; and, in the adverse ranks, La Chatarguene, a noble of the French court, had prepared bullets of the same costly material for the reception of Charles V. It was under the impression of this poisonous nature of wounds, that individuals of both sexes, called suckers, followed armies, and endeavoured to extract the venom by suction; the records of chivalry give us instances of lovely damsels who condescended to perform this operation with their lovely mouths upon

[20] Oil is, however, a useful application to wounds in warm climates. During the retreat of our troops after the battle of Talavera, I found the wounds of many of our men, that had not been dressed for three or four days, pullulating with maggots. This was not the case with the Spanish soldiers, who, to prevent this annoyance (which was more terrific than dangerous), had poured olive oil upon their dressings. I invariably resorted to the same practice when I subsequently had to remove the wounded in hot weather.

their *damoiseaux*; and Sibille submitted the wounds of her husband, Duke Robert, to a similar treatment: indeed, these suckers were chiefly females. May not this practice be the origin of the term *leech*, applied in ancient times to medical men? Leechcraft was the art of healing. Thus Spenser:

And then the learned leech
His cunning hand 'gan to his wounds to lay,
And all things else the which his art did teach.

To this day, the custom of sucking wounds prevails among soldiers; and there is every reason to hope, from the experiments of the late Sir David Barry, that the exhaustion produced by cupping-glasses will be found of essential service in all venomous wounds. This practice of suction, no doubt, was known in Greece; Machaon performed it at the siege of Troy. The mothers and wives of the ancient Germans had recourse to the same process. In India the suction of wounds constitutes a profession. It was by this means that the Psylli cured the bite of serpents; and it is related of Cato, that his abhorrence of the Greek surgeons was such, that he directed Psylli to follow the Roman armies.

Water affords a beautiful illustration of that indestructibility with which the Creator invested matter for the preservation of the world he formed from elementary masses, and appears to have existed unchangeable from the commencement of the universe. Its constituent parts are not broken into by any atmospheric revolution; they continue the same, whether in the solid ice, the fluid state of a liquid, or the gaseous form of a vapour. Its powers are undiminished, whether in the wave or the steam; the most effective agent in the hands of man to promote that welfare and happiness which his own errors deprive him of, frequently bringing on those calamities that his perversity attributes to the will of the Omnipotent. Water is the same in the atmosphere as on the earth, and falls in the very same nature as it ascends; electricity has no other influence upon it than that of hastening its precipitation. Chemical agents, however powerful, can only decompose its elementary principles upon the most limited scale. The heterogeneous substances with which water may occasionally be alloyed must be considered as purely accidental.

The homogeneous characters of this fluid admit of no alteration, and, like atmospheric air, are still obtained as pure most probably as when they first emerged from chaotic matter. The same principles are found in the clouds, the fogs, the dews, the rain, the hail, and the snow. For the preservation of the world it was indispensable that water should be endowed with the property of ever retaining its fluid form, and in this respect become subject to a law different from that of other bodies, which change from fluid to solid. This is a deviation from a general decree of Nature. Were it not for this wise provision of the Creator, the world would shortly have been converted into a frozen chaos. All bodies contract their dimensions, and acquire a greater specific gravity by cooling; but water is excepted from this law, and becomes of less specific gravity, whether it be heated, or cooled below 42° 5′. Were it not for this exemption, it would have become specifically heavier by the loss of its caloric, and the waters that float on the surface of rivers would have sunk as it froze, until the beds of rivers would have been filled up with immense masses of ice. From the observations of Perron, there is reason to believe that the mountainous accumulations of ice that have hitherto arrested the progress of polar navigators have been detached from the depths of the ocean to float upon its surface. This circumstance would account for the difference of temperature of the sea according to its depth. The experiments of Perron, made with an instrument of his own invention, which he called the thermobarometer, gave the following results:

1st, The temperature of the sea upon its surface, and at a distance from shore, is at the meridian, lower than that of the atmosphere in the shade; much more elevated at midnight, but in a state of equilibrium morning and evening.

2nd, The temperature rises as we approach continents or extensive islands.

3rd, At a distance from land, the temperature of the deep parts of the sea is lower than that of the surface, and the cold increases with the depth. It is this circumstance which led this ingenious philosopher to conclude that even under the equator the bottom of the sea is eternally frozen.

Humboldt is of a contrary opinion, and maintains that the temperature is from two to three degrees lower in shallow water; and he therefore is of opinion that the thermometer might prove of material use to navigators. He attributes this diminution of temperature to the admixture of the lower bodies of water with that of the surface. Who is to decide between these two ingenious experimentalists? “Experientia fallax, judicium difficile.” The curious reader may consult in this investigation the tables of Forster in Cook’s second voyage, those of Lord Mulgrave when Captain Phipps, and various other navigators.

The salutary medicinal effects of sea-bathing are generally acknowledged, although too frequently recommended in cases which do not warrant the practice; in such circumstances they often prove highly prejudicial. The ancients held sea-water baths in such estimation, that Lampridius and Suetonius inform us that Nero had it conveyed to his palace. As sea-bathing is not always within the reach of those who may require it, artificial sea-water has been considered a desirable substitute; and the following mode of preparing it, not being generally known, may prove of some utility. To fifty pounds of water add ten ounces of muriate of soda, ten drachms of muriate of magnesia, two ounces of muriate of lime, six drachms of sulphate of soda, and the same quantity of sulphate of magnesia. This is Swediaur’s receipt. Bouillon Lagrange, and Vogel, recommend the suppression of the muriate of lime and sulphate of soda, to be replaced with carbonate of lime and magnesia; but this alteration does not appear necessary, or founded on sufficient chemical grounds for adoption.

Sea-water taken internally has been considered beneficial in several maladies; and, although not potable in civilized countries, it is freely drunk by various savage tribes. Cook informs us that it is used with impunity in Easter Island; and Schouten observed several fishermen in the South Sea drinking it, and giving it to their children, when their stock of fresh water was expended. Amongst the various and capricious experiments of Peter the Great, an edict is recorded ordering his sailors to give salt water to their male children, with a view of accustoming them to a beverage which might preclude the necessity of laying in large stocks of fresh water on board his ships! The result was obvious: this nursery of seamen perished in the experiment. Russel, Lind, Buchan, and various other medical writers, have recommended the internal use of sea-water in scrofulous and cutaneous affections; but its use in the present day is pretty nearly exploded.

Proverbs And Sayings Regarding Health And Disease

An ague in the spring is physic for a king.

Agues come on horseback, but go away on foot.

A bit in the morning is better than nothing all day.

You eat and eat, but you do not drink to fill you.

An apple, an egg, and a nut, you may eat after a slut.

Poma, ova, atque nuces, si det tibi sordida, gustes.

Old young and old long.

They who would be young when they are old, must be old when they are young.

When the fern is as high as a spoon,
You may sleep an hour at noon.
When the fern is as high as a ladle,
You may sleep as long as you are able.
When fern begins to look red,
Then milk is good with brown bread.

At forty a man is either a fool or a physician.

After dinner sit a while, after supper walk a mile.

After dinner sleep a while, after supper go to bed.

A good surgeon must have an eagle's eye, a lion's heart, and a lady's hand.

Good kale is half a meal.

If you would live for ever you must wash milk from your liver.

Vin sur lait, c'est souhait; lait sur vin, c'est venin.

Butter is gold in the morning, silver at noon, and lead at night.

He that would live for aye, must eat sage in May.

Cur moriatur homo, cui salvia crescit in horto?

After cheese comes nothing.

An egg and to bed.

You must drink as much after an egg as after an ox.

He that goes to bed thirsty rises healthy.

Qui couche avec la soif, se leve avec la santé.

One hour's sleep before midnight is worth two hours after.

Who goes to bed supperless, all night tumbles and tosses.

Often and little eating makes a man fat.

Fish must swim thrice.

Poisson, goret, et cochon vit en l'eau, mort en vin.

Drink wine and have the gout, drink no wine and have it too.

Young men's knocks, old men feel.

Quæ peccamus Juvenes, ea luimus Senes.

Go to bed with the lamb, and rise with the lark.

Early to bed, and early to rise,
Makes a man healthy, wealthy, and wise.

Wash your hands often, your feet seldom, and your head never.

Eat at pleasure, drink by measure.

Pain tant qu'il dure, vin à mésure.

Cheese is a peevish elf,
It digests all but itself.

Caseus est nequam,
Quia digerit omnia se quàm.

The best physicians are Dr. Diet, Dr. Quiet, and Dr. Merryman.

Si tibi deficiant medici, medici tibi fiant
Hæc tria; mens læta, requies, moderata diæta.

Drink in the morning staring,
Then all the day be sparing.

Eat a bit before you drink.

Feed sparingly and dupe the physician.

Better be meals many than one too many.

You should never touch your eye but with your elbow.

Non patitur ludum fama, fides, oculus.

The head and feet keep warm, the rest will take no harm.

Tenez chaud le pied et la tête, au demurant vives en bête.

Qui ne boit vin après salade, est en danger d'être malade.

Cover your head by day as much as you will, by night as much as you can.

Fish spoils water, but flesh mends it.

Apples, pears, and nuts spoil the voice.

Quartan agues kill old men and cure young.

Old fish, old oil, and an old friend.

Pesce, oglio, ed amico vecchio.

Raw pullet, veal, and fish, make the churchyard fat.

Of wine the middle, of oil the top, of honey the bottom.

Vino di mezzo, oglio di sopra, e miele di sotto.

The air of a window is the stroke of a cross-bow.

Aria di finestra, colpo di balestra.

Piscia chiaro, ed incaca al medico.

When the wind is in the east, it's neither good for man nor beast.

A hot May makes a fat churchyard.

That city is in a bad case, whose physicians have the gout.—*Hebrew Proverb.*

When the sun rises, the disease will abate.[21]

If you take away the salt, throw the meat to the dogs.

Splen ridere facit, cogit amare jecur.[22]

Lever à cinq, dîner à neuf.
Souper à cinq, coucher à neuf.
Font vivre dans nonante neuf.

Surge quintâ, prande nonâ, cœna quintâ, dormi nonâ, nec est morti vita prona.

Hunger's the best sauce.

Optimum condimentum fames.

Plures occidit gula quàm gladius.

Qui a bu, boira. Ever drunk ever dry.

Vinum potens, vinum nocens.

The child is too clever to live long.

Præcocibus mors ingeniis est invida semper.

Le chant du cocq, le coucher du corbeau,
Préservent l'homme du tombeau.

Bitter to the mouth, sweet to the heart.

Paulò deterior, sed suavior potus est cibus; meliori quidem, sed ingrato, præferendus est.

Après la soupe, un coup d'excellent vin
Tire un écu de la poche du médecin.

[21] A Hebrew proverb originating from a tradition that Abraham wore a precious stone round his neck, which preserved him from disease, and which cured sickness when looked upon. When Abraham died, God placed this stone in the sun.

[22] The ancients considered the spleen the seat of mirth, and the liver the organ of love; hence their old proverb.

The Night-Mare

The Night-mare or Ephialtes, *incubus*, from εφαλλομαι, "to leap upon," and *incubo*, "to lie upon," may be considered a sympathetic affection of the brain during our sleep, generally arising from a derangement in the digestive functions. We therefore observe it after a heavy supper, or the use of any article of food of difficult digestion. It is to these circumstances more than to the "unusual loss of volition," which some physiologists consider as its cause, that we are to attribute this unpleasant perturbation of our repose, which impresses the sleeper with the idea of some living being pressing upon the chest, inspiring terror, impeding respiration, and subduing all voluntary action that might endeavour to remove the unwelcome visiter. It has been observed that persons of a melancholy and contemplative disposition are more subject to it than the gay and the vivacious. Sedentary employment and anxiety of mind often bring it on; and it has been noticed in *nostalgia*, or regret of home, in soldiers and sailors. The sense of apprehension remains after the sufferer is awakened, and the fluttering of the heart and quick pulse are observed for some time after, while drops of cold perspiration frequently trickle down his brow. When the night-mare is the result of too much repletion, it is possible that its symptoms denote a pressure of the loaded stomach on the solar plexus.

It is said that the *night-mare* derives its name from *Mara*, an evil spirit of the Scandinavians, which, according to the Runic theology, seized men in their sleep, and deprived them of the powers of volition. Our old Anglo-Saxon name for the disease was *Elf-Sidenne*, or elf-squatting; hence the popular term "hag-ridden."

There is a variety of the malady which makes its attack by day, and when waking: it has been called the day-mare, or *ephialtes vigilantium*. This affection, although uncommon, has been noticed by Forestus, Rhodius, Sauvages, and Good. Forestus has known it to return periodically like an intermittent fever.

It is not always that the patient experiences unpleasant sensations in these nocturnal attacks, which were not unfrequently of a curious nature. The ancients thought that these intruders were sometimes sportive Fauns; hence Pliny calls the affection *ludibria Fauni*. At a subsequent period, superstition replaced the Fauns by *Incubi*, or evil spirits, who visited the earth to destroy virtuous women; and it was once gravely discussed by the Sorbonne, whether the offspring of such an union should be considered human, or the fair lady's reputation injured by the involuntary act of giving a young incubus to the world. The absurd stories of the pranks of the *Succubi* and *Incubi* are well known.

Ephialtes has been known to be epidemic, and has attacked numbers at a time. Cælius Aurelianus informs us that Silimachus, a disciple of Hippocrates, observed the phenomenon in Rome, when the disease generally proved fatal. It is more than probable that in these cases the night-mare was merely symptomatic of other complaints. A French physician, Dr. Laurent, however, has related a very curious instance of a species of night-mare attacking an entire regiment; he thus relates the singular occurrence:

"The first battalion of the regiment Latour d'Auvergne, of which I was the surgeon, was garrisoned at Palmi, in Calabria, when we received a sudden order at midnight to march with all possible speed to Tropea; a flotilla of the enemy having appeared off the coast. It was in the month of June; we had a march of forty miles of the country, and only arrived at our destination at seven o'clock the following evening, having scarcely halted during those thirty-one hours, and suffered considerably from the heat of the sun. On our arrival the men found their rations cooked and their quarters prepared; but, having arrived the last, our regiment had

the worst accommodation, and eight hundred men were pent up in a building scarcely capacious enough for half the number. The soldiers were in consequence much crowded, and slept upon the straw without any bedding, and most uncomfortably. The building was an abandoned monastery; and the inhabitants warned us that we should not be able to occupy it quietly, as it was haunted every night. We laughed at their superstitious fears, but were much amazed when, towards midnight, we heard loud cries, and the soldiers rushed tumultuously, and in evident terror, out of their rooms. Being interrogated as to the causes of this alarm, they all affirmed that the devil was in the abbey; that they had seen him enter in the shape of a large black dog, that had jumped upon their breasts and disappeared. To convince them of the absurdity of their fears was of no avail; not a single man could be persuaded to return to his quarters, and they wandered about the town until daybreak. On the following morning I questioned the most steady non-commissioned officers and the oldest soldiers; and though under ordinary circumstances they were strangers to fear, and never gave credit to any tales of supernatural agency, they assured me that the dog had weighed them down and nearly suffocated them. We remained that day in Tropea, and had no other quarters to occupy but the same monastery, and the soldiers would only take up their residence on the condition that we should remain with them: the men retired to sleep—we watched; all was quiet until about one in the morning; when they awoke in the same terror, and fled from the building in dismay. We had looked out most attentively, but could not perceive the cause of this commotion. The following day we returned to Palmi; and, although we marched over a great part of Italy, and were frequently equally crowded and uncomfortable, a similar scene never recurred."

Dr. Laurent very judiciously attributes this singular attack to the pernicious local influence of some deleterious gas, and the very crowded state the men slept in. It is also probable that they did not take off their accoutrements, and lay down with their belts on: might they not also have eaten some unwholesome fruit upon the line of march, for it was in the month of June, when various berries grow in abundance along the road-side?

Hippocrates's theory of the night-mare was, that, during our sleep, our volition being suspended, the soul, still awake, watches over all the functions of the body. It is rather odd that the animal that most persons pretend to have thus annoyed them, is a long-haired black dog. Forestus assures us that it was a similar visiter that tormented him in his youth. This circumstance can only be attributed to vulgar superstition and tradition. Dubosquet has preceded his Treatise on Ephialtes with the engraving of a large monkey who had perplexed a young lady whom he attended; the monkey most probably came on horseback, as his steed is also delineated looking over the sleeping victim.

Various medicines have been recommended to prevent these attacks; amongst others, saffron and peony: and several learned commentators have endeavoured to prove and disprove that they were only specific in the form of an amulet. Zacutus Lusitanus recommends aloes, and his advice is perhaps as good a one as could be given. The ancients attributed many powerful effects to saffron, and, amongst other properties, it was considered as an effective narcotic, and was said to occasion violent headaches. Curious anecdotes are related of its effects. Amatus Lusitanus having exhibited this medicine to accelerate a tardy accouchement, the woman was delivered of two yellow daughters; and Hertodt, in his work called Crocology, relates that, having tried it on a bitch, all her pups were of a similar colour. The ancients called saffron the king of plants, the vegetable panacea, and the soul of the lungs. In modern times we do not recognise any peculiar property in this production; and in Spain and Italy it is used as a condiment with perfect impunity. Peony was also deemed a valuable remedy, when gathered as the decreasing moon was passing under Aries: the slit root being then tied round the neck of an epileptic person, he was forthwith cured. "Unlimited scepticism," Dugald

Stewart observes, “is as much the child of imbecility as implicit credulity.” How difficult it is to steer the vessel of our understanding between those shoals!

Medical writers have divided the night-mare, according to its phenomena, into complete, incomplete, mental, and bodily. The complete night-mare, in which the suspension of the functions had been so powerful, has been known to prove fatal. In the incomplete, we fancy ourselves placed in a peculiar situation, opposed by some unexpected obstacle, and all our efforts seem of no avail to extricate ourselves from our difficulties. There is an incubus, called indirect, in which the dreamer is not the individual arrested in his movements; but he is impeded in his progress by the stoppage of his horse, his carriage, his ship, which no power can propel. In the mental or intellectual night-mare, the flow of our ideas is embarrassed, all the associations of our very thoughts appear to be singularly unconnected; we think in an unintelligible language; we write, and cannot decipher our manuscript: all is a mental chaos, and no thread can lead us out of the perplexing labyrinth. In the corporeal ephialtes, we imagine that some of our organs are displaced, or deranged in their functions. One man fancies that a malevolent spectre is drawing out his intestines or his teeth: a patient of Galen felt the cold sensation of a marble statue having been put into bed with him. These, however, are nothing else than the actual sensations we experience at the time. Thus Conrad Gesner fancied that a serpent had stung him in the left side of the breast; an anthrax soon appeared upon the very spot, and terminated his existence. Arnauld de Villeneuve imagined that his foot had been bitten, and a pimple which broke out on the spot soon degenerated into a fatal cancerous affection. Corporeal night-mare may therefore be simply considered as a symptom of disease, and not as a mysterious forewarning.

The cold stage of fever that often invades us in our sleep is the natural forerunner of the malady. This was the case with Dr. Corona, the physician of Pius VI. who upon two occasions was attacked with typhus fever, ushered in by a distressing dream or incubus. These physical phenomena only strengthen the opinion, that in our sleep we are equally alive to mental impressions and bodily sufferings; and that, correctly speaking, there is no suspension of our intellectual faculties of perception, nor is there any interruption in the susceptibilities of our relative existence. The various doctrines regarding dreams illustrate this position.

Incubation Of Diseases

The term “incubation” in its rigid sense applies to the act of hatching eggs, either naturally or artificially. It has however been adopted by physicians to denote that state of predisposition to disease, in which the germ of the malady lurks, latent and unperceived by the inexperienced observer. Too frequently the individual who is thus menaced is totally unaware of his condition. So far from being depressed in spirits, his hopes are more sanguine, and his future projects more industriously formed than usual. At other times, on the contrary, he labours under a load of despondency which he cannot explain, and his gloom seems to anticipate his end. This presentiment has oftentimes been singularly prophetic. Moreau de St. Remy relates the case of one of his most intimate friends, who visited him, saying, “I come to die near you.” He was apparently in perfect health, but the prediction too soon proved true.

It is no doubt probable, that in these cases the influence of the mind labouring under these fatal impressions brings about, by its all-powerful sympathetic power on our functions, the expected yet dreaded event.

Incubation is observed in many contagious affections; and in hydrophobia its duration is amazing, this dreadful malady developing itself years after the original accident. In mental diseases, aberrations of the intellectual faculties are noticed long before the patient can be pronounced insane; oddities, as they are called, are frequently the precursors of mania.

The ancient Greeks and Egyptians use the term “incubation” in another sense. With them it expressed the religious ceremony of sleeping in the temples of the gods, to be inspired with the means of relieving their sufferings. Nothing can express this superstitious rite more forcibly than the following letter from Aspasia to Pericles, recorded by one of the scholiasts of Ælian.

“Aspasia to Pericles, greeting. Podalirius! Podalirius, to whom Love taught the art of healing, and who in return didst consecrate thine art to Love, I return thee my thanks. Athens will once more see me beauteous! I shall have lost none of my attractions, and Pericles shall find in his Aspasia all that he once held dear! Podalirius, I return thee my thanks; and thou, Pericles, be grateful to my benefactor. I did not wish to write to thee until I was certain that I had been cured. I shall relate to thee my voyage. I punctually followed the instructions of Nocrates, that wise and enlightened physician. I first repaired to Memphis, where I visited, but without success, the temple of Isis. I there beheld the goddess, and her son Orus, seated on a throne, supported by two lions. The *Sebestus*[23] grew round her shrine! Incense was burnt in the morning, myrrha during the day, and cyplis at eve. I was assured that young Alexander had come to this temple not long before to indulge in a holy contemplation, and learn by inspiration the means of curing his friend Ptolemy: his supplications were heeded. I also slept in the temple, but found no relief. This misfortune, alas! was attributed to my incredulity. I took my departure, and repaired to Patras. There I saw in her temple the divine Hygeia; not as she was represented by Aristophanes, when she relieved Plutus, sweet and graceful, clothed in an aerial robe and a short tunic, and holding in her hand a cup of *Musa*, whence a serpent was seen to spring, but she appeared to me in the form of a mysterious pentagon. I first paid a devout visit to the fountain; and while I deposited my offerings at the feet of the goddess, a mirror was floating on the surface of the waters upon which I gazed by order of the priests,

[23] *Cordia Sebestena*; according to some, the *C. Myxa L.*, a species of Egyptian date. It was formerly employed as a demulcent. A viscid black glue was also prepared from it, and exported in considerable quantities from Alexandria.

but I was not cured! Thence I went to sleep at Pergania and at Hercyna. But the gods seemed to slumber when Aspasia slept! On a sudden the name of Podalirius struck mine ear! I was informed that his temple was at Lacera. I instantly sought it; and, on my arrival, bathed in the Althonus. After the bath, I was anointed with the perfumed balsams that our friend Sosinius had given me in the temple of Mercury the day I left Athens. I then put up my prayers to deserve the favour I implored from the god. At nightfall I sought repose on the skin of a ram close to the statuary pillar. I soon found myself in that state when we are no longer wide awake, but when sleep has not yet lulled our senses to repose. Methought that a celestial light was shed around me. Æsculapius appeared to me with his two daughters; and, from the clouds that surrounded him, he promised me my pristine health. I soon after fell into a profound sleep; but towards the break of day I beheld Cypris—Cypris who was always the friend of Podalirius: she came herself! I recognised her, although she had assumed the form of a gentle dove. Yes, Cypris came to cure me. Podalirius! Æsculapius! Cypris! each day shall you be thanked by Aspasia and by Pericles.

"I must now relate to thee the vision of a Daunian, who slept near me. She suffered from an affection of her breast, and this she dreamed:—She beheld the young god Harpocrates lying on leaves of lotos, and covered with bandages from the head to the feet. He appeared weak and emaciated; he cried like an infant, supplicating the poor woman to nurse him. Soon after, she dreamt that a lamb came to seek his sustenance from her bosom. The dream was fulfilled,—it clearly indicated the use of a certain plant; but, until it could be obtained, the Daunian was advised to eat nothing but stewed raisins. Learn that here various names are given to various inspirations. The last dream I have related is called *allegorical*. When a dream prescribes a certain remedy, it is named *theôrematic*. Here are many dreams: wise Pericles, thou art perhaps smiling at them; but what is *not* visionary is my perfect recovery, and my love for thee. Farewell!"

Although this letter of Aspasia is an evident fiction, yet it gives an excellent, though a romantic description of the incubation of the ancients. Aspasia was supposed to be labouring under one of the most vexatious disorders that can affect a pretty woman,—an eruption in the face; hence the gods sent her a mirror, that her devotion might be increased by her unsightly appearance. It is not improbable that in those days, as in the present era, women of a certain, or rather an uncertain age, were more fervid in their endeavours to render themselves acceptable to Heaven when they ceased to be admired and sought for upon earth.

Quackery And Charlatanism

The origin of the word "quack" is not ascertained. Johnson derives it from the verb "*to quack*, or gabble like a goose." Butler uses this verb as descriptive of the encomiums empirics heap upon their nostrums. Thus in Hudibras:

Believe mechanic Virtuosi
Can raise them mountains in Potosi,
Seek out for plants with signatures
To *quack* of universal cures.

The word *charlatan* is equally enveloped in obscurity. Furetiere and Calepin say that it is derived from the Italian word *Ceretano*, from *Cæretum*, a town near Spoleto, whence a band of impostors first sallied forth, marching under the banners of Hippocrates, and roving from town to town, selling drugs and giving medical advice.[24] Ménage has it that *charlatan* springs from *Circulatanus*, from *Circulator*. Other etymologists trace it to the Italian *Ciarlare*, to chatter; hence *Ciarlatan*.

The Romans called their quacks *Agyrtæ*, or *Seplasiarii*, from *Seplasium*, the generic name of aromatic substances. *Seplasium* was the place where they vended their drugs. Thus Martial:

Quodque ab Adumæis vectum *seplasia* vendunt,
Et quidquid confert medicis lagæa cataplus.

An empiric was also called *Planus* and *Circulator* "*unde Plani unde levatores*."

Some of the stratagems resorted to by needy empirics to get into practice are very ingenious, and many a regular physician has been obliged to have recourse to similar artifices to procure employment. It is related of a Parisian physician, that, on his first arrival in the capital, he was in the habit of sending his servant in a carriage about daybreak to rap at the doors of the principal mansions to inquire for his master, as he was sent for to repair instantly to such and such a prince, who was dying. The drowsy porter naturally replied, with much ill-humour, "that he knew nothing of his master."—"What! did he not pass the night in this house?" replied the footman, apparently astonished. "No," gruffly answered the Swiss; "there's nobody ill here."—"Then I must have mistaken the house. Is not this the hotel of the Duke of ——?"—"No. Go to the devil!" exclaimed the porter, closing the ponderous gates. From this house his valet then proceeded from street to street, alarming the whole neighbourhood with his loud rap. Of course nothing else was spoken of in the porter's lodge, the grocer's shop, and the servants' hall for nine days.

Another quack, upon his arrival in a town, announced himself by sending the bellman round, offering fifty guineas reward for a poodle belonging to Doctor ——, Physician to his Majesty and the Royal Family, Professor of Medicine, and Surgeon General, who had put up at such and such an inn. Of course the physician of a king, who could give fifty guineas for a lost dog, must be a man of pre-eminence in his profession.

Another indigent physician having complained of his ill-fortune to an ingenious friend, received the following advice: The *Café de la Régence* is now in fashion: I play at chess every day at two o'clock, when a considerable crowd is assembled. Come there at the same hour; do not pretend to know me; call for a cup of coffee, and always pay the waiter his

[24] Quod Cæretani totum orbem vano quodam ac turpi superstitionum genere ludificantes continuò peregrinantur, familia domi relicta.

money in a rose-coloured paper: leave the rest to me. The doctor followed his advice; and his eccentric manners were soon observed,—when his friend informed the persons around him, that he was one of the ablest practitioners in the land; that he had known him for upwards of fifteen years, and that his cures were most marvellous,—his extreme modesty alone having prevented him from giving publicity to his abilities. He further added, I have long wished to become intimate with so great a man; but he is so absorbed in the study of his profession, that he scarcely ever enters into conversation with any one. In a short time, the Rose-colour Doctor was in extensive business.

Many years ago, the jaw-breaking words *Tetrachymagogon* and *Fellino Guffino Cardimo Cardimac Frames*, were chalked all over London, as two miracle-working doctors. Men with such names must have some superior qualification, and numbers flocked to consult them. Another quack put up as an advertisement, that he had just arrived in town, after having made the wonderful discovery of the green and red dragon and the female fern-seed. This was sure to attract notice. An advertisement was handed about of a learned physician, "who had studied thirty years by candle-light for the good of his countrymen." He was, moreover, the seventh son of a seventh son, and was possessed of a wonderful cure for hernia, as both his father and his grandfather had been ruptured. This reminds one of the oculist in Mouse Alley, mentioned in the Spectator, who undertook to cure cataracts, in consequence of his having lost an eye in the Imperial service. Dr. Case made a fortune by having the lines, *Within this place, lives Doctor Case*, written in large characters upon his door.

The accidental circumstances which frequently bring medical men into extensive practice, or that notoriety which may lead to it, are truly curious. It is well known that a most eminent English physician owed all his success to his having been on a particular occasion in a state of intoxication. Disappointed on his first arrival in London, he sought comfort in a neighbouring tavern, where the servant of the house at which he lodged went to fetch him one evening, after a heavy potation, to see a certain countess. The high-sounding title of this unexpected patient tended not a little to increase the excitement under which he laboured. He followed a livery footman as steadily as he could, and was ushered in silence into a noble mansion, where her ladyship's woman anxiously waited to conduct him most discreetly to her mistress's room; her agitation most probably preventing her from perceiving the doctor's state. He was introduced into a splendid bedchamber, and staggered towards the bed in which the lady lay. He went through the routine practice of pulse-feeling, &c., and proceeded to the table to write a prescription, which, in all probability, would have been mechanically correct. But here his powers failed him. In vain he strove to trace the salutary characters, until, wearied in his attempts, he cast down the pen, and, exclaiming "Drunk, by G—!" he made his best way out of the house. Two days afterwards he was not a little surprised by receiving a letter from the lady, enclosing a check for 100*l.*, and promising him the patronage of her family and friends, if he would observe the strictest secrecy on the state he found her in. The fact simply was, that the countess had been indulging in brandy and laudanum, which her abigail had procured for her, and was herself in the very condition which the doctor had frankly applied to himself.

Chance, more than science or ability, has frequently brought professional men to the summit of their business. There is an Eastern story of a certain prince who had received from a fairy the faculty of not only assuming whatever appearance he thought proper, but of discerning the wandering spirits of the departed. He had long laboured under a painful chronic disease, that none of the court physicians, ordinary or extraordinary, could relieve; and he resolved to wander about the streets of his capital until he could find some one, regular or irregular, who could alleviate his sufferings. For this purpose he donned the garb and appearance of a dervish. As he was passing through one of the principal streets, he was surprised to see it so

thronged with ghosts, that, had they been still inhabitants of their former earthly tenements, they must have obstructed the thoroughfare. But what was his amazement and dismay when he saw that they were all grouped with anxious looks round the door of his royal father's physician, haunting, no doubt, the man to whom they attributed their untimely doom. Shocked with the sight, he hurried to another part of the city, where resided another physician of the court, holding the second rank in fashionable estimation. Alas! his gateway was also surrounded with reproachful departed patients. Thunderstruck at such a discovery, and returning thanks to the prophet that he was still in being, despite the practice of these great men, he resolved to submit all the other renowned practitioners to a similar visit, and he was grieved to find that the scale of ghosts kept pace with the scale of their medical rank. Heartbroken, and despairing of a cure, he was slowly sauntering back to the palace, when, in an obscure street, and on the door of an humble dwelling, he read a doctor's name. One single poor solitary ghost, leaning his despondent cheek upon his fleshless hand, was seated on the doctor's steps. "Alas!" exclaimed the prince, "it is, then, too true that humble merit withers in the shade, while ostentatious ignorance inhabits golden mansions. This poor neglected doctor, who has but one unlucky case to lament, is then the only man in whom I can place confidence." He rapped; the door was opened by the doctor himself, a venerable old man, not rich enough, perhaps, to keep a domestic to answer his infrequent calls. His white locks and flowing beard added to the confidence which his situation had inspired. The elated youth then related at full length all his complicated ailments, and the still more complicated treatment to which he had in vain been submitted. The sapient physician was not illiberal enough to say that the prince's attendants had all been in error, since all mankind may err; but his sarcastic smile, the curl of his lips, and the dubious shake of his hoary head, most eloquently told the anxious patient that he considered his former physicians as an ignorant, murderous set of upstarts, only fit to depopulate a community. With a triumphant look he promised a cure, and gave his overjoyed client a much-valued prescription, which he carefully confided to his bosom; after which he expressed his gratitude by pouring upon the doctor's table a purse of golden sequins, which made the old man's blinking eyes shine as brightly as the coin he beheld in wondrous delight. His joy gave suppleness to his rigid spine, and, after bowing the prince out in the most obsequious manner, he ventured to ask him one humble question: "By what good luck, by what kind planet, had he been recommended to seek his advice?" The prince naturally asked for the reason of so strange a question: to which the worthy doctor replied, with eyes brimful with tears of gratitude, "Oh, sir, because I considered myself the most unfortunate man in Bagdad until this happy moment; for I have been settled in this noble and wealthy city for these last fifteen years, and have only been able to obtain one single patient."—"Ah!" cried the prince in despair, "then it must be that poor, solitary, unhappy-looking ghost that is now sitting on your steps!"

It has been observed that religious sects have materially contributed to the elevation of physicians in society, and political associations have been equally beneficial. The celebrated Mead was the son of a non-conforming minister, who, knowing the influence he possessed over his numerous congregation, brought him up as a physician, in the full confidence of obtaining the splendid result that rewarded the speculation. His example was followed by several dissenting preachers; among whom we may name Oldfield, Clarke, Nesbitt, Lobb, Munckly, whose sons all rose to extensive and most lucrative practice. At that period, St. Thomas's and Guy's Hospitals were under the government of Dissenters and Whigs; and so soon as any one became a physician to the establishment, his fortune was made. The same advantages attended St. Bartholomew's and Bethlem, both of royal foundation.

Dr. Meyer Schomberg, who was a poor Jew of Cologne, came to London without any profession, when, not knowing what to do to obtain a living, to use his own words, he said, "I

am a physician;" and, having thus conferred a degree upon himself, he sedulously cultivated the acquaintance of all his fellow Jews about Duke's-place, got introduced to some of their leading and wealthy mercantile brethren, and a few years after Dr. Schomberg was in the annual receipt of four thousand pounds. It is rather strange, but the Jew was succeeded in his lucrative practice by a Quaker. This was the celebrated Dr. Fothergill. Brought up an apothecary, he took out a Scotch degree, and, attaching himself to Schomberg, calculated on following his example; and, on his patron's decease, he slipped into the practice of both Jew and Gentile.

Amongst many singular instances of good fortune may be mentioned a surgeon of the name of Broughton, to whom our East India Company may consider themselves as most indebted, since he was the person who first pointed out the advantages that might result from trading in Bengal. Broughton happened to travel from Surat to Agra in the year 1636, when he had the luck to cure one of the daughters of the Emperor *Shah-Jehan*. To reward him, this prince allowed him a free trade throughout his dominions. Broughton immediately repaired to Bengal to purchase goods, which he sent round by sea to Surat. Scarcely had he returned, when he was requested to attend the favourite of a powerful nabob, and he fortunately restored her to health, when, in addition to a pension, his commercial privileges were still more widely extended; the prince promising him at the same time a favourable reception for British traders. Broughton lost no time in communicating this intelligence to the Governor of Surat; and it was by his advice that the company sent out two large ships to Bengal in 1640.

There are some amusing anecdotes related regarding a vocation for the medical profession. Andrew Rudiger, a physician of Leipsic, when at college, made an anagram of his name, and, in the words *Andreas Rudiger* he found "*Arare Rus Dei Dignus*," or "worthy to cultivate the field of God." He immediately fancied that his vocation was the church, and commenced his theological studies. Showing but little disposition for the clerical calling, the learned Thomasius recommended him to return to his original pursuits. Rudiger confessed that he had more inclination for the profession of medicine than the church; but that he had considered the anagram of his name as a divine injunction. "There you are in error," replied Thomasius; "that very anagram calls you to the art of healing; for *Rus Dei* clearly meaneth the churchyard."

The subject of quackery, in every sphere of life, whether it be resorted to by diplomatists or physicians, sanctimonious adventurers or fashionable *roués*, leads to serious consideration. How comes it that man seems more anxious to be deceived than enlightened? Simply from the errors of his education, which foster a love for the marvellous, and induce him to admire that which really is not or cannot be comprehended. The superiority of the intellectual faculties of the ancients, at an earlier age than the generality of men in the present times, is solely to be attributed to their having been brought up with philosophical views. Mallebranche has justly said, "that to become a philosopher, we must *see clearly*; but to be endued with faith, we must *believe blindly*." Although we cannot admit this axiom in matters of revealed religion, yet in many worldly concerns it does hold. If a youth was not educated with the scholastic jargon, commonly called learning, he would be considered ignorant. Helvetius has said, that man is born ignorant, but not a fool; and that it is even no easy matter to make him one; and the same writer has very justly divided stupidity into that which is natural, arising from ignorance, and that which is acquired and the result of instruction. It is thus that, by speaking to the passions, naturally weak, and to our desires and apprehensions, ever ready to grasp at a favourite phantom,—the artful manage to exercise a more powerful control, and incline persons to believe what their senses actually discredit. The traffic of hope and fear has ever been a lucrative trade; and while fear became the staple commodity of priestcraft, hope was the fortune of medical quacks. The multiplication of sins increased the

profits of the one; the various diseases, real and imaginary, to which flesh is heir, became the source of emolument to the other. It is under these cherished impressions of ameliorating our condition, that many men of common sense, and even of judgment, are induced to rely on the most absurd and fallacious promises; so prone are we to believe all that we wish;—the fidelity of a woman, the truth of a sycophant, and the candour of a flatterer. If there could be established a regular college of quackery, where the errors of mankind might be studied, and pupils taught to avail themselves of their follies, as a future vocation, a more perfect knowledge of the world would be acquired than in all the universities in Europe. Our sovereigns would be wise in selecting their ministers amongst the graduates of this academy. Cardinal Du Perron, who, in a long homily, convinced his sovereign, Henry III., of the existence of a God, and afterwards informed him that he would prove the contrary, if it could afford his Majesty any consolation, might have been selected as a proper rector for such an institution.

It is also to be observed that the founders of all doctrines, however hypothetical and absurd, have generally assumed a dogmatic language, which gives to their fallacious assertions an appearance of truth, and Bacon has long ago said, “Method, carrying a show of total and perfect knowledge, has a tendency to general acquiescence.”

Quackery is considered by many practitioners as necessary to forward the views of medical men. It is related of Charles Patin, that being on a visit to a physician at Basle, where his son was studying medicine, he questioned the youth on the principal studies required to form a physician; to which the future candidate for medical popularity replied, “Anatomy, physiology, pathology, and therapeutics.” “You have omitted the chief pursuit,” replied his catechiser, “*quackery*.”

When we cast our eyes on the absurd names which many Italian academies adopted to characterize the nature of their studies, we find an ample illustration of this science in the *Seraphici*, the *Oscuri*, the *Immaturi*, the *Infecundi*, the *Offuscati*, the *Somnolenti*, and *Phantastici*!

The most ridiculous and disgusting epithets have been considered honourable distinctions. Thus, when the science of *Uroscopia* and *Uromancy* prevailed, we find a Dr. Theodorus Charles, a Wirtemberg physician, calling another learned practitioner, “*Urinosa Claritas*.”

On The Use Of Tea

Such is the growing consumption of this now indispensable article in England, that in 1789 there were imported 14,534,601 lbs., and in 1833 the quantity was increased to 31,829,620 lbs.; the latter importation yielding a revenue of 3,444,101*l.* In other countries we find the consumption much less. Russia in 1832 imported 6,461,064 lbs.; Holland consumes about 2,800,000 lbs., and France only 230,000 lbs.

It is supposed that tea was first introduced into Europe by the Dutch, about the middle of the seventeenth century; and Lords Arlington and Ossory are said to be the first persons who made it known in England. In 1641, Tulpius, a Dutch physician, mentioned it in his works. In 1667, Fouquet, a French physician, recommended it to the French faculty; and in 1678, an elaborate treatise was written on it by Cornelius Boutkoë, physician to the Elector of Brandenburg. About the same time, several travellers and missionaries, amongst whom we find Kœmpfer, Kalm, Osbeck, Duhalde, and Lecomte, give various accounts of the plant and its divers qualities.

The Chinese name of this plant is *theh*, a *Fokien* word. In the Mandarin it is *tcha*, and the Japanese call it *tsjaa*. *Loureiro*, in his *Flora Cochin-China*, describes three species of tea. It is a polyandrous plant of the natural order *Columniferæ*, growing to a height varying from three to six feet, and bearing a great resemblance to our myrtle. The blossom is white, with yellow style and anthers, not unlike that of the dog-rose; the leaves are the only valuable part of the plant. The *camellias*, particularly the *camellia sesanqua*, of the same natural family, are the only plants liable to be confounded with it. The leaves of the latter camellia are indeed frequently used as a substitute for those of the tea-plant in several districts of China. This shrub is a hardy evergreen, growing in the open air from the equator to the forty-fifth degree of northern latitude; but the climate that appears the most congenial to it seems to be between the twenty-fifth and thirty-third degree. Almost every province and district in China produces tea for local consumption: but what is cultivated for trade is chiefly in Fokien, Canton, Kiang-nan, Kiang-si, and Che-Kiang; Fokien being celebrated for its black tea, and Kiang-nan for the green. The plant is also cultivated in Japan, Tonquin, and Cochin-China, and in some parts of the mountainous tracts of Ava, where, in addition to its use in infusion, it is converted into a pickle preserved in oil. When tea was first introduced as a luxury on particular occasions in the wild districts of Ireland, the people used to throw away the water in which it had been boiled, and eat the leaves with salt-butter or bacon like greens. The Dutch are now endeavouring to propagate this valuable plant in Java, and for that purpose employ cultivators, who have emigrated from Fokien. The Brazilians are making similar attempts, and some tolerable tea has been reared near Rio Janeiro.

The black teas usually imported from Canton are the *bohea*, *congou*, *souchong*, and *pekoe*, according to our orthography: the French missionaries spelt them as follows: *boui*, *camphou* or *campoui*, *saotchaon*, and *pekao* or *peko*. Our green teas are the *twankay*, *hyson-skin*, and *hyson*, *imperial*, and *gunpowder*; the first of which French travellers write *tonkay*, *hayswin-skine*, and *hayswin*. The French import a tea called *têhulan*, but it is artificially flavoured with a leaf called *lan hoa*, or the *olea fragrans* of Linnæus.

The tea-plant grows to perfection in two or three years: the leaves are carefully picked by the family of the growers, and immediately carried to market, where they are purchased for drying in sheds. The tea-merchants from Canton repair to the several districts where it is produced, and, after purchasing the leaves thus simply desiccated, submit them to various

manipulations; after which they are packed in branded cases and parcels called *chops*, from a Chinese word meaning a seal. Some of the leaf-buds of the finest black tea plants are picked early in the spring, before they expand: these constitute *pekoe*, sometimes called "white-blossomed tea," from their being intermixed with the blossoms of the *olea fragrans*. The younger the leaf, the more high-flavoured and valuable is the tea. Green teas are grown and gathered in the same manner; but amongst these the gunpowder stands in the grade of the *pekoe* among the black, being prepared with the unopened buds of the spring crops. The alleged preparation of green teas upon copper plates, to give them a verdant colour, is an idle story. They are dried in iron vases over a gentle fire; and the operator conducts this delicate work with his naked hand, and the utmost care not to break the fragile leaves. This part of the manipulation is considered the most difficult, as the leaves are rolled into their usual shape between the palms of the hands until they are cold, to prevent them from unrolling. Teas are adulterated by various odoriferous plants, more especially the *vitex pinnata*, the *chloranthus inconspicuus*, and the *illicium anisatum*. In our markets the chief adulteration is operated by the mixture of sloe and ash leaves, and colouring with terra Japonica and other drugs.

That tea is a substance injurious to health is beyond a doubt. Nothing but long habit from early life renders it less baneful than it otherwise would be: persons who take its infusion for the first time invariably experience uncomfortable sensations. It is well known that individuals who are not in the practice of taking tea in the evening, never transgress this habit with impunity; and it is quite clear that a preparation which deprives them of sleep, and renders them restless during a whole night, cannot be salubrious by day; and although the following opinion of Dr. Trotter regarding the use of this leaf is somewhat exaggerated, it is founded on experience; and I have known several persons afflicted with a variety of serious affections who never could obtain relief until they had ceased to consume it.

"Tea is a beverage well suited to the taste of an indolent and voluptuous age. To the glutton it affords a grateful diluent after a voracious dinner; and, from being drunk warm, it gives a soothing stimulus to the stomach of the drunkard: but, however agreeable may be its immediate flavour, the ultimate effects are debility and nervous diseases. There may be conditions of health, indeed, where tea can do no harm, such as in the strong and athletic; but it is particularly hurtful to the female constitution, to all persons who possess the hereditary predisposition to dyspepsia, and all diseases with which it is associated, to gout, and to those who are naturally weak-nerved. Fine tea, where the narcotic quality seems to be concentrated, when taken in a strong infusion, by persons not accustomed to it, excites nausea and vomiting, tremors, cold sweats, vertigo, dimness of sight, and confusion of thought. I have known a number of men and women subject to nervous complaints, who could not use tea in any form without feeling a sudden increase of all their unpleasant symptoms; particularly acidity of the stomach, vertigo, and dimness of the eyes. As the use of this article of diet extends among the lower orders of the community and the labouring poor, it must do the more harm. A man or a woman who has to go through much toil and hardship has need of substantial nourishment; but that is not to be obtained from an infusion of tea. And if the humble returns of their industry are expended in this leaf, what remains for the purchase of food better adapted to labour? In this case tea becomes hurtful, not only from its narcotic quality, but because that quality acts with double force in a body weakened from other causes. This certainly is one great reason for the increased and increasing proportion of nervous, bilious, spasmodic, and stomach complaints, &c. appearing among the lower ranks of life."

It is well known that tea is frequently resorted to by literary men to keep them awake during their lucubrations. Dr. Cullen said he never could take it without feeling gouty symptoms; and we frequently see aged females, who are in the habit of taking strong green tea, subject to

paralytic affections. Many experienced physicians, such as Grimm, Crugerus, Wytt, Murray, Letsom, condemn the abuse of the plant as highly dangerous.[25] That it is a most powerful astringent we well know; and the hands of the Chinese who are employed in its preparation are shrivelled, and, to all appearance, burned with caustic. Chemists have extracted from it an astringent liquor containing tannin and gallic acid. This liquor, injected in the veins or under the integuments of frogs, produces palsy of the posterior extremities, and, applied to the sciatic nerve for half an hour, has occasioned death.

There is no doubt that tea acts differently on various individuals. In some it is highly stimulant and exhilarating; in others its effects are oppression and lowness of spirits; and I have known a person who could never indulge in this beverage without experiencing a disposition to commit suicide, and nothing could arouse him from this state of morbid excitement but the pleasure of destroying something, books, papers, or any thing within his reach. Under no other circumstances than this influence of tea were these fearful aberrations observed. It has been remarked that all tea-drinking nations are essentially of a leucophlegmatic temperament, predisposed to scrofulous and nervous diseases. The Chinese, even the degraded Tartar races amongst them, are weak and infirm, their women subject to various diseases arising from debility. Although their confined mode of living, and want of the means of enjoying pure air and exercise, materially tends to render them liable to these affections; still their immoderate use of strong green tea, taken, it is true, in very small quantities at the time, but repeatedly, greatly adds to this predisposition.

From long experience I am convinced that, although tea may in general be considered a refreshing and harmless beverage, yet in some peculiar cases it is decidedly injurious; and many diseases that have baffled all medical exertions, have yielded to the same curative means so soon as the action of tea had been suspended.

[25] Patin called it *l'impertinente nouveauté du siécle*.

Mandragore

Self-styled wandering Turks and Armenians are frequently met with in crowded cities vending rhubarb, tooth-powder, and various drugs and nostrums, exciting the curiosity of the idlers that group around them, by exhibiting a root bearing a strong resemblance to the human form. This is the far-famed mandragore, of which such wonderful accounts have been related by both ancients and moderns.

This plant is the *Atropa Mandragora* of Linnæus, and grows wild in the mountainous and shaded parts of Italy, Spain, and the Levant, where it is also cultivated in gardens. The root bears such a likeness, at least in fancy's eyes, to our species, that it was called *Semi-homo*. Hence says Columella,

Quamvis semihominis vesano gramine fœta
Mandragora pariat flores mœstamque cicutam.

The word *vesano* clearly refers to the supposed power it possessed of exciting delirium. It was also named *Circœa*, from its having been one of the mystic ingredients employed in Circe's spells; although the wonderful mandragore was ineffectual against the more powerful herb the *Moly*, which Ulysses received from Mercury. This human resemblance of the root, which is, moreover, of a blackish hue and hairy, inspired the vulgar with the idea that it was nothing less than a familiar dæmon. It was gathered with curious rites: three times a magic circle was drawn round it with a naked sword; and the person who was daring enough to pluck it from the earth, was subject to manifold dangers and diseases, unless under some special protection; therefore it was not unusual to get it eradicated by a dog, fastened to it by a cord, and who was whipped off until the precious root was pulled out. According to Josephus, the plant called *Buaras*, which was gifted with the faculty of keeping off evil spirits, was obtained by a similar canine operation. Often, it was asserted, did the mandragore utter piteous cries and groans, when thus severed from mother earth. Albertus the Great affirms that the root has a more powerful action when growing under a gibbet, and is brought to greater perfection by the nourishing secretions that drop from the criminal's dangling corpse.

Amongst its many wonderful properties, it was said to double the amount of money that was locked up with it in a box. It was also all-powerful in detecting hidden treasures. Most probably the mandragore had bad qualities to underrate its good ones. Amongst these, we must certainly class the blackest ingratitude, since it never seemed to benefit the eloquent advocates of its virtues, who, in general, were as poor as their boasted plant was rich in attraction.

It was also supposed to possess the delightful faculty of increasing population and exciting love; and the Emperor Julian writes to Calixines that he is drinking the juice of mandragore to render him amorous. Hence was it called *Loveapple*; and Venus bore the name of *Mandragontis*. It has been asserted by various scholiasts, that the *mandrake* which Reuben found in the fields and carried to his mother, Leah, was the mandragore; the *Dudaïm*, however, which he gathered was not, according to all accounts, an unpleasant fruit, but is supposed to have been a species of orchis, still used in the East in love-philters and prolific potions. The word *Dudaïm* seems to express a tuberculated plant; and in Solomon's Songs, he thus describes it: "The mandrakes give a smell, and at our gates are all manner of pleasant fruits, new and old, which I have laid up for thee, O my beloved." Now it is utterly impossible, whatever may have been the revolution in taste since the days of Solomon, that

the nauseous and offensive mandragore could have been considered as a propitiating present to a lady.

The etymology of the word *Dudaïm* would seem to describe it. It is derived from the word דדים, (*Dadim*) breasts, or דודים, (*Dodim*) friends, neighbours, twins; which indicates that this plant is formed of two similar parts. It is thought that the *Dudaïm* might be the highly-scented melon which is cultivated in the East, especially in Persia, and known by the name of *Destenbuje*, or the *Cucumis Dudaïm* of Linnæus, and which is also found in Italy, where its powerful aroma is imparted to garments and chambers. It must have been an odoriferous production, since in the *Talmud* we find it denominated *Siglin*, which has been considered the jessamine or the lily. The orchis is remarkable for its double bulbous roots and its agreeable perfume; we may therefore justify the idea that the *Dudaïm* of the Jews was a species of this plant.

Frontinus informs us that Hannibal employed mandragore in one of his warlike stratagems, when he feigned a retreat, and left in the possession of the barbarians a quantity of wine in which this plant had been infused. Intoxicated by the potent beverage, they were unable to withstand his second attack, and were easily put to the sword. Was it the mandragore that saved the Scotch in a similar *ruse de guerre* with the Danish invaders of Sweno? It is supposed to have been the *Belladonna*, or deadly nightshade, the effects of which are not dissimilar to those of the plant in question.

In the north of Europe, this substance is still used for medicinal purposes; and Boerhaave, Hoffberg, and Swediaur have strongly recommended it in glandular swellings, arthritic pains, and various diseases where a profuse perspiration may be desirable.

Machiavel has made the fabulous powers of the mandragore the subject of a comedy, and Lafontaine has employed it as an agent in one of his tales.

Another root that excited superstitious phantasies and reverential awe, from its supposed resemblance to the human form, was the Gin-seng, a Chinese production, which, according to the author of the *Kao-li-tchi-tsan*, or Eulogium of the Kingdom of Corea, “imitates the configuration of man and the efficacy of spiritual comfort, possessing hands and feet like a human being, and the mental virtues that no one can easily comprehend.” According to Jartoux, *Gin-seng* signifies “the representation of man.” It appears, however, that the learned father was in error. *Jin*, it is true, signifies *man*; but *Chen* does not mean representation, but a *ternary body*. Hence *Gin-seng* signifies the *ternary of man, making three with man and heaven*!—no doubt some superstitious tradition, since this root bears various names in other countries, that plainly denote the veneration in which it was held. In Japan it is called *Nindsin*, and *Orkhoda* in the Tatar-Mandchou language, both of which mean “the queen of plants.” Father Lafitau informs us that the name of *Garent-oguen* of the Iroquois, which it also bears, means the *thighs of man*. The *Gin-seng* is a native of Tartary, Corea, and also thrives in Canada, Virginia, and Pennsylvania, in shaded and damp situations, as it soon perishes under the solar rays. The Chinese attach considerable value to it. Thunberg informs us that it sometimes is sold for forty pounds a pound; and Osbeck states that in his time it was worth twenty-four times its weight in silver. This enormous price frequently induced foreign smugglers to bring it into the Chinese territory; but the severest laws were enacted to punish this fraudulent traffic. The Tartars alone possess the privilege of cultivating and collecting it; and the districts that produce this precious plant are surrounded with palisades, and strictly guarded. In 1707, the Emperor of China, to increase his revenue, sent a body of ten thousand troops to collect the gin-seng. According to the Chinese physicians, this root possesses the faculty of renovating exhausted constitutions, giving fresh vigour, raising the drooping moral and physical faculties, and restoring to health and *embonpoint* the victim of debauchery. It is

also said that a bit of the root chewed by a man running a race will prevent his competitor from getting the start of him. It is somewhat singular that the same property is attributed to garlic; and the Hungarian jockeys frequently tie a clove of it to their racers' bits, when the horses that run against them fall back the moment they breathe the offensive odour. It has been proved that no horse will eat in a manger if the mouth of any other steed in the stable has been rubbed with the juice of this plant. I had occasion to ascertain this fact. A horse of mine was in the same stall with one belonging to a brother officer; mine fell away and refused his food, while his companion throve uncommonly well. I at last discovered that a German groom, who had charge of the prosperous animal, had recourse to this vile stratagem. It is also supposed that men who eat garlic knock up upon a march the soldiers who have not made use of it. Hence, in the old regulations of the French armies, there existed an order to prohibit the use of garlic when troops were on a march.

Barber-Surgeons, And The Progress Of Chirurgical Art

No consideration should render man more thankful to his Creator, and justly proud of the progress of human intellect, than the perfection to which the art of surgery has been carried. In its present improved condition, we are struck with horror at the perusal of the ancient practice, and marvel that its barbarity did not sooner induce its professors to diminish the sum of misery it inflicted on their victims. Ignorance, and its offspring Superstition, seemed to sanctify this darkness. Improvement was considered as impious and unnecessary; and to deny the powers of the chirurgical art, heresy against the holy men, who alone were permitted to exercise it.

This supposed divine attribute of the priesthood can be traced to remote ages: Æsculapius was son of Apollo, and princes and heroes did not consider the art of surgery beneath their dignity. Homer has illustrated the skill of Podalirius and Chiron; and Idomeneus bids Nestor to mount his chariot with Machaon, who alone was more precious than a thousand warriors; while we find Podalirius, wrecked and forlorn on the Carian coast, leading to the altar the daughter of the monarch whom he cured, and whose subjects raised a temple to his memory, and paid him divine honours.

Tradition informs us, that in the infancy of the art all its branches were exercised indiscriminately by the medical practitioners. It was not then supposed that the human body was subject to distinct affections, external and internal; yet, as its study advanced, the ancients were led into an opposite extreme, and we find that in Egypt each disease became the province of a special attendant, regulated in his treatment by the sacred records handed down by their hierarchy.

Herodotus informs us, that “so wisely was medicine managed by the Egyptians, that no physician was allowed to practise any but his own peculiar branch.” Accouchments were exclusively the province of females.

These practitioners were remunerated by the state; and they were severely punished, when, by any experimental trials, they deviated from the prescribed rules imposed upon them, and, in the event of any patient dying under a treatment differing from the established practice, the medical attendant was considered guilty of a capital offence. These wise provisions were made, says Diodorus, in the full conviction that few persons were capable of introducing any new treatment superior to that which had been sanctioned and approved by old practitioners.

Pliny complains that no such laws existed in Rome, where a physician was the only man who could commit murder with impunity; “Nulla præterea lex,” he says, “quæ puniat inscitium capitalem, nullum exemplum vindictæ. Discunt periculis nostris, et experimenta per mortes agunt: medicoque tantum hominem occidisse impunitas summa est.”

By one of these singular anomalies in public opinion, this supposed divine science was soon considered an ignoble profession. In Rome it was chiefly practised by slaves, freedmen, or foreigners. From the overthrow of the Roman empire till the revival of literature and the arts in Europe, medicine and surgery sought a refuge amongst the Arabians, who studied both branches in common; for, though exiled to the coast of Africa in point of scientific cultivation, it was necessarily cultivated in other countries, and in the greater part of Europe became the exclusive right of ecclesiastics. In time, however, it was gradually wrested from

their hands by daily necessities; and every one, even amongst the lowest classes, professed himself a surgeon, and the cure of the hurt and the lame was intrusted to menials and women.

As the church could no longer monopolize the art of healing, it became expedient to stigmatize it, although that very faculty had but lately been their boast; but it had fallen within the powers of vulgar and profane comprehension, and therefore was useless to maintain sacerdotal pre-eminence. In 1163, the Council of Tours, held by Pope Alexander III., maintained that the devil, to seduce the priesthood from the duties of the altar, involved them in mundane occupations, which, under the plea of humanity, exposed them to constant and perilous temptations. The edict not only prohibited the study both of medicine and law amongst all that had taken religious vows, but actually excommunicated every ecclesiastic who might infringe the decree. It appears, however, that the temptations of the evil one were still attractive, as Pope Honorius III., in 1215, was obliged to fulminate a fresh anathema on transgressors, with an additional canon, ordaining that, as the church abhorred all cruel or sanguinary practices, not only no priest should be allowed the practice of surgery, but should refuse their benediction to all who professed it.[26]

The practice then fell into the hands of laymen, although priests, still regretting the advantages that it formerly had yielded them, were consulted in their convents or houses; and when patients could not visit them without exposing them to clerical censure, they asserted their ability to cure diseases by the mere inspection of the patient's dejections; and so much faith was reposed in this filthy practice, that Henry II. decreed that upon the complaints of the heirs of persons who died through the fault of their physicians, the latter should suffer capital punishment, as having been the cause of their patient's death, unless they had scientifically examined what was submitted to their investigation by the deceased's relatives or domestics: and then proceeded to prescribe for the malady.

Unable to quit their cloisters, in surgical cases, which could not be so easily cured at a distance, sooner than lose the emoluments of the profession, they sent their servants, or rather the barbers of the community, who shaved, and bled, and drew teeth in their neighbourhood ever since the clergy could no longer perform these operations, on the plea of the maxim "*Ecclesia abhorret à sanguine*;" bleeding and tooth-drawing being, I believe, the only cases where this maxim was noticed. From this circumstance arose the barber craft or barber-surgeons.

[26] The priesthood in thus stigmatizing the medical profession so soon as its practice ceased to be their exclusive privilege, displayed the same spirit of intolerance and thirst for omnipotent sway that characterized their anathemas on the drama when they no longer were the authors, actors, and managers of their own sacrilegious plays, which they called mysteries and moralities. Previously to the drama becoming the pursuit of laymen, the monkish exhibitions had been so holy, that one of the popes granted a pardon of one thousand days to every person who went to the plays performed in the Whitsun week, beginning with a piece called "The Creation," and ending the season with the performance of "The General Judgment." In these representations the performers belonged to various corporations, and acted under the direction of the clergy. "The Creation" was performed by the *Drapers*,—"The Deluge" by the *Dyers*,—"Abraham, Melchizedek, and Lot," by our friends the *Barbers*,—"The Purification" by the *Blacksmiths*,—"The Last Supper" by the *Bakers*,—"The Resurrection" by the *Skinners*,—and "The Ascension" by the *Tailors*.
The following curious anecdotes are recorded in the description of a mystery performed at Veximel, near Metz, by the order of Conrad Bayer, bishop of the diocese. This play was called *The Passion*; and it appears that by some mismanagement a priest by the name of Jean de Nicey, curate of Métrange, who played Judas, was nigh meeting with an untimely end; for his neck had slipped and tightened the noose by which he was suspended to the tree, and, had he not been cut down, he would have performed the part most effectually.
A play was acted in one of the principal cities in England by these clerical performers, representing the terrestrial Paradise, when Adam and Eve made their appearance entirely naked.

These practitioners, from their various avocations, were necessarily dexterous; for, in addition to the skill required for good shaving, tonsurating the crowns of clerical heads was a delicate operation; and it was about this period that Pope Alexander III. revised the canon issued by the synod of Carthage respecting the tonsure of the clergy. Surgery being thus degraded, the separation between its practice and that of medicine became unavoidable, and the two branches were formally made distinct by bulls of Boniface VI. and Clement V.

St. Louis, who had witnessed the services of surgeons in the field of battle during the crusades, had formed a college or *confrérie* of surgeons, in honour of St. Cosme and St. Damian, in 1268; and wounds and sores were dressed *gratis* in the churches dedicated to those saints on the first Monday of every month. To this body, of course, the barber-surgeons, or *fraters* of the priests, who had not received any regular education, did not belong. Hence arose the distinction, which even to the present day obtains in various parts of the Continent, where surgeons are divided into two classes,—those who had gone through a regular course of studies, and those who, without any academical education, were originally employed as the servants of the priests and barbers. So late as the year 1809, one of my assistants in the Portuguese army felt much hurt at my declining his offer to shave me; and in 1801, some British assistant-surgeons, who had entered the Swedish navy, were ordered to shave the ship's company, and were dismissed the service in consequence of their refusal to comply with this command.

But to return to our barbers.—These ambitious shavers gradually attempted to glean in the footsteps of the regular chirurgeons, and even to encroach upon their domain, by performing more important operations than phlebotomy and tooth-drawing; the audacious intruders were therefore very properly brought up *ex officio* by the attorney-general of France, and forbidden to transgress the boundaries of their art, until they had been duly examined by master chirurgeons; although these said masters were not better qualified than many of the barbers. Such was their ignorance indeed, that Pitard, an able practitioner, who had successively been the surgeon of St. Louis, Philip the Brave, and Philip the Fair, obtained a privilege to examine and grant licences to such of these masters who were fit to practise, without which licence all practitioners were liable to be punished by the provost of Paris; and in 1372 barbers were only allowed to dress boils, bruises, and open wounds.

Although this account chiefly refers to France and its capital, yet the same distinction and division between surgeons and barbers prevailed in almost every other country; and privileges were maintained with as much virulence and absurdity as the present controversial bickerings between physicians and surgeons.

In 1355 these master-surgeons constituted a faculty, which pocketed one-half of the penalties imposed upon the unlucky wights who had not the honour of belonging to their body. They also enjoyed various immunities and exemptions; amongst others, that of not keeping guard and watch in the city of Paris. To increase their emoluments, they granted as many honorary distinctions as they could in decency devise, and introduced the categories of bachelors, licentiates, masters, graduates, and non-graduates of surgery. The medical faculty now began to complain of the encroachments of the master-surgeons on their internal domain of poor mortality with as much bitterness as the masters complained of the impertinent invasion on the part of the barbers, of their external dominion. To court the powerful protection of the university against these interlopers, the surgeons consented to be considered as the scholars of the medical faculty, chiefly governed by clerical physicians.

In 1452 a fresh source of dissension arose amongst clerical physicians, lay physicians, master surgeons, and barbers. Cardinal Etoutville abolished the law which bound the physicians of the university to celibacy, when, to use the historian's words, "many of the clerical

physicians, thinking there was more comfort to be found in a wife without a benefice than could be expected in a benefice without a wife, abandoned the priesthood, and were then permitted to visit their patients at their own houses." Thus thrown into the uncontrolled practice of medicine, these physicians became jealous of the influence of the surgeons, to whom they had been so much indebted; and they had recourse to every art and manœuvre that priestcraft could devise to oppress and degrade them. To aid this purpose, they resorted to the barbers, whom they instructed in private, to enable them to oppose the master-surgeons more effectually. The surgeons, indignant at this protection, had recourse to the medical faculty, supplicating them to have the barbers shorn of their rising dignity. Thus for mere motives of pecuniary interest, and the evident detriment of society, did these intriguing practitioners struggle for power and consequent fees; and, according to the vacillation of their interests, the barbers became alternately the allies of the physicians or the mercenary skirmishers of the surgeons.

From this oppression of the art, for nearly three centuries surgery was considered a degrading profession. Excluded from the university, not only were surgeons deprived of all academic honours and privileges, but subjected to those taxes and public burdens from which the members of the university, being of the clerical order, were exempted. This persecution not only strove to injure them in a worldly point of view, but the priests carried their vindictive feelings to such a point of malignity that when Charles IX. was about to confer the rites of apostolical benediction upon the surgeons of the long robe, the medical faculty interposed on the plea of their not being qualified to receive this benediction, as they did not belong to any of the four faculties of the university; and as the chancellor, or any other man, had not the power of conferring a blessing without the pope's permission and special mandate, both surgeons and barbers ought to be irrevocably damned. The apostolical benediction in those days was considered of great value, since it exempted all candidates from examination in anatomy, medicine, surgery, or any other qualification, when they applied for a degree.

Ever since the healing art ceased to be a clerical privilege, and a state of rivalry prevailed between spiritual and corporeal doctors, the former have sought to represent their opponents as infidels and atheists—the unbelief of physicians became prevalent, and to this day medical men are generally considered freethinkers;—an appellation which in a strictly correct acceptation might be considered more complimentary than opprobrious, since it designates a man, who extricating his intellectual faculties from the meshes of ignorance or prejudices, takes the liberty of thinking for himself.

Sir Thomas Brown in his "Religio Medici," alludes to this injurious opinion entertained of medical men, when he says, "For my religion, though there be several circumstances that might persuade the world I have none at all, *as the general scandal of my profession*, the natural course of my studies, the indifferency of my behaviour and discourse in matters of religion—yet in despite thereof, I dare, without usurpation, assume the honourable style of Christian."

Sir Kenelm Digby in his observations on the work from which the above is extracted, entertains a similar opinion, and quotes Friar Bacon in support of it. The following are his words: "Those students who busy themselves much with such notions as reside wholly in the fantasy, do hardly ever become idoneous for abstracted metaphysical speculations; the one having bulky foundations of matter, or of the accidents of it, to settle upon—at the least with one foot; the other flying continually, even to a lessening pitch in the subtile air. And accordingly it hath been generally noted, that the excellent mathematicians, who converse altogether with lines, figures, and other differences of quantity, have seldom proved eminent in metaphysics or speculative divinity. Nor again, the profession of their sciences in other

arts, much less can it be expected that an excellent physician, whose fancy is always fraught with the material drugs that he prescribeth his apothecary to compound his medicines of, and whose hands are inured to the cutting up, and eyes to the inspection of anatomized bodies, should easily and with success ply his thoughts at so towering a game, as a pure intellect, or separated and unbodied soul."

That such ideas should be maintained in former days, when bigotry and prejudice reigned paramount, we cannot be surprised; but one must marvel to see a modern and intelligent annotator of Brown's work,[27] coincide in this illiberal opinion, in the following terms:

"Imaginative men, that is, persons in whom the higher attributes of genius are found, seldom delight in the sciences conversant with mere matter or form; least of all in medicine, the object of which is the derangement, or imperfection of nature, and the endeavour to substitute order and harmony in the place of their opposites. Brought thus chiefly into contact with diseased organization, surrounded by the worst elements of civil society, (for their experience must in general be among the intemperate and the vicious,) they may be said to exist in an infected moral atmosphere, and it is therefore not greatly to be wondered at that among such persons a highly religious frame of mind should be the exception and not the rule."

The absurdity of this observation can only be equalled by its extreme illiberality. Can it be for one moment entertained, that the physician who gives his care to every class of society and at all ages "exists in an infected moral atmosphere?" Supposing that he is not fortunate enough to attend upon the opulent and the great, and is limited to a pauper or an hospital practice, does Mr. St. John mean to say that instances of intemperance and vice are confined to the indigent, although want of education, and poverty may degrade them in crapulous pursuits? If there does exist a profession pre-eminent for its philanthropic character, and the power of discrimination between good and evil, and right and wrong, it is undoubtedly that of medicine. The finest feelings of humanity are constantly brought to bear, both in seeking to relieve bodily sufferings and solacing an afflicted mind—whether it be with the scalpel in hand in an anatomical theatre, or by the bedside of an agonized sufferer, whom he hopes, under Providence, to restore to health and to his family, the physician has daily opportunities of beholding the wonders of the creation and the benevolence of the Creator—he is a constant witness of the fervent supplication of the unfortunate and the heartfelt gratitude of those suppliants at the throne of mercy, whose prayers have been heard. A man of exalted benevolence (and such a physician ought to be), he must be alive to all the generous feelings of humanity, and he is doomed more frequently to move in an *infected moral atmosphere*, when gratuitously attending some of the troublesome and pedantic legislators of the republic of letters, than when exerting his skill to relieve the grateful poor who may fall under his care.

It has been maintained that the physician seeking in the arcana of nature the causes of every vital phenomenon becomes a materialist: nothing can be more unjust, nay, more absurd, than such a supposition. The study of physiology teaches us, more perhaps then any other pursuit, to admire the wonderful works of our Creator, and Voltaire has beautifully illustrated the fact in the following lines:

Demandez à Sylva par quel secret mystère
Ce pain, cet aliment dans mon corps digéré,
Se transforme en un lait doucement préparé;
Comment, toujours filtré dans des routes certaines,
En longs ruisseaux de pourpre il court enfler mes veines;

[27] Mr. J. A. St. John.

A mon corps languissant donne un pouvoir nouveau,
Fait palpiter mon cœur et penser mon cerveau;
Il lève au ciel les yeux, il s'incline, il s'écrie
Demandez le à ce Dieu qui m'a donnez la vie.

Broëseche has justly said, *Tanta est inter deum, religionem, et medicum connexio, ut sine Deo et religione nullus exactus medicus esse queat*; and it has truly been said by a later writer, "that a philosophic physician must seek in religion, strength of mind to support the painful exertions of his profession, and some consolation for the ingratitude of mankind."

Amongst the many glaring absurdities which retarded the progress of medical studies, one cannot but notice the presumptuous claims of the physicians to the exclusive privilege of teaching surgery to their pupils, while anatomy was solely professed by surgeons, and not considered necessary in the instruction of a physician. All these anomalies can be easily traced to that spirit of dominion, exclusion, and monopoly, which invariably characterized clerical bodies. To such a pitch was this destructive practice carried, that surgeons were only allowed to perform operations in the presence of one or more physicians: nor were they permitted to publish any work on their profession until it had been licensed by a faculty who were utterly ignorant of the matter of which it treated. The celebrated Ambrose Paré could only obtain as a special favour from his sovereign, the permission to give to the world one of its most valuable sources of information.

So late as 1726 we find the medical faculty of Paris making a formal representation to Cardinal de Noailles and the curates of that capital to prevent surgeons from granting certificates of health or of disease, and this application was grounded on the pious motive of enforcing a more rigid observance of Lent! They further insisted that this indispensable mortification was eluded in consequence of the facility of obtaining certificates that permitted persons stated to be indisposed to eat animal food, eggs, and butter, whence infidelity was making a most alarming progress, threatening the very existence of church and state, and the overthrow of every ancient and glorious institution. The faculty were formally thanked for their pious zeal in the true interests of religion, and the spiritual welfare of their patients; and orders were affixed upon the door of every church, anathematizing all certificates that emanated from the unholy hands of surgeons and barbers.

These unfortunate barbers, although they humbly submitted to the sway of both physicians and surgeons when it suited their purpose, were in turn persecuted by both their allies and alternate protectors; so much so, that the clerical practitioners at one time prohibited them from bleeding, and conferred this privilege upon the bagnio-keepers. From the well-known nature of these establishments, various may be the reasons that led to this patronage, which was clearly an attempt to qualify bagnio-keepers to extend their convenient trade.

At last, in the year 1505, barbers were dignified with the name of surgeons. Their instructions were delivered in their vernacular tongue, until the university again interfered, and ordered that lectures should be delivered in Latin; once more closing alma-mater against illiterate shavers, who were, however, obliged to give a smattering of classical education to their sons destined to wield alternately the razor and the lancet. In 1655, surgeons and barber-surgeons were incorporated in one college; a union which was further confirmed, in 1660, by royal ordonnance, under some limitations, whereby the barbers should not assume the title of licentiates, bachelors, or professors, nor be allowed to wear the honourable gown and cap that distinguished the higher grades of learning. Red caps were in former times given by each barber to his teacher on his being qualified, and gloves to all his fellow-students.

Thus we find that the high state of perfection which the surgical art has attained is solely due to the efforts of industry to free itself from the ignoble trammels of bigotry and prejudice. Intellectual progress has invariably been opposed in every country by those powerful and interested individuals who derived their wealth and influence from the ignorance of society. Corporate bodies monopolizing the exercise of any profession will invariably retard instruction and shackle the energies of the student. It is, no doubt, indispensable that the practice of medicine in all its branches should only be allowed to such persons as are duly qualified; but whenever pecuniary advantages are derived from the grant of the permission, abuses as dishonourable as they are injurious to society will infallibly prevail. In Great Britain the period of study required in medical candidates is by no means sufficient. Five or six years is the very lowest period that should be insisted on; and, when duly instructed, degrees and licences should be conferred without fee, on all applicants, by a board of examiners unprejudiced and disinterested. This mode of granting licences would add to the respectability of the profession, while it would ensure proper attendance to the public. Physicians and surgeons would then become (what to a certain extent the latter are at present, though illegally as far as the laws of the college go), general practitioners, and society would no longer be infested by the swarms of practising apothecaries, who, from the very nature of their education, can only be skilled in making up medicines, or who must have obtained experience in the lessons taught by repeated failures in their early practice, unless perchance they have stepped beyond the usual confined instruction of their class. The consequences that arise from this fatal system are but too obvious. These men live by selling drugs, which they unmercifully supply, to the material injury of the patient’s constitution. If, after ringing all the changes of their materia medica without causing the church-bell to toll, they find themselves puzzled and bewildered, a physician or a surgeon is called in, and too frequently these practitioners are bound by tacit agreement not to diminish the revenue that the shop produces. If it were necessary to prove the evils that result from the monopolizing powers vested in corporate institutions, the proof might be sought and found in the virulence and jealousy which they evince in resisting reform, from whatever quarter it may be dreaded; and it may be said that too many of the practising apothecaries of the present day stand in the same relative situation in the medical profession as the barbers of olden times.

This faculty of exercising every branch of the profession, however qualified, is of olden date, and we find on the subject the following lines in the writings of Alcuin in the time of Charlemagne:

Accurrunt medici mox Hippocratica tecta:
Hic venas findit, herbas hic miscet in olla;
Ille coquit pultes, alter sed pocula perfert.

On Dreams

Philosophical ingenuity has long been displayed in the most learned disquisitions in an endeavour to account for the nature of these phenomena. The strangeness of these visionary perturbations of our rest—their supposed influence on our destinies—their frequent verification by subsequent events—have always shed a mystic *prestige* around them; and superstition, ignorance, and craft, have in turns characterized them as the warnings of the Divine will, or the machinations of an evil spirit.

Macrobius divided them into various categories. The first, the mere *dream*, *somnium*, he considers a figurative and mysterious representation that requires to be interpreted. Dion Cassius gives an example of this in the case of Nero, who dreamt that he saw the chair of Jupiter pass into the palace of Vespasian, which was considered as emblematical of his translation to the empire.

The second distinction he terms a *vision*, *visio*, or a foreboding of future events. The third he deemed *oracular*, *oraculum*, and this was the case when a priest, or a relative, a deity, a hero, or some venerable person, denounced what was to happen, or warned us against it. As an example of this inspiration, for such it was considered, an anecdote of Vespasian is related. Having heard that a man in Achaia had dreamt that a person unknown to him had assured him that he should date his prosperity from the moment that Nero should lose a tooth,—a tooth just drawn from that emperor being shown to him the following day, he foresaw his destinies: soon after Nero died, Galba did not long survive him, and the discord that reigned between Otho and Vitellius ultimately placed the diadem on his brow. These inspirations were considered by Cicero, and various philosophers, as particularly appertaining to the shrine of the gods; those who sought that heavenly admonition were therefore recommended to lie down in temples. The Lacedæmonians sought slumber in the temple of Pasithea; Brizo, the goddess of sleep and dreams, was worshipped at Delos, and her votaries slept before her altars with their heads bound with laurel, and other fatidical symbols; hence divination by dreams was called *Brizomantia*. Supplications were offered up to Mercury for propitious visions, and a caduceus was placed for that purpose at the feet of beds; hence was it called ἑρμῖες.

Diodorus informs us that dreams were regarded in Egypt with religious reverence, and the prayers of the devout were often rewarded by the gods with an indication of appropriate remedies. But the confidence in supernatural agency and the power of magic, was only deemed a last resource, when human skill had been baffled. Some persons promised a certain sum of money for the maintenance of sacred animals, consecrated to the divinity whose aid they implored. In the case of infants, a certain portion of their hair was cut off and weighed, and when the cure was effected an equal quantity of gold was given to the successful intermediator.

The fourth division was *insomny*, *insomnium*, which was characterized by a disturbed repose, caused either by mental or bodily oppression, or solicitude. The fifth class of dreams was the *phantasm* or *visus*, which takes place between sleeping and waking, in a dozing and broken slumber, when the person thinks himself awake, and yet beholds fantastic and chimerical figures floating around his couch. Under this class is placed the *ephialtes*, or night-mare. Macrobius represents the phantasm and the insomnium as little deserving of attention, being of no use in divination and prediction.

When these notions prevailed, the interpretation of dreams became a profitable trade; and it is a lamentable truth, that, to the present day, it is considered a speculation upon credulity. We find in Plutarch's Life of Aristides that there were tables drawn out for this purpose; and he speaks of one Lysimachus, a grandson of Aristides, who gained a handsome livelihood by this profession, taking up his station near the temple of Bacchus. Rules of interpretation were formed by Artemidorus, who lived in the reign of Antoninus Pius, and he drew his conclusions from circumstances considered either propitious or sinister. Thus, to dream of a large nose, signified subtlety; of rosemary or sage, trouble and weakness; of a midwife, disclosure of secrets; of a leopard, a deceitful person. These interpretations became so multiplied, that at last it was decreed that no dreams which related to the public weal should be regarded, unless they had visited the brains of some magistrates, or more than one individual. But what limits can any enactment assign to the influence of credulity and superstition? Cicero informs us that the Consul Lucius Julius repaired to the temple of Juno Sospita, in obedience to a decree of the senate regarding the dream of Cæcilia, daughter of Balearicus.

In more modern times we have often seen dreams resorted to, in order to assist the speculations of policy and priestcraft; some of them as absurd in their nature as revolting in their interpretation. Monkish records relate that St. Bernard's mother dreamed that she had a little white dog barking about her, which was interpreted to her by a religious person as meaning "that she should be the mother of an excellent dog indeed, who should be the hope of God's house, and would incessantly bark against its adversaries, for he should be a famous preacher, and cure many by his medicinal tongue." Our Archbishop Laurence, to whom we owe the church of Our Lady at Canterbury, was about to emigrate to France under the discouragement of persecution, until warned in a dream, and severely scourged by St. Peter for his weakness. It was on the relation not only of this dream, but on actually exhibiting the marks of the stripes he had received, that Eadbald was baptized, and became a protector of the church. It was in a dream of this description that St. Andrew instructed Peter Pontanus how to find out the spear that had pierced our Saviour's side, and which was hidden somewhere near Antioch. Antioch was at that time besieged by the Persians, and half famished; but this weapon being carried by a bishop, enabled the besieged to beleaguer Caiban, the Persian general.

The Peripatetics represented dreams as arising from a presaging faculty of the mind; other sects imagined that they were suggestions of dæmons. Democritus and Lucretius looked upon them as spectres and *simulacra* of corporeal things, emitted from them, floating in the air, and assailing the soul. A modern writer, Andrew Baxter, entertained a notion somewhat similar, and imagined that dreams were prompted by separate immaterial beings, or spirits, who had access to the sleeper's brain with the faculty of inspiring him with various ideas. Burton divides dreams into natural, divine, and dæmoniacal; and he defines sleep, after Scaliger, as "the rest or binding of the outward senses, and of the common sense, for the preservation of body and soul."

Gradually released from the trammels of superstition, modern philosophers have sought for more plausible explanations of the nature and causes of dreams, but perhaps without having attained a greater degree of certainty in this difficult question than our bewildered ancestors. Wolfius is of opinion that every dream originates in some sensation, yet the independent energies of the mind are sufficiently displayed in the preservation of the continued phantasms of the imagination. He maintains that none of these phantasms can prevail unless they arise from this previous sensation. De Formey is of the same opinion, and conceives that dreams are supernatural when not produced by these sensations. But of what nature are these sensations? Are they corporeal impressions received prior to sleep, and the continuances of

reflection, or are they the children of an idle brain? Although it is not easy to trace an affinity between the subjects of our dreams and our previous train of thought, yet it is more than probable that dreams are excited by impressions experienced in our waking moments, and retransmitted to the sensorium, however difficult it may be to link the connexion of our ideas, and trace their imperceptible catenation. Moreover, there does not exist a necessary and regular association in the state of mind that succeeds any particular impressions. These impressions only predispose the mind to certain ideas, which act upon it with more or less subsequent energy, and with more or less irregularity, according to the condition in which the predisposing causes have left it. It has been observed that we seldom dream of the objects of our love or our antipathies. Such dreams may not be the natural results of such sentiments. We may fondly love a woman, and in our dreams transfer this soft sensation of fondness to another individual,—to a dog that fondles us, or any other pleasing object. We may have experienced fear—in a storm at sea; yet we may not dream of being tossed about in a boat, but of being mounted upon a runaway horse who hurries us to destruction, or of flying from a falling avalanche. Our mind had been predisposed by fear to receive any terrific impression, and most probably these alarming phantasms will be of a chimerical and an extravagant nature. A man who has been bitten by a dog may fancy himself in the coils of a boa-constrictor. When dreaming, the mind is in an abstracted state; but still is its reciprocal influence over the body manifest, although it is powerless on volition. Vigilance in sleep is still awake; but her assistance is of no avail until the connexion between mind and body is aroused by any alarm from external agents. It is well known that a hungry man will dream of an ample repast. A patient with a blister on his head has fancied himself scalped by Indians in all their fantastic ornaments. Somnambulism clearly proves that the mind retains its energies in sleep. Locke has justly observed that dreams are made up of the waking man’s ideas, although oddly put together. Hartley is of opinion that dreams are nothing but the reveries of sleeping men, and are deducible from the impressions and ideas lately received, the state of the body, and association. I have endeavoured to explain, on the ground of the general effects of predisposition, the anomalies which so often are displayed in these associations. Of the surprising powers of the mind in somnambulism we have many instances too well authenticated to be doubted. Henricus ab Heeres was in the habit of composing in his sleep, reading aloud his productions, expressing his satisfaction, and calling to his chamber-fellow to join in the commendation. Cælius Rhodiginus when busied in his interpretation of Pliny, could only find the proper signification of the word *ectrapali* in his slumbers. There is not the least doubt but that the mind is capable of receiving impressions of knowledge, but more particularly inspirations of genius, when the body is lulled in a state of apparent repose. Dreams have been ingeniously compared to a drama defective in the laws of unity, and unconnected by constant anachronisms. Yet certain incoherences are not frequent: Darwin has justly remarked that a woman will seldom dream that she is a soldier, and a soldier’s visions will seldom expose him to the apprehensions of child-birth. Buffon has observed, “We represent to ourselves persons whom we have never seen, and such as have been dead for many years; we behold them alive and such as they were, but we associate them with actual things, or with persons of other times. It is the same with our ideas of locality; we see things not where they were, but elsewhere, where they never could have been.”

Dugald Stewart has endeavoured to account for these phenomena by the doctrine that in sleep the operations of the mind are suspended, and that therefore the cause of dreams is the loss of power of the will over the mind, which in the waking condition is subject to its control. Now, if this be the case, dreams must consist of mental operations independent of the will. However, it is not the suspension of the will and of the powers of volition that alone constitutes sleep; it is the suspension of the powers of the understanding,—attention, comparison, memory, and judgment. It is in consequence of this suspension of all our active

intellectual faculties that we never can *will* during our dreams; in that state there appears to be a resistance of the powers of volition with which the mind struggles in vain, and which is expressed both by moans, and the character of the sleeper's every feature, which portrays a state of anguish and impatience. In all dreams that are not of a morbid nature, every action is passive, involuntary. This state is widely different from delirium, in which the brain is in a morbid state of excitement; and the body is more susceptible than usual of external agency, while the mind is perplexed by hallucinations of an erroneous nature.

Dr. Abercrombie considers insanity and dreaming as having a remarkable affinity when considered as mental phenomena; the impressions in the one case being more or less permanent, and transient in the other. Somnambulism he considers an intermediate state. Dreams, according to his theory, are divided into four classes: the first, when recent events and recent mental emotions are mixed up with each other, and with old events, by some feeling common to both; the second class relates to trains of images brought up by association with bodily sensations; the third, the result of forgotten associations; and the fourth class of dreams contains those in which a strong propensity of character, or a strong mental emotion, is imbodied in a dream, and by some natural coincidence is fulfilled. The following interesting cases that fell under Dr. Abercrombie's immediate notice, illustrate his views and the above classification.

Regarding the first class, Dr. A. relates the following: "A woman, who was a patient in the clinical ward of the infirmary of Edinburgh, under the care of Dr. Duncan, talked a great deal in her sleep, and made numerous and very distinct allusions to the cases of other sick persons. These allusions did not apply to any patients who were in the ward at the time; but, after some observation, they were found to refer correctly to the cases of individuals who were there when this woman was a patient in the ward two years before."

The following is an instance of phantasms being produced by our associations with bodily sensations, and tends to show how alive our faculties continue during sleep to the slightest impressions:

The subject of this observation was an officer in the expedition to Louisburg in 1758, who had this peculiarity in so remarkable a degree, that his companions in the transport were in the constant habit of amusing themselves at his expense. They could produce in him any kind of dream by whispering in his ear, especially if this was done by a friend with whose voice he had become familiar. One time they conducted him through the whole progress of a quarrel, which ended in a duel; and when the parties were supposed to have met, a pistol was put into his hand, which he fired, and was awakened by the report. On another occasion they found him asleep on the top of a locker in the cabin, when they made him believe he had fallen overboard, and exhorted him to save himself by swimming. They then told him that a shark was pursuing him, and entreated him to dive for his life. He instantly did so, and with so much force as to throw himself from the locker upon the cabin floor, by which he was much bruised, and awakened of course. After the landing of the army at Louisburg, his friends found him one day asleep in his tent, and evidently much annoyed by the cannonading. They then made him believe that he was engaged, when he expressed great fear, and showed an evident disposition to run away. Against this they remonstrated, but at the same time increased his fears by imitating the groans of the wounded and the dying; and when he asked, as he often did, who was hit, they named his particular friends. At last they told him that the man next himself in his company had fallen, when he instantly sprung from his bed, rushed out of the tent, and was only roused from his danger and his dream by falling over the tent-ropes. A remarkable thing in this case was, that after these experiments he had no distinct recollection of his dreams, but only a confused feeling of oppression or fatigue, and used to

tell his friends that he was sure they had been playing some trick upon him. It has been observed that we seldom feel courageous or daring in our dreams, and generally avoid danger when menaced by a foe, or exposed to any probable peril.

The third class of dreams relates to the revival of forgotten associations. The person in question was at the time connected with one of the principal banks in Glasgow, and was at his place at the teller's table, where money is paid, when a person entered demanding payment of a sum of six pounds. There were several people waiting, who were in turn entitled to be attended to before him; but he was remarkably impatient and rather noisy, and being besides a remarkable stammerer, he became so annoying, that another gentleman requested him to pay the money and get rid of him. He did so accordingly, but with an expression of impatience at being obliged to attend to him before his turn, and thought no more of the transaction. At the end of the year, which was eight or nine months after, the books of the bank could not be made to balance, the deficiency being exactly six pounds. Several days and nights had been spent in endeavouring to discover the error, but without success, when he returned home much fatigued, and went to bed. He dreamt of being at his place in the bank, and the whole transaction of the stammerer, as now detailed, passed before him in all its particulars. He awoke under the full impression that the dream would lead him to the discovery of what he was so anxiously in search of, and on examination he soon discovered that he had neglected to enter the sum which he had thus paid.

The following singular dreams are examples of the fourth class. A clergyman had come to Edinburgh from a short distance in the country, and was sleeping at an inn, when he dreamt of seeing a fire, and one of his children in the midst of it. He awoke with the impression, and instantly left town on his return home. When he arrived in sight of his house, he found it on fire, and got there in time to assist in saving one of his children, who in the alarm and confusion had been left in a situation of danger.

A gentleman in Edinburgh was affected with aneurism of the popliteal artery, for which he was under the care of two eminent surgeons, and the day was fixed for the operation. About two days before the appointed time, the wife of the patient dreamt that a favourable change had taken place in the disease, in consequence of which the operation would not be required. On examining the tumour in the morning, the gentleman was astonished to find that the pulsation had entirely ceased, and, in short, this turned out to be a spontaneous cure,—a very rare occurrence in surgical practice.

The following dream is still more remarkable. A lady dreamt that an aged female relative had been murdered by a black servant, and the dream occurred more than once. She was then so impressed by it, that she went to the house of the lady, and prevailed upon a gentleman to watch in an adjoining room during the following night. About three o'clock in the morning, the gentleman, hearing footsteps on the stairs, left his place of concealment, and met the servant carrying up a quantity of coals. Being questioned as to where he was going, he replied, in a hurried and confused manner, that he was going to mend his mistress's fire, which at three o'clock in the morning in the middle of summer was evidently impossible; and, on further investigation, a strong knife was found concealed beneath the coals.

Dreams, to whatever causes they may be attributed, vary according to the nature of our sleep: if it is sound and natural, they will seldom prevail; if, on the contrary, it be broken and uneasy, by a spontaneous association dreams will become fanciful, and might indeed be called visions, so fantastic and chimerical are all the objects that present themselves in motley groups to the disturbed mind. This derangement in the sensorium may be referred to various physical causes,—the sensations of heat or of cold, obstruction in the course of the circulation of the blood, as when lying upon the back, a difficult digestion. In a sound sleep our dreams

are seldom remembered except in a vague manner; whereas, in a broken sleep, as Formey has observed, the impression of the dream remains upon the mind, and constitutes what this philosopher called "*the lucidity of dreams*." It not unfrequently happens to us that we have had a similar dream several times, or at least we labour under this impression; nay, many persons fancy that particular events of their life at the moment of their occurrence had clearly taken place at a former period either in reality or in a dream. Morning "winged dreams" are more easily remembered in their circumstantial vagaries than those of the preceding night, for at that period (the morning) our sleep is not sound, and dreams become more lucid. These *rêvasseries*, as the French call them, are admirably described by Dryden:

A dream o'ertook me at my waking hour
This morn, and dreams they say are then divine,
When all the balmy vapours are exhal'd,
And some o'erpow'ring god continues sleep.

That we are more or less impressionable in our sleep is rendered evident by the facility with which even a sound sleeper is disturbed by the slightest noise: the sparkling of a fire, or the crackling produced by the wick of our night-lamp when coming into contact with the water in the glass, the sting of an insect, the slightest admission of a higher or lower temperature, will occasion a broken sleep and its dreams. It has been remarked that the sense of seeing is more frequently acted upon in dreams than that of hearing, and very seldom do we find our smell and taste under their influence. It is possible that this peculiarity may arise from the greater variety of impressions with which the sight is daily struck, and which memory communicates by association or retransmission. Next to feeling, vision is the first sense brought into relation with external objects. When we hear noises, explosions, tumultuous cries, it is more than probable that our dreams partake of a delirious and morbid nature, or of sensorial or intellectual hallucinations, in which the mind is actually diseased, and our perceptions become erroneous: then we speak loudly to others, and to ourselves. When these hallucinations prevail after sleep, the invasion of mania may be apprehended.

Cabanis, in his curious investigations on the mind, has endeavoured to fix the order in which the different parts of our organization go to sleep. First the legs and arms, then the muscles that support the head and back: the first sense that slumbers, according to his notions, is that of sight; then follow in regular succession the senses of taste, smell, hearing, and feeling. The viscera fall asleep one after the other, but with different decrees of soundness. If this doctrine be correct, we may easily conceive the wild and strange inconsistencies of our dreams, during which the waking and the sleeping organs are acting and reacting upon each other.

Corporeal sensations and different organic actions frequently attend our dreams; but these may be attributed to our mode of living, or the indulgence in certain unruly desires and conversations. That man and animals dream of the pursuits of the preceding day there can be no doubt: hence the line,

Et canis in somnis leporis vestigia latrat.

The effects of a heavy meal, more especially a supper, in disturbing our rest, was well known and recorded by ancient physicians: and Crato tells us "that the fittest time to repair to rest is two or three hours after supper, when the meat is then settled in the bottom of the stomach: and 'tis good to lie on the right side first, because at that side the liver doth rest under the stomach, not molesting any way, but heating him as a fire doth a kettle that is put to it. After the first sleep 'tis not amiss to lie upon the left side, that the meat may the better descend; and sometimes again on the belly, but never on the back."

Our ancestors had recourse to various devices to procure sound sleep. Borde recommends a good draught of strong drink before going to bed; Burton, a nutmeg and ale, with a good potation of muscadine with a toast; while Ætius recommends a sup of vinegar, which, according to Piso, "*attenuat melancholiam et ad conciliandum somnum juvat*." Oppression from repletion will occasion fearful dreams and the night-mare; and bodily sufferings, when exhaustion has brought on sleep, will also be attended with alarming and painful visions.

Levinus Lemnius recommended to sleep with the mouth shut, to promote a regular digestion by the exclusion of too much external air. The night-mare is admirably described in Dryden's translation of Virgil:

And as, when heavy sleep has closed the sight,
The sickly fancy labours in the night,
We seem to run, and, destitute of force,
Our sinking limbs forsake us in the course:
In vain we heave for breath; in vain we cry;
The nerves, unbraced, their usual strength deny,
And on the tongue the falt'ring accents die.

In the Runic theology it was regarded as a spectre of the night, which seized men in their sleep, and suddenly deprived them of speech and of motion. It was vulgarly called witch-riding, and considered as arising from the weight of fuliginous spirits incumbent on the breast.

Somnus ut sit levis, sit tibi cœna brevis, is the ancient axiom of our distich,

That your sleep may be light,
Let your supper be slight.

Notwithstanding this rule of health, it is nevertheless true that many persons sleep more soundly after a hearty supper; and, most unquestionably, dreams are more frequent towards morning than in the beginning of the night. In my opinion, I should apprehend that the sound sleep of supper-eaters is to be attributed to the narcotic nature of their potations, more than the meal, although the *siesta* of southern countries might be advanced in favour of a contrary opinion.

When philosophers speak of dreams being mental operations independent of the will, they speak vaguely, for the operations of the mind when we are awake are too frequently uncontrolled by volition. Did we possess this power over our rebellious thoughts, who would constantly ponder on a painful subject? Our thoughts cannot be suspended at will, and their influence has been beautifully described by Shakspeare:

My brain I'll prove the female to my soul,
My soul the father; and these two beget
A generation of still breeding thoughts.

Volition has no more power over thought when we are awake than sleeping; and, despite all metaphysical and psychological speculations, it cannot be demonstrated that the mind does not retain its full energies during sleep, only they cease to be regulated by judgment, and are not, to use Locke's words, under the rule and conduct of the understanding; and even on this opinion it has been fairly observed, that much of incongruity which is supposed to prove suspension of reason, and much of the wild discordancy of representation which appears to prevail during our sleep, may arise from the defect of memory when we are awake, that does not retain the impression of images which have passed across the mind in light and rapid succession, and which, therefore, exhibit but a partial and imperfect sketch of the picture that

engaged the attention in sleep. The well-known fact that the impressions of our dreams are oftentimes more vivid and correct, when some time has elapsed, than on our awakening, tends to confirm this hypothesis; and these recollections are the more vivid when they bear any analogy to circumstances that come to pass.

Sir Thomas Brown was of opinion that sleep was the waking of the soul; the ligation of sense, but the liberty of reason; and that our waking conceptions do not match the fancies of our sleep. He thus expresses himself in his Religio Medici: “At my nativity my ascendant was the watery sign of Scorpius; I was born in the planetary hour of Saturn, and I think I have a piece of that leaden planet in me. I am no way facetious, nor disposed for the mirth and galliardise of company; yet in one dream I can compose a whole comedy, behold the action, apprehend the jests, and laugh myself awake at the conceits thereof. Were my memory as faithful as my reason is then fruitful, I would never study but in my dreams, and this time also would I choose for my devotions; but our grosser memories have then so little hold of our abstracted understandings, that they forget the story, and can only relate to our awaked souls a confused and broken tale of that that hath passed.”

Dreams have been considered as prescriptive in various diseases. Diodorus Siculus relates that a certain Scythian dreamed that Æsculapius had drawn the humours of his body to one place, or head, to have it lanced. When Galen had an inflammation of the diaphragm, we are told that he was directed in a dream to open a vein between the thumb and the fourth finger—an operation which restored him to health. Marcus Antoninus asserted that he learned in his dreams various remedies for spitting of blood. It is related of Sir Christopher Wren, that, when at Paris, in 1671, being disordered with “a pain in his reins,” he sent for a physician, who prescribed blood-letting, but he deferred submitting to it, and dreamed that very night that he was in a place where palm-trees grew, and that a woman in a romantic habit offered dates to him. The next day he sent for dates, which cured him. Now, although this cure, brought about by a dream, was considered wonderful, its circumstances offer nothing supernatural. It is more than probable that Sir Christopher had frequently read in foreign works on medicine, that dates were recommended as an efficacious remedy in nephritic complaints; and, moreover, had met in his daily perambulations female quacks, who exhibit themselves to this day in the French metropolis, fantastically attired, and vending their far-famed nostrums. That he should have remembered dates, and that the phantasm of the she-mountebank might at the same time have struck his fancy, were two associations by no means improbable.

It is very likely that all the strange stories of prophetic dreams might be traced to a similar connexion of ideas. I have before observed that dreams do not always assume their complexion from recent occurrences, and our bodily sufferings during sleep bring to our recollection every circumstance that regards the malady. A patient who had a bottle of hot water placed at his feet dreamed that he was walking in great agony in the burning lava of Vesuvius. Similar associations exist when awake: the man whose arm has been amputated constantly refers the pain he experiences to the lost hand, or to that part of the limb which received the injury; and the very same nervous illusion prevails during his slumbers. A case is recorded of an officer who had lost his leg, and, when cold, felt comfort and warmth by wrapping the stump of his wooden leg in flannel.

In various diseases the nature and the period of the invasion of dreams afford a valuable ground of observation to the physician both in his diagnosis and prognosis of the case. In incipient hydro-thorax, for instance, dreams occur at the very moment the patient falls asleep, and he fancies himself suffocated by some impending and destructive weight. Diseases of the heart are accompanied by alarming dreams, from which the patient starts up in great terror. In

children the perturbation of their sleep frequently indicates the seat of their sufferings; and the valuable researches on the nervous system by Charles Bell have enabled the medical attendant to read in the features of a sleeping infant whether the malady be in the head, the cavity of the chest, or the abdomen.

If proof were wanting that dreams arise from our waking thoughts, it might be found in the circumstance of those sleepers who divulge their secrets, and verify the lines of Shakspeare:

There are a kind of men so loose of soul,
That in their sleep will mutter their affairs.

Reason, therefore, prompts us to reject the idea of dreams being preternatural suggestions. In general, we may consider them as a morbid excitement of the brain, arising either from moral or physical causes, and depending essentially on the condition of our mind and body. Our most lively hopes are ever linked with fears that prey upon us even when most secure; and these apprehensions, recurring in our dreams, prove too often prophetic of the very events we dreaded. The prejudices of early education shed around these forewarnings circumstantial incidents; and fear is the greatest ally of superstition.

If our visions by night are fraught with such singular circumstances, our “day dreams,” or *reveries*, are frequently attended with strange associations. The impressions received during these ecstatic visions or trances will occasionally act so powerfully upon the mind, that during our waking hours and the usual pursuits of life we cannot divest ourselves of the existence of their reality.

Dr. Arnould has given the following curious account of a case of this kind, as narrated by the individual himself:—“One afternoon in the month of May, feeling himself a little unsettled and not inclined to business, he thought he would take a walk into the city to amuse his mind, and having strolled into St. Paul’s Churchyard, he stopped at the shop window of Carrington and Bowles, and looked at the pictures, among which was one of the cathedral. He had not been long there before a short grave-looking elderly gentleman, dressed in dark brown clothes, came up and began to examine the prints, and occasionally casting a glance at him, very soon entered into conversation with him, and praising the view of St. Paul’s which was exhibited at the window, told him many anecdotes of Sir Christopher Wren the architect, and asked him at the same time if he had ever ascended to the top of the dome. He replied in the negative. The stranger then inquired if he had dined, and proposed that they should go to an eating-house in the neighbourhood, adding that after dinner he would accompany him up St. Paul’s. It was a glorious afternoon for a view, and he was so familiar with the place that he could point out every object worthy of attention. The kindness of the old gentleman’s manner induced him to comply with the invitation, and they went to a tavern in some dark alley, the name of which he did not know. They dined and very soon left the table, and ascended to the ball just below the cross, which they entered alone.

“They had not been there many minutes, when, while he was gazing on the extensive prospect and delighted with the splendid scene below him, the grave gentleman pulled out from an inside coat-pocket something like a compass, having round the edge some curious figures; then having muttered some unintelligible words, he placed it in the centre of the ball. He felt a great trembling, and a sort of horror came over him, which was increased by his companion asking him if he should like to see any friend at a distance and to know what he was at that time doing, for if so, the latter could show him any such person. It happened that his father had been for a long time in bad health and for some weeks past he had not visited him. A sudden thought came into his mind, so powerful, that it overcame his terror, that he should like to see his father. He had no sooner expressed the wish than the exact person of his

father was immediately presented to his sight in the mirror, reclining in his armchair and taking his afternoon sleep. Not having fully believed in the power of the stranger to make good his offer, he became overwhelmed with terror at the clearness and truth of the vision presented to him, and he entreated his mysterious companion that they might immediately descend, as he felt himself very ill. The request was complied with, and on parting under the portico of the northern entrance, the stranger said to him, 'Remember you are the slave of the man of the mirror.'"

He returned in the evening to his home, he does not know exactly at what hour; felt himself unquiet, depressed, gloomy, apprehensive, and haunted with thoughts of the stranger. For the last three months he has been conscious of the power of the latter over him. Dr. Arnould adds, "I inquired in what way his power was exercised? He cast on me a look of suspicion mingled with confidence, took my arm, and after leading me through two or three rooms and then into the garden, exclaimed, 'It is of no use—there is no concealment from him, for all places are alike open to him—he sees us—and he hears *us now*.' I asked him where the being was who saw us and heard us? He replied in a voice of deep agitation, 'Have I not told you that he lives in the ball below the cross on the top of St. Paul's, and that he only comes down to take a walk in the churchyard and get his dinner at the house in the dark alley. Since that fatal interview with the necromancer,' he continued, 'for such I believe him to be, he is continually dragging me before him in his mirror—he not only sees me every moment of the day, but he reads all my thoughts, and I have a dreadful consciousness that no action of my life is free from his inspection, and no place can afford me security from his power.' On my reply that the darkness of the night would afford him protection from these machinations, he said, 'I know what you mean, but you are quite mistaken—I have only told you of the mirror, but in some part of the building which he passed on coming away, he showed me what he called a great bell, and I heard sounds which came from it, and which went to it, sounds of laughter, and of anger, and of pain; there was a dreadful confusion of sounds, and I listened with wonder and affright'—he said, 'this is my organ of hearing; this great bell is in communication with all the other bells within the circle of hieroglyphics, by which every word spoken by those under my control is made audible to me.' Seeing me look surprised at him, he said, 'I have not yet told you all, for he practises his spells by hieroglyphics on walls and houses, and wields his power, like a detestable tyrant as he is, over the minds of those whom he has enchanted, and who are the objects of his constant spite within the circle of his hieroglyphics.' I asked him what these hieroglyphics were, and how he perceived them? He replied, 'Signs and symbols which you in your ignorance of their true meaning have taken for letters and words, and read, as you have thought, *Day and Martin* and *Warren's blacking*. Oh! that is all nonsense! they are only the mysterious characters which he places to mark the boundaries of his dominions, and by which he prevents all escape from his tremendous power. How I have toiled and laboured to get beyond the limits of his influence! Once I walked for three days and three nights, till I fell down under a wall exhausted by fatigue, and dropped asleep; but on awaking I saw the dreadful sign before my eyes, and I felt myself as completely under his infernal spell at the end as at the beginning of the journey.'"

Dr. Pritchard remarks on this singular case of insanity, that this gentleman had actually ascended to the top of St. Paul's, and that impressions there received being afterwards renewed in his mind when in a state of vivid excitement, in a dream or ecstatic revery, became so blended with the creation of fancy, as to form one mysterious vision, in which the true and the imaginary were afterwards inseparable.

It is also possible that this person, being of a nervous and susceptible disposition, had been struck, when on the dizzy height of the cupola, with a vertigo, or fit, during which these phantasms had struck him in so vivid a manner as to derange his intellects—the loud and

terrific sound of the bell adding to the horror of his situation. It is well known that persons have recollected circumstances that occurred around them during an epileptic and an apoplectic attack. Our worthy visionary was for two years an inmate of a private asylum.

In regard to the verification of dreams, they may be easily accounted for by that proneness that most men, especially if of a weak and impressionable state of mind, experience in courting the object of their hopes or fears. Thus have the absurd prognostications of fortune-tellers been too frequently fatal, as we may work up our thoughts to such an intensity as to bring on the very death that we apprehend. Dr. Pritchard relates the case of a clergyman, in an indifferent state of health, who, when standing one day at the corner of a street, saw a funeral procession approaching him. He waited till it came near him, saw all the train pass him, with black nodding plumes, and read his own name on the coffin, which was carried by, and entered, with the whole procession, into the house where he resided. This was the commencement of an illness which put an end to his life in a few days.

During a severe fever, in the peninsula, my nightly rest was constantly disturbed by the threatening appearance of animals with fearful horns and antlers, incessantly hovering about me. For a long time after my recovery the spectral illusion continued, and every horse or mule that passed by me appeared to be armed with immense horns.

It is to be feared that, notwithstanding the ingenuity of the many physiologists who have sought to investigate the nature of dreams, we shall never come to any satisfactory conclusion, since we follow too frequently the example of the German philosopher, Lesage, who, in his endeavour to throw some light on this obscure subject, sought to ascertain the intermediate condition of the mind when passing from the waking state into sleep, a transition which never has been, and, most probably, never can be ascertained, since sleep, to a certain degree, is a suspension of all power of attention, perception, volition, and every spontaneous faculty.

On Flagellation

Amongst the various moral and physical remedies introduced by the priesthood and physicians for the benefit of society, flagellation once held a most distinguished rank. As a remedy, it was supposed to reanimate the torpid circulation of the capillary or cutaneous vessels, to increase muscular energy, promote absorption, and favour the necessary secretions of our nature. No doubt, in many instances, its action as a revulsive may be beneficial; and urtication, or the stinging with nettles, has not unfrequently been prescribed with advantage. As a religious discipline, for such has this system of mortification been called, it has been considered as most acceptable to Heaven; so much so, indeed, that the fustigation was commensurate with the sinner's offence. Under the head of Dæmonomania I have endeavoured to show that whipping was equally agreeable to the evil spirit, who delighted in flogging the elect.

It appears that at this period a belief prevailed that heavenly mercy restored the grace that had been forfeited, commuting for temporal punishment that which else would have been eternal. The monks of Fonte Avellana, for instance, had decreed that thirty psalms, said or sung, with an accompaniment of one hundred stripes to each psalm, would be considered as a set-off for one year of purgatory; and, by this calculation, the whole psalter, which would have demanded fifteen thousand stripes, would have procured a relief of five years from the fiery ordeal. It was no doubt under this impression that St. Dominic the Cuirassier, so named from his wearing, day and night, an iron cuirass next his skin, and which he never took off, adopted this same covering when, upon entering into priest's orders, his parents presented the bishop who ordained him with a rich fur garment, an offence for which the holy man wished to atone by donning an iron vestment.

This said madman belonged to the congregation of Fonte Avellana, the monks of which never touched either wine or oil, and, during five days of the week, lived upon bread and water; moreover, every day after service they flogged each other. Dominic, in extenuation of his family's offence in having presented his diocesan with a luxurious gown, lashed himself at the rate of ten psalters, and thirty thousand lashes *per diem*; by which he calculated that he was redeeming three thousand six hundred and fifty years of purgatorial torments *per annum*: but, in addition to this wholesome allowance, he humbly petitioned his superior to allow him, during Lent, a supplementary punishment of one hundred years, when his day's work was two psalters and a half, and thirty-four thousand five hundred lashes. This punishment did not seem sufficient in his eyes to propitiate the Creator; and St. Pietro Damiano informs us that, during the Lenten days, he actually recited the psalter two hundred times, with a *crescendo* accompaniment of sixty millions of stripes. It was on this occasion that Yepes shrewdly observed, that he marvelled less at a man's head being able to retain so many verses than that his arm was able to carry on such a flagellation; or, to use his own words, how his flesh, unless made of iron, could resist such a castigation. This blessed man must have been endowed with powers that were increased by exertion, since we find that his ambition gave him such energy, that once beginning his operations in the evening, and singing and flogging, and flogging and singing, *con amore*, through the day and night, at the expiration of twenty-four hours he had gone through the psalms twelve times, begun them a thirteenth time, and proceeded as far as *Beati quorum*, the thirty-second psalm; having inflicted upon himself one hundred and eighty-three thousand one hundred stripes, thereby reducing purgatorial stock to the amount of sixty-one years, twelve days, and thirty-three minutes, to a fraction.

It would be perfectly idle and absurd for any freethinker to doubt this fact, recorded by an eyewitness—Pietro Damiano, a saint, and moreover a cardinal; and Calmet himself maintains that no man should dare to doubt a saint's assertion, more especially when speaking of another beatified person. Notwithstanding this assertion, a stiff-necked arithmetician calculated that, if during these twenty-four hours the saint had given himself two blows every second, the number of lashes would only have amounted to one hundred and seventy-two thousand eight hundred, being ten thousand three hundred short of the amount stated! However, this difficulty was overcome by Father Castaniza, who makes up the amount by maintaining that he made use of cats with ten tails, and therefore had actually a balance in his favour in his *winding*-sheet.[28]

Ubi stimulus ibi affluxus, has been a physiological axiom since the days of Hippocrates; and flagellation thus employed is only a modification of blistering, or exciting the skin by any other irritating method. The moral influence of flagellation in the treatment of different diseases has been appreciated by the ancients: it was strongly recommended by the disciples of Asclepiades, by Cælius Aurelianus, and since by Rhasis and Valescus, in the treatment of mania. No doubt, the terror which this castigation inspires may tend materially to facilitate the management of the insane. To the present day this opinion has prevailed to a revolting degree, and it is no easy matter for the humane physician to convince a keeper of the cruelty or inutility of this practice. Seldom or never does this harsh management become necessary: I had charge of a military lunatic asylum for a considerable time, and, with one exception, never found myself warranted in causing corporal punishment to be inflicted, notwithstanding the association of ideas of discipline which such a chastisement must have produced amongst men then exposed to the capricious infliction of the lash. The case to which I allude was one of a Sergeant N—, who had twice attempted my life, and who fully remembered every circumstance in the remissions of his malady; so much so, indeed, that doubts were entertained in the minds of the casual visiter as to the real condition of his mental faculties; and in the establishment now under my superintendence a keeper is discharged when convicted of having struck a patient *under any circumstances*.

To return from this digression: the authoritative power of man over the brute creation is daily witnessed, even with unruly and ferocious animals; and there are, no doubt, cases where bodily punishment becomes indispensable, when the body will feel what the judgment cannot comprehend. Boerhaave relates the case of a hypochondriac who swore that his legs were made of straw; but an officious servant-maid, who was sweeping the room, struck him across the shins with her broomstick, and soon brought him to a sense of his erroneous impression.

Flagellation draws the circulation from the centre of our system to its periphery. It has been known in a fit of ague to dispel the cold stage. Galen had observed that horse-dealers were in the habit of bringing their horses into high condition by a moderate fustigation; and therefore recommended this practice to give *embonpoint* to the lean. Antonius Musa treated a sciatica of Octavius Augustus by this process. Elidæus Paduanus recommends flagellation or urtication when the eruption of exanthematic diseases is slow in its development. Thomas Campanella records the case of a gentleman whose bowels could not be relieved without his having been previously whipped.

Irritation of the skin has been often observed to be productive of similar effects. The erotic irregularities of lepers is well authenticated; and various other cutaneous diseases, which procure the agreeable relief that scratching affords, have brought on the most pleasurable sensations. There exists a curious letter of Abelard to his Eloisa, in which he says, "Verbera

[28] As this worthy never took off his cuirass, it may be shrewdly suspected that his lashes were such as our old friend Sancho Pança inflicted on the tree.

quandoque dabat amor, non furor; gratia, non ira; quæ omnium unguentorum suavitatem transcenderent."

This effect of flagellation may be easily referred to the powerful sympathy that exists between the nerves of the lower part of the spinal marrow and other organs. Artificial excitement appears in some degree natural: it is observed in various animals, especially in the feline tribe. Even snails plunge into each other a bony and prickly spur that arises from their throats, and which, like the sting of the wasp, frequently breaks off and is left in the wound.

In the monastic orders of both sexes, flagellation became a refined art. Flagellation was of two species, the upper and the lower; the upper inflicted upon the shoulders, the lower chiefly resorted to when females were to be fustigated. This mode was adopted, according to their assertions, from the accidents that might have happened in the upper flagellation, where the twisting lash might have injured the sensitive bosom. In addition to this device, nudity was also insisted upon. In the article Dæmonomania I have recorded various abominations of the kind. Nor was it only amongst religious orders and their followers that this custom obtained. It was practised by ladies of high rank amongst their commensals and attendants. Brantome gives us a curious and quaint account of this amusing castigation. Mademoiselle de Limeuil, one of the queen's maids of honour, was flagellated for having written a pasquinade, in company with all the young ladies who had been privy to the composition. And on another occasion he tells us: "J'ai ouï parler d'une grande dame de par le monde, voire grandissime, mariée et veuve, qui faisait dépouiller ses dames et filles, je dis les plus belles, et se délectait fort à les voir, et puis elle les battait du plat de la main, avec de grandes clacquades et blamuses assez rudes; et les filles qui avaient délinqué en quelque chose, avec de bonnes verges, et elle les clacquait ainsi selon le sujet qu'elles lui en donnaient, pour les faire ou rire ou pleurer."

The minions of Henry III. of France, and other princes, were decked in white robes, then stripped, and whipped in procession for the gratification of their royal masters. Not unfrequently the ladies themselves were the executioners in cases where any man had offended them; and the adventure of Clopinel the poet is worth relating. This unfortunate wight had written the following lines on the fair sex:

Toutes êtes, serez, ou fûtes,
De fait ou de volonté putes;
Et qui bien vous chercherait
Toutes putes vous trouverait.

This libellous effusion naturally excited the indignation of the ladies at court, who decided that Clopinel should be flagellated by the plaintiffs without mercy; and it is difficult to say to what extent they might have carried their vengeance but for a timely witticism of the culprit, who piteously addressing the angry yet beauteous group around him with uplifted arm and rod, humbly entreated that the first blow might be struck by the honourable damsel who felt herself the most aggrieved. It is needless to add that not a lash was inflicted.

Medical men were frequently consulted as to the adoption of the upper or lower discipline, as flagellation on the shoulders was said to injure the eyesight. It was from the fear of this accident that the lower discipline was generally adopted amongst nuns and female penitents, as appears by the following rule: "Quippe cum eâ de causâ capucini, multæque moniales, virorum medicorum ac piorum hominum consilio, ascesim flagellandi sursum humeros reliquerint, ut sibi nates lumbosque strient asperatis virgis, ac nodosis funiculis conscribillent."

In a medical point of view, urtication, or stinging with nettles, is a practice not sufficiently appreciated. In many instances, especially in cases of paralysis, it is more efficacious than blistering or stimulating frictions. Its effects, although perhaps less permanent, are more general and diffused over the limb. This process has been found effectual in restoring heat to the lower extremities; and a case of obstinate lethargy was cured by Corvisart by repeated urtication of the whole body. During the action of the stimulus, the patient, who was a young man, would open his eyes and laugh, but sink again into profound sleep. His perfect cure, however, was obtained in three weeks.

On Life And The Blood

The life of all flesh is the blood thereof. On this doctrine, expressed in the Mosaic books, many of the olden writers founded their hypothesis that blood was the principle of life. It is, however, more than probable that this opinion was derived from a more ancient ritual than the Levitical code, since we find a similar belief among the Parsees, Hindoos, and other Oriental nations of very remote antiquity, who no doubt owed the practice of abstaining from blood to the early patriarchs.

The Greeks and the Romans, if we take the expressions of their poets as being conclusive, entertained similar notions regarding the vital fluid; and the "purple death" of Homer and "the purple life" of Virgil, are phrases evidently applicable to this theory, which Critias, Empedocles, and their sects maintained. This opinion, however, does not appear to have dictated the expressions made use of by Moses. When he says "the life of all flesh is the blood thereof," it merely signifies that when the blood is abstracted death ensues; a circumstance that must have been daily and hourly observed. It is probable that this injunction was promulgated to check the barbarous custom of devouring raw meat, which seems to have prevailed long before the Jewish legislator. We read in Genesis ix. 4, "Flesh with the life thereof, which is the blood thereof, shall you not eat." From this circumstance we may infer that, like the Abyssinians of Bruce's time, the Jews were in the habit of tearing and cutting flesh from live animals. Saul's army was guilty of a similar practice. It therefore behoved their legislators to oppose a custom that increased the natural ferocity and cruelty of the nation they ruled.

This theory of the ancients has been frequently revived in modern times, and has not a little contributed to increase the mystery that veils the nature of our existence. Harvey, who discovered the circulation of the blood, was a convert to this doctrine; Hoffman also adopted it; and Huxham not only fully believed in it, but sought the immediate part of the blood that constituted life, and fancied that he had discovered it in its red particles. It was John Hunter, however, who first established the system on any thing like a rational basis, although his arguments on the subject have led to much doubt and illiberal controversy. "The difficulty," says he, "of conceiving that blood is endowed with life while circulating, arises merely from its being a fluid, and the mind not being accustomed to the idea of a living fluid. I shall endeavour," he continues, "to show that organization and life do not in the least depend upon each other; that organization may arise out of living parts and produce action; but that life can never arise out of or produce organization." The errors of this doctrine are obvious, and have led many ingenious physiologists into a maze of idle wandering. The fact is, that life is the instrument of organization, or, in other words, organization is the result of life. The embryo could not be developed, did not the fluid that animates it possess a principle of vitality which it communicates to a body previously organized. In this confusion the word "life" has sometimes been applied to the power, and at others to the result. Without organization, life cannot be transmitted; and the moment the principle of life ceases, a disorganization, more or less rapid, ensues.

The doctrine of the vitality of the blood has very lately been maintained by several physiologists. Professor Schultz speaks of an active vital process which can be seen constantly going on between the individual molecules of the blood and the substance of the vessels; but Muller asserts that, during ten years, he examined the circulation of the blood in various parts, at every opportunity and with different instruments, but had never seen what Schultz describes—the constant assimilation, disappearance, and new formation of the

globules; nor had Rudolphi, Purkinje, Koch, and Meyer, been more successful in their investigation; and Muller further maintains that the motion of these red particles in the circulation is purely passive, which may be proved by compressing the vessels of the limb, or the limb itself.

Eber and Meyer pretended that these red particles were infusory animals. On this important and curious subject I shall quote Muller's opinion: "The question whether the blood be living fluid or not, calls to mind a critical state of our science. Every thing which evidences an action which cannot be explained by the laws of inorganic matter, is said to have an organic, or, what is the same thing, a vital property. To regard merely the solids of the body as living, is incorrect, for there are strictly no organic solids; in nearly all, water constitutes four-fifths of their weight. Although, then, organic matter generally be considered as merely 'susceptible of life,' and the organized parts as 'living,' yet the blood also must be regarded as endowed with life, for its action cannot be comprehended from chemical and physical laws. The semen is not merely a stimulus for the fructification of the egg, for it impregnates the eggs of the Batrachia and fishes out of the body; and the form, endowments, and even tendencies to disease, of the father, are transferred to the new individual. The semen, therefore, although a fluid, is evidently endowed with life, and is capable of imparting life to matter. The impregnable part of the egg, the germinal membrane, is a completely unorganized aggregation of animal matter; but, nevertheless, is animated with the whole organizing power of the future being, and is capable of imparting life to a new matter, although soft, and nearly allied to a fluid. The blood also evidences organic properties; it is attracted by living organs, which are acted upon by vital stimuli. There subsists between the blood and the organized parts a reciprocal vital action, in which the blood has as large a share as the organs in which it circulates."

This doctrine is, no doubt, ingenious, but I do not consider it as conclusive. It is not because that in inflammation, the blood becoming solid, forming pseudo membranes, which are shortly after supplied with a proportion of blood-vessels, blood possesses life. If this adventitious coagulation were not supplied with blood, it would prove a foreign body; but it is not, therefore, shown that the circumstance of its possessing vitality after its formation is a proof of the life of the blood; it only shows that the secretions of the blood are endowed with a susceptibility of life, when having assumed a solid form, needing vessels for its support. I shall not dwell longer on a professional question of great interest, but which would need a development foreign to the nature of these sketches.

The Greeks had distinct appellations for the cause and result of life; the former they termed ψυχὴ the latter ζωὴ. The essential nature of life is, and most probably will ever remain, an impenetrable mystery. Living matter is endowed with a property which we call life; but to find out to what we may venture to attribute this property, is a vain and hypothetical attempt. Equally vain and absurd have been the endeavours to ascertain whether life began at the creation to be subsequently transmitted from parent to offspring, or owed its origin to a spontaneous generation from matter. Many ancient philosophers considered matter as eternal: such was the doctrine of the Pythagoreans; amongst whom we must particularly notice Lucanus Ocellus, whose system, developed in a work written in the Attic dialect, was adopted by Aristotle, Plato, and Philo-Judæus. This work was first translated into Latin by Nogarola. These doctrines led to the unanswerable question, What was this matter—this *invisa materia*—from which every thing visible has proceeded? Has it existed from all eternity, or has it been called into being by the Creator? Has it uniformly exhibited its present harmonious arrangement, or was it once a waste and shapeless chaos? Was this matter endowed with intelligence as a whole, or in its separate fractions?

The eternity of matter was maintained by these philosophers from the belief that *no thing could be created out of nothing, and that no thing could ever return to nonentity*. Such was the doctrine of the Epicureans, of Democritus, and of Aristotle. The poets were of the same belief; and Lucretius expresses himself as follows:

Ubi viderimus nihil posse creari
De nihilo, tune, quod sequimur, jam rectiùs inde
Perspiciemus.

Persius maintains the same idea:

Gigni
De nihilo nil, in nihilum nil posse reverti.

This dogma was no doubt transmitted to the Greeks from the East; and, to the present day, it is a doctrine of the Brahminical creed, clearly expressed in the following terms in their Yajur Veid: “The ignorant assert that the universe in the beginning did not exist in its author, and that it was created out of nothing. O ye, whose hearts are pure! how could something arise out of nothing?” The fathers of the church embraced a similar belief; and Justin Martin says that “the word of God formed the world out of *unfashioned matter*. This Moses distinctly asserts, Plato and his adherents maintain, and ourselves have been taught to believe.”

Such was the doctrine of the schools that professed the eternal nature of matter. Other philosophers supported as warmly a different opinion. Thales of Miletus, Zeno of Citium, Xenocrates, and Dicearchus the Messenian, insisted that the human race had a first origin at a period when mankind did not exist. According to this hypothesis, the universe is an emanation or extension of the essence of the Creator. Zeno and the Stoics attribute this creation to the universal elements of fire and water. Anaximander the Milesian asserted that the primitive animals were formed of earth and water mixed together, heated and animated by the solar rays; these aquatic creatures became amphibious, and were gradually transformed into the human races. Strange to say, this extraordinary idea has found proselytes even in our days, and was advocated by Professor De Lamark in his Zoological Philosophy. This fancy pervades the poetry of the ancients. Homer makes Tethys, the wife of Ocean, the daughter of Uranus and Terra, the first parents; and Hesiod, in his Cosmogony, raises Venus and Proteus from the foam of the sea.

The vital and intellectual fire of the ancients that animated all living beings was admitted by most of their physicians, especially by Hippocrates, Galen, and Aretæus. Aristotle describes an universal creative agent in all the elements, the source of life upon earth, and of the celestial movements in the firmament. Descartes, in modern times, maintained that a vital flame existed in the heart of every animal. This fire, and the genial warmth that it diffused, was considered the soul of the universe; and on this subject Gassendi expresses himself as follows: “Si quis velit talem calorem etiam animam dicere, nihil est similiter quod vetet.”

It was natural for man, even in an uncivilized state, to attribute to solar heat the same influence on animals as was manifest in its actions upon plants. When life had fled, the inanimate corpse was cold, and caloric was therefore considered the principle of vitality. It was from this conviction that we find the sun and fire objects of adoration both in ancient times and amongst savages to the present day. Fire is idolized by the Tartars, and various African tribes. The Yakouts, a Siberian horde, believe that the deity of good and evil has taken his abode in this supposed element. The Columbian Indians were fire-worshippers; and Pallas informs us that the Chinese on the confines of Siberia held it in such religious respect, that they never attempted to extinguish it even when their dwellings were burning.

The doctrine of man and the universe having been created an emanation of the Creator, renders the Creator material, or matter itself; matter being considered intelligent, and susceptible of this organization. This was the belief of the Brahmins, and was no doubt transmitted to the Academic and Eleatic schools of Greece by Pythagoras. We find in the Yajur Veid, already alluded to, the following passages, that clearly demonstrate this belief: "The whole universe is the Creator, proceeds from the Creator, and returns to him. The ignorant assert that the universe in the beginning did not exist in its author, and that it was created out of nothing. O ye, whose hearts are pure! how could something arise out of nothing? This first being alone, and without likeness, was the All in the beginning. He could multiply himself under different forms. He created fire from his essence, which is light." And further: "Thou art Brahma! thou art Vishnu! thou art Kodra! thou art the moon! thou art substance! thou art Djam! thou art the earth! thou art the world!"

These Brahminical doctrines were, beyond doubt, also held by the Greeks. In a poem ascribed to the fabled Orpheus we find the following lines, translated by Mason Good with as much correctness as elegance:

Jove first exists, whose thunders roll above,
Jove last, Jove midmost; all proceeds from Jove.
Female is Jove—immortal Jove is male;
Jove the broad earth—the heavens' irradiate pale.
Jove is the boundless spirit, Jove the fire,
That warms the world with feeling and desire;
The sea is Jove, the sun, the lunar ball;
Jove king supreme, the sovereign source of all.
All power is his; to him all glory give,
For his vast form embraces all that live.

It may be easily imagined that a subject so recondite and obscure must have led philosophers into the wildest speculations. By some, life was considered as the result of a general consent or harmony between the different organs of which the vital frame is formed; while, as we have seen, many have attributed its phenomena to the blood. That blood, to a certain extent, is endowed with vitality is beyond a doubt; Hunter has endeavoured to prove the fact by various experiments. It is capable of being acted upon and contracting like the solid fibres; this we daily witness when blood is coagulated and comes into contact with the atmosphere. It preserves an equality of temperature in whatever medium an animal may move. He also has shown that this fluid can form solid vessels of every description; and its life is also proved by the death inflicted when any excessive stimulus destroys the muscular fibre. Thus, in a body struck with lightning, the muscles remain flaccid and uncontracted, while the blood preserves its fluidity, and is left uncoagulated.

All this specious reasoning shows that blood is a living fluid, but does not in the slightest degree demonstrate to what principle this vitality is to be attributed. It merely proves that every part of a living animal, whether solid or fluid, is endowed with a certain degree of life; but leaves us in impenetrable darkness as to the nature of life. The one cannot be killed without the other; and, as Mason Good justly observes, "that which is at one time alive, and at another dead, cannot be life itself." It is clear that life cannot exist without blood, but at the same time it is equally evident that the blood is merely a secretion of the living system, and dependent upon the action of the solids, which influence its quantities and properties.[29]

[29] The diseases to which the blood is subject was another ground upon which the vitality of this fluid was founded. The most remarkable kind of diseased blood is that which occurs in cholera, where it is dark, nearly

It is from this notion of the vitality of the blood that the absurd idea of transfusing it was first conceived. Transfusion consisted in the injection of the arterial blood of young and healthy animals into the veins of the aged and the debilitated. It was about forty years after the discovery of the circulation of the blood by Harvey that this singular project was tried upon animals, and afterwards upon man. Medicated liquids had already been introduced in Germany into the system by this method, principally by Wahrendorf. Dr. Christopher Wren, an English physician, was the first who proposed the injection of blood, and Dr. Lower put it into practice. The result of his experiments seemed to warrant their adoption. An animal was drained of a considerable proportion of blood, and lay faint and expiring; but the blood of another animal being thrown into the languid system, active circulation was restored, and the patient ran about with as much facility as before the experiment. When too great a quantity of blood was injected, the creature became drowsy, and shortly after died of plethora.

These experiments were reported by the transfusers with many absurd details. In one case a simpleton had become witty by a supply of lamb's blood; in another, an old mangy cur was cured by the vital fluid of a young spaniel; a blind old dog, transfused by a Mr. Gayant, bounded and frisked about like a young pup. Dr. Blundel seriously conceived that this operation might be practised with great advantage in cases of hæmorrhage, more especially in women.

Of late years these curious experiments have again been tried with singular results. Prevost and Dumas have shown that the vivifying power of the blood does not reside so much in the serum as in the red particles. An animal bled to syncope, is not revived by the injection of water or pure serum of a temperature of 68° Fahrenheit into its vessels. But if blood of one of the same species is used, the animal seems to acquire fresh life at every stroke of the piston, and is at last restored. Diemenbach has confirmed these experiments. It is also stated by these physiologists, that revival takes place likewise when the blood injected had been previously deprived of its fibrin.

black, even in the arteries. The cause of this phenomenon is by no means decided. Dr. Thomson attributes it to a diseased condition of the blood, which unfits it for being duly arterialised. Dr. O'Shaughnessy denies the assertion, and proves that choleric blood can be rendered florid by the absorption of oxygen. Dr. Stevens, in his treatise on the blood, attributes this dark appearance to the contagion of the malady, which throws the fluids into a morbid state, the effect of which is the diminution of the saline matter which the healthy blood contains. He observed that in cholera-hospitals the blood of all the persons residing in them was also dark. It is, however, more than probable that this morbid condition of the blood arises from the deranged state of the circulation, and may be attributed to a disease of the solids, which must invariably affect the fluids that they propel with more or less energy, flowing in a rapid current, or in a sluggish stream.

I have fully illustrated this want of oxygen in the blood of cholera patients in a work I published in Bordeaux, in 1831, entitled *Observations sur la nature et le traitement du Cholera Morbus d'Europe et d'Asie*; and, from several experiments subsequently made on cholera patients, I feel convinced that the inspiration of oxygen gas will be ultimately found the most energetic and effective practice in combating this fearful disease.

By the experiments lately made by Dr. Donné of Paris, it has been found that the globules of blood, when submitted to microscopic examination, varied in magnitude according to the description of animals from which it was drawn. In certain diseases, globules of pus have also been detected in the sanguiferous stream. They were larger than those of the blood, and, instead of being defined by a marginal line, were fringed on their circumference, and their centre was striated with interwoven lines.

The same physiologist discovered animalcules in the pus of certain ulcers not dissimilar in appearance to the *vibrio lineola* of Müller. Other animalcules, which he has named the *tricomonas vaginalis*, were also found in great number when the mucous membranes of the organ (whence the latter part of their denomination was derived) were in a state of inflammation. These animalculi could not be detected in healthy mucus. The knowledge of this influence of inflammation may lead to many important practical results.

Another very singular fact has been elicited by these experiments; blood of animals of a different genus, of which the corpuscules, though of the same form, have a different size, effects an imperfect restoration, and the animal generally dies in six days.

The injection of blood with circular corpuscules into the vessels of a bird (in which the corpuscules are elliptic and of a larger size) produces violent symptoms similar to those of the strongest poisons, and generally death, which ensues indeed instantaneously, even when a small quantity only of the blood has been injected. Such, for example, was the effect of the transfusion of some blood of the sheep into the veins of a duck; while in many cases in which the blood of sheep and oxen were injected into the vessels of cats and rabbits, these animals were revived for a few days. The fact of the blood of mammalia being poisonous to birds is very remarkable; it cannot be explained mechanically. The injection of fluids containing globules of greater diameter than the capillary vessels of the injected animal most probably produces death, by obstructing the pulmonary vessels and producing suffocation; but the globules of the blood in mammalia are even smaller than those of birds. In Dieffenbach's experiments, pigeons were killed by a few drops only of the blood of mammalia, and the blood of fishes, it is asserted, is as fatal to mammalia as to birds.

These interesting facts have been confirmed by Dr. Bischoff. In all his experiments made with the fresh blood of mammalia, birds died within a few seconds after the transfusion, with violent symptoms resembling those of poisoning; but when, instead of the fresh unchanged blood, he injected blood from which the fibrin had been removed by stirring, and which was heated to a proper temperature, he was surprised to find that no such symptoms were produced, the animal not appearing to suffer any inconvenience.

It seems indeed from these experiments, that the blood of an animal of a different class, is not adapted for the operation.

When transfusion was first proposed in France, it met with furious opponents; and Lamartinière declared that it was a barbarous operation proceeding from Satan's workshop. The controversy between the transfusers and their adversaries was at length carried on with such virulence, that in 1668 the practice was forbidden by a decree of the Châtelet, unless the operation had been sanctioned by the faculty of Paris. In Italy it continued to be in vogue. Riva and Manfredi frequently performed it; and a physician of the name of Simboldus submitted himself to the experiment. According to the accounts given by the patients who had been thus injected, they first experienced an increased heat with violent pulsation, profuse perspiration with pains in the loins and stomach, and a sense of suffocation. Violent vomiting frequently arose, and the patient gradually sank into a torpid and heavy sleep. Whatever may be the theoretical ingenuity in favour of this practice, it is not probable that it will ever be adopted.

While young blood was thus supposed to give fresh vigour to the aged, the heat communicated by young persons to debilitated bedfellows was also resorted to. This practice seems to have been founded on observation. It is an acknowledged fact that an uncommon depression of vital power takes place in the young when such experiments are tried. This abstraction of vital power is frequently observed in young females married to very old men. In illustration of this fact, Dr. Copeland relates the following case: "I was a few years since consulted about a pale, sickly, and thin boy of about five or six years of age. He appeared to have no specific ailment; but there was a slow and remarkable decline of flesh and strength, and of the energy of all the functions,—what his mother very aptly termed 'a gradual blight.' After inquiring into the history of the case, it came out that he had been a very robust and plethoric child up to his third year, when his grandmother, a very aged person, took him to sleep with her; that he soon afterwards lost his good looks, and that he had continued to

decline progressively ever since, notwithstanding medical treatment. I directed him to sleep apart from his aged parent, and prescribed gentle tonics, change of air, &c., and the recovery was very rapid."

This selfish indulgence of the aged in endeavouring to deprive their young bedfellows of heat and strength has been often remarked; and young women thus circumstanced have shrewdly suspected the cause of their debilitated condition. It is extremely probable that in these cases electricity is conducted from one body to another. This hypothesis is in some degree confirmed by the experiments made upon Casper Hauser by Von Feuerbach. This Casper Hauser had been kept from infancy until he was eighteen years of age in a perfectly dark cage, without leaving it, and where he never saw a living creature or heard the voice of man. He was restricted from using his limbs, his voice, his hands, or senses; and his food consisted of bread and water only, which he found placed by him when wakening from his sleep. When exposed in Nuremberg, in 1828, he was consequently at eighteen years as if just come into the world, and as incapable of walking, discerning objects, or conveying his impressions, as a newly born infant. These faculties, however, he soon acquired; and he was placed under an able instructor, who has recorded his singular history. Darkness had been to him twilight. The light of day was at first insupportable, inflamed his eyes, and brought on spasms. Substances, the odour of which could not be perceived by others, produced severe effects upon him. The smell of a glass of wine, even at a distance, occasioned headache; of fresh meat, sickness; and of flowers, a painful sensation. Passing by a churchyard with Dr. Daumer, the smell of dead bodies, although altogether imperceptible to the doctor, affected the young man so powerfully as to occasion shudderings, followed by feverish heat, terminating in a violent perspiration. He retained a great aversion, owing to their disagreeable taste and smell, to all kinds of food excepting bread and water.

When the north pole of a small magnet was held towards him, he described a drawing sensation proceeding outwards from the epigastrium, and *as if a current of air went from him*. The south pole affected him less, and he said it blew upon him. Professor Daumer and Hermann made several experiments of the kind, calculated to deceive him, and, even although the magnet was held at a considerable distance from him, his feelings always told him very correctly. These experiments always occasioned perspiration and a feeling of indisposition. He could detect metals placed under oil-cloths, paper, &c. by the sensation they occasioned. He described these sensations as a drawing, accompanied with a chill, which ascended, according to the metal, more or less up the arm, and attended with other distinctive feelings, the veins of the hand exposed to the metal becoming visibly swollen.

The variety and multitude of objects which at once came rushing upon his attention when he thus suddenly came into existence, the unaccustomed impressions of light, free air, and sense, and his anxiety to comprehend them, were too much for his weak frame and acute senses: he became dejected and enfeebled, and his nervous system morbidly elevated. He was subject to spasms and tremors, so that partial exclusion from external excitements became for a time requisite. After he had learned regularly to eat meat, his mental activity was diminished; his eyes lost their brilliancy and expression; the intense application and activity of his mind gave way to absence or indifference, and the quickness of apprehension became diminished. It may be questioned whether this alteration proceeded from the change of diet, or the painful excess of excitement that had preceded it.

Among the various doctrines regarding the creation of animals, that of *Panspermia* was most ingenious and attractive. According to this theory, maintained by Anaxagoras and Heraclitus, all bodies contained the germ or the organic molecules necessary for their generation. Hippocrates favoured this idea, as plainly appears in his book *de Diætâ*; and in modern times

Perrault, Gésik, Wollaston, Sturm, and other physiologists, have endeavoured to revive the doctrine, of which the organic molecules of Buffon and the living molecules of Ray were merely modifications. The expression in Genesis which sanctions the belief that the earth spontaneously germinated its productions, cannot be referred to the animal kingdom. Were this the case, similar animals would be found in every quarter of the globe. Spontaneous generation was also attributed to putrefaction; and Virgil describes the manner in which Aristæus drew forth a swarm of bees from the corrupted entrails of a heifer. Pliny admits the spontaneous creation of rats, mice, frogs, and other small tribes of animals. These errors, however, were soon dispelled by the light thrown on the subject by the microscopic experiments of Valisnéri, Swammerdam, Réaumur, and many other naturalists, who discovered sexual organs in all these supposed self-created individuals.

This doctrine was the foundation of the classification of the generative principle into *equivocal* and *univocal generations*,—the former the effect of putrefaction, but which in reality was *univocal*, since it was soon ascertained that this production arose from the incubation of numerous eggs deposited by various insects and animalculi in these corrupted bodies. The following experiment afforded a convincing proof of the fact: A piece of meat was placed in an open vessel, and another in a vase hermetically closed; so soon as these animal substances entered into decomposition, myriads of insects pullulated in the exposed meat, whereas that which was protected from external agency remained free from this invasion.

It is a recognised fact that it is only through organized beings that organization can be transmitted; for how can corrupt substances, dead and deprived of vitality, give life to any organized matter? Generation is life; putrescence is death. By a law of nature, generation may be said ultimately to destroy the generative powers; a striking illustration of mortality, since life is transmitted at the expense of our very existence, and many individuals in the catenation of organized beings perish the very moment that they have tended to perpetuate their race. Death advances with rapid strides in the very ratio of the energies of life; and the surest method to attain longevity is to be sparing in the exercise of our exhausting faculties.

Et quasi vitaï lampada tradunt.

Latent or insensible life, such as that of the seeds of plants, or the animal enveloped in its egg, may last for a number of years, so long as they are able to germinate; here vitality is not worn out by relative life. Various species of the snail, the wheel-polybe, the tile-eel, and divers animalcules, have been kept apparently dead, and in the form of dried preparations, withered and hardened, for months and even years, but have afterwards been restored to life by the agency of warmth, moisture, and other stimulants. Snails have been thus reanimated after a lapse of fifteen years; and Bauer revived the *Vibrio tritici*, after an apparent death of five years and eight months, by merely soaking it in water. Adders have been found in hard winters not only completely frozen but absolutely brittle, yet have been restored to life when thawed. A shower of fragments of ice has fallen at Leicester, containing the horsehair eel, with the nuclei of a greater number. Colonel Wilks found eggs in the solid rocks of St. Helena susceptible of being hatched. The vitality in the seeds of plants is truly amazing; barley taken out of the bodies of mummies, Indian corn discovered in the tomb of a Peruvian Inca, and the bulb of an onion found in the hand of a mummy 3000 years old have been sown and have thriven luxuriantly. The most intense heat cannot destroy the vital property. The seeds of roasted apples, the kernels of baked prunes and boiled elder-berries have germinated. Sir John Herschel found that the *Acacia Lophanta* lived after having been steeped in boiling water for twelve hours, and Ludwig informs us that the seeds of a species of cedar only germinated after ebullition. Fresh-water shells have been found in the thermal waters of

Gastein at a temperature of 117°, and Niebuhr found a conferva growing in water at 142°. Raspberry-seeds taken from the corpse of an ancient Briton, contemporaneous with the Druids, have produced fruit when recommitted to the earth.

Some have endeavoured to explain the resurrection of the dead by these natural phenomena; forgetting that in these instances no corruption or actual disorganization had taken place. Stahl expresses himself in the following words when defining life: “Life is formally nothing more than the preservation of the body in mixture, corruptible indeed, but without the occurrence of corruption;” and in Junker we find, “What we call life is opposite to putridity.”

The next theory attributed the principle of life to a subtle *gas* or *aura*. This doctrine constituted one of the principles of the Epicurean philosophy, and was illustrated by Lucretius in his poem on the Nature of Things:

Nam penitùs prorsùm latet hæc natura, subestque;
Nec magis hac infra quidquam est in corpore nostro;
Atque anima est animæ proporrò totius ipsa.

According to these notions, there existed a volatile principle that bore no specific name, but was diffused through every part of living bodies, more subtile than heat, air, or vapour. In later times this same gaseous agent received various appellations. Van Helmont designated it as the *aura vitalis*, while other philosophers called it the *aura seminalis* and the *aura sanguinis*. The *archeus faber* of Van Helmont, the *astrum internum* of Crollius, the *principium energoumenon* of Michael Alberti, the *substantia energetica naturæ* of Glisson, may all be referred to this unseen but powerful agency. Hippocrates called it φυσις, or nature, which he elsewhere denominates ενορωντα. It was also the δυναμις ξωτικη of Galen. This soul, or breath, or spirit, directed and preserved the whole economy; and Chrysippus asserts that it acted like salt upon pork.

Modern chemistry has sought this principle in specific agents. Caloric, or the matter of heat; oxygen, or the vital part of atmospheric air, first discovered by Priestley, and explained by Lavoisier; and finally, the fluid collected by the Voltaic trough, were then considered as the principle of life. The experiments of Professor Galvani of Bologna, in which he produced the phenomena of life many hours after death, induced many physiologists to maintain that the identity that existed in galvanic electricity and the nervous influence, proved that this *aura* was the creative agent in our economy.

The late experiments of Mr. Crosse seemed to show that insects were produced in silicate of potash under a long-continued action of voltaic electricity. Now whether this be really the case or not, it is grievous in the present enlightened age, to see these experiments and the assertions that resulted from them, denominated the work of atheism, and the labour of another Frankenstein!—I do not suppose for one moment that Mr. Crosse pretended to have discovered the power of imparting life, but merely of having developed a vital principle in substances supposed to be inorganic. Every experimentalist who thus develops the vital principle may be said to bestow life, without being exposed to the absurd charge of impiety.—The man who brings forth chickens from the incubation of eggs, instead of eating them; the physiologist who rots a piece of meat to develop myriads of living beings in the putrid nidus, might just as well be called an atheist.

While naturalists were thus groping in nature’s dark labyrinth, endeavouring to account for the wonders of the *natura naturans*, that divinity of the Stoics that Lucan thus describes,

Superos quid quærimus ultrà?
Jupiter est quodcumque vides, Jovis omnia plena,—

other wise men fancied that they had actually discovered the seat of life, which, according to their fanciful speculations, they had lodged in certain organs. The nervous system, the spinal marrow, the brain, the heart, were all and each of them considered in turn as the head-quarters of vitality; while the workshop of alimentation, or much-abused stomach, did not pass unnoticed and unhonoured. The heart of a turtle, and of some reptiles, has been seen contracting and dilating hours after its extraction from the body; the stomach has been excited into an action bearing some analogy to vomiting, when separated from the trunk; but all these curious phenomena, explained and accounted for (in some measure, at least) by physiology, do not tend to prove that any one organ, or any chain of organs, is possessed of separate vitality independent of the general principle of life. The brain, which has been regarded as the chief seat of this principle, is not always essential to life; for although man perishes, or at least his vital functions cease to act, when he is decapitated,[30] yet various birds and reptiles continue to live for hours and days after the head has been severed from the body, while we actually behold a regeneration of the head in the earth-worm. Moreover, we have upon record many cases of *acephalous* children, or born without any head; and *anencephalous* children who lived (for a short time, it is true) without any brains. Fontana removed the entire brain of a turtle, yet it lived six months, and walked about as before.

Sandiford had divided acephalous animals into three classes: the first, in which the head was wanting; the second, where other organs were also missing; and the third, where the fœtus presented an unformed mass. In the acephalous twin described by Béclard, no liver, spleen, stomach, or œsophagus could be discovered, and the intestinal tube commenced at the superior extremity of the body. The infant had ten ribs on each side, and regular nerves arose from the spinal marrow. Although headless animals may not be gifted with intellectual faculties evident to our senses, yet they clearly live and feel. The zoophytes and polypes, without brains or heads, possess irritability and sensibility; they can seek their food, seize it, reject what is not edible, are susceptible of the powers of light and heat, can contract their fibres when touched or injured, and, in short, manifest various innate or instinctive powers. Gall has maintained that the passions resided in the brain, and, therefore, that brainless animals did not experience their influence. This is a bold assertion. Can he prove that worms, insects, zoophytes, that possess only what is called a ganglionic system, are strangers to instinctive fears and partialities? I apprehend that it will be found that passions belong to instinct much more than to our volition.

It is nevertheless true that animals may be killed by wounding the spinal marrow, by the process commonly called "*pitting*." This practice may be traced to high antiquity; and Livy informs us that when the Carthaginian troops were routed, Asdrubal ordered their unmanageable elephants to be destroyed by driving the point of a knife between the junction of the head and spine.

From these observations it will appear quite clear that life has no necessary connexion with sensation, although the latter cannot be experienced without the former. Vegetables are endowed with vitality; but we have no reason to suppose that they feel. It is also more than probable that, as the degree of intelligence decreases, the intensity of the corporeal feelings are also diminished. Did not this scale of sensibility exist, insects could not live under the supposed agonies that the entomologist daily inflicts. This supposition does not rest upon indefinite reasoning, for in our own race we observe that those parts which are gifted with a

[30] During the horrors of the French Revolution, various experiments were made by Sue and other physiologists to ascertain if the bodies of the guillotined victims possessed sensibility. No conclusion, however, could be elicited from these inquiries, which gave rise to many absurd tales, such as that the face of Charlotte Corday blushed when the executioner slapped it, as he held it out to the enraptured Parisians.

reproductive power are possessed of the smallest degrees of sensation; and the cuticle, the hair, the beard, and the nails will even grow after death. This fact may calm the apprehensions of those very humane persons who look upon experimental physiologists as very monsters of barbarity. Vaillant took out the intestines of a locust, and stuffed it with cotton, then fixed it down in his box with a pin, yet, five months after, the insect moved its feet and antennas. Spallanzani has shown that the snail can renew its head.

All this confusion in theories and wandering of the imagination have arisen from our confounding the vital principle, of which we know nothing, with the phenomena of sensation, for which patient and calm investigation may account. That there does exist a principle of life that animates, vivifies, and preserves all living bodies, until its powers cease, no one can deny; although to find out its nature is a vain pursuit, as idle as our endeavours to penetrate into the *causes of causation*. As Richerand observes, "its *essence* is not designed to preserve the aggregation of our constituent molecules, but to collect other molecules, which, by assimilating themselves to the organ that it *vivifies*, may replace those which daily losses carry off, and which are employed in repairing and augmenting them; the word *vital principle* is therefore not designed to express a distinct being, but denotes the *totality of powers alone* which animate living bodies, and distinguish them from inert matter, the *totality of properties* and *laws* which govern the animal economy."

Of all the doctrines upon this abstruse subject (of which I have noticed the principal ones), that of the pre-existence of an organic germ appears the most plausible, or at any rate the easiest to conceive. It was from this conviction that the ancients held as an axiomatic principle *Omnia ex ovo*. It is upon this theory that Buffon rested his organic molecules, and Ray his vital globules. The primitive lineaments of organization may be traced in the egg, even before it is fecundated. The embryo that we find in its involucra is soft, flexible, ready to receive the plastic impression of the vivifying secretion,—the fecundating agency that imparts existence and all its wondrous attributes, to the pre-existing *ova*, the *ova subventanea*. It does not appear that the first organ of the embryo which exhibits the living principle is the heart, hence denominated in the fœtus the *punctum saliens*; the principle of life has probably organized every molecule of the animal long before this supposed fountain of vitality had been seen to flow. It is more likely that the nervous system has received the first impressions imparted by the fecundating secretion, which the ancients supposed to have been a direct emanation from the brain, and bearing in its vivifying molecules the life of every part of the being it was about to organize; thus Valescus: "Sperma hominibus descendit ex omni corporis humore, qui fit ex subtiliori naturâ. Habet autem hoc sperma nervos et venas proprias attrahentes se à toto corpore ad testiculos—à membris disconditur principalibus—à corde, epate, cerebro mittuntur spiritus, ex quibus resultat spiritus informativus, et non aliter nisi cum spermate—ergo ab iis principaliter sperma disconditur."

Such were the doctrines on this curious subject until the days of Fabricius d'Acquapendente and Harvey. Buffon, however, exerted all his eloquence to revive the theory. The following are the notions of this elegant writer, who unfortunately only studied natural history in books and cabinets. He maintains that there exist two sorts of matter,—the one living, the other dead: the first enjoying a permanent vitality; the second universally spread, passing from vegetables to animals through the channels of nutrition, and returning from animals to vegetables through the medium of putrefaction,—thus in a constant state of circulation to animate living beings. This vital matter exists in determined quantities in nature, and is composed of an infinity of organic molecules, primitive, living, active, incorruptible, and in relation, both as regards action and numbers, with the molecules of light, and enjoying an immutable existence, since the usual causes of destruction can only affect their adherence. It is these molecules which, being cast in regular moulds, constitute all the organized bodies

that surround us. According to this doctrine, *development* and *growth* are only a change of form operated by the addition of organic molecules; *nutrition*, the preservation of this form by the accession of fresh molecules that replace those that are destroyed; *generation*, the combination of these particles; and *death*, their separation from cohesion and association.

This ingenious system is not dissimilar to that of Maupertuis, who thought that the mysteries of generation could be explained by the usual laws of elective attraction. Various were the physical, metaphysical, and moral batteries raised against this visionary fabric. One single fact was sufficient to overthrow it. We constantly see parents deficient in a limb, or misshapen, producing perfect offspring; if each part of the economy was to transmit to its progeniture molecules similar to itself, the child would naturally be visited with the imperfection of the parent.

Notwithstanding these fallacies, we cannot but admit that chemical and molecular attraction constitute the principle that harmonizes all organized bodies. Generation is simply a function of organization and life. Organized bodies alone can generate. The living only can impart life. Animals and plants transmit to their descendants their several properties; and the inheritance of organization departs with the vital spark. Life is the property of no one; it is a transmitted heir-loom that never perishes; it resembles a torch that communicates an eternal flame while consuming itself. Organized beings have justly been considered the fuel of the universal vital fire, and we all are the *daily bread* of that monstrous animal called *the world*. All are ingulfed in that vortex which Beccher has called the "*circulus æterni motus*" Metempsychosis was simply an illustration of this fact recognised in all ages in the East, and taught in European schools by Pythagoras. Nothing perishes; and even combustion produces fresh combinations.

Poetical philosophy has considered *Love* as the source and arbiter of *life*, and the *Venus Generatrix* the fount of our existence. Lucretius recognises this power in the following lines:

Per te quoniam genus omne animantûm
Concipitur, visitque exortum lumina solis.

Then again,

Omnibus incutiens blandum per pectora amorem,
Efficis ut cupidè generatim sæcia propagent.

Virey, a delightful French physiologist, seems to partake of this mythological opinion in the following passage: "L'amour est l'arbitre du monde organique; c'est lui qui débrouille le chaos de la matière, et qui l'impregne de vie. Il ouvre et ferme à son gré les portes de l'existence à tous les êtres que sa voix appelle du néant, et qu'il y replonge. L'attraction dans les matières brutes est une sorte d'amour ou d'amitie analogue à celle qui reproduit des êtres organisés. Ainsi la faculté générative est un phénomène général dans l'univers; elle est représentée par les attractions planétaires et chimiques dans les substances brutes, et par l'amour ou la vie dans les corps organisés."

According to our amatory neighbours, the word *ame*, or soul, comes from *amor* and *amare*, and *amare* is derived from *animare*; hence *animation* and *animal* may be syllogistically referred to love.

I know not how far this etymological disquisition may illustrate the history of their *enfans trouvés*, or our foundling hospitals, the inmates of which are generally uncommonly ill favoured by beauty. The offspring of the aforesaid Venus Generatrix must have been especially ungrateful; and if it be true that Julius Cæsar was her son, he certainly exerted his best endeavours to depopulate his mother's territories.

Of The Homœopathic Doctrines

It is a matter worthy of remark, that, while the doctrines of homœopathy have fixed the attention and become the study of many learned and experienced medical men in various parts of Europe, England is the only country where it has only been noticed to draw forth the most opprobrious invectives. It is certainly true that no one but an ardent proselyte of the visionary Hahnemann could for one moment become the advocate of all his absurd ideas; yet, while we reject his errors, great and important truths beam from the chaotic clouds that shroud his wanderings; and, however wild his theories may be, incontrovertible facts have been elicited from his apparently inefficacious practice.

Before I enter into an examination of the practical views of the homœopathists, I shall give a brief sketch of their doctrines and of their founder.

Samuel Hahnemann was born in Meïssen in Saxony, on the 10th of April, 1755. His father was an humble porcelain manufacturer. The first rudiments of education that young Hahnemann received were gratuitous; and his master, pleased with the progress of his ambitious but needy scholar, strongly urged him to repair to Leipzig, where, at the age of twenty, he arrived, with exactly the same number of crowns in his pocket as he numbered years. At this university he zealously pursued his favourite studies of the natural sciences, supporting himself by translating French works, and giving lessons; and finally he graduated in the university of Eslan—in 1779.

It was during his arduous studies that Hahnemann was struck with the conflicting systems and the deplorable controversies which for centuries divided in turn the medical schools of Europe, and were triumphant or overthrown by scholastic revolutions; each doctrine being doomed to obscurity and oblivion in the ratio of its ephemeral splendour. The result of his reflections and experiments was the system of homœopathy. Its novelty, its apparent absurdity, soon exposed him not only to opposition, but to violent persecution. As is usual in all cases of oppression, whether justly or unjustly resorted to, proselytes as furious and as fanatical as his persecutors joined their chief. Despite the sanatary regulations of Saxony, which prohibited physicians from dispensing their medicines, Hahnemann prepared and supplied his homœopathic remedies; and, being expelled from Leipzig, sought a refuge at Kœthen, where, exasperated by the harsh treatment he had experienced, he fulminated his anathema on all past and present systems of medicine with no small degree of furious resentment, pronouncing his doctrine to be stamped with the seal of infallibility, and denouncing all others as the aberrations of ignorance and error, or the speculations of imposture and fraud.

As might have been expected, few of his opponents thought it worth their while to study his system calmly and dispassionately; nor, indeed, was such an application necessary, for his doctrines needed no deep investigation on the part of his foes, so fraught were they with apparent errors and false deductions, not only from his own pretended experience, but the experience of ages. Finding that he could not enjoy a despotic sway over the schools, he was resolved at any rate to seek the palm of martyrdom, and had recourse to such violence in words and actions, that many of his enemies maintained he was a more fitting subject for a lunatic asylum than the *soi-disant* founder of a rational doctrine; for he and his fanatical disciples set all ratiocination at nought, considering his *dixit* as a fiat of condemnation passed on all who dared to doubt his infallibility, although at different periods their oracle was obliged to retract many erroneous assertions and contradict fallacious statements.

In the short view of his doctrines which I am about to give, these fallacies will become evident.

Hahnemann had observed in his studies and hospital practice that the prevalent systems of medicine were founded on the rational principle of combating effects by striking at morbid causes. Physicians sometimes endeavoured to attain this desirable end by producing in the system an artificial action differing from the nature of the malady, and founded their practice on the scholastic axiom of *contraria contrariis curantur*; at other times they raised or depressed the vital energies according to the prevalence of excitement or debility, or modified the character of the disease by revulsion and derivation, a practice which received the name of antagonistic, or *allopathic*,—a term used by Hahnemann in contradistinction to homœopathy, and derived from αλλος, *different*, and παθος, *affection*.

In his therapeutic pursuits Hahnemann had been forcibly struck with the long-acknowledged fact that medicinal substances supposed to possess a certain specific property in the treatment of diseases, were known in the healthy subject to produce phenomena bearing a close analogy to the symptoms of those identical diseases. Thus, mercurial preparations occasioned symptoms of syphilis, sulphur produced cutaneous irritation, and, in some instances, the exhibition of cinchona had been known to bring on febrile intermissions. In various works he found these observations established. For instance, amongst many others, he found in the publications of Beddoes, Scott, Blair, and various writers, that nitric acid, which was known to produce ptyalism, relieved salivation and ulceration in the mouth. Arsenic, which, according to Henreich, Knape, and Heinze, occasioned cancerous anomalies in healthy subjects, was stated by Fallopius, Bernharde, Roennow, and many other surgeons, to be efficacious in relieving, if not curing, similar disorders; preparations of copper were asserted by Tondi, Ramsay, Lazermi, and numerous practitioners, to have produced epileptic attacks; and Batty, Baumes, Cullen, Duncan, and several experienced medical practitioners, recommended similar remedies in epilepsy. In short, the illustrations of the power inherent in certain substances to produce accidents analogous to the symptoms of the various diseases in the treatment of which they had proved efficacious, induced Hahnemann to consider whether a treatment founded on *similia similibus curantur* might not be found more effectual than the former practice based upon the *contraria contrariis*. He was of opinion that no medicine was possessed of any *curative property*, but solely acted by its *morbific power* of producing a disordered condition in the system; and on this and other principles, which we shall shortly notice, he asserts that nature does not possess any curative power, totally denying the *vis medicatrix* of the schools. He further maintained, that there does not exist any specific malady; but that which we consider to be a disease is nothing but a complexity of symptoms, and that a cure can only be effected when these complex symptoms are made to disappear.

Impressed with these ideas, he and his disciples proceeded to try various medicinal substances upon themselves and others when in health, and, carefully recording the symptoms which these medicines produced, they drew up a statement of their various powers, that they might be afterwards resorted to, to relieve the same symptoms in a morbid state. Grounding this practice on the principle (in many instances correct) that two similar diseases cannot coexist, they conceived that if, to counteract a natural malady, one can produce by any medication an artificial derangement of the same nature, the artificial disorder will overcome the natural disease, and a radical cure be obtained. To explain more distinctly this idea, I shall quote the author’s words.

“The curative power of medicines is thus founded on the property they possess to give rise to symptoms similar to those of the disease, but of a more intense power. Hence no disease can be overcome or cured in a certain, radical, rapid, and lasting manner, but through the means

of a medicine capable of provoking a group of symptoms similar to those of the disease, and at the same time possessed of a superior energetic power."[31] And further,

"If two dissimilar maladies happen to be coexisting, possessed of an unequal force, or if the oldest disease is more energetic than the recent one, the latter will be expelled by the former. Thus, an individual labouring under a severe chronic disease will not be subject to the invasion of an autumnal dysentery, or any other slight epidemic. Larrey affirms that the districts of Egypt in which scurvy was prevalent were exempt from the plague. Jenner asserts that rachitis prevents the effect of vaccination; and Hildebrand assures us that phthysical patients never experience epidemic fevers unless of the most severe character."[32]

"If a recent affection, dissimilar to a more ancient one be more powerful than the latter, then will the progress of the latter be suspended until the malady is either cured or has been expended in its career, and then the old one will reappear."[33]

"But the result is totally different when two similar diseases meet in the organism; that is to say, when a pre-existing affection is complicated with one of the same nature, but possessed of more energy."[34]

"Two maladies resembling each other in their manifestation and their effects, that is to say, in the symptoms which they determine, mutually destroy each other, the strongest conquering the weakest."[35]

He further contends that the essential nature of every disease is unknown; that their existence is revealed by alterations and changes in the system perceptible to our senses, and constituting what are called *symptoms*, and it is the series of these symptoms which characterize the disease in its course and its development. According to his notions, the physician has only to follow and study the succession and the grouping of these symptoms; in short, the phases and the phenomena of diseases. Attack and destroy these symptoms, and you will have destroyed the malady.

All classification of diseases, and their various denominations, he therefore deemed absurd, as, according to his doctrines, no one disease resembles another; so various were their modifications, that, with few exceptions, it was idle to give them a particular name, since disease was simply a derangement in our organization manifested by peculiar symptoms.

We are also, according to Hahnemann, ignorant of the essential properties of medicines, and can only observe and record their effects by experimental observation. Like diseases, they also produce a derangement in our organism, manifested by peculiar symptoms, their sole action consisting in developing specific diseases.

In conformity with these notions, to cure disease we have only to produce a similar affection; the primitive one would then give way to the secondary affection artificially produced, and in time the artificial one would cease to exist when the means that produced it were no longer brought into action.

Homœopathic medicines, he maintained, have the property of acting in a direct manner upon the affected part of the system; and this is proved when the disease, and the medicine given to

[31] Organon, xxxii.
[32] Op. cit. xxxi.
[33] Ibid. xxxiii.
[34] Op. cit. xxxviii.
[35] Organon, xl. This will be found to be the case in all diseases that are dissimilar; the stronger suspends the weaker, except in case of complication, which is a rare occurrence in acute diseases, but they never cure each other reciprocally.

relieve it, produce similar morbid manifestations: and he further contended that our vital organism was less susceptible of the action of natural affections than of those which are artificially produced.

On this basis did the homœopathic doctrinarians ground their practice; but a still more singular theory was broached by their leader; he maintained that medicinal substances, to prove efficacious, should be administered in an attenuated and diluted state, carried to such an extent as to become infinite in their division; he further asserts that this infinite division, far from diminishing their medicinal power and properties, imparts greater energy and certainty of action when these particles encounter in our organization an affinity of disposition, or a homogeny in action; that is to say, that these atomic attenuations act with greater power in those affections which manifest symptoms similar to those which these very medicines are known to produce when experimentally tried upon a healthy subject.

Upon this principle the homœopathist condemns all combinations of medicines as likely to neutralize each other's properties by their various affinities; therefore generally speaking, no fresh medicine should be given until the effects of the former have subsided; and to guide this practice, while they endeavoured to ascertain the symptoms produced by medicines, they also sought to ascribe certain limits to the duration of their action: thus, the influence of aconite lasts forty-eight hours, and that of crude antimony fifteen days.

Dreading all substances that could tend to weaken or neutralize the effect of medicine, the homœopathists made it their particular study to discover the peculiar action of all alimentary substances on the organism, and characterized as antidotes all such articles of food as they considered opposed to this supposed action: thus, wine and vegetable acids were deemed antidotes to aconite; coffee, to Angustura bark; vinegar, to asarum, &c.

I have already stated that the homœopathists conceive that the infinite dilution of their atoms of medicinal substances increase their energy; and this fact they so strenuously maintain, that they assert that accidents of a serious nature may arise when this division is carried too far; and these accidents are then to be met with the medicinal antidotes they pretend to have discovered: thus, camphor is an antidote to cocculus; opium, to the crocus sativus; camomile and camphor, to ignatia amara; and so on.

The minuteness with which the specific actions of various medicinal substances on certain organs is detailed is scarcely credible; and the following extract from the homœopathic materia medica will give a slight idea of their industrious labours. Taking as an example phosphorus, which they affirm produces—

Vertigo, determination of blood to the head, headache in the morning, fall of the hair, difficulty in opening the eyelids, burning sensation and ulceration of the internal canthus of the eye, when exposed to the open air, lachrymation and adhesion of the palpebræ; inflammation of the eyes, with the sensation of particles of sand having been introduced; sparks and spangles floating before the eyes, a dark tinge in objects that are looked on, diurnal cecity, the appearance of a gray veil drawn before the eyes, pulsation in the ears, epistaxis, mucous discharge from the nostrils, foulness of breath, tumefaction of the throat, whiteness of the tongue, ulceration of the mouth, expectoration of glairy mucus, dryness of the mouth by night and by day, spasmodic eructation, nausea, sense of hunger after eating, anxiety after meals; in short, twenty-four octavo pages are devoted to the innumerable effects of this substance on the organism.

Of *magnesia artificialis* three hundred and twelve symptoms are noted; six hundred and fifty of the *rhus radicans*; nine hundred and forty of *pulsatilla*; five hundred of *ignatia amara*; four hundred and sixty of *arsenic*: in short, volumes upon volumes are crowded with these

observations, not only recording physical effects, but singular results on our moral faculties; such as serenity or moroseness, gaiety or sadness, a disposition to commit suicide or a fond partiality to life, courage or cowardice, a weak intellect or a vigorous conception. For instance,—common sea-salt occasions irascibility, lowness of spirits, taciturnity, melancholy, palpitation of heart, disposition to shed tears, pusillanimity, and despair; while potash gives rise to ill-temper without apparent cause at noon and in the evening, with violent paroxysms of rage in the morning, impetuous desires, furious passion, with gnashing of teeth, if all around does not yield to the patient's desires; while the vision of a bird hovering about the window produces loud shrieks of alarm, exaltation of the intellects, and a horror of the future. So innumerable, indeed, are all these singular effects attributed to various medicines thus experimented, that no memory, however retentive, could possibly bear them in recollection. The following are the directions laid down for conducting this curious inquiry:

The person upon whom medicines are tried must be free from disease; but weak substances should be given to subjects of a delicate and sensitive constitution. The medicine is to be tried in its most pure and simple state, possessing all its energies, taking special care that it is not combined with any heterogeneous substances during the day it is exhibited, and the time while its action is supposed to last. The diet must be moderate; all spices and high-seasoned food to be avoided, as well as green vegetables, roots, salads, &c. which are known to possess medicinal properties. The dose of the medicine to be similar to that which is usually prescribed by practitioners. If, at the expiration of about two hours, no effect is observed, a stronger dose is to be given. Should the first dose operate powerfully at the commencement, but gradually lose its influence, the second will be given the following morning; and a still stronger one, four times the strength of the first, be administered on the third day.

The result of these experiments being recorded, homœopathic agents are selected to oppose morbid symptoms; and when the choice of remedies has been appropriate, an aggravation of the symptoms is observed. This aggravation is usually considered as an increase of the disorder, whereas it is solely the effect of the homœopathic remedy. "For these phenomena," say the homœopathists, "were frequently observed by physicians, who little thought at the time, that they were the result of the medicines they had given." Thus, when the pustules of itch became more rife after the exhibition of sulphur, it was thought that the increase of the eruption was merely the affection *coming out* more freely; whereas, the aggravation was occasioned by sulphur. Leroy informs us that the heart's-ease, *viola tricolor*, increased an eruption in the face. Lyrons says that elm-bark aggravated cutaneous affections, which were cured by this remedy; but neither of them were aware of the nature of this homœopathic development. For further information on this head, the Organon of Hahnemann must be consulted.

Such were his doctrines for a period of about twenty years,—doctrines which he emphatically pronounced infallible, and founded on the immutable laws of homœopathy. In 1828, however, convinced by numerous failures in the treatment of chronic diseases, that other causes than those which he acknowledged,—such as the improper preparation of the medicine, or dietetic neglect on the part of the patient,—contributed to these disappointments, he announced that he had discovered the hidden source of the obstacles he encountered; and that, after many years of experiments and meditation, he had come to the conclusion that almost all chronic diseases originated from constitutional miasmatic affections or predispositions, which he divided into *sycosis*, *syphilis*, and *psora*, or, in plain English, the itch. To this latter affection he attributes innumerable disorders. In diseases of a syphilitic character, he had found his mode of treatment infallible; and he therefore concluded that all obstinate and rebellious affections were the result of some other constitutional predisposing circumstances. He tells us that he laboured in profound secrecy to discover this great, this

sublime desideratum: his very pupils knew it not; the world was to remain in ignorance of his pursuits until he could proclaim the most inestimable gift that Divinity bestowed upon mankind. This immortal discovery was neither more nor less than the itch; to which malady, according to his views, since the days of Moses, seven-eighths of the physical and moral miseries to which flesh is heir, were to be referred. Whether rendered evident by eruptions, or latent from our cradle, it was a curse transmitted to us, by the modification and degeneration of leprosy, through myriads of constitutions, and which only disappears from the surface to fester in malignity until it bursts forth again in the multifarious forms of innumerable diseases, amongst which we find scrofula, rachitis, phthisis, hysteria, hypochondriasis, dropsy, hydrocephalus, hæmorrhage, fistula, diseases of the head and liver, ruptures, cataracts, tic-douloureux, deafness, erysipelas, cancers, aneurisms, rheumatism, gout, apoplexy, epilepsy, palsy, convulsions, stone, St. Vitus's dance, nervous affections of every description, loss of sight, of smell, of taste, stupidity and imbecility.[36] In support of this doctrine, Hahnemann adduces ninety-five cases recorded by medical writers, in which the disappearance of the itch was followed by various acute and chronic maladies.

The next miasmatic generator is *sycosis*, or the disposition to warty excrescences; but this source of disease Hahnemann does not consider so prolific as syphilis, or his favourite psora.

Such are the principal features of the homœopathic system. I have already stated that its followers consider the most minute particles of medicine more powerful than larger doses; they therefore have recourse to infinite trituration or dilution in three vehicles which they consider free from any medicinal property,—distilled water, spirits of wine, and sugar of milk; by these means they procure a decillionth or a quintillionth fraction of a grain. One drop of their solution is considered sufficient to saturate three hundred globules of sugar of milk; and three or four of these globules are deemed a powerful medicine. To give a better idea of Hahnemann's notions on this subject, I shall quote his own words:

"By shaking a drop of medicinal liquid with one hundred drops of alcohol *once*, that is to say, by taking the phial in the hand which contains the whole, and imparting to it a rapid motion by a single stroke of the arm descending, I shall then obtain an exact mixture of them; but two or three, or ten such movements, would develop the medicinal virtues still further, making them more potent, and their action on the nerves much more penetrating. In the extenuation of powders, when it is requisite to mix one grain of a medicinal substance in one hundred grains of sugar of milk, it ought to be rubbed down with force during one hour *only*, in order that the power of the medicine may not be carried to too great an extent; medicinal substances acquiring at each division or dilution a new degree of power, as the rubbing or shaking they undergo develops that inherent virtue in medicines which was unknown until my time, and which is so energetic, that latterly I have been forced by experience to reduce the number of shakes to two."

As a further illustration of this theory, he affirms that gold is without any action in our organism in its natural state; but that when one grain of this metal is triturated according to the above process until each grain of the last triturated preparation contains a quadrillionth part of the original grain of the mineral, it will be so powerful that it will be sufficient to place this single grain in a phial, to be inspired for a moment, to produce the most amazing results, and none more so than the faculty of restoring to a melancholy individual, disposed to commit suicide, his pristine partiality to life.

Unfortunately for Hahnemann, many of these assertions are unsupported by facts or sound reasoning, and appear mere wanderings of an ardent imagination; and thus soaring in regions

[36] On Chronic Diseases. Translation of Begel, p. 107.

of fancy, he himself has struck many fatal blows to his own doctrines. For instance, what are the arguments he adduces to prove that in two similar diseases the strongest will overcome the weakest?

“Why,” he exclaims, “does the splendid Jupiter disappear during the twilight of morn to the eyes of the contemplator? It is because a similar power, but possessed of greater energies, the breaking day, acts upon our organs.”

This is a defective analogy. Hahnemann tells us that a stronger power banishes a weaker one in a permanent manner, whereas the bright planet he here alludes to will return with the night. Then again:—

“With what do we endeavour to relieve the olfactory nerves when offended by disagreeable odours? By snuff, which affects the nostrils in a similar but in a more powerful manner.” This is not correct: when the action of snuff has ceased, the disagreeable effluvia become again offensive. In some instances his poetical vagaries are preposterous. “By what means,” he adds, “do we endeavour to protect the ears of the compassionate from the lamentations of the poor wretched soldier condemned to be scourged? Is it not by the shrill notes of the fife united to the loud beat of the drum? How do we endeavour to drown the roar of distant artillery that causes terror in the heart of the soldier? By the roll of the double drum;—nor would this feeling of compassion, this sense of terror, have been checked by admonition or by splendid rewards. In the same manner our grief, our regret, subside, upon receiving the intelligence, true or false, that a more lively sorrow has affected another person.” It would be idle to dwell upon the absurdity of such visions and erroneous statements.

To support his doctrines, Hahnemann should have proved, 1st, that medicinal powers do produce an artificial malady similar to the natural affection; 2nd, that the organism only remains under the influence of the medicinal disease; 3rd, that this medicinal disease is of short duration; and 4th, that all these effects can only be produced by a medicine selected according to their similarity of symptoms. Our theorist has utterly failed in his endeavours to establish these facts; therefore have his doctrines been impugned by many of his most zealous disciples, amongst whom may be mentioned Griesselich, Rau, Schroen. The aggravation which he asserts takes place after the exhibition of a homœopathic medicine is not only unsupported by proof, but positively denied by many of their practitioners; and Hartman plainly affirms that, after a homœopathic dose, the patient frequently experiences a state of calm, a disposition to slumber, and often falls into a profound sleep more or less prolonged, in waking from which he finds himself much relieved, if not perfectly cured. Thus several physicians who have adopted his practical views reject many of the doctrines on which they are founded; and a homœopathist has justly compared his works to a wild virgin forest, in which we meet with a number of valuable trees and plants in the midst of arid brushwood and parasitic weeds that would check the growth of the most useful productions.

Yet, notwithstanding the many gratuitous assertions, and consequent erroneous inductions, we meet with in the *Organon*, it is probable that this system is destined to operate a gradual but material revolution in the *practice* of medicine. As to theories, we must agree with Voltaire when he said “En fait de système, il faut toujours se reserver le droit de rire le lendemain de ses idées de la veille.”

Hippocrates laid down in his Aphorisms the incontrovertible fact, “Duobus doloribus simul obortis, non tandem eâdem in parte, vehementior alterum obscurat. A. 46.” To a certain degree, it was upon this assertion, which the experience of ages has confirmed, that Hahnemann founded the principal and most important point of his doctrine; but, going much farther than the father of medicine, he affirms that similar diseases effectually remove each

other. For centuries practitioners have been acting homœopathically; the exhibition of specifics, in fact, being nothing else. As we have already shown, specifics are known to produce symptoms similar to the diseases they cure. Hitherto the number of such medicines has been confined to a very few agents; and perhaps with the exception of mercury, sulphur, and bark, with their several preparations, scarcely any article in the materia medica could have claimed this peculiar property. To extend these limits, which confined in so exiguous a compass our therapeutic agents, has been the laborious and singular study of Hahnemann and his disciples. Haller had first given the example, and they arduously applied themselves to discover by experiments on the healthy subject, both upon their own persons and others, what were the peculiar effects or symptoms produced by various medicinal substances. These observations are so numerous and confused, that, on reading them, we feel plunged in a chaotic labyrinth of symptoms, without any clue to extricate ourselves from its perplexing mazes. Still, from this multifarious catalogue much important information can be collected; and it cannot be denied that the homœopathist has not only thrown a new light on the action of many medicines which we daily prescribe, but brought into practical consideration the necessity of attending to dietetic discipline, by an investigation of the several properties of our usual *ingesta*.

It is obvious that any enthusiast who would blindly embrace the foregoing doctrines without serious and deep investigation, and boldly apply the wild theory to practice, would at once throw open the flood-gates of absurdity, and lend his aid in destroying, if possible, with one fell swoop, the result of ages of mature study and experience. Hahnemann, to fertilize the fields of science, had recourse to inundation instead of wise and cautious irrigation; and the fury with which he and his rash disciples maintained their opinions materially tended to retard their progress. Truth needeth not violence; its own lustre will beam through surrounding darkness, without being dragged into light.

The objections to Hahnemann’s doctrines are glaring. The art of healing, from the dawn of science until the present day, has been more or less founded on the faculties of reasoning. We are taught, in the first instance, to observe carefully the phenomena of disease, and, by referring effects to probable causes, endeavour, however difficult the task, to trace their catenation. Many of these causes are perhaps sealed for ever in the inscrutable book of our destinies; yet, if we cannot obtain a knowledge of the origin of these disorders, still when we take into mature consideration the complication of all accidental circumstances, and from visible effects seek invisible relations, guided by our experience in anatomy, physiology, and the revelations of pathology, we may find this pursuit less difficult than it may be imagined. But the homœopathist despises and rejects as idle, all those collateral means of diving into nature’s arcana. He bids us dwell only upon evident symptoms, or, in other words, look to the effects alone, and cast away all thoughts of discovering their causes. Nothing can be more illogical than this argument; for certainly we can scarcely hope to remove effects without striking, as far as in our power lies, at their cause. To deny the existence of any specific affection because we cannot account for its origin, is absurd. As well might we reject the use of medicines known to possess specific properties, from our utter ignorance of their *modus operandi*. The exclusive consideration of symptoms would lead us into lamentable error, since the same symptoms are observable in various diseases. Similar pains, for instance, may be the symptoms of rheumatism, nephritic affections, and calculus; headaches may arise from inflammation, and from various and well-known sympathies with distant organs: yet, without seeking to ascertain these relations, the mechanical and empirical homœopathist will prescribe such medicines as are known to occasion pains in the loins, or headaches; only bearing in mind perceptible derangements, heedless of the phenomena of organization, the state of the secretions and excretions, the history, the rise and progress of the disorder, or the

idiosyncrasy of the patient. The liver is diseased; the discovery is of no importance. We have only to attend to the pain extending up the clavicle and shoulder, or the uneasiness experienced in the right hypochondrium: the pulse, the respiration, the condition of the excretions, the temperature of the skin, the appearance of the tongue, are all regarded as minor considerations. It is not *hepatitis* that we are called upon to cure; it is to relieve a pain in the shoulder and in the hypochondrium, or a difficulty of lying on the left side.

No one will pretend to deny that our safest, perhaps our sole, guide in the study of disease is the group of symptoms, that become more and more perceptible during the course of our investigations. It was principally on the study of symptoms that the most learned practitioners of every age and country grounded their diagnosis and their prognosis; but they never viewed them either singly, or in their complexity, as unconnected with the particular diseases to which they were not only essentially united, but from which they originated, and of the existence of which they were to be considered the diagnostic signs. Therefore did the ancients classify them as principal and accessory, univocal and equivocal, characteristic or common, as they afforded more or less information in our pathological deduction; and in that light they were weighed with greater or less application, as our judgment could only be formed by the attentive consideration of the phenomena of the organism in health and in disease.

But while the homœopathist's attention is chiefly directed to the discovery of means that can enable him to produce symptoms analogous to those of the disorder, he seems to disregard the laws of sympathy, by which our organism appears to be ruled; a mysterious agency which can only be ascertained by observation and experiment, when, to use the words of a distinguished writer,[37] "by the former we may be said to listen to nature, by the latter to interrogate her." Health depends upon the due co-operation of all these associations; and one organ in the wonderful machinery cannot be deranged in its functions without influencing others, however distant and unconnected they may appear. In this co-ordination, these vital relations have been very properly divided into mechanical, functional, and sympathetic. Their study constitutes the groundwork of all rational induction. It is not by individual or complex symptoms that we can decide where the want of equilibrium is to be traced. Various have been the theories on this most important subject, and great have been the erroneous ideas dogmatically laid down. The illustrious Bichat himself erred when he maintained that sympathies were aberrations—morbid developments of our vital properties. Sympathies, on the contrary, may be considered as constant phenomena, essential and inseparable from our organism, whether in health or in sickness; and are, if I may be pardoned the expression, co-ordinated to co-operate with each other in their mechanical, their functional, and their sympathetic associations.

An incarcerated hernia causes hiccup, nausea, vomiting. Will the homœopathist tell us that we must seek in his catalogue of innumerable effects some substance which is known to produce similar symptoms? Surely the rupture must first call our attention. This example is adduced as referring to nearly every case in which it might be rashly attempted to separate causes from effects. The mammary glands are variously affected in uterine diseases; their impressions are reciprocal, yet the uterine affection must be the chief object of our solicitude. A peculiar pruritus is a symptom of calculus. Are we then to administer a homœopathic dose of *cannabis*, or any other medicine which may give rise to a similar sensation? It may be objected to this observation that these are purely surgical cases, in which we need not be guided by symptoms to discover causes; but it has too frequently happened that nausea and vomiting have been attended to, while the hernia was overlooked, until fatal accidents were

[37] Sir Gilbert Blane's Medical Logic.

manifested. Moreover, a diseased liver, a diseased spleen or kidney, would be just as perceptible as hernia or calculus, if these parts could be brought into view or contact.

It may be said that an erroneous notion of Hahnemann's doctrines on this subject has been taken; it is therefore necessary to quote his own words:

"It may be easily conceived that the existence of a malady presupposes some alteration in the interior of the human organism; but our understanding can only lead us to suspect this alteration in a vague and deceitful manner, from the appearance of the morbid symptoms, the sole guide we can depend on except in surgical cases. The essence of the internal and invisible change is undiscoverable, nor have we any means of guarding against deceptive illusions."[38]

"The invisible substance that has undergone a morbid alteration in the interior of the human body, and the perceptible changes, which are externally developed,—in other words, symptoms,—form by their union what is called disease; but the symptoms are the only points of the malady which are accessible to the physician, the sole indication whence he can derive any intuitive notion, and the principal objects with which he ought to become acquainted to effect a cure. From this incontestable truth there is nothing discoverable in disease beyond the totality of its symptoms to guide us in the selection of our curative means."[39]

It is not to be supposed that an experienced physician, although a homœopathist, will rest satisfied with this study of symptomatic medicine, without endeavouring to attach these effects to some cause, however occult it may appear; but such a doctrine becomes pernicious, since it bids us close the only book of truth that can reveal our errors,—*post mortem* investigations. Surely, if a group of certain symptoms attend a disease which, when terminating fatally, shows disorganization in certain viscera, we are not only justifiable in giving to that disorganization a specific name in our scientific classification and categories, but in considering the symptoms of no other importance than as corroborative of those facts that morbid anatomy daily brings to light.

It is generally admitted that most nosologies are imperfect, and may occasionally lead the young practitioner into error. This is easily accounted for when we consider the Protean forms that the same disease assumes in different individuals; yet, without this classification, the science of medicine could not be studied. A certain arrangement is necessary to simplify all our pursuits in natural science, and to seek a variety we must know the order and the genus.

Had Hahnemann given a better system of nosology than those we possess, and with his truly praiseworthy zeal and industry enumerated the various symptoms of disease as minutely and as accurately as he has recorded the effects of medicinal substances, his labours might have proved a most valuable addition to our store of knowledge.

Let us now direct our attention to the absurdities to which these opinions have led. Solely attentive to effects, and heedless of the disorganization of various important parts of the human economy which morbid anatomy detects, Hahnemann endeavours to discover the occult causes—the original source—the germ—of the malady, which most likely are beyond the reach of our researches; and he boldly affirms that all chronic diseases spring from syphilis, a disposition to warts and the itch. Now experience has proved that such an assumption is unfounded. The most healthy subjects, those who attain the finest old age, are more liable to this disgusting affection than the wealthy and cleanly part of the community.

[38] Organon, v.
[39] Ibid. vi.

The Irish and Scotch peasantry from their infancy, and through life, are most subject to psora; and certainly our soldiers and sailors, amongst whom the disease is common, are not more predisposed to chronic diseases than any other classes of society, of course not taking into consideration the effects of unhealthy climates.

Syphilis, it will be readily granted, has a considerable share in producing anomalous *sequelæ*, more especially when in combination with mercury. Warts, except of a syphilitic character, were never known to germinate diseases; indeed, they affect the most healthy and robust individuals. Yet to these three miasmatic causes does Hahnemann attribute nearly every disease that was ever known to afflict mankind; while he passes over in silence the predisposition to scrofula, gout, rheumatism, to which we can unfortunately trace with too much certainty the source of much human misery.

That the itch is a disease of great antiquity is a matter of doubt. It has been maintained that it is the same eruptive disorder described by Celsus under the appellation of *scabies*; yet this writer does not allude to its contagious nature, and moreover says, that in some cases it disappears completely, whereas in others it is renewed at certain periods of the year.

Celsus, moreover, includes other forms of pustular eruptions among the different species of scabies, not sufficiently distinguishing them from each other. The character of his scabies is more analogous to the lichen agrius of Willan.

Nor did the ancients consider their *psora* as our itch. It appears to have been the scaly tetter, which they sometimes denominated *psoriasis*, at others *lepra*, a synonymous affection; but neither pustular nor vesicular. Leprosy, indeed, is a malady totally distinct from the itch in all its characters. Hahnemann asserts that the species of leprosy that afflicted the Jews, and which is described by their legislator in the 13th chapter of Leviticus, was the itch; but any one who will peruse this description will perceive that it does not bear the slightest resemblance to that disorder. It appears, on the contrary, to have been that kind of leprosy called *leucé* by the ancients. Nor was leprosy constantly attended with itching, one of the chief characteristics of the malady, and from which sensation it derives its very name. Hippocrates mentions a leprosy that usually occasioned a prurience before rain. There are no diseases in the classification of which more obscurity exists than in cutaneous affections; and Hahnemann's ideas would tend to increase this confusion, since he tells us that he considers the *frambœsia* of America, the *sibbens* of Norway, the *pellagra* of Lombardy, the *plica* of Poland, the *pseudo-syphilis* of the English, and the *asthenia Virginiensis* of Virginia, complications of his three miasmatic principles; and he further informs us, no doubt on the faith of some idle tradition, that *psora* lost its external deformity on the return of the Crusaders, who brought from the Holy Land the use of linen shirts, a cleanly and salutary precaution that eradicated the disease at a period when France had no less than two thousand hospitals for the reception of *itch* patients,—a plain proof that he confounds leprosy with itch, since the hospitals he alludes to were distinctly considered leper-houses.

It is certainly true that there does exist in our system a constant predisposition to eruptive affections of some kind or other. We are born heirs to certain exanthematic affections, such as the measles and smallpox; and it would be as difficult to find a being morally immaculate as an individual free from speck or blemish. Many of these eruptions are considered of a critical and salutary nature; and the ancients fancied that nature relieved herself by throwing upon the surface some "peccant humours." Hence their dread of the retrocession of any of these "breakings out;" and there is no doubt but that accidents frequently followed their sudden disappearance, in the same manner as drying up an issue or a blister established for some time, and become habitual, may occasion internal mischief; but to maintain that all

chronic diseases arise from three eruptive principles is a most gratuitous and untenable assertion.

Enthusiastically anxious to support his doctrines, Hahnemann is frequently led into erroneous assertions. Thus he tells us that life will suddenly cease if a little water, or the mildest liquid, is injected into a vein; whereas experience has proved, in the treatment of cholera, and various other instances, that the most stimulating solutions may be thus introduced, not only with impunity, but with salutary results.

It is needless to enter more deeply into the ungracious business of pointing out errors, many of which were evident to Hahnemann himself; since, not only in the several editions of his Organon, but in various paragraphs in the same volume, he contradicts himself.

A much more gratifying and important task is now undertaken, to prove, by the evidence of facts, supported by practical reasoning, that the art of healing is more indebted to the homœopathic doctrines than to any system that has hitherto been delivered in our schools.

That the all-bountiful Creator, in permitting, for purposes unknown to us, mankind to be visited by so many scourges, has also scattered around us means to counteract these evils, cannot be a matter of doubt. Instinct leads animals to find out these salutary agents, and various specifics have been discovered by man. The rudest savage is in possession of curative substances unknown to civilized man, and performs cures where learning and experience have proved of no avail.

To extend the limits of specifics, must therefore be considered a most desirable step towards adding to our means of relieving disease; and in this pursuit it is impossible to bestow too much praise on the homœopathic observer. Enthusiasm—predilection to a favourite but persecuted system—may induce an ardent proselyte not only to deceive others, but unwittingly to deceive himself. It is therefore not only possible, but probable, that in the experimental investigations of the effects of medicine, Fancy, in her multifarious colours, may have depicted, with apparent fidelity, a state of body and mind that only existed in an excited imagination; but when we behold various individuals, distant from each other, and totally unconnected, observing similar results from the exhibition of various medicinal substances, we have no right to call their assertions into doubt. These assertions, moreover, are not laid down dogmatically, but are earnestly recommended to be submitted to the test of experiment. For instance, the homœopathist has found out that certain substances, by diminishing the energy of the heart and arteries, subdue inflammatory action as effectually as venesection. This is a fact daily witnessed, and of which any practitioner may convince himself. It is not asserted, that in cases of sudden determination of blood, which require immediate revulsion and abstraction of the vital fluid, homœopathic remedies will be found possessed of sufficient activity to afford prompt relief; but experience has fully proved that in cases which can admit of a few hours' delay, these medicines very frequently supersede the necessity of debilitating the patient by a copious loss of blood.

Dr. Paris, in his admirable work on Materia Medica, has justly observed, "that observation or experiment upon the effects of medicine is liable to a thousand fallacies, unless it be carefully repeated under the various circumstances of *health* and *disease*, in different climates, and on different constitutions." This has been the main object of the homœopathist; and a further quotation from the above distinguished writer will illustrate the importance of their labours. "It is impossible to cast our eyes over such multiplied groups (of medicinal substances) without being forcibly struck with the palpable absurdity of some, the disgusting and loathsome nature of others, the total want of activity in many, and the uncertain and precarious reputation of *all*, without feeling an eager curiosity to inquire, from the

combination of what causes it can have happened that substances at one period in the highest esteem, and of generally acknowledged utility, have fallen into total neglect and disrepute. That such fluctuation in opinion and versatility in practice should have produced, even in the most candid and learned observer, an unfavourable impression with regard to the general efficacy of medicines can hardly excite our astonishment, much less our indignation; nor can we be surprised to find that another portion of mankind has at once arraigned physic as a fallacious art, or derided it as a composition of error and fraud. A late foreign writer, impressed with this sentiment, has given the following *flattering* definition of our profession: *Physic is the art of amusing the patient, while Nature cures his disease*."

With such a lamentable view of the practice of medicine, can we be too thankful to those observers who strenuously endeavour to rescue it from the dark trammels in which prejudice and interested motives have bound it? In no country more than in Great Britain is such an investigation desirable. We have become proverbial from our incessant abuse of a farrago of medicinal substances; and what is usually termed an *elegant prescription* signifies an amalgam of various drugs and preparations, which most probably, by their affinities, neutralize the expected effects of each other; for, however great and flattering may have been the discoveries of modern chemistry, many of these affinities are unknown to us. Surely when our labours cannot detect any difference in the component parts of the purest Alpine atmosphere and the deleterious air of a loathsome dungeon, we cannot expect to form a correct idea of pharmaceutic combinations.

The mere hopes of being able to relieve society from the curse of constant drugging, should lead us to hail with gratitude the homœopathist's investigations. That many physicians, but especially apothecaries, who live by overwhelming their patients with useless and too frequently pernicious medicines, will warmly, nay furiously inveigh against any innovation of the kind, must be expected as the natural result of interested apprehension; and any man who aims at simplicity in practice will be denounced as guilty of medical heresy. Have we not seen inoculation and vaccination branded with the most opprobrious epithets, merely because their introduction tended to diminish professional lucre?

In these remarks upon medicinal combinations, it is not meant to infer, that, because they are chemically incompatible, they are ineffectual,—experience has proved the contrary; but no one will contend that, if we can attain the same beneficial results from a single ingredient, administered in small quantities and at distant periods, as from the exhibition of repeated and nauseous doses of pills, powders, draughts, potions, &c. which hang over the bed of sickness, nay, of slight derangements, like the sword of Damocles, we have not effected a most salutary reform in the practice of physic. It is related of one of these ingenious and industrious practitioners, that, having seen a prescription, that only contained half a dozen medicines, he exclaimed, "What! nothing more?" To which the prescriber replied, "If you choose, sir, we'll step over to the apothecary, and see what else he has in his shop."

Specifics may be divided into two classes; the one producing a peculiar effect upon particular organs, the other producing general results. Thus, the action of cantharides and digitalis on the urinary system, of emetics on the stomach, of certain purgatives on the small intestines, and of others on the large ones, are generally known; whereas the action of mercury and opium is still a matter of controversy. A study of these effects constitutes the chief object of the homœopathist; and, having determined their peculiar action, these medicinal agents are given singly, and, as we have already observed, in the most minute doses.

It is this division into infinite fractions that has drawn upon the homœopathic practice the denunciation of the allopathic physicians, as it is considered utterly impossible that such imponderable particles can produce any beneficial or prejudicial effect; and the Academy of

Medicine of Paris, when officially condemning the doctrine, asserts, in support of this argument, that great danger arises from it "in frequent and serious cases of disease, where the physician may do as much injury, and cause no less mischief, by ineffectual means as by those which are prejudicial."

This is perhaps one of the most important points of the homœopathic doctrine. If these fractional doses are inert, and yet the disease is cured, then must the successful treatment be solely ascribed to the dietetic regimen and the efforts of nature. However, experience has afforded abundant proofs that these infinite atoms do produce positive and evident effects. What appears to our feeble organs an atomic fraction may produce phenomena on the organism which we cannot comprehend, but should not therefore be denied. Let one grain of iodine be dissolved in one thousand five hundred and sixty grains of water, the solution will be limpid; let two grains of starch be dissolved in two ounces of water and added to the first solution, and the liquor will forthwith assume a blue tint. In this experiment the grain of iodine has been divided into 1⁄15360. Dissolve the four-hundredth part of one grain of arsenic in four hundred thousand parts of water, and the hydric-sulphite will bring it into evidence. Let a five-thousandth part of arseniate of ammonia be dissolved in five hundred thousand parts of water, and the addition of the smallest proportion of nitrate of silver will obtain a yellow precipitate. Numerous experiments of a similar nature may be daily resorted to, to prove that the most minute particles of two substances possessed of chemical affinities may be brought into action, although diluted *ad infinitum*. But the power that the smallest particle possesses in producing natural phenomena cannot be more evidently proved than by Spallanzani's experiments in fecundation. This physiologist having wrapped up a male frog in oil-silk, fecundation could not take place; but having collected on the point of a camel-hair pencil a particle of the fecundising fluid, he succeeded in vivifying thousands of eggs. Surprised at this result, he dissolved three grains of the secretion in a pound of water, and one globule of the solution was endowed with the same faculty. In this case the globule of water only contained 1⁄2994687500 part of one grain. This curious experiment has been tried with a similar result by Prevost and Dumas. How imponderable and impalpable must be the effluvium which enables the dog to track his master for miles! the particle of atter of roses that perfumes a whole chest of clothes! and what must the power of the aroma be which is preserved for thousands of years in some Egyptian mummies! Would the vulgar believe in the wonders of the solar and gaseous microscopes unless they were exposed to view? In these we behold in amazement myriads of individuals in one drop of fluid, each of them as perfect in organization as the mighty mammoth of old or the sagacious elephant of our days, endowed with distinct habits, destructive and reproductive propensities and faculties.

It has been advanced by the opponents of homœopathy that the insignificant dose of three or four medicinal globules cannot possess any power, since one might swallow a thousand of them with impunity. To this it is answered, that it is only under certain morbid conditions that these medicines act by their homœopathic affinities. Moreover, it is well known that small doses of medicinal substances will frequently produce more powerful effects than larger quantities. Tartar-emetic, sugar of lead, calomel, afford daily instances of this fact; and it is also admitted that many substances act differently upon the healthy or the sick. An individual in health can take any food without apprehension; but when his functions are deranged, the slightest imprudence in regimen may lead to serious consequences. There are primordial and inscrutable peculiarities in our constitution that cannot be accounted for; and the medicine which relieves one patient will aggravate the sufferings of others. The exhalations of the American *rhus* are deadly to some persons, but innocuous to others; and many poisons which cause instantaneous death to some animals may be given with safety to others. Whence has arisen the controversy regarding damp sheets, which many maintain are not dangerous,

simply from the fact that a healthy person with a vigorous circulation may sleep in them with impunity, when a feeble and languid subject will be exposed to some dangerous determination of blood?

A learned writer already quoted thus expresses himself on this matter:[40] "The virtues of medicines cannot be fairly nor beneficially ascertained by trying their effects on sound subjects, because the peculiar morbid condition which they are calculated to remove does not exist." It may be said that this observation militates against the homœopathic experiments, and to a certain extent it evidently does; but it cannot be inferred that because a medicinal substance will occasionally act differently in health and in disease, that it may not frequently operate in a similar manner when the morbid condition does prevail, since it is generally admitted that medicines act in a relative manner according to the state of the system. Hence classifications of medicines are too frequently erroneous and imperfect. The doses of medicines determine their effects. Linnæus says, "Medicines differ from poisons, not in their nature, but in their dose;" and Pliny tells its aphoristically, "*Ubi virus, ibi virtus*." According to their doses, medicines will produce a general or a local effect; and Dr. Paris, whom I feel much gratification in quoting, lays down as a rule that "substances perfectly inert and useless in one dose may prove in another active and valuable." It would be foreign to my purpose to enter more fully into this most important subject; but the cases which shall be adduced will be deemed sufficient to convince the most incredulous, of the power of homœopathic doses.

Those who have denied this property have boldly attributed homœopathic cures to dietetic means. Admitting this statement by way of argument, surely, if any observer, by ascertaining the peculiar action of our ingesta, can so regulate the regimen as to produce salutary effects without the aid of medicine, mankind would be most essentially benefited. How many persons do we not daily meet with, who have never taken any medicine since their childhood, when maternal care strove to destroy their digestive organs with apothecary's *stuff*, and who regulate their functions by mere attention to their mode of living. I know one gentleman, a physician, who relieves constipation by green chilies; another, with cold milk; a third, with warm milk: in some habits spinach and sorrel will act as a powerful and safe aperient; in others, cheese, or a hard egg, will operate in a contrary way. Fermented and spirituous liquors all possess specific properties. Some gouty persons cannot drink Claret without bringing on a paroxysm, and others dread a glass of Champagne or Burgundy. Nay, different wines have been known to bring on arthritic attacks in particular parts; and I have known Champagne to produce gout in the wrist, and Burgundy in the knee, in subjects who under other circumstances never experienced the disorder in those articulations. Our peculiar aversion, nay, our dread, of various alimentary substances are well known. The odour of cheese, of strawberries, have occasioned fainting and convulsions; and in certain constitutions, several articles of diet bring on indigestion. In short, the study of our ingesta is one of the greatest importance; and here again the homœopathist is entitled to our best thanks.

This investigation will moreover prompt physicians to be more attentive in inquiring into the various effects of alimentary and medicinal substances on their patients. Instead of hastily drawing out routine prescriptions for such and such a disorder, they will accurately ascertain the physical and moral condition of the subject, taking into due consideration previous habits, predispositions, and pursuits in life. Indeed, it would be desirable that practitioners followed the example of army medical men, who keep an exact register of every individual they attend, and in which is diligently recorded every circumstance connected with the disease and its treatment.

[40] Sir G. Blane.

Moral influence has also been called into aid in opposition to this practice, and cures have been attributed to the mere power of fancy and credulity. We have certainly known superstition and mental imbecility to be productive both of good and evil,—to have created some maladies, and cured others; but homœopathy has succeeded when the patient was unaware of the treatment to which he was submitted. But, conceding the point, and admitting that inert substances, such as starch, (and this experiment was resorted to in Paris,) may have obtained singular beneficial results,—the results of a weak imagination, this circumstance alone would be illustrative of the power of moral agency; and who would not gladly wish for a mental relief in lieu of a nauseating and injurious course of medicine?

Others will exclaim, although the homœopathist disavows the *vis medicatrix naturæ*, that he solely succeeds by leaving the malady to the salutary efforts of the constitution. Here again we must admit, that, were we to leave many diseases to run their course, we might be more successful in obtaining a cure than by a rash and detrimental interference, founded on the principle that a physician "must order something."

But the facts I am about to record,—facts which induced me, from having been one of the warmest opponents of this system, to investigate carefully and dispassionately its practical points,—will effectually contradict all these assertions regarding the inefficacy of the homœopathic doses, the influence of diet, or the agency of the mind; for in the following cases in no one instance could such influences be brought into action. They were (with scarcely any exception) experiments made without the patient's knowledge, and where no time was allowed for any particular regimen. They may, moreover, be conscientiously relied upon, since they were made with a view to prove the fallacy of the homœopathic practice. Their result, as may be perceived by the foregoing observations, by no means rendered me a convert to the absurdities of the doctrine, but fully convinced me by the most incontestable facts that the introduction of fractional doses will soon banish the farrago of nostrums that are now exhibited to the manifest prejudice both of the health and the purse of the sufferer.

CASE I.

A servant-maid received a blow of a stone upon the head. Severe headache, with dizziness and dimness of sight, followed. Various means were resorted to; but general blood-letting could alone relieve the distressing symptoms, local bleeding not having been found of any avail. The relief, however, was not of long duration, and the distressing accidents recurred periodically, when abstraction of blood became indispensable. Reduced by these frequent evacuations, I was resolved to try the boasted "bleeding globules" of the homœopathist, when, to my great surprise, I obtained the same mitigation of symptoms which the loss of from twelve to sixteen ounces of blood had previously accomplished. Since the first experiment no venesection became necessary, and the returns of the violent headache were invariably relieved by the same means.

CASE II.

An elderly woman was subject to excruciating headache, with an evident determination of blood to the brain. Numerous leeches were constantly applied. The usual remedies indicated in similar affections were resorted to, but only afforded temporary relief. A homœopathic dose of aconite was given, and the relief that followed was beyond all possible expectation.

CASE III.

My much-esteemed friend Dr. Grateloup of Bordeaux was subject to frequent sore-throats, which were only relieved by local blood-letting, cataplasms, &c., but generally lasted several days, during which deglutition became most difficult. I persuaded him to try a dose of the belladonna, neither of us having the slightest confidence in its expected effects. He took the

globules at twelve o'clock, and at five p.m. the tumefaction of the tonsils, with their redness and sensibility, had subsided to such an extent that he was able to partake of some food at dinner. The following morning all the symptoms, excepting a slight swelling, had subsided.

Since this period Dr. G. has repeatedly tried the same preparation in similar cases, and with equal success. In my own practice, I can record seven cases of cynanche tonsillaris which were thus relieved in the course of a few hours.

CASE IV.

H—, a young woman on the establishment of the Countess of —, was suffering under hemiplegia, and it was resolved by Dr. Brulatour and myself to try the effects of nux vomica. At this period the wonders of the homœopathic practice had been extolled to the skies by its advocates, and we were resolved to give one of their supposed powerful preparations a fair trial. The girl was told that the powder she was about to take was simply a dose of calomel; and on calling upon her the following morning we did not expect that the slightest effect could have been obtained by this atomic dose, when, to our utter surprise, the patient told us that she had passed a miserable night, and described to us most minutely all the symptoms that usually follow the exhibition of a large dose of strychnine. It is but fair to mention that the homœopathic treatment did not cure the disease; but the manifest operation of this fractional dose, that could not possibly be denied, is a fact of considerable importance.

CASE V.

Mrs. —— of Brompton, Bow, had laboured under hectic fever for several months, and was so reduced by night perspirations, that she was on the very brink of the grave. Called into consultation, I frankly told her husband that every possible means known in the profession had been most judiciously employed, and that I saw no prospect of obtaining relief. At the same time I mentioned to him that the homœopathic practitioners pretended that they had found the means of relieving these distressing symptoms, which he might submit to an experimental trial if he thought proper. He immediately expressed his wish that it should be adopted. I gave her a homœopathic dose of phosphoric acid and stannum; and, to the surprise of all around her, the night sweats did not break out at their usual hour,—three o'clock in the morning. What renders this case still more interesting is the fact of these perspirations recurring so soon as the action of the medicine ceased; a circumstance so evidently ascertained, that the patient knew the very day when another dose became necessary.

CASE VI.

A daughter of the same lady was subject to deafness, which I attributed to a fulness of blood. This cause I clearly ascertained by the relief afforded by the application of a few leeches behind the ear. I was therefore induced, on a recurrence of the complaint, to endeavour to diminish vascular action by a dose of aconite. The effects were evident in the course of four hours, when the deafness and the other symptoms of local congestion had entirely disappeared.

*****

I could record numerous instances of similar results, but they would of course be foreign to the nature of this work. I trust that the few cases I have related will afford a convincing proof of the injustice, if not the unjustifiable obstinacy, of those practitioners who, refusing to submit the homœopathic practice to a fair trial, condemn it without investigation. That this practice will be adopted by quacks and needy adventurers, there is no doubt; but homœopathy is a science on which numerous voluminous works have been written by enlightened practitioners, whose situation in life placed them far above the necessities of speculation.

Their publications are not sealed volumes, and any medical man can also obtain the preparations they recommend. It is possible, nay, more than probable, that physicians cannot find time to commence a new course of studies, for such this investigation must prove. If this is the case, let them frankly avow their utter ignorance of the doctrine, and not denounce a practice of which they do not possess the slightest knowledge.

Despite the persecution that *Hahnemannism* (as this doctrine is ironically denominated) is at present enduring, every reflecting and unprejudiced person must feel convinced that, although its wild and untenable theories may not overthrow the established systems (if any one system can be called established), yet its study and application bid fair to operate an important revolution in medicine. The introduction of infinite small doses, when compared, at least, with the quantities formerly prescribed, is gradually creeping in. The history of medicine affords abundant proofs of the acrimony, nay, the fury, with which every new doctrine has been impugned and insulted. The same annals will also show that this spirit of intolerance has always been in the *ratio* of the truths that these doctrines tended to bring into light. From the preceding observations, no one can accuse me of having become a blind bigot of homœopathy; but I can only hope that its present vituperators will follow my example, and examine the matter calmly and dispassionately before they proceed to pass a judgment that their vanity may lead them to consider a final sentence.

Doctrine Of Signatures

One of the most absurd medical doctrines that ever prevailed in the dark æras of science was the firm belief that all medicinal substances displayed certain external characters that pointed out their specific virtues. This curious theory may be traced to the Magi and Chaldæans, who pretended that every sublunary body was under a planetary influence. To find the means of concentrating or fixing this stellary emanation became a cabalistic study, called by Paracelsus the "*ars signata*;" and talismans of various kinds were introduced by the professors of sideral science. The word talisman appears to be derived from the Chaldæan and Arabic *tilseman* and *tilsem*, which mean characteristic figures or images.

Paracelsus, Porta, Crollius, and many other philosophers and physicians, cherished this vision, which had been transmitted to them through the dense mists of superstition from more ancient authorities; amongst others, Dioscorides, Ælius, and Pliny.

The *lapis ætites*, or eagle-stone, which was supposed to be found in the nests of this bird, but which, in fact, is nothing more than a variety of iron-ore, was said to prevent abortion if tied to the arm, and to accelerate parturition if affixed to the thigh. This conceit arose from the noise that seemed to arise from the centre of the stone when it was shaken: "Ætites lapis agitatus, sonitum edit, velut ex altero lapide prægnans." From this absurd hypothesis sprung the doctrine; and the very names of plants were supposed to indicate their specific qualities. For instance, the *euphrasia*, or eye-bright, exhibiting a dark spot in its corolla, resembling the pupil of the eye, was considered efficacious in affections of that organ. The blood-stone, the *heliotropum*, from its being marked with red specks, was employed to stop hæmorrhage; and is to this day resorted to in some countries, even in England, to stop a bleeding from the nose.[41] Nettle-tea was prescribed for the eruption called *nettle-rash*. The *semecarpus anacardium*, bearing the form of a heart, was recommended in the diseases of this viscus. The *cassuvium occidentale*, resembling the formation of a kidney, was prescribed in renal complaints; and the pulmonary lichen of the oak, the *sticta pulmonaria*, from its cellular structure, was esteemed a valuable substance in morbid affections of the lungs. Deductions still more absurd, if possible, are recorded: thus saxifrage, and other plants that grow in rocky places, embodied as if it were in calcareous beds, were advised to dissolve the stone; and the *echium*, bearing some faint resemblance to a viper, was deemed infallible in the sting inflicted by this reptile. The divers colours of substances supposed to be medicinal were also another *signature*. Red flowers were given for derangement in the sanguiferous system, and yellow ones for those of the bile. In Crollius's work, entitled "*De Signaturis Plantarum*," many curious observations may be found; and Sennert, Keuch, Dieterich, and other writers displayed great industry in the division of these signatures, which, by the ancients, were considered as something denoting no particular quality, and were then called ἀσημοι χαρακτηροι; or σημαντικοι, when their virtues were evident.

Amongst the various influences and indications that were attributed to colours, black was especially considered as the mark of melancholy. Baptista Porta affirms, that if a "black spot be over the spleen, or in the nails, it signifies much care, grief, contention, and melancholy." Cardan assures us that a little before his son's death he had a black spot, which appeared in one of his nails, and dilated itself as he approached his end.

[41] The celebrated Boyle used to apply to his wrists for the same purpose, the moss that grew from a human skull.

While nature was thus supposed to mark the virtues of her productions on their external configuration, man assumed the same authoritative power, and marked medicines with certain signs or seals. For this purpose, the ancient physicians carried signets or rings, frequently worn upon the thumb, and on which were engraved their own names, sometimes written backwards, or the denominations of the nostrums they vended. On one of these seals we find the word *aromaticu*, from *aromaticum*; on another, *melinu*, abbreviation of *melinum*,—a collyrium prepared with the alum of the island of Melos. A seal of this kind is described by Tôchon d'Annecy, bearing the words *psoricum crocodem*, an inscription that has puzzled medical antiquaries. The word *psoricum* was applied to an eruptive affection of the eye; and Actuarius mentions a *collyrium psoricum* of *Ælius*; while Marcellus Empiricus records the virtues of the *psoricum stratioticum*, which restored sight in twenty days to a patient who had been blind for twelve years; but, when it was applied, it was ineffectual, unless the words "*Te nunc resunco, bregan gresso*," were religiously pronounced. *Crocodem* was also supposed to apply to *crocus* or saffron, or to *crocodes*, a remedy for sore eyes, mentioned by Galen; while some learned men refer the word to the dejections of the crocodile, which were said to possess various virtues. The earth of Lemnos was sealed with the figure of Diana, and to this day the bolar argils, brought from Greece, bear various seals and characters; hence the *bolus Armeniæ*, and *bolus ruber*, are called *terra sigillata*.

The influence of colours was supposed to have been so great, that in our own annals we find John de Gaddesden, mentioned by Chaucer, ordering the son of Edward I., when labouring under the small-pox, to be wrapped up in scarlet; and to the present day, flannel, died nine times blue, is supposed to be most efficacious in glandular swellings. Tourtelle, a French army physician, has made the following singular observation on this subject: "I observed that those soldiers of the Republic who were affected with diseases connected with transpiration were more severely indisposed, and not unfrequently exhibited symptoms of putrescency, when their wet clothes had left a blue tinge on the skin, than when they had been merely wetted by the rain." The explanation of this supposed phenomenon, is simply that those men who had been coloured by their uniforms, had, no doubt, been long wearing them, saturated by incessant rains, whereas the others had merely been exposed to occasional showers. From this observation, I do not pretend to affirm that any deleterious substances in a dye might not occasion a dangerous absorption; but the accidents that may result from such a circumstance could be easily explained without having recourse to any particular influence of colour. The colour of cloth, especially in army clothing, may also materially tend to influence cutaneous transpiration, as some colours are more powerful conductors of heat than others; and it is not impossible that the French soldiers, not belonging to fresh levies, and who had always been clad in white, might have experienced some difference of temperature when marching under intense heat in dark blue and green uniforms.

Some of the terms used by the signature doctrinarians may puzzle the most learned. The Greeks called them σημαντικὰ; and, in addition to the all-powerful *abracadabra*,—an infallible cure of ague, when suspended round the neck,—we find the magic terms of *sator*, *asebo*, *tenet*, *obera*, *rotas*, *abrac*, *khiriori*, *gibel*, engraved upon amulets. For the bite of a mad dog, *pax max*, and *adimax*, were irresistible; and for a fractured arm or a luxation, *araries*, *dandaries*, *denatas*, and *matas*, would have set at defiance the most experienced chirurgeons. I must refer the curious reader on this important subject to the work *De figuris Persarum Talismanicis* of Guffarel, to the *Œdipus* of Kircher, the book of Crollius *De signaturis internis rerum*, and *Isagoge physico-magico-medica* of Elzer.

The church vehemently denounced these abominations; and we find in the council of Laodicea an injunction forbidding the priesthood the study and practice of enchantment,

mathematics, astrology, or the binding of soul by amulets. These incantations were dreaded in every age. Thus Lucan:

Mens, hausti nullâ sanie polluta veneni,
Incantata perit.

Philosophers have justly observed that most of the diseases treated and supposed to have been cured by these mystic means, were of a nervous description, and therefore depending, in a great measure, upon moral influence. Here faith and hope assisted the physicians,—two great auxiliaries in every worldly turmoil and trouble. Therefore do we find most of these cures referred to epilepsy, paralysis, melancholy, hypochondriasis, hysteria, as well as to many periodical affections, the return of which is frequently arrested by mental impressions. A fright has checked the paroxysm of an intermittent fever; and many natural functions are impeded or brought on by a similar agency. The sight of a dentist has been often known to calm an excruciating toothache; and there is no complaint that has been cured by more singular means than this troublesome affection. In 1794, a tract was published in Florence by Dr. Ranieri Gerbi, a professor of mathematics in Pisa, entitled *Storia naturale di un nuovo insetto*, which he called *curculio anti-odontalgicus*, and which, being squeezed between the fingers, imparted to them, for the period of one year, the wonderful power of relieving toothache with the mere touch; and the author asserts that by this simple process he cured four hundred and one cases out of six hundred and twenty-nine. This may be considered a branch of magnetism, and has been treated by Schelhammar, in his book *De Odontalgiá tactu sedandâ*.

This wonderful insect belonged to the *coleoptera*, and was simply the *curculio* and the *coccinella septem-punctata*, well known to entomologists, and which, according to Cipriani Zuccagni, and more particularly Carradori, possessed these singular properties, which, however, subsequent experiments have fully disproved.

While we find some *charms* having sufficient power over our weak imagination to cure diseases, there were others considered sufficiently energetic to occasion death. Sometimes a wax figure was made, supposed to represent the devoted victim, and which was pierced with a pointed instrument, each stab being accompanied by a magic imprecation:

Devovet absentes, simulacraque cerea fingit.

These means the ancients called *carmina, incantationes, devotiones sortiariæ*. It is somewhat strange that this same ceremony of the waxen image to destroy the object of our hate was also employed to obtain love. The figure was on these occasions called by the name of the person, and afterwards placed near the fire, when, as the heat gradually melted it, the obdurate heart of the lover was simultaneously softened. At other times two images were thus exposed to heat, the one of clay, the other of wax; and, while the one melted, the other became more hardened:—a vindictive feeling, to render our own heart insensible, while we mollified that of an ingrate; or perhaps with a view to render that heart inflexible to others, while it propitiated the addresses of the supplicant. Thus Virgil:

Limus ut hic durescit, et hæc ut cera liquescit,
Uno eodemque igni; sic nostro Daphnis amore.
Sparge molam, et fragiles incende bitumine lauros.
Daphnis me malus urit, ego hanc in Daphnide laurum.

The wishes of the ancients for those they loved were sometimes curious, and they often turned round a mystic wheel, praying that the object of their affections might fall down at their door and roll himself in the dirt.

The ancients, who daily witnessed this influence of the imagination in causing and in curing disease, have left us many valuable injunctions on the subject; and Plato thus expresses himself: “The office of the physician extends equally to the purification of mind and body; to neglect the one is to expose the other to evident peril. It is not only the body that by its sound constitution strengthens the soul, but the well-regulated soul, by its authoritative power, maintains the body in perfect health.”

Coffee

It is doubtful to whom we owe the introduction of this article of luxury into Europe. The plant is a native of that part of Arabia called *Yemen*, but we find no mention made of it until the sixteenth century; and it is believed that Leonhart Rauwolf, a German physician, was the first writer who spoke of it, in a work published in 1573. The plant was also described by Prosper Alpinus, in his treatise on Egyptian plants, published in 1591 and 1592. Pietro della Valle wrote from Constantinople in 1615 that he would teach Europe the manner in which the Turks made their *cahué*. This spelling was no doubt incorrect; for, in a pamphlet printed at Oxford in 1659, in Arabic and English, it is written *kauhi*, or *coffee*. Purchas, who was a contemporary of Della Valle, called it *coffa*; and Burton thus speaks of its use: "The Turks have a drink called *coffa*, so named of a berry as black as soot and as bitter, which they sip still of, and sup as warm as they can suffer. They spend much time in their coffa-houses, which are somewhat like our alehouses and taverns, and there they sit chatting and drinking to drive away the time and to be merry together, because they find by experience that kinde of drink so used helpeth digestion and procureth alacrity."

The first coffee-house opened in London was in 1652. A Turkey merchant, of the name of Edwards, having brought with him from the Levant some coffee and a Greek servant, he allowed him to prepare and sell this beverage; when he established a house in St. Michael's Alley, Cornhill, on the spot where the Virginia Coffee-house now stands. Garraway's was the first coffee-house opened after the fire in 1666. It appears, however, that coffee was used in France in 1640; and a sale of it was opened at Marseilles in 1671.

The introduction of this berry was furiously opposed; and it appears that in its native land it was treated with no less severity, since, in an Arabian MS. in the King of France's library, coffee-houses were suppressed in the East. In 1663 appeared a pamphlet against it, entitled "A Cup of Coffee, or Coffee in its Colours." In 1672 the following lines were to be found in another publication, "A Broadside against Coffee, or the Marriage of the Turk:"

Confusion huddles all into one scene,
Like Noah's ark, the clean and the unclean.
For now, alas! the drench has credit got,
And he's no gentleman who drinks it not.

Then came "The Woman's Petition against Coffee," which appeared in 1674, in which we find the following complaint: "It made men as unfruitful as the deserts whence that unhappy berry is said to be brought, so much so, that the offspring of our mighty ancestors would dwindle into a succession of apes and pigmies; and on a domestic message a husband would stop by the way to drink a couple of cups of coffee." It was then sold in convenient pennyworths;—hence coffee-houses where wits, *quidnuncs*, and idlers resorted, were called "penny universities."

While it had adversaries, coffee was not left without eloquent advocates. Sir Henry Blount, in his *Organon Salutis*, 1659, thus speaks of it: "This coffa-drink has caused a great sobriety among all nations. Formerly apprentices, clerks, &c. used to take their morning-draughts in ale, beer, or wine, which often made them unfit for business. Now they play the good-fellows in this wakeful and civil drink. The worthy gentleman, Sir James Muddiford, who introduced the practice hereof in London, deserves much respect of the whole nation."

It appears, however, that the jealousy with which the use of coffee was viewed, even by the government, arose more from the nature of the conversations that took place in coffee-houses during moments of public excitement, than from the apprehension of any injury that its consumption might have caused to the public health. In the reign of Charles II. coffee-houses were shut up by a proclamation, issued in 1675, as the retailing of coffee "nourished sedition, spread lies, *scandalized great men*, and might therefore be considered a *common nuisance*." As a *nuisance*, its abolition was considered as not being an infringement of the constitution! Notwithstanding this Machiavellian torturing of the letter to serve the spirit, this arbitrary act occasioned loud and violent discontent; and permission was given to reopen coffee-houses, on condition that the landlords should not allow any scandalous papers containing scandalous reports against the government or *great men* to be read on their premises!

The use, or rather the abuse, of coffee is said to produce feverish heat, anxiety, palpitations, trembling, weakness of sight, and predisposition to apoplexy. Its effects in checking somnolence have been long known. However, the action of this berry differs according to its being roasted or raw. An infusion of torrefied coffee assists digestion, and frequently removes headaches resulting from derangement in the digestive functions. It also neutralizes the effect of narcotics, especially opium, and this power is increased by the addition of lemon juice. A similar mixture has been known to cure obstinate agues. Musgrave and Percival recommended its use in asthma: indeed, most persons who labour under this distressing malady seem to derive relief from its use.

Taking into consideration all that has been advanced in regard to the inconveniences that may attend the use of coffee and tea, they must be considered as overruled by the moral results that have arisen from the introduction of these beverages; and a late writer has observed, that it has "led to the most wonderful change that ever took place in the diet of civilized nations,—a change highly important both in a moral and physical point of view. These beverages have the admirable advantage of affording stimulus without producing intoxication." Raynal observes, that the use of tea has contributed more to the sobriety of the Chinese than the severest laws, the most eloquent discourses, or the best treatises on morality.

The quality and effects of coffee differ according to the manner in which it is roasted. Bernier states that when he was at Cairo there were only two persons in that great city who knew how to prepare it to perfection. If it be underdone, its virtues will not be imparted, and its infusion will load and oppress the stomach; if it be overdone, its properties will be destroyed, and it will heat the body, and act as an astringent.

The best coffee is the *Mocha*, or that which is commonly called Turkey coffee. It should be chosen of a greenish, light, olive hue; the berries of a middling size, clean, and plump.

The bad effects of coffee may in all likelihood be attributed both to its powerful and stimulating aroma and to its pungent acidity. According to Cadet, this acid is the *gallic*; while Grindel considers it the *kinic*, and Pfaff terms it the *caffeic* acid. When strongly heated, it yields a *pyro-caffeic* acid, from which may be obtained a most pungent vinegar, that has recently been thrown into trade, but, I believe, with little or no success.

The principle of coffee is the *caffein*, discovered by Robiquet, in 1821; and it is to this active principle that its beneficial or baneful effects can be attributed. Recent experiments tend to show that it is possessed of powerful febrifuge virtues. To obtain this result, raw coffee has been used. It gives to water a greenish hue, and, thus saturated, it has been called the *citrine coffee*. Grindel has used this preparation in the treatment of intermittent fevers in the Russian hospital of Dorpat; he also administered the raw coffee in powder. In eighty cases of this fever scarcely any resisted the power of this medicine, given either in decoction, powder, or

extract; but he seems to consider the latter form the most effectual. From this physician's observations, coffee may become a valuable addition to our *materia medica*; and the homœopathic practitioners maintain that they have employed it with great success in various maladies.

Aqua Tophania

It was for a long time supposed that there actually did exist in Italy a secret poison, the effects of which were slow, and even unheeded, until a lingering malady had consumed the sufferer. No suspicions were excited; or, had they led to any *post mortem* examination, no trace of the terrific preparation's effects could have been detected.

It was towards the year 1659, during the pontificate of Alexander VII., that the existence of this baneful preparation was suspected. Many young women had been left widows; and many younger husbands, who might have ceased to please their wives, had died away. A certain society of young ladies had been observed to meet under the auspices of an elderly matron of rather a questionable character, who had been known in her horoscopic predictions to announce deaths that had but too truly taken place about the period she prophesied. One of the society, it appears, *peached* against her companions, who were all apprehended and put to the torture; and the lady patroness, whose name was Spara, was executed with four of her pupils. This Spara was a Sicilian, who had obtained the fatal secret from Tofania at Naples. Hence the composition was named *aqua Tofania*, *aqua della Toffana*, and *acquetta di Napoli*. These deadly drops had been charitably distributed by Tofania to various uncomfortable ladies who wished to get rid of their lords, and were contained in small phials, bearing the inscription of "*Manna de San Nicolas de Bari*." This hag had lived to an old age, but was at length dragged from a monastery, in which she had sought a sanctuary, tortured, and duly strangled, after a confession of her crimes.

Garelli, physician to Charles VI., thus wrote to Hoffmann on the subject: "Your elegant dissertation on the popular errors respecting poisons brought to my recollection a certain slow poison which that infamous poisoner, still alive in prison at Naples, employed to the destruction of upwards of six hundred persons. It was nothing else than crystallized arsenic dissolved in a large quantity of water by decoction, with the addition, but for what purpose I know not, of the herb *cymbalaria* (*antirrhinum*). This was communicated to me by his Imperial Majesty himself, and confirmed by the confession of the criminal in the judicial procedure."

Abbé Gagliani, however, gives a different account of the secret Neapolitan drug. "At Naples," he says, "the mixture of opium and cantharides is known to be a slow poison; the surest of all, and the most infallible, as one cannot mistrust it. At first, it is given in small doses, that its effects may be insensible. In Italy it is called *aqua di Tufinia*: no one can avoid its attacks, since the liquid is as limpid as water, and cannot be suspected. Most of the ladies of Naples have some of it lying carelessly on their toilet-tables with smelling-bottles; but they always can know the fatal phial when they need its contents." A curious observer has remarked on these two preparations, that the mixture of Garelli was, perhaps, intended for husbands, while that of Gagliani was for the use of lovers.

This remark appears judicious, since the potion described by the Abbé was evidently intended as an amorous philter. Under that head I have related many curious circumstances. There is no doubt but that these preparations often contained deadly drugs, the perilous qualities of which were most probably unknown to those who made them up without any sinister motives. Plutarch and Cornelius Nepos inform us that Lucullus, the Roman General, lost his reason, and subsequently his life, from having taken one of these mixtures; and Caius Caligula was driven into a fit of insanity by a philter given to him by his wife Cæsonia, as described by Lucretius:

Tamen hoc tolerabile, si non
Et furere incipias, ut avunculus ille Neronis
Cui totam tremuli frontem Cæsonia pulli
Infudit.

Virgil also alludes to the powerful and baneful nature of the plants employed in magical incantations:

Has herbas, atque hæc Ponto mihi lecta venena
Ipse dedit Mœris; nascuntur plurima Ponto.
His ego sæpe lupum fieri, et se condere silvis
Mœrin, sæpe animas imis excire sepulchris,
Atque satas alio vidi traducere messes.

Female poisoners of a somewhat similar description were known amongst the ancients. Nero, when he resolved to destroy Britannicus, sent for one of those murderers, named Locusta, who, convicted of several assassinations, was pardoned, but kept by the emperor to execute his secret purposes. He wished that on this occasion the poison should produce immediate death. Locusta prepared a drug that destroyed a goat in a few minutes. This was not sufficiently active. The next preparation killed a hog in a few seconds. It was approved of. The ill-fated youth was seated at the imperial festive board—the potion poured into his goblet—and he died in epileptic convulsions. Nero, undisturbed, requested his guests to remain quiet—the youth he said was subject to similar attacks, which in general were but of short duration; but soon the black, the livid hue of the face betrayed the poison, which the imperial assassin sought to conceal, by ordering this tell-tale sign to be concealed with paint. Sir Henry Halford seems to think that Juvenal alludes to this circumstance in his first Satire.

Instituit rudes melior Locusta propinquas
Per famam et populum *nigros* effere maritos.

The poisons used by the ancients appear to have been of various kinds; some more slow in their action than others, to suit, most probably, the views of their employers. Socrates, it is supposed, drank the *cicuta*, the action of which must have been very slow and weak, since his gaoler informed him that if he could exert himself in a warm debate, the effects might be arrested. The philosopher, however, remained tranquil. He shortly after experienced a numbness in the legs, gradually became insensible, and expired in convulsions.

These secret poisons were conveyed in the most stealthy manner. Hence it is related, that the poison prepared by Antipater, to destroy Alexander, had been conveyed in a mule's hoof, being of so corroding a nature, that no metallic vessel could contain it. This absurd story was credited by Plutarch and Quintus Curtius, whereas it appears more probable that poison was carried in an *onyx*, of which trinkets to contain precious ointments were frequently made, or under a human nail, also called *Unguis*, or ονυξ. The latter case was the opinion of Dr. Heberden.

Sir Henry Halford, in his learned and interesting essay on the deaths of illustrious persons of antiquity, has clearly proved that Alexander was not poisoned, but died of a lingering fever of a remittent type; a disease that was most probably endemic in the marshes surrounding the city of Babylon.

Many absurd ideas regarding venenose substances prevailed in ancient days as well as in modern times. Hannibal and Themistocles were said to have been poisoned with bullocks' blood.

Eastern nations fancy that a fascinating power is the gift of virtue. In the *Hitapadesa* of *Vishnusannan* we find the following aphorism: “As a charmer draweth a serpent from his hole, so a good wife, taking her husband from a place of torture, enjoyeth happiness with him.” Possibly some receipt of this description may be found in the archives of Doctors’ Commons.

Plica Polonica And Human Hair

Hair may be considered a vegetation from the surface of the body. In a state of health, hairs are insensible, and it is more than probable that they possess no nerves, and that the circulation is carried on in the same manner as in plants. In the bulb or root of the hair, however, the vessels that promote this circulation are numerous, and there we may trace the diseases that affect this beauteous ornament of mankind, more especially in the Caucasian race. Long hair, of course, requires more nutriment than scanty locks, and some physicians have been of opinion that their great length debilitates. Dr. Parr affirms that he has observed symptoms of plethoric congestion to arise after long hair had been suddenly cut off.

Vauquelin has made curious experiments on this substance. A solution of black hair has deposited a black matter containing bitumen, sulphur, and iron; and alcohol extracted from the same coloured hair a whitish and a grayish-green oil. Red hair yielded whitish matter and a blood-red oil. White hair contained phosphate of magnesia, affording a proof of the disposition towards the formation of calcareous matter in old age. When hair becomes suddenly white under the shock of a severe moral impression, Vauquelin is of opinion that this phenomenon is to be attributed to the sudden extrication of some acid, as the oxymuriatic acid is found to whiten black hair. Parr thinks that this accident may be owing to an absorption of the oil of the hair by its sulphur, as in the operation of whitening woollen cloths.

The *plica* is a curious and disgusting malady, that has been considered a disease of the hair, which, according to vulgar report, secreted and shed blood. This affection is common and endemic in Poland; hence the term *Polonica* that has been given to it. The invasion of this pestilence has been traced to the irruption of the Moguls, from 1241 to 1287, chiefly under the command of Cayuk, grandson of Yenghiz. The most absurd tales were then related of the manner in which this dreaded infection was propagated. Spondanus affirms that it arose from the waters having been poisoned by venomous plants. Pistorius and Pauli relate that these waters were corrupted by the great number of human hearts that the Moguls cast in rivers and in wells. This supposition arose from the unheard-of acts of barbarity perpetrated by the ferocious invaders on the wretched population of Prussia, Poland, Hungary, and Transylvania. Their refined cruelty has been depicted by Gebhardi, in his history of Hungary, in the most glowing language.

Other historians assert that the plica originated in the East; such is the opinion of Stabel, Spreugel, and other writers. Rodrigo de Fonseca relates that the Indians, after drinking certain waters, were attacked with a disease in which the hair became agglomerated and matted in the most disgusting manner. Erndtel attributes the malady in Poland to the gluttonous consumption of horseflesh. However this may be, Poland has been ever considered the country most exposed to this visitation.

This disease affords a convincing proof of the vascularity of the hair, since it tumefies, augments in capacity so as to allow an evident circulation of blood, as the hairs will often bleed when divided with the scissors. Dr. Kerckhoffs regards the malady as the mere result of the custom among the filthy Poles of letting the hair grow to an immense length, of never combing or cleaning it, and always keeping the head covered with a woollen or leathern cap. Hence he observes that the rich are generally exempt from the affection which particularly prevails amongst the Jews. With this view of the disorder, he thinks that cleanliness and the excision of the matted hair are sufficient to effect a cure.

It is, however, more than probable that other causes occasion this horrible disease; and there is but little doubt that the system is affected by a particular virus. In many instances affections of the head complicate it; although it is likely that they may result from the constant irritation of the scalp, that sympathizes so powerfully with the membranes of the brain.

The different names given to the *plica* indicate more or less the ideas that prevail regarding its nature. The Poles call it *gwozdiec* or *gwodziec*, which signifies a *nail* that splits the wood into which it is driven. In the district of the Roxolans it is termed *koltun*, *a stake*. In Germany superstitious fancies have also given it various curious denominations. It is called *alpzopf* and *schraitelzopf*, as being the result of the *malefices* of vampires and incubi. By some it is asserted that the Moravians, natural enemies of the Poles, not having been able to conquer them by their arms, had recourse to magical art to inflict this scourge: hence they term it *mahrenflechten*, *mahrenwichtung*. To this day it is called *hexenzopf* and *bichteln*, or unbaptized, alluding, no doubt, to the Jews, who were accused of having introduced the disorder in the deadly hate they bore the Christians; hence was it also known by the name of *Judenzopf* (*Coma Judæorum*).

Amongst the whimsical ideas to which the *plica* has given rise, the most extraordinary effort of the imagination was that of Hercules Saxoniæ. He maintained that the fabulous description of the heads of the Gorgons and the Furies was derived from this affection: "*Caput Gorgoneum, caput Furiarum, vera humana capita fuisse, et fictitiis poetarum occasionem præbuisse*."

There are instances on record of infants being born with this loathsome malady. Davidson attributes this circumstance to the mental impressions of the mother: "*Si ita matris ac nutricis superstitioni placere libuerit*." The length of the matted hair in plica is frequently considerable: Bachstrom relates the case of a Prussian woman whose hair extended beyond the sides of her bed, and she was in the habit of turning it over to make a quilt of it; Caligerus saw a man in Copenhagen whose clotted locks were six feet three inches in length; and Rzaczyinski gives an account of a woman whose hair measured six ells. In the museum of Dr. Meckel, at Halle, is to be seen a specimen of the disease eight feet long. The beard and the hair of other parts of the body are equally liable to these attacks; while the affection has been observed in horses, dogs, and other animals. A curious case is related on this subject by Dr. Schlegel: A drunken coachman was carried away by a pair of spirited young horses, who precipitated themselves, with the fragments of the broken carriage, into the Moskwa. One of the animals was drowned; but the other contrived to extricate itself, and swam ashore. It continued sick for a considerable time, and, on its convalescence the plica broke out in its entire coat.

The assertion that the hairs become endowed with sensibility in this disorder is unfounded. The pain is experienced in the root or bulb; thus a painful sensation is occasionally felt when a lock of hair has been turned back under the nightcap. There is little doubt that the plica is to be attributed to a specific virus, which pervades the whole system unless successfully treated. The most serious accidents have arisen from neglecting it; and Starnigelio gives the following horrible account of its ravages. "Magno omnium malo magnoque cruciatu divagatur: infringit ossa, laxat artus, vertebras eorum infestat. Membra conglobat et retorquet; gibbos efficit, pediculos fundit, caputque aliis atque aliis succedentibus ita opplet, ut nequaquam purgari possit. Si cirri raduntur, humor ille et virus in corpus relabitur, et affectos, ut supra scriptum est, torquet; caput, manus, pedes, omnes artus, omnes juncturas, omnes corporis partes exagitat."

Amongst the various specifics recommended for the cure of plica, is the *lycopodium*, hence called *herba plicaria*; the *vinca*, or *perventia*. The δαφνοειδες and καμαι δαφνη of the Greeks was also extolled, possibly from its supposed powers in cases of incantation, whence Apuleius calls it "*victoria, quod vinceret pervinceretque injuriam temporis*." This is the plant for which Rousseau felt such a predilection, that in after life he never beheld it without experiencing a delightful recollection of the pleasures of his boyhood. Its flowers are considered the symbol of virginity, and in Flanders are still called *Maegden-palm*. In Etruria maidens are crowned with a wreath of it on their funerals.

The decay and fall of the hair is an accident of frequent occurrence. This unpleasant drawback on vanity has been termed *alopecia*, from the Greek word ἀλωπὴξ, *vulpes*, a *fox*; this animal and the wolf being said to lose their hair and become bald sooner than any other quadruped. The Arabian writers were impressed with the same belief, and named the affection *daustaleb*, literally the *wolf disease*. Baldness is more frequent in males than in females; and it has been observed, that emasculated subjects are exempt from its visitation.

Amongst the singular anomalies that characterize our ideas, the respect in which hair (naturally unclean unless most carefully attended to) was held at various periods is as singular as the fond devotion with which it is treasured when having belonged to the objects of our affections. In ancient Rome neglected hair was the badge of bondage, and slaves were distinguished by the *capillum passum, fluxum, et intonsum*. Free men, on the contrary, took great care of it; and the term *cæsaries* is said to be derived from the frequency of its cutting, while *coma* alluded to the great attention paid to its ornamental appearance. The Gauls wore long hair, and their country was thence called *Gallia Comata*. The German chiefs, deprived of their rank and power, were shorn of their locks as a mark of degradation and loss of strength. Shaving the heads of criminals is to this day considered ignominious.

Hair, most unquestionably, constitutes the proudest ornament of female beauty; and clustering locks, compared both by the ancients and the Oriental poets to the growth of grapes, has ever been considered a *desideratum* at the female toilet, artificial means to curl it having been resorted to from time immemorial, even by men. We find Virgil speaking contemptuously of Æneas for the care he took of his locks:

Vibratos calido ferro, myrrhaque madentes.

The Romans called a man who thus frizzled himself, *homo calamistratus*.

Crisp and curled ringlets were ever admired, and Petrarch thus describes them:

Aura che quelle chiome bionde e *crespe*
Circondi, e movi, e se mossa de loro
Soave mente, e spargi quel dolce oro
E poi'l raccogli, e'n bei nodi *l'increspe*.

Apuleius maintains, that if Venus were bald, though circled by the graces and the loves, she would not please even swarthy Vulcan. Petronius, in his description of Circe, describes her tresses naturally curling, and falling negligently over her shoulders, which they entirely covered. Apuleius praises her trailing locks, thick and long, and insensibly curling, dispersed over her divine neck, softly undulating with carelessness. Ovid notices those beauties who platted their braided hair like spiral shells. Petronius, to give an idea of a perfect beauty, says, that her forehead was small, and showed the roots of her hair raised upwards. This fashion, adopted by the Chinese, was not long ago a modish *coëffure* in France. Lucian, however, makes Thais say of a rival courtezan, "Who can praise her person, unless he is blind? Does she not draw up her scanty hair on her large forehead?"

The ancients also perfumed their hair, especially on festivals, with various ointments, composed of the spikenard and different balsams. They also occasionally painted it with a bright yellow. Unhappy must have been the poor slaves who had to attend a Roman lady's toilet; if a single ringlet was displaced, the scourge was applied, and the *cow-skin* of our West Indian planters, the *Taurea* ("*scutica de pene taurino*") brought into play; and not unfrequently the head of the offender was broken with the steel mirror that betrayed their negligence to the impatient fair one. As we are on the subject of female ingenuity in endeavouring to spread their nets more cunningly, it may be some comfort to our modern coquettes to know that antiquity seems to sanction the use of rouge, notwithstanding the fate of Jezabel. Plautus tells us that the Roman dames daubed their faces with the "*fucus*, compound of white lead and of vermilion:" hence were they called *fucatæ*, *cerusatæ*, and *minionatæ*. Various cosmetics were also employed, and, when at home, their faces were preserved with a coat of paste, the skin having been previously rubbed with a pumice-stone, and then washed with asses' milk. Poppæa, the wife of Nero, had five hundred asses milked every day for her baths; and when she was exiled, a reduction of her establishment to fifty asses was considered a severe chastisement. Patches were also worn, of various shapes and dimensions, even by men; and Pliny tells us of one Regulus, a lawyer, who put a patch upon his right or left eye as he was going to plead for plaintiff or defendant.

The ancients also wore a certain hair-powder, a custom that was only revived in Europe in the seventeenth century, since it appears that this filthy fashion was brought in vogue at the fair of St. Germain, in 1614, by some beautiful ballad-singers.

In ancient mythology, hair was the symbol of life. All dead persons were supposed to be under the jurisdiction of the infernal deities, and no man could resign his life until some of his hair was cut off. Euripides introduces Death going to cut off some of the hair of Alcestis, when doomed to die instead of her husband Admetus; and Virgil describes Dido unable to resign her life, from her hair having been cut off by Proserpine, until Iris was sent by Juno to perform the kind office:

"Hunc ego Diti
Sacrum jussa fero, teque isto corpore solvo."
Sic ait, et dextra crinem secat; omnis et unà
Dilapsus, calor, atque in ventos vita recessit.

Locks of hair were suspended over the door of the deceased, to show that the family were in mourning. On these occasions, the hair was torn, cut off, or shaved. It was then sometimes strewed over the dead body, or cast on the funeral pile. On the demise of great men, whole cities and communities were shorn, while animals shared a similar fate. Admetus, on the death of Alcestis, ordered this operation to be performed on his chariot horses: and when Masistius was slain by the Athenians, the Persians shaved themselves, their horses, and their mules. Alexander, not satisfied with this testimony of grief, ordered the very battlements of a city to be knocked down, that the town might look bald and shorn of its beauty.

While in some cases bald heads were expressive of affliction, in others long hair denoted grief; Joseph allowed his hair to grow during his captivity; and Mephibosheth did the same when David was banished from Jerusalem. Juvenal informs us that mariners, on their escape from shipwreck, shaved their heads; and Lycophron describes long and neglected hair as a sign of general lamentation.

To be shaved by barbers was a proof of cheerfulness; but to cut off one's own hair denoted mourning. Hence Artemidorus informs us that for a man to dream of shaving himself was a presage of some calamity. However, this ceremony may, in its signification, be attributed to

the customs of the various nations. Where the hair was generally worn short, its length indicated grief, and *vice versâ*. The filth of long and neglected hair might also have been considered a proper and respectful mark of tribulation; for the ancients fancied that rolling themselves in the dirt was a convincing proof of affection; and we see Œneus besmearing himself with nastiness on the death of his son Meleager:

Pulvere canitiem genitor, vultusque seniles
Fœdat humi fusos, spatiosumque increpat ævum.

Shaving was also a nuptial ceremony, when virgins presented their hair to Venus, Juno, Minerva, Diana, and other propitious divinities. At Trœzene virgins were obliged to sacrifice their hair to Hippolytus, the son of Theseus, who died for his chastity. The Megarensian maidens presented them to Sphinoe, daughter of Alcathous, who died a virgin. Statius records this ceremony, when speaking of Minerva's temple:

Hic more parentum
Insides, thalamis ubi casta adolescerat ætas,
Virgineas libare comas; primosque solebant
Excusare toros.

Animal Magnetism

Are we to give credit to the various observations that record the wonderful effects of animal magnetism; or should we reject them as the impostures of knaves, or the result of the credulity of fools? It is now nearly half a century since this method of relieving diseases has been introduced by modern practitioners. Thousands of disinterested and candid witnesses have corroborated their assertions, and testified to their veracity. How, then, are we authorized to treat this doctrine as visionary or fraudulent? The most learned bodies have not thought it derogatory to their dignity to investigate the matter; and, notwithstanding opposition, ridicule, and contempt, the practice obtains to the present day. It has, no doubt, been materially impeded in its progress by the invectives of occasional scepticism; but such will ever be the case with science, and those discoveries which accelerate its inevitable empire on the human understanding. Persecution may be considered as the harbinger of truth, or, at any rate, of that investigation which directs to it. Pythagoras was banished from Athens; Anaxagoras was immured in a dungeon; Democritus was considered a maniac, and Socrates condemned to death. An advanced and honourable old age did not protect Galileo against his barbarous persecutors. Varolius was decreed an infamous and execrable man for his anatomical discoveries, and our immortal Harvey was looked upon as a dangerous madman. Inoculation and vaccination were deemed impious attempts to interfere with the decrees of Providence.

Magnetism may be defined as a reciprocal influence which is supposed to exist between individuals, arising from a state of relative harmony, and brought into action by the will, the imagination, or physical sensibility. This influence is said to exist in a peculiar fluid, transmissible from one body to another under certain conditions of each individual, without which the expected results are not manifest. Under these conditions, the effects of animal magnetism are obtained by manual application, by gestures, words, and even looks, more frequently, as may be easily conceived, with nervous, weak, and impressionable individuals. By these means magnetizers affirm that they can effect cures when all other remedial endeavours have been of no avail, either when the patient is awake or in a state of artificial somnambulism.

The history of this doctrine is curious. The ancients fully admitted the power of sympathy in the cure of diseases; but generally attributed its action to the interference of Divinity, or the operation of sorcery and enchantment. A remarkable affinity can be traced between modern magnetism and its supposed phenomena, and the relations of the Pythian and Sibylline oracles, the wonders of the caverns of Trophonius and Esculapius, and the miraculous dreams and visions in the temples of the gods. Amongst the Hebrews, the Egyptians, the Greeks, and Romans, we constantly discover traces of this supposed power of manual apposition, friction, breathing, and the use of the charms of music and mystic amulets. The Egyptian priesthood were considered as possessing a divine attribute in healing diseases. Prosper Alpinus, in his treatise on the medicine of the Egyptians, informs us that mysterious frictions were one of their secret remedies. The patients were oftentimes wrapped in the skins of animals, and carried into the sanctuary of their temples to be assisted by visions, that appeared either to them or to their physicians, who pretended that Isis was the immortal source of these celestial inspirations. The same divine assistance was firmly believed by the Hebrews. It was intimated to Miriam and Aaron that the Lord would make himself known to them in a vision, and speak to them in a dream; and we find in Deuteronomy that the signs and the wonders of prophets and dreamers of dreams were to be considered as the abominations of idolaters, who

were to be put to death without pity. This anathema on false prophets was not unfrequently rigorously carried into execution, and we read in the Book of Kings the destruction of all the worshippers of Baal. Ahab marched upon Ramoth-Gilead by the advice of his prophets.

The sympathetic power of corporeal apposition was illustrated when Elisha, to revive the widow's child, stretched himself three times upon him and prayed to the Lord. When Elisha restored the child of the Shunamite to life he lay upon it, put his mouth upon his mouth, his eyes upon his eyes, and his hands upon his hands, and he stretched himself upon the child, and the child opened its eyes. Miracles were generally wrought by manual application or elevation. Naaman expected that Elisha would have stricken his hand over the place to cure his leprosy; and we find in the Scriptures that our Saviour healed the sick upon whom he laid his hands. Amongst the Greeks we again see the same ceremonies performed on all wonderful recoveries. Plutarch tells us that Pyrrhus cured persons with diseased spleens by passing his hand over the seat of the malady. Ælianus informs us that the Psylli performed their cures by stretching themselves upon the patients, and making them swallow water with which they had rinsed their mouths; and he also mentions that those who approached these mysterious agents were seized with a sudden stupor, and deprived of their intellects until they had left them. Apollonius brought a young girl to life by touching her, and leaning over her as though he were whispering some magic words in her ear; and Origenes affirms that there were sages who dispensed health with their mere breath. Vespasian restored sight to the blind by rubbing their eyes and cheeks with his saliva, and cured a paralytic by merely touching him: the same emperor kept himself in perfect health by frequently rubbing his throat and his body. From a passage of Plautus, it appears that this manual application was resorted to in his days to procure sleep. Mercury is made to say, "Quid si ego illum tractem, tangam ut dormiat;" to which Sosia replies, "Servaveris, nam continuas has tres noctes pervigilavi."

Pliny maintains that there exist persons whose bodies are endowed with medicinal properties; but he admits, at the same time, that imagination may produce these salutary emanations. Celsus informs us that Asclepiades by friction could calm a phrensy; and further states, that when these frictions were carried to too great an extent, they brought on a lethargic state. Cælius Aurelianus recommends manual frictions for the cure of pleurisy, lethargy, and various other maladies, describing the manner in which they are to be conducted: for instance, in epilepsy, the head and forehead are to be chafed, then the hand is to be carried gently over the neck and bosom; at other times, the extremities of the hands and feet are to be grasped, that "we may cure by the very act of holding the limb."

That remedies were indicated in a state of somnambulism is affirmed by Tertullian, who thus speaks of one of the followers of Prisca and Maximilla, two women who foretold future events when they fell into an ecstatic swoon: "She conversed with angels, discovered the most hidden mysteries, prophesied, read the secrets of the heart, and pointed out remedies when she was consulted by the sick." He thus describes ecstasy in his treatise *De Anima*: "It is not sleep, for during sleep all reposes; whereas in ecstasy the body reposes, while the soul is actively employed. It is therefore a mixed state of sleep and ecstasy which constitutes the prophetic faculty, and it is then that we have revealed unto us, not only all that appertaineth to honour, to riches, but the means of curing our diseases." St. Stephen relates the case of a youth who was in such a lethargic state, that he was insensible to all painful agents, and could not be awakened; but when he recovered his senses, he declared that two persons, the one aged, the other young, had appeared to him and recommended sea-bathing. He complied with the instruction, and was cured. But the miracles of paganism were soon discredited, when the relics and tombs of saints were resorted to instead of the temples of the false gods; and priests assumed the power once held by their Chaldean and Egyptian predecessors, and the Druids of Gaul. The beatified were not only physicians during their life, but medicinal after death. St.

Gregory of Tours tells us that St. Cosmus and St. Damian were not only able physicians during their blessed existence, but assisted all those who consulted them in their tombs, not unfrequently appearing to them in visions, and prescribing the proper remedies. A saint's breathing upon a veil, and then placing it on the head of a demoniac, infallibly cast out the evil one; and St. Bernard never failed in his exorcisms, by making the possessed swallow some water in which he had dipped his hands. St. Martin stopped the most fearful hemorrhage by merely touching the patient with his garment. The shrines of St. Litardus, St. Anthony, and various other saints, lulled to sleep, and inspired with miraculous visions those who sought their aid.

However, as the progress of intellect dispelled the dark clouds that shrouded the middle ages in superstitious and credulous prejudices, philosophy endeavoured to investigate the nature of this mysterious agency, which priests had for so many centuries usurped as their special gift and property. Sceptic as to supernatural powers in the common occurrences of life, philosophers attributed these phenomena to some peculiar principle with which organized bodies were endowed, and hence arose the dawn of the doctrine of animal magnetism. So early as 1462, Pomponatius of Mantua maintained, in his work on incantation, that all the pretended arts of sorcery and witchcraft were the mere results of natural operations; he further gave it as his opinion, that it was not improbable but that external means, called into action by the soul, might relieve our sufferings; that there, moreover, did exist individuals endowed with salutary properties, and it might therefore easily be conceived that marvellous effects should be produced by the imagination, and by confidence, more especially when they are reciprocal between the patient and the person who assists his recovery; physicians and men of sense being well convinced that if the bones of any animal were substituted for those of a saint, the result would be the same. It need not be added that our author was violently persecuted for this heretical doctrine. Two years after, Agrippa, in Cologne, asserted that the soul, inflamed by a fervent imagination, could dispense health and disease, not only in the individual himself, but in other bodies. In 1493, Paracelsus expressed himself in the following language: "All doubt destroys work, and leaves it imperfect in the wise designs of nature. It is from faith that imagination draws its strength. It is by faith that it becomes complete and realized. He who believeth in nature, will obtain from nature to the extent of his faith. Let the object of this faith be real or imaginary, you nevertheless reap similar results; and hence the cause of superstition."

Cardanus, Bacon, and Van Helmont pursued this study; and the latter physician, having cured several cases by magnetism, was considered a sorcerer, and was seized by the Inquisition. Magnetism, he observed, "is a universal agent, and only novel in its appellation, and paradoxical to those who ridicule every thing they do not comprehend, or attribute to Satan what they cannot understand. The name of magnetism is given to that occult influence which bodies possess on each other at various distances, either by attraction or by impulsion. The means or the vehicle of this influence is an ethereal spirit, pure, vital, (*magnale magnum*,) which penetrates all matter, and agitates the mass of the universe. This spirit is the moderator of the world, and establishes a correspondence between its several parts and the powers with which it is endowed. We can attach to a body the virtues that we possess, communicate to it certain properties, and use it as the intermediate means to operate salutary effects. I have hitherto withheld the revelation of this great mystery. There exists in man a certain energy, which can act beyond his own person according to his will or his imagination, and impart virtues and exercise a durable influence even in distant objects. Will is the first of powers." Van Helmont fully admitted the wonderful faculties that somnambulism seemed to develop, and informs us that it was chiefly during his sleep that he was inspired with his doctrines. One might have imagined that these philosophic researches would have put an

effectual stop to the progress of superstition, or rather of persecution; yet their promulgation could not save Urbain Grandier, and many supposed sorcerers, from a barbarous death.

It was in the beginning of the eighteenth century that various experiments were made with the loadstone in researches regarding electricity. In 1754, Lenoble had constructed magnets that could be used with facility in the treatment of various diseases. In 1774, Father Hell, a Jesuit and professor of astronomy at Vienna, having cured himself of a severe rheumatism by magnetism, related the result of his experiments to Mesmer. This physician was immediately struck with observations that illustrated his own theories respecting planetary influence. He forthwith proceeded to procure magnets of every form and description for the gratuitous treatment of all those that consulted him; and, while he widely diffused his doctrines, he sent his magnets in every direction to aid the experimental pursuits of others, and thus expressed himself on the subject in a memoir published in 1779: "I had maintained that the heavenly spheres possessed a direct power on all the constituent principles of animated bodies, particularly on the *nervous system*, by the agency of an all-penetrating fluid. I determined this action by the intension and the remission of the properties of matter and organized bodies, such as gravity, cohesion, elasticity, irritability, and electricity. I supported this doctrine by various examples of periodical revolutions; and I named that property of the animal matter, which renders it susceptible to the action of celestial and earthly bodies, animal magnetism. A further consideration of the subject led me to the conviction that there does exist in nature an universal principle, which, independently of ourselves, performs all that we vaguely attribute to nature or to art."

Mesmer, as might have been foreseen, became the object of persecution and of ridicule, and withdrew to Switzerland and Suabia. It was there that he met with a certain Gassner of Braz, who, having fancied that an exorcism had relieved him from a long and painful malady, took it into his head to exorcise others. He considered the greater part of the disorders, to which flesh is heir as the work of the devil, and he counteracted his baneful influence in the name of our Saviour. He divided these diabolical visitations into *possessions*, *obsessions*, and *circumsessions*; the latter being trifling invasions. For the purpose of ascertaining whether his patients laboured under natural or infernal ailments, he conjured Satan to declare the truth. If, after three solemn interpellations, and signs of the cross, the devil did not answer, the disorder was considered as coming within the province of medicine; but if, on the contrary, the patient fell into convulsions, Gassner drew forth his stole and crucifix, and, in the name of the Redeemer, commenced rubbing and pinching, sometimes in the most indecorous manner, when females were submitted to his manipulations. When his attempts failed, he accused the patient of want of faith or of the commission of some deadly sin, which baffled his endeavours. His fame became so universal, that the Bishop of Ratisbon sent for him, and he exercised his art under his auspices. At one period, the town was so crowded with his patients, that ten thousand of them were obliged to encamp without the walls. It appears that this adventurer had the power of acting upon the pulse, and could increase or retard it, render it regular or intermittent, and was even reported to paralyze limbs and produce tears or laughter at will. It is scarcely credible, yet the celebrated De Haen, one of the most distinguished and learned practitioners in Germany, not only believed in the power of this Gassner, but actually attributed it to a paction with the devil.

Mesmer was not so credulous, and explained the miraculous cures of Gassner by the doctrines of the animal magnetism which he advocated. From Suabia he returned to Vienna, whence he was expelled as a quack; and in 1778 arrived at Paris, a capital that had patronised Cagliostro and St. Germain, and was ever ready to be deceived by ingenious empiricism. In 1779 he published a paper on the subject, in which he maintained twenty-seven propositions to establish his supposed influence between the celestial bodies, the earth, and animated

matter, produced by a fluid universal, subtile, susceptible of receiving, transmitting, and communicating its impressions, on mechanical principles, until then unknown, and producing alternate effects of flux and reflux. This powerful agent, he said, acted chiefly on the nervous system. The human body, moreover, according to his notions, possessed properties analogous to the loadstone, and presenting an opposed polarity, subject to various modifications, which either strengthened or weakened it. The action of animal magnetism, according to him, was not confined to animal matter, but could be equally communicated to inanimate bodies at various distances. Mirrors could reflect and increase its power like the rays of light, and sound could propagate and increase it. This magnetic property, he further stated, could be accumulated, concentrated, and transported at pleasure, although there did exist animated bodies possessed of properties so opposite as to render this powerful agent inefficient. He found that the loadstone was susceptible of animal magnetism, and of its opposite virtues, without any apparent influence on its power over iron and the needle; whence he concluded that there existed a wide difference between animal and mineral magnetism.

Mesmer soon found a warm advocate of his doctrines in a Dr. D'Eslon, and animal magnetism became in fashionable vogue. Not only were men and animals subjected to their experiments, but this wondrous influence was communicated to trees and plants, and the celebrated elm-tree of Beaugency was magnetized by the Marquis de Puységur and his brother; while the enthusiastic D'Eslon absolutely went knocking from door to door to procure patients. Breteuil, who was then one of the ministers, offered Mesmer a yearly pension of thirty thousand francs, with a sum of three hundred thousand francs in cash, with the decoration of St. Michael, if he would consent to reveal the mysteries of his science to the medical faculty. This tempting offer our magnetizer indignantly rejected, and a secret society was instituted under the name of the Lodge and Order of Harmony. The charms and the power of youth and music were not neglected as auxiliaries to propagate the fashionable doctrine. Young men of elegant manners and athletic form were initiated in the practice of magnetizing, and the *salons* of Paris consecrated to this worship (for such it might have been termed) were crowded with the most fascinating women that the gay metropolis of France could produce. Most of these females, impassioned by nervous excitability, as loose in their morals as to outward appearance they were fervent in their devotions, abandoned themselves without reserve to the delightful sensations that magnetism and its surrounding machinery were said to afford. In their ecstasies, their hysteric attacks, their spasms, Mesmer, the high-priest, fancifully dressed, but in the height of fashion, with his useful acolytes, endeavoured to soothe and calm the agitation of their enchanting patients by all the means that Mesmerism could devise.

It soon became pretty evident that these phenomena were solely to be attributed to the influence of imagination; and Doppet, one of the most ardent disciples of the new creed, frankly avowed that "those who were initiated in the secrets of Mesmer entertained more doubts on the subject than those who were in thorough ignorance of them." Notwithstanding this evidence brought forward against Mesmer's fascinating practice, he was warmly eulogised even by high churchmen; and Hervier, a doctor of Sorbonne, did not hesitate to assert that the Golden Age was on the return; that man would be endowed with fresh vigour, live for the space of five generations, and only succumb to the exhaustion of age; that all the animal kingdom would enjoy a similar blessing; while magnetized trees would yield more abundant and delicious fruits. This belief of the good ecclesiastic arose, according to his own assertion, from his having been cured of some cruel disorder by magnetism, while all his intimate acquaintances insisted that he had never ceased to enjoy perfect health.

Such were the circumstances that attended the introduction of animal magnetism, which to this day is defended and maintained by ardent proselytes. Sound philosophy can only

attribute its wonderful phenomena, many of which cannot be denied, to the influence of the imagination, and the all-powerful deceptive agency of faith. It is an incontrovertible fact, that the nervous system may be so worked upon, thrown by various secret and physical means into such a morbid condition, that results bordering upon the miraculous in the eyes of the credulous may be easily obtained. Every circumstance that appears to differ from the usual course of nature is deemed miraculous by the ignorant; and the Greek proverb θαύματα μωροίς, plainly maintains that miracles are only for the simple. In fact, who are the persons who in our times cry out "miracle," but weak and timid men, worn out by excesses or age, labouring under the influence of terror; silly old women, who have not the power of reasoning; or nervous and enthusiastic females, who seek for some saving clauses in a pact between vice and virtue, depravity and religion.

All the wonders of the creation are miraculous, if we are to consider those phenomena that are, and most probably will ever remain, beyond our humble and miserable comprehension to be such. The manifestations of the Creator's will are daily exhibited in stupendous forms that strike the ignorant with awe, while they lead the man of science to bow in grateful veneration to that Almighty power that has harmonized the creation for our wellbeing, if we would only obey the sublime dictates of his laws, without attempting to scrutinize their spirit by quibbling with their letter.

There can be but little doubt that the wonders of magnetism may be referred to the imagination; yet some of the phenomena must excite our surprise, and may occasion some degree of hesitation in invariably attributing its results to fancy. The Academy of Medicine of Paris having appointed a commission of twelve members to examine and report upon it, their inferences were as follow:

1. The effects of magnetism were not evident in healthy persons, and in *some* invalids.

2. They were *scarcely* apparent in others.

3. They *often* appeared to be the result of ennui, monotony, and the influence of imagination.

4. Lastly, *they are developed independently of these causes, very probably by the effects of magnetism alone*.

The points of this report that I have printed in italics prove most clearly that the members of the commission, all of whom were decidedly adverse to the doctrine, were convinced, at least to a certain extent, by the experiments they had witnessed, of some singular powers residing in this mysterious science. Such must have been the case, since we find three members seceding from their associates, Laennec, Double, and Magendie, all well known as distinguished physiologists, somewhat inclined to pure materialism, and what may be termed *matter-of-fact* men, who would hesitate in yielding their belief to any assertion that the scalpel could not demonstrate. Notwithstanding the protest of these gentlemen, the following were the conclusions of the commission:

1. Contact of the thumbs and magnetic movements are the means of relative influence employed to transmit magnetic action.

2. Magnetism acts on persons of different age and sex.

3. Many effects appear to depend on magnetism alone, and are not reproduced without it.

4. These effects are various. Sometimes magnetism agitates, at other times it calms. It generally causes acceleration of the pulse and respiration, slight convulsive movements, somnolency, and, in a few cases, somnambulism.

5. The existence of peculiar characters of somnambulism has not yet been proved.

6. It may, however, be inferred that this state of somnambulism prevails when we notice the development of new faculties, such as *clairvoyance* and intuitive foresight, or when it produces changes in the physiological condition of the individual, such as insensibility, sudden increase of strength, since these effects cannot be attributed to any other cause.

7. When the effects of magnetism have been produced, there is no occasion on subsequent trials to have recourse to *passes*.[42] The look of the magnetizer and his will have the same influence.

8. Various changes are effected in the perceptions and faculties of those persons in whom somnambulism has been induced.

9. Somnambulists have distinguished with closed eyes objects placed before them. They have, then, read words, recognised colours, named cards, &c.

10. In two somnambulists we witnessed the faculty of foreseeing acts of the organism to take place at periods more or less distant. One announced the day, the hour, and the minute of the invasion and recurrence of an epileptic fit; the other foresaw the period of his recovery. Their anticipations were realized.

11. We have only seen one somnambulist who had described the symptoms of the diseases in three individuals presented to her.

12. In order to establish justly the relations of magnetism with therapeutics, one must have observed the effects on a number of individuals, and have made experiments on sick persons. Not having done this, the commissioners can only say, they have seen too few cases to enable them to form a decisive opinion.

13. Considered as an agent of physiological phenomena, or of therapeutics, magnetism should find a place in the range of medical science, and be either practised, or its employment superintended by a physician.

14. From the want of sufficient opportunities, the commission could not verify the existence of any other faculties in somnambulists; but its reports contain facts sufficiently important to conclude that the Academy ought to encourage researches in animal magnetism, as a curious fact of psychology and natural history.

This report was impugned by Mr. Dubois, in what he calls his rational conclusions, which of course maintain that those of the commission were irrational. However, in this paper he merely affirms his own incredulity, without supporting it upon any grounds of experiment or observation; and therefore his observations must be considered an individual attempt to refute the assertions of a body of scientific men, who, after diligently and maturely weighing the arguments in favour of a doctrine that they were previously disposed to condemn as unworthy of research, came to the conclusions that we have seen.

While the French Academy did not consider it beneath their dignity to investigate this doctrine, in other parts of Europe it attracted the attention both of the reigning monarchs and the most distinguished physicians. In Prussia, Hufeland, who had been one of the warmest opponents of magnetism, became a convert; and a clinical hospital was established in Berlin, by order of the government, to observe and record its phenomena. At Frankfort and Groningen, Drs. Passavant and Bosker published works on the subject; the latter having translated the critical history of Deleuze. At Petersburg, Dr. Stoffreghen, first physician of the Emperor, pronounced himself with several colleagues in its favour; and most of these

[42] The term that designated magnetic manipulation.

distinguished men seemed to partake of the opinion of the justly celebrated Orfila, who certainly may be considered as an authority, and who thus expressed himself on the subject:

"If there exists trickery and quackery in animal magnetism, its adversaries are too hasty in refusing to admit all that has been asserted in regard to its effects. The testimony of enlightened physicians should be considered as proofs. If the magnetic phenomena appear extraordinary, the phenomena of electricity appeared equally marvellous in its origin. Was Franklin to be considered a quack when he announced that with a pointed metal he could command thunder? Whether magnetism acts in good or in evil, it is clearly a therapeutic agent, and it behoves both the honour and the duty of the Academy to examine it."

Such is the present state of this curious science. To what credit it may be entitled, and how far it may become a useful medical agent, experience alone can decide. At the same time, it would be unjust to assert, in our present ignorance, that all the learned and independent men who support it are either fools or knaves.[43]

[43] Since the first edition of this work was published, animal magnetism has become the subject of much controversy and animadversion in London and various parts of the empire. The utmost virulence has as usual been resorted to, not only to impugn the doctrine, but to stigmatize its supporters; while, on the other hand, the greatest ingenuity has been displayed to convince unbelievers, and to give to the many experiments practised for this purpose the semblance of undeniable facts. Baron Dupotet's labours and publications have been submitted to the test of a public investigation; while Dr. Elliotson and several other practitioners have aided the practice apparently with success. It would be foreign to the nature of this work to consider this matter more elaborately; it is now before the tribunal of public opinion, whose decision we must await.

Poisonous Fishes

The deleterious qualities of certain fishes have long been the subject of medical conjectures. It is somewhat singular, and most difficult to account for, that the same fish should be wholesome in some waters, and deadly in others, although under the same latitude, and when, to all appearance at least, no local cause can be discovered to which we might reasonably attribute this fatal property. So powerful and prompt moreover, it is in its action that rapid death will ensue whenever a small portion of the fish has been eaten. Such, for instance, is generally the case with the yellow-bill sprat, the *clypea thrissa*.

Some naturalists attribute this poison to copper banks, on or near which the fish may feed. The absurdity of this opinion has been fully demonstrated; in the first instance, no such copper banks have been discovered in the West Indies, and these fish abound on the coasts of islands of coral formation. Moreover, it is not likely that this mineral should saturate the animal; and, even if it could produce this effect, the entire body would in all probability be affected, whereas the poison seems to lie in particular parts, chiefly in the intestines, the liver, the fat, &c. This is evident from the practice of fishermen, who can eat poisonous fish with impunity if they have taken the precaution to draw them carefully and salt them. In addition to these observations, the symptoms of the disease thus produced, by no means resemble those of mineral poisons. Dr. Chisholm, who pretends that copper banks do exist in the Windward Islands, is of this opinion. Admitting the facts, it may be asked, have the waters of these seas been impregnated by the copper? if they are not, how can its influence extend to its inhabitants? and why are particular fish only affected? Moreover, although it is well known that certain substances are deleterious to some animals and harmless to others, yet one might fancy that, if the coppery principal of an animal's flesh could poison, it is not irrational to think that the same deadly substance would also destroy the animal. The presence of this mineral has never been detected by any chemical test; and, if the poison consisted in copper, how could salting the fish destroy it? In opposition to these objections, it has been maintained that fish may be rendered poisonous by feeding on the marine plants that grow upon these deadly banks. Now, unless it could be proved that copper is not injurious to fish, these same lithophyta and zoophyta would no doubt poison them.

However, it is more than probable that it is to a certain injurious food that these dangerous qualities are to be referred. Various plants that grow in these regions are of a poisonous nature to man, although, as I have just observed, they may not be so destructive to fish. The circumstance of the alimentary tube being more poisonous than any other part seems to warrant the conclusion; and I have observed in the West Indies, that the crabs that feed upon banks where the manchineel is to be found, frequently occasion serious, and sometimes fatal accidents. On the coast of Malabar, crabs are poisonous in the month of October, when the *blue tithymale* abounds.

Whatever may be the causes of this deadly principle, the effects are most rapid. When a large quantity has been taken, the patient soon dies in strong convulsions; but frequently, when the quantity and the nature of the poison have not been sufficient to occasion death, the body becomes emaciated, the cuticle peels off, particularly on the palms of the hands and the soles of the feet, the hair drops, acute pains shoot through every joint, and the sufferer not unfrequently sinks under a lingering disease. In these cases change of climate has been found the most effectual remedy, and a return to Europe becomes indispensable.

The usual symptoms that denote the presence of the poison, are languor, heaviness, drowsiness, great restlessness, flushing of the face, nausea, griping, a burning sensation, at first experienced in the face and eyes, and then extending over the whole body; the pulse, at first hard and frequent, soon sinks, and becomes slow and feeble. In some cases the salivary glands become tumefied with a profuse salivation; and the body, and its perspiration, are as yellow as in the jaundice. These peculiar symptoms have frequently been known to arise after eating the *rock-fish*.

The remedies that are usually resorted to are stimulants. Capsicum has been considered a powerful antidote; and the use of ardent spirits or cordials has also been strongly urged. It has been observed, that persons who had drunk freely, or who had taken a dram after eating fish that had disordered others, were, comparatively speaking, exempt from the severity of the disease. A decoction of the root of the *sour-sop*, and an infusion of the flowers of the *white cedar* and the *sensitive plant* have also been advised by several West India practitioners.

The practice of putting a silver spoon in the water in which fish is boiled, to ascertain its salubrity, is a popular test that cannot be depended on. Fishermen have observed that fish that have no scales are more apt to prove injurious; and those of uncommon size are looked upon as the most dangerous.

To ascertain whether the nature of the fishes' food could thus render them poisonous, Mr. Moreau de Jonnês had recourse to many curious experiments. He took portions of polypes found in the waters reputed dangerous, more particularly the *liriozoa Caribæa*, the *millepora polymorpha*, the *gorgonia pinnata*, the *actinia anemone*, &c., and, having enveloped them in paste, he fed fishes with them; but in no one instance was any prejudicial result observed. He tried in the same manner the *physalis pelagica* of Lamark, which contains an acrid and caustic fluid; but the fish invariably refused it, nor would they touch fragments of the manchineel apple.

Oysters have been known to produce various accidents; and, when they were of a green colour, it has been supposed that this peculiarity was also due to copper banks. This is an absurdity; the green tinge is as natural to some varieties as to the *esox belone*, whose bones are invariably of the same hue as verdigrise. Muscles frequently occasion feverish symptoms, attended with a red, and sometimes a copper-coloured, efflorescence over the whole body. These accidents appear to arise from some peculiar circumstances. In Boulogne I attended a family in which all the children who had eaten muscles were labouring under this affection, while not another instance of it was observed in the place. In the Bahama Islands I witnessed a fatal case in a young girl who had eaten crabs; she was the only sufferer, although every individual in the family had shared in the meal. The idea of the testaceous mollusca avoiding copper-bottomed vessels, while they are found in abundance on those that are not sheathed, is absurd; this circumstance can be easily explained by the greater facility these creatures find in adhering to wood. There is every reason to believe, that the supposed poisonous oysters found adhering to the copper bottom of a ship in the Virgin Isles, and the occasional accidents amongst the men that ate them, were only so in the observer's imagination, and that part of the ship's company were affected by some other causes. Another report, equally absurd, was that of the fish having gradually quitted the Thames and Medway since coppering ships' bottoms has been introduced! The following may be considered the fish that should be avoided:

The Spanish mackerel, *Scomber cæruleo-argenteus*.
The yellow-billed sprat, *Clupea thrissa*.
The baracuta, *Esox baracuta*.
Grey snapper, *Coracinus fuscus*.

The porgie, *Sparus chrysops*.
The king-fish, *Scomber maximus*.
The hyne, *Coracinus minor*.
Bottle-nosed cavallo, *Scomber*.
Old wife, *Balistes monoceros*.
Conger eel, *Murœna major*.
Sword-fish, *Xiphias gladius*.
Smooth bottle-fish, *Ostracion globellum*.
Rock-fish, *Perca manna*.

I have known accidents arise from the use of the dolphin on the high seas; and, while I was in the West Indies, a melancholy instance of the kind occurred, when the captain, mate, and three seamen of a trading vessel died from the poison; a passenger, his wife, and a boy, were the only survivors, and were fortunately picked up in the unmanageable vessel.

The above catalogue of poisonous fishes is extracted from Dr. Dancer's "Jamaica Practice of Physic," and its correctness fell under my own observation in the Wrest Indies. The different systems and classifications of ichthyologists have produced much confusion, and may lead to fatal errors.

A work, in which a *synonymous* catalogue of all the fishes supposed to be poisonous might be found, would be highly desirable, as they generally bear different popular and scientific names, thus producing a dangerous confusion even amongst naturalists; how much more dangerous amongst seafaring people and voyagers!

I cannot conclude this article without noticing the singular properties of those electric fishes denominated the *torpedo-ray* and the *gymnote*. They had been long known to naturalists, and the ancients attributed their destructive faculties to a magic power that Oppian had recorded in his *Alieuticon*, where he describes a fisherman palsied through the hook, the line, and the rod. This influence being voluntary on the part of the animal, seemed to warrant the belief in its mischievous nature, since it allows itself sometimes to be touched with impunity, while at others it burrows itself under the sand of the beach, when the tide has receded, and maliciously benumbs the astonished passenger who walks over it. This singular fish, which is common in the Mediterranean Sea, has been described both by the Greek and Roman writers; amongst others, by Aristotle and Athenæus: and Socrates, in his Dialogues, compares a powerful objection, to the influence of the torpedo.

This voluntary faculty has been observed by Lacépède and Cloquet in the Mediterranean, and at La Rochelle. In torpedos kept in water for experimental purposes, Réaumur found that he handled them without experiencing any shock for some time, until they at last appeared to become impatient: he then experienced a stunning sensation along the arm, not easily to be described, but resembling that which is felt when a limb has been struck with a sudden blow. One of the experiments of this naturalist proved the extensive power of this faculty. He placed a torpedo and a duck in a vessel containing sea-water, covered with linen to prevent the duck from escaping, without impeding the bird's respiration. At the expiration of a few minutes the animal was found dead, having been killed by the electric shocks of its enemy.

Redi was the first who demonstrated this faculty. Having laid hold of a torpedo recently caught, he had scarcely touched it, when he felt a creeping sensation shooting up to the shoulder, followed by an unpleasant tremor, with a lancinating pain in the elbow. These sensations he experienced as often as he touched the animal; but this faculty gradually decreased in strength as the animal became exhausted and dying. These experiments he related in a work entitled "*Esperienze intorno à diverse cose naturali*." Florence, 1671.

In 1774, Walsh made some very interesting experiments at the Isle of Ré and La Rochelle, and clearly demonstrated this electric faculty in a paper *On the electric property of the torpedo*. In one of them he found that this fish could produce from forty to fifty shocks in the course of ninety minutes. The electrified individuals were isolated; and at each shock the animal gave, it appeared to labour under a sense of contraction, when its eyes sunk deep in their sockets.

The *trichiurus electricus* of Linnæus, the *rhinobatus electricus* of Schneider, and the *gymnonotus electricus* of *Surinam*, are the species of this singular fish with which experiments have chiefly been made. The *gymnonotus* is a kind of eel, five or six feet in length, and its electric properties are so powerful that it can throw down men and horses. This animal is rendered more terrific from the velocity of his powers of natation, thus being able to discharge its thunder far and near. When touched with one hand the shock is slight; but when grasped with both, it is so violent that, according to the accounts of Collins Flag, the electric fluid can paralyze the arms of the imprudent experimentalist for several years. This electric action is analogous to that which is obtained by means of the fulminating plate, which is made of glass with metallic plates. Twenty-seven persons holding each other by the hands, and forming a chain, the extremities of which corresponded with the points of the fish's body, experienced a smart shock. These shocks are produced in quick succession, but become gradually weaker as the fluid appears to be exhausted. Humboldt informs us, that, to catch this fish, wild horses are driven into the water, and after having expended the fury and the vigour of the gymnonotus, fishermen step in and catch them either with nets or harpoons. Here we find that the irritable or sensorial power is exhausted through the medium of electricity. These phenomena may be attributed to an electric or Voltaic aura; and the organ of the animal that secretes the fluid resembles in its wonderful structure the Voltaic apparatus. Both the gymnote and the torpedo obey the laws of electricity, and their action is limited to the same conducting and non-conducting mediums. The electric sparks proceeding from the gymnote have been plainly seen in a dark chamber by Walsh, Pringle, Williamson, and others. The fish has four electric organs, two large and two small ones, extending on each side of the body from the abdomen to the end of the tail. These organs are of such a size that they constitute one third of the fish's bulk. Each of them is composed of a series of aponeurotic membranes, longitudinal, parallel, horizontal, and at about one line's distance from each other. Hunter counted thirty-four of these fasciculi in one of the largest. Other membranes or plates traverse these vertically, and nearly at a right angle; thus forming a plexus or net-work of numerous rhomboidal cells. Hunter found no less than two hundred and forty of these vertical plates in the space of eleven inches.

This apparatus, analogous to the Voltaic pile, is brought into action by a system of nerves rising from the spinal marrow, each vertebra giving out a branch; other branches, rising from a large nerve, running from the basis of the cranium to the extremity of the tail. All these ramifications are spread and developed in the cells of the electric organs, to transmit its powerful fluid, and strike with stupor or with death every animal that comes within its reach. Lacépède has justly compared this wonderful mechanism to a battery formed of a multitude of folio-electric pieces.

The electric organ of the *malapterus electricus* is of a different formation. This fish, found in the Nile and in other rivers of Africa, is called by the Arabs *raash* or thunder. In this animal the electric fluid extends all round the body, immediately under the integuments, and consists of a tissue of cellular fibres so dense, that it might be compared to a layer of bacon; but, when carefully examined, it consists of a series of fibres forming a complex net-work. These cells, like those in the gymnote, are lubricated with a mucous secretion. The nervous system of this intricate machinery is formed by the two long branches of the pneumo-gastric nerves, which

in fishes usually run under each lateral line. Here, however, they approach each other on leaving the cranium, traversing the first vertebra.

Linnæus had classed the torpedo in the genus *ray*, and hence called it *raia torpedo*. Later naturalists have restored to it its ancient name, as given by Pliny, and termed it *torpedo*, of which four species are described: the *T. narke*, or with five spots; the *T. unimaculata*, marked, as the name indicates, with one spot; the *T. marmorata*, and the *T. Galvanni*.

The ancients placed much faith in the medicinal properties of these fishes. Hippocrates recommends its roasted flesh in dropsies that follow liver affections. Dioscorides prescribed its application in cases of obstinate headaches and rheumatisms. Galen and other physicians recommend the application of the living animal; and Scribonius Largus states that the freedman Anteroes was cured of the gout by this practice. To this day, in Abyssinia, fever patients are tied down on a table, and a torpedo is applied to various parts of the body. This operation, it is affirmed, causes great pain, but is an infallible remedy.

Memory And The Mental Faculties

This noble faculty, the proudest attribute of mankind, justly called the mother of the Muses, is subject to be impaired by various physical and moral causes, while a similar agency can sometimes restore it to its pristine energy, or develope its powers when sluggish and defective. Memory may be considered as the history of the past chronicled in our minds, to be consulted and called upon whenever circumstances stances or the strange complication of human interests demand its powerful aid. Its powers and nature widely differ, and these varieties depend upon education, natural capacities, mode of living, and pursuits. Thus memory has been divided into that faculty that applies to facts, and to that more superficial quality that embraces a recollection of things, to which must be added the memory of localities and words: “Lucullus habuit divinam quamdam memoriam rerum, verborum majorem Hortensius,” said Cicero.

It is on this division that Aristotle founded his belief that the brute creation had not the faculty of reminiscence, although he allowed them to possess memory. According to his doctrine, reminiscence is the power of recollecting an object by means of a syllogistic chain of thought; an intellectual link with which animals do not seem to be gifted. Their memory appears solely to consist of the impressions received by the return of circumstances of a similar kind. Thus, a horse that has started on a certain part of a road will be apt to evince the same apprehension when passing the same spot. This is an instinctive fear, but not the result of calculation or the combination of former ideas. Reminiscence is the revival of memory by reflection; in short, the recovery or recollection of lost impressions.

The recollection of things or facts can alone bring forth a sound judgment. It implies a regular co-ordination of ideas, a catenation of reflections, in which circumstances are linked with each other. The chain broken, no conclusion can be drawn. Newton was wont to lose the thread of an important conversation when his mind was in search of an idea. This is the reason why the society of the learned is seldom entertaining to the generality of men. They are considered absent, while their brain is busily employed in pursuits perhaps of great importance; they must therefore be anything but agreeable to those who generally think through the medium of other persons’ brains.

The brain is considered to be the seat of memory. When it is injured, remembrance is impaired; and, on the other hand, an accident has been known to improve the recollective faculties. A man remarkable for his bad memory fell from a considerable height upon his head; ever after he could recollect the most trifling circumstance. The effects of different maladies will also produce various results on this faculty. In some instances names of persons and things are completely forgotten or misapplied; at other times, words beginning with a vowel cannot be found. Sudden fright and cold have produced the same effects. An elderly man fell off his horse in crossing a ford in a winter’s night; ever afterward he could not bring to his recollection the names of his wife and children, although he did not cease to recognise and love them as fondly as before the accident. Cold has been at all times considered injurious to memory; hence Paulus Æginus called Oblivion the child of Cold.

In fevers, and a state of great debility, in a disordered condition of the digestive functions, and various affections of the head, we generally find that the attention cannot long be applied to any one subject or a continued train of thoughts; all past circumstances are readily forgotten, while passing occurrences are most acutely observed and felt, excepting in cases of delirium, when we have the perception of surrounding objects or receive an erroneous

impression of their nature and agency. In many cases of this nature, we find that conversation produces great excitement and increases the evil, for the subject of such intercourse is generally misconceived and distorted through the medium of a morbid conception, while the past, the present, and the future are grouped in a confused and most heterogeneous and incoherent jumble.

Philosophers have endeavoured to fix the seat of memory in various portions of the brain. The ancients fancied that it was lodged in the posterior part of the cranium; having observed that when persons endeavoured to recollect any thing, they usually scratched the back part of the head. The Arabian physicians entertained a similar belief. Gratarola maintained that a great protuberance of the occiput indicated a good memory. Gall places it above the orbitary cavity of the eye, and even behind it. It has long been thought that persons with protuberant eyes had quick recollections. The physical condition of the brain has also been considered as materially affecting memory. What physiologists have called a moist brain was looked upon as unfavourable to its development; and it was therefore owing to the soft and pulpy condition of the cerebral organs in young children that the difficulty of impressing anything upon their minds arose; the same stupidity being observed in cases where water was supposed to be lodged in the brain. While this humid state was considered as injurious to memory, dryness of the organ was also esteemed an obstacle of a similar nature; and in old age it is by this state of siccity that failure in memory was attempted to be explained. This failure of memory as age advances may, however, be explained in a much more rational manner. Old people will bear in lively recollection the events that attended their childhood, their youth, and manhood; it is only recent occurrences that shed a transient impression on their minds. The cause of this may be considered to arise from the extreme *impressionability* that prevails in early life, when every organ is prompt in responding to each call upon its powers; when the charms of novelty tinge with a brighter, yet a more lasting lustre, all our pleasurable sensations; when grief had not yet wrung the young heart till its fibres became callous to future pangs, when perfidy and ingratitude have shown us that all is vanity, and calm philosophy has tutored our passions in the school of Adversity. Reason now sits upon the judgment-seat, and all that we then can wonder at that is, at any time we could have wondered at any thing. Why, then, are we to seek for a material theory of the mind, when our daily experience shows us that it is under the influence of so many moral agents?

We have, moreover, convincing proof that the brain may be materially affected, without any deterioration of the mental faculties. Dr. Ferriar mentions a man in whom the whole of the right hemisphere, that is, one half of the brain, was found destroyed, but who retained all his faculties till the very moment of his death. Diemerbrook states another case where half a pound of matter was found in the substance of the brain. O'Hallaran relates the history of a man who had suffered such an injury of the head, that a large portion of his brain was removed on the right side; and extensive suppuration having taken place, an immense quantity of pus, mixed with large masses of the substance of the brain, was discharged at each dressing, through the opening. This went on for seventeen days, and it appears that nearly one half of the brain was thrown out, mixed with the matter, yet the man retained all his intellectual faculties to the very last moment of his dissolution, and through the whole course of the disease, his mind maintained uniform tranquillity. I attended a soldier at Braburne Lees, who had received a wound in the head during ball practice. The ball remained in the brain, and during three weeks large masses of brainular substance were brought away with pus. To the last day of his life he would relate, with every circumstantial particular, the neglect of the comrade by whom he had been wounded, and who fired while he was running to the target to mark the shots. It is somewhat singular, but suppuration of the brain is more offensive than the foulest ulcer, and it is with great difficulty that the pestilential effluvia can

be tolerated. These cases plainly show that cerebral diseases have but little influence on the manifestations of the mind.

Amongst the many curious doctrines that have been started, to account for the operations of memory, some philosophers have compared it to the art of engraving; pretending that on those subjects where it requires much time and trouble to work an impression it was more durable, while it was only traced in a superficial manner on those brains that were ever ready and soft to receive this plastic influence. These several faculties they therefore compared to bronze or marble, to butter and to wax. Descartes, following up the phantasy, compared recollection to etching, and said that the animal spirits, being passed over the lines previously traced, brought them more powerfully to the mind; thus comparing the brain to the varnished copper-plate over which the engraver passes his mordants. Malebranche endeavoured to establish another doctrine, and compared our cerebral organ to an instrument formed of a series of fibres, so arranged, that when any recent emotion agitated one of these chords the others would immediately be thrown into vibration, renewing a past chain of ideas. As these chords became less flexible in old age, of course these vibrations were more difficult to obtain. Recollection was also considered an attribute of each molecule of the brain; and Bonnet endeavoured to count how many hundred ideas each molecule was capable of holding during a long life.

The controversies of learned psychologists on the relation of memory and judgment, indeed on the analogies that exist between our several mental faculties, have been as various as they are likely to prove interminable. Without offending these illustrious controversionalists, we may endeavour to enumerate these faculties, which, despite the ingenuity of theorists, appear in a practical point of view to exercise a wonderful influence upon each other. The first may be considered the faculty of *perception*, assisted by that of *attention*, to which we are indebted for our *ideas*. These are preserved and called into action from the rich stores of the mind by *memory*, justly called by Cicero the guardian of the other faculties. *Imagination* is the faculty of the mind that represents the images of remembered objects as if they were actually present. *Abstraction* forms general deductions from the foregoing faculties; while *judgment* compares and examines the analogies and relations of the ideas of sense and of abstract notions. Finally, *reason* draws inferences from the comparisons of judgment.

It is from the combination and the workings of these wonderful powers that *appetency*, *desires*, *aversions*, and *volition* arise. *Appetency* occasions *desires*, and these, when disappointed or satiated, inevitably usher in aversions and antipathies; although, as we shall see in another article, our antipathies are frequently instinctive, and not arising from any combination of the faculties I have enumerated.

Dr. Gall has considered these mental faculties as fundamental; and in this view he was certainly correct, since they may be considered the source whence all other distinct capacities are probably formed by particular habits of study and the nature of our pursuits, independently of those specific capacities which appear to be innate, and, according to the system of the phrenologists, organic. Every man possesses these fundamental faculties in a greater or less degree, according to the obtuseness or the energies of his mind; but it is absurd to conceive that specific capacities can be brought into action without the agency of those which are fundamental. Let us take the instinct to destroy life, the sentiment of property, metaphysical sagacity, or poetic talent,—in short, any one of Gall's various faculties; can we for one instant conceive that they are not under the influence of *perception*, *memory*, *imagination*, and *abstraction*, although they may not be properly ruled by *judgment* and by *reason*? Instincts are equally under a similar influence, and are, according to circumstances, regulated by judgment in the various modes of life of animals.

Phrenologists deny that instinct is a general faculty, and assert that it is an inherent disposition to activity possessed by every faculty, and that there are as many instincts as fundamental faculties. This is a postulation by no means clear. Instinct is an inherent disposition possessed by every animal, but not by every faculty. It is a disposition dependent upon the combination of all the mental faculties, according to the degree in which the animal may possess them: the reminiscences of animals prove it. We have instanced the horse, who endowed with the memory of locality, starts when passing by the same spot where he had started before. But here the memory of facts, *memoria realis*, and probably of words, *memoria verbalis*, are superadded to the *memoria localis*. The horse recollects the tree, the carrion, the object that startled him, whatever it might have been; but to this reminiscence are associated the chiding, the punishment he received from his rider. If this horse had possessed the faculties of *abstraction*, *judgment*, and *reason*, he would not have started, to avoid a reiteration of punishment; but he started under the impression of *perception*, *attention*, and *memory*. Wherever there does not exist a combination of the faculties, the intellectual ones may be considered imperfect. We certainly may have a greater perception and memory of one subject than of others. Thus, a man with a musical organisation will recollect any tune he may have heard, though it may not have attracted the *attention* of one who "hath no music in his soul." We daily perceive different talents in children educated together. This is, no doubt, a strong corroboration of the doctrine of organic dispositions, which in reality no philosophic observer can deny; but to assert that these several dispositions are not regulated by what have been called the fundamental faculties, is, I apprehend, a position that cannot well be maintained; and we may be warranted in the conclusion that a particular faculty may be the result of the combined action of several faculties, if not of all; for, whether a man be a poet or a painter, a miser or a spendthrift, an affectionate father or an assassin, every one of the mental faculties that I have enumerated will to a certain extent be brought into action, however morbid that action may be.

All these disquisitions, however attractive they may be, when decked out with the fascination of the fancy, are the mere wanderings of metaphysical speculation, that never can be proved or refuted until we attain a knowledge of the nature and quality of the perceptions which material objects produce in the mind through the medium of the external senses. But while some of these speculations are idle and harmless, others may be fraught with danger, and occasion much misery to society. Let us for one moment conceive the possibility of our resolves and actions being dictated by a supposed phrenological knowledge,—a knowledge earnestly recommended to statesmen, and indeed to mankind in general;—what would be the result? A diplomatic bungler would be sent on an embassy, because a minister, or a sovereign, with a phrenological map before him, may fancy that he displays the faculty of circumspection, or the sense of things; and a chancellor of the exchequer be found in some needy adventurer who possessed the organ of relation of numbers!

I do not at all presume to invalidate the statements of Dr. Gall. The profession is highly indebted to him for his accurate description of the brain; and physiology must ever consider him as one of the brightest ornaments of science: but I do maintain, that to recommend his conclusions as a guide to society would be the most rash of visionary speculations; and, to my personal knowledge, no man was ever more mistaken in his estimate of the persons whom he met in society than the learned doctor himself. Of this I had frequent opportunities of convincing myself, when I met him in Paris in the circle of a Russian family which he daily visited. If I could admit, with a late ingenious writer, "that phrenology teaches the true nature of man, and that its importance in medicine, education, jurisprudence, and everything relating to society and conduct must be at once apparent," I should certainly agree with him in recommending its study to parents, judges, and juries; but for the present, I am inclined to

believe that, although it may prove a most interesting and valuable pursuit to the physiologist, it is by no means calculated to be the *vade mecum* of any liberal man.

The memory of various persons is amazing, and has been remarked in ancient times with much surprise. Cyrus knew the name of every soldier in his army. Mithridates, who had troops of twenty-two nations serving under his banners, became a proficient in the language of each country. Cyneas, sent on a mission to Rome by Pyrrhus, made himself acquainted in two days with the names of all the senators and the principal citizens. Appius Claudius and the Emperor Hadrian, according to Seneca, could recite two thousand words in the order they had heard them, and afterwards repeat them from the end to the beginning. Portius Latro could deliver all the speeches he had hastily written without any study.

Esdras is stated by historians to have restored the sacred Hebrew volumes by memory when they had been destroyed by the Chaldeans; and, according to Eusebius, it is to his sole recollection that we are indebted for that part of Holy Writ. St. Anthony, the Egyptian hermit, although he could not read, knew the whole Scripture by heart: and St. Jerome mentions one Neopolien, an illiterate soldier, who, anxious to enter into monastic orders, learned to recite the works of all the fathers, and obtained the name of the Living Dictionary of Christianity; while St. Antonius, the Florentine, at the age of sixteen, could repeat all the Papal Bulls, the Decrees of Councils, and the Canons of the Church, without missing a word. Pope Clement V. owed his prodigious memory to a fall on his head. This accident at first had impaired this faculty; but by dint of application he endeavoured to recover its powers, and he succeeded so completely, that Petrarch informs us he never forgot anything that he had read. John Pico de la Mirandola, justly considered a prodigy, could maintain a thesis on any subject,—*de omni re scibili*,—when a mere child; and when verses were read to him, he could repeat them backward. Joseph Scaliger learned his Homer in twenty-one days, and all the Latin poets in four months. Haller mentions a German scholar, of the name of Muller, who could speak twenty languages correctly. Our own literary annals record many instances of this wonderful faculty.

To fortify this function when naturally weak, or to restore it to its pristine energy when enfeebled by any peculiar circumstances, has been long considered an essential study both by the philosopher and the physician. Reduced to an art, this pursuit has received the name of *Mnemonia*; and at various periods professors of it, more or less distinguished by their success, have appeared in the several capitals of Europe.

It has been justly observed, that remembrance is to the past what our sensations are to the present, and our busy conjectures to futurity. Memory gives a lesson to mankind, by stripping past events of their *prestige*; thus enabling us to view what passes around us with a more calm and philosophic resignation, while at the same time it tends to protect us, in the career lying before us, against the many contingencies that are likely to impede our path. Although it might appear desirable that we could obliterate from the mind the painful scenes of our past life, yet the wisdom of the Creator has deemed this faculty as necessary to our happiness as our utter ignorance of our future destiny. For let us mistake not by a hasty glance on this most important subject; the remembrance of past sufferings is not always painful. On the contrary, there is that which is holy in our past sorrows, that tends to produce a calm, nay a pleasurable sensation of gratitude. St. Theresa beautifully expressed this hallowed feeling when she exclaimed, “Where are those blissful days when I felt so unhappy!” *Et olim meminisse juvabit.*

Memory depends in a great measure on the vivacity with which these past scenes are retraced—I may say re-transmitted to the mind, in ideal forms “as palpable” as those that may be present. Therefore reminiscence may be said to result from a connexion between ideas and

images recalled into being by a regular succession of expressive signs that the brute creation do not possess. Those characteristic signs and images that are generally circumstantial are co-ordained and classified in the mind, and tend materially in weak memories to produce an artificial mode of recollecting the past. This faculty is therefore matured by habit. A literary man, whose library is properly classed, will find the book he wants in the dark. The classification of his books is ever present to his mind. These circumstantial signs are always remembered by a sort of association in our ideas. Thus Descartes, who fondly loved a girl who squinted, was always affected with strabismus when speaking of her. When we first see a person in any particular costume, the individual is clad in the same apparel whenever brought to our minds, even after a lapse of many years, when fashion has banished even from general recollection the costume that memory thus retraces individually. From these observations it has been concluded that the most probable method of improving memory would be to regulate these associations by a proper classification. One link of this ideal chain will naturally lead to another. Many military men, to recollect any number, will associate it with that of a regiment, so far at least as the number of regiments extend; and the recollection of this particular regiment will not only bring to his mind the number of the house he seeks, but various other circumstances connected both with the regiment and the number. For instance, I wish to recollect No. 87 in a certain street. I had, when the number was mentioned to me, attached it to the 87th regiment; and instantly I not only recollect that the 87th regiment are the Irish Fusiliers, but that they took an eagle at Barossa, where they distinguished themselves, and that the figure of that eagle is borne upon all the appointments of the corps. At the same moment, with the rapidity of lightning I recollect all the circumstances of the battle of Barossa; the different conversations I may have had at various times with the officers of the 87th; the town, the camp, the bivouac where I last had met them. Thus are innumerable circumstances instantaneously converging in a mental focus while simply seeking for the lodgings of an individual. This may be called the memory of locality, since it is locality that revives the recollection of it.

This train of thought has also been called the memory of association, and associations have been referred to three classes:—

I. Natural or philosophical associations.

II. Local or incidental associations.

III. Arbitrary or fictitious associations.

Dr. Abercrombie has admirably treated this subject, and I refer the reader to his interesting work.[44] The poet Simonides is said to have been the founder of the mnemonic art. Cicero informs us, that, supping one night with a noble Thessalian, he was called out by two of his acquaintance, and while in conversation with them the roof of the house fell in, and crushed to death all the guests he had left at table. When the bodies were sought for, they were so disfigured by the accident that they could not be recognised even by their nearest friends; but Simonides identified them all, by merely recollecting the seats they had held at the banquet.

Cicero and Quintilian adopted his system, connecting the ideas of a discourse with certain figures. The different parts of the hilt of a sword, for instance, might regulate the details of a battle; the different parts of a tree associate the relations of a journey. Other mnemonic teachers recommended the division of ideas to correspond with the distribution of a house; while some of them refreshed the memory by associations connected with the fingers and other parts of the hand. Cicero expresses himself plainly on this subject: “Qui multa voluerit

[44] Inquiries concerning the Intellectual Powers, &c.

meminisse, multa sibi loca comparet: oportet multos comparare locos, ut in multis locis multas imagines collocemus."

The celebrated Feinagle who delivered lectures on memory had adopted the system of aiding the memory by dates, changing the figures in the dates into the letters of the alphabet corresponding to them in number. These letters were then formed into a word to be in some way associated with the date to be remembered—for instance—Henry IV., King of England, was born in the year 1366. This date changed into letters makes *mff* which was very easily changed into the word *muff*—the method is not so obvious of establishing with this a relation to Henry IV., but Hen*ry* IV., says Mr. Feinagle, means four hens, and we put them in a muff, one in each corner, and no one after hearing this is in any danger of forgetting the date of Henry IV.'s birth.

Learning poetry by heart in infancy and youth is perhaps one of the best methods of improving memory, since it lays the early foundation of a classification of words and ideas. Virgil has justly said, "Numeros memini, si verba tenerem." To abridge, resume, and analyze what we have read or heard, is another practice highly beneficial; for, the more clearly we comprehend a subject, the deeper will it remain engraved in our memory. Reading what we wish to recollect before going to bed will materially assist the memory. We sleep over the impressions we have received, and dreams alone can weaken them. From this very reason we can write with more facility upon subjects that require much mental exertion in the morning, fasting, when the mind has not been disturbed by the events of the day, and when the functions of digestion have not drawn upon our faculties, too frequently with the lavishness of a spendthrift. It is somewhat singular, but, despite the interruption of dreams, our ideas are matured during our sleep. Quintilian expresses himself as follows on this subject: "Mirum dictu est quantum nox interposita adferat firmitatis, sivè quiescit labor ille cujus sibi ipsa fatigatio obstabat, sivè maturatur ac coquatur, seu firmissima ejus pars est recordatio. Quæ statim referri non poterant, contexuntur postero die, confirmatque memoriam idem illud tempus quod esse in causâ solet oblivionis."

Memory is subject to be variously disturbed in certain maladies. There is an affection called *amnesia*, in which it utterly fails, and another termed *dysmnesia*, when it is defective. Failure of memory is generally more manifest on some subjects than on others. Salmuth relates the case of a man who had forgotten to pronounce words, although he could write them. Another person could only recollect the first syllables. An old man had forgotten all the past events of his life, unless recalled to his recollection by some occurrence; yet every night he regularly recollected some one particular circumstance of his early days. A curious anecdote is recorded of an elderly gentleman who had fallen into the meshes of an artful courtesan, and who frequently took his own wife for this insidious acquaintance, frequently saying to her, "Madam, I feel that I am doing wrong by devoting to you so much of my time, for, when a man has a wife and children, such conduct is unpardonable;" and, after this polite observation, he took up his hat, and would have walked off, had not his wife, wise enough not to manifest displeasure, contrived to undeceive him.

Dietrich mentions a patient who remembered facts, but had totally forgotten words; while another could write, although he had lost the faculty of reading. Old men are frequently met with who confound substantives, and will call their snuff-box a cane, and their watch a hat. In other cases letters are transposed, and a musician has called his *flute* a *tufle*. Dr. Abercrombie relates the case of a gentleman who uniformly called his snuff-box a hogshead. In Virginia he had been a trader in tobacco, so that the transition from snuff to tobacco, and from tobacco to a hogshead seemed to be natural. Another person, affected in a similar manner, always called for paper when he wanted coals, and coals when he needed paper. Others are known to invent

names and unintelligible words. Some curious anagrams have been made by these irregularities. John Hunter was suddenly attacked with a loss of memory, which is thus related by Sir Everard Home: “He was at the time on a visit at the house of a friend. He did not know in what part of the house he was, not even the name of the street when he was told, nor where his own house was. He had not a conception of anything existing beyond the room in which he was, and yet he was perfectly conscious of the loss of memory. He was sensible of impressions of all kinds from the senses, and therefore looked out of the window, although rather dark, to see if he could be made sensible of the situation of the house. The loss of memory gradually went off, and in less than half an hour his memory was perfectly recovered.” Such momentary accidents I have frequently observed in gouty patients; and for a second or two I have myself experienced the sensation, which was for the moment of a most alarming nature. Hunter was subject to arthritic attacks.

Corvinus Messala lost his memory for two years, and in his old age could not remember his own name. This is an occurrence by no means uncommon; and I knew a person in perfect health who could only recollect his name by writing it. We frequently see individuals who, although they are generally correct orthographers, cannot sometimes spell a simple conjunction. An anecdote is related in the Psychological Magazine of a German statesman, who having called at a gentleman’s house, the servants of which not knowing him, was asked for his name, which he had, however, so totally forgotten, that he was under the necessity of turning round to a friend and saying with great earnestness, “Pray tell me who I am, for I cannot recollect.”

Cases are recorded of the forgetfulness of a language constantly spoken, while one nearly forgotten from want of practice was recovered. A patient in St. Thomas’s Hospital, who had been admitted with a brain-fever, on his recovery spoke an unknown language to his attendants. A Welsh milkman happened to be in the ward, and recognised his native dialect; although the patient had left Wales in early youth, had resided thirty years in England, and had nearly forgotten his native tongue. Boerhaave relates a curious case of a Spanish poet, author of several excellent tragedies, who had so completely lost his memory in consequence of an acute fever, that he not only had forgotten the languages he had formerly cultivated, but even the alphabet, and was obliged to begin again to learn to read. His own former productions were shown to him, but he could not recognise them. Afterwards, however, he began once more to compose verses, which bore so striking a resemblance to his former writings, that he at length became convinced of his having been the author of them.

Dr. Abercrombie relates the case of an aged gentleman, who, in an attack of the head, had almost forgotten the English language, and expressed himself in a mixed dialect of French, Italian, Spanish, German, and Turkish. Having been some time afterwards severely burnt about the head, by setting fire to the curtains of his bed, he was observed to make use of some English words; this being followed by a course of blistering, he continued to speak more English, but only occasionally and in very short sentences. These were sometimes correctly applied, but at other times most erroneously; for instance, having been taken to see a small house, he observed, “it is very neat, but it is a very little child.”

Dr. Beattie mentions the case of a clergyman who, on his recovery from an apoplectic attack, had exactly forgotten a period of four years; and Dr. Abercrombie records a lady who had thus forgotten ten or twelve years of her life. Wepfer mentions a gentleman, who on recovery from an apoplectic attack, was found to know nobody and remember nothing. After several weeks he began to know his friends, to remember words, to repeat the Lord’s Prayer, and to read a few words of Latin, rather than German, his native language. When urged to read more than a few words at a time, he said that he formerly understood those things, but now did not.

After some time he began to pay more attention to what was passing around him, but while thus making slight and gradual progress, he was, after a few months, suddenly cut off by another attack of apoplexy. Dr. Beattie relates the case of a gentleman who, after a blow on the head, lost his knowledge of Greek, and did not appear to have lost any thing else.

Loss of memory has been observed as a frequent occurrence after the prevalence of pestilential diseases. Thucydides relates, that after the plague of Athens several of the inhabitants forgot their own names and those of their parents and friends. After the disastrous retreat of the French army in Russia, and the disease which swept away so many of their troops at Wilna, many of the survivors had no recollection of country or of home. Injuries of the head appear to occasion different results. This circumstance was observed by the ancients. Valerius Maximus relates the case of an Athenian, who, being struck on the head with a stone, forgot all literary attainments, although he preserved the recollection of other matters. A man wounded with a sword in the eye completely forgot Greek and Latin, in which he had formerly been a proficient. A young man, having fallen off his horse and contused his head, lost his memory to such an extent, that he would repeat a question a hundred times over, although the very first interrogation had been answered. He had not the slightest recollection of his accident. Epileptic and paralytic attacks frequently usher in this melancholy result, which has also been often observed after child-birth.

Dr. Abercrombie knew a lady who was seized with an apoplectic fit while engaged at cards; the attack took place on a Thursday evening—she lay in a state of stupor on Friday and Saturday, and recovered her consciousness rather suddenly on Sunday. The first words she then uttered were, “What is trump?”

Dr. Conolly mentions a young clergyman who, when on the point of being married, suffered an injury of the head, by which his understanding became impaired. He lived in this condition to the advanced age of eighty, and to the last day of his existence, spoke of nothing but his approaching wedding, expressing impatience for the arrival of the happy day.

A singular instance of forgetfulness is related of a lady who had been united to a man she loved, after much opposition on the part of her family, and who lost her memory after the birth of a child. She could not be made to recollect any circumstance that had occurred since her marriage; nor could she recognise her husband or her infant, both of whom she maintained were utter strangers to her. At first she repulsed them with apparent horror, but was at last, by the entreaties of her family, induced to believe that she was a wife and a mother; and although she yielded to their solicitations, yet for years she could not persuade herself that their assertions were correct, as she actually was convinced “against her will.” In this instance disease not only destroyed memory, but affection.

The case of Dr. Broussonnet was remarkable. An accident he had met with in the Pyrenees brought on an apoplectic attack. When he recovered, he could neither write nor pronounce correctly any substantives or personal names either in French or Latin, while adjectives and epithets crowded in his mind. Thus, when speaking of a person, he would describe his appearance, his qualities, and, without pronouncing the word “coat,” would name its colour. In his botanical pursuits he could point out the form and colour of plants, but had not the power of naming them. A Parisian merchant, after severe losses, experienced such a failure in recollection, that he was constantly guilty of the most absurd anachronisms;—would talk of the battles of Louis the Fourteenth with Alexander the Great, and describe Charles the Twelfth ascending triumphantly Mount Valerian; and one night, after witnessing the performance of Talma, could not be persuaded that he had not applauded Lekain.

Sudden fright has also obliterated this faculty. Artemidorus lost his memory from the terror inspired by treading on a crocodile. Bleeding has produced the same effects; while, on the other hand, blood-letting has restored an absent man to perfect recollection. Various venenose substances have also been said to produce amnesia. History records several instances of the kind. The soldiers of Anthony, on their return from the Parthian war, were attacked with loss of memory after eating some poisonous plants on their march. Bamba, king of the Goths, was suddenly deprived of all recollection after taking a draught presented to him by Eringius. Plater and Baldinger attributed a similar accident to the use of hemlock and arsenic. Narcotics, no doubt, may produce similar effects, but they will be of a transient nature; I do not know that this injurious power has been detected in any other productions, as the cases related by writers are not supported by sufficient authority to be entitled to unqualified belief.

The cause of these affections will most probably ever be unknown. Equally futile have proved all the endeavours to ascertain in what part of the brain memory is seated, since we have found some physiologists lodging this wonderful faculty in the posterior, and others in the anterior portion of the cranium. I apprehend that we might torture the brute creation, from the elephant down to the lowest reptile, for centuries, without being able to ascertain this point; and even could we attain this information, *cui bono*? Would it protect this privileged quarter of the cerebral organ from the action of external agency, or restore it to its healthy functions when diseased? The mode in which our mental faculties are developed is an impenetrable mystery; and, instead of vainly endeavouring to raise the mystic veil to gratify our curiosity, or rather our vanity, let us endeavour to apply these functions to the use for which they were intended by the allwise Creator, and exert them for the purpose of increasing the prosperity, or at any rate in endeavouring to diminish the sum of sufferings of his creatures, whether they be our fellow-men or the divers races that are submitted to our capricious power.

Affections Of The Sight

The different terms applied to the various morbid affections of vision have been frequently misconceived, and consequently have occasioned much confusion in their application. Those vitiated conditions which are usually noticed may be classed as follows:

I. Night sight.
II. Day sight.
III. Long sight.
IV. Short sight.
V. Skew sight.
VI. False sight.

Night sight, specifically called *Lucifuga*, was also termed *Nyctalopia*, from νυξ, *night*, and ωψ, *eye*; it was also known as the *Noctem amans*. This affection was thus named in consequence of the person labouring under it being only able to see at night, or in a deep shade; hence the first name: while nyctalopia has been used by most modern writers in the opposite sense of *night-sight ache*, agreeably, according to Mason Good's observations, to the technical or implied meaning of *opia*, in which case it always applies to a diseased vision; whence nyctalopia has been made to import day sight, instead of night sight.

This disease appears to be dependent upon a peculiar irritability of the retina, produced by two different causes,—a sudden exposure to a stronger light than the eye has been accustomed to bear, or a deficiency of the black pigment which lines the choroid tunic. If the iris be weak and torpid, it is enlarged; if strong and contracted, diminished. Thus, those who from peculiar circumstances reside in dark caverns and subterraneous abodes, or who have long been confined in obscure dungeons, labour under the first of these causes; instances of which were observed in two of the captives liberated from the Bastille in 1789.

Ramazzini informs us that this affection is commonly observed among the Italian peasants, amongst whom he was not able to trace any other peculiarity than an enlargement of the pupil. This state of the vision, however, has been attributed to the peculiar brightness of the Italian sky, its clear atmosphere, and the relaxing warmth of the temperature. The Italian peasants are therefore constantly exposed to all those causes that tend to debilitate the iris, while they irritate the retina. We thus find these causes acting with renewed power at the season when the disease usually makes its attack,—the vernal equinox, when an increased flood of solar rays breaks on them. Such is the dimness that this brightness produces, that the peasantry frequently lose their way in the fields in the glare of day; but on the approach of night they can see distinctly. Hence are they obliged to remain for some weeks in the shade to recover their sight.

A deficiency of the black pigment of the eye is occasionally found in persons of a very fair complexion and light hair. This affection is therefore common in the Albinoes. This circumstance arises from the whiteness of the eyelashes and hair, whereby the retina is deprived of the natural shade that softens the light in its descent. This debilitated race generally inhabit warm and damp regions; they are seldom long-lived, and frequently low-spirited and morose. The iris is of a pink colour, and this circumstance, added to the constant winking that the weakness of the organ occasions, gives them a distressing appearance. In horses, this want of the dark pigment constitutes what is called the *wall eye*.

Acuteness in night vision is natural to most, if not to all, animals that prowl in the dark. In the feline genus we observe that the iris can be contracted much closer than in mankind, when exposed to a vivid glare; but they also expand to a much greater degree when obscurity sets in. Owls, bats, and many insects, possess a similar faculty.

Day sight, the nyctalopia of some authors, is said to be endemic in some countries,—Poland, the West Indies, Brazil, and various intertropical regions. This affection arises from causes totally different from the former one. Here the eye is habitually exposed to too great a flood of light, whence the retina becomes torpid. It has been said to be endemic in some districts of France, particularly in the neighbourhood of Roche Guyon, on the banks of the Seine; but here the soil is of a dazzling white: and as it makes its attacks in the spring, and continues for three months, it is supposed to arise from the keenness of the reflected light, after the dreary winter months.

This disease has also been commonly observed in Russia, especially in the summer, when the eye is exposed, with scarcely any intermission, to the constant action of light, as the sun dips but little below the horizon, and there is scarcely any interval of darkness. Hens are subject to this affection, and cannot see to pick up their food in the dusk of the evening. The complaint is, from this circumstance, called *hen blindness*.

Dr. Heberden has communicated the following curious case of this species of affection: “A man about forty years old had in the spring a tertian fever, for which he took too small a quantity of bark, so that the returns of it were weakened without being removed. Three days after his last fit, being then employed on board a ship in the river, he observed at sun-setting that all objects began to look blue, which blueness gradually thickened into a cloud; and not long after he became so blind as hardly to perceive the light of a candle. The next morning about sunrising his sight was restored as perfectly as ever. When the next night came on, he lost his sight again in the same manner, and this continued for twelve days and nights. He then came ashore, where the disorder of his eyes gradually abated, and in three days was entirely gone. A month after he went on board another ship, and after three days’ stay in it the night blindness returned as before, and lasted all the time of his remaining in the ship, which was nine nights. He then left the ship, and his blindness did not return while he was upon land. Some little time afterwards he went into another ship, in which he continued for ten days, during which time the blindness returned only two nights, and never afterwards.” It appears, however, that this individual had previously laboured under an affection produced by the use of lead, which had left him in a state of much nervous debility. Notwithstanding this circumstance, this case clearly proves that the affection is liable to be increased and brought on by local influence.

Long sight. In this species of vision the iris is habitually dilated, and not easily stimulated into contraction. Several varieties of this affection have been observed. Dr. Wells, in the Philosophical Transactions, relates the case of a young person who, from a permanent dilatation of the pupil, saw near objects with much difficulty and confusion, but remote bodies with singular accuracy. The power of moving the upper lid was completely lost. This dilatation of the pupil, which may be artificially produced by the application of belladonna, can be remedied by the use of convex glasses.

Short sight. In this case the iris is contracted, and the cornea, which in long sight is too much flattened, is too convex or polarised; therefore spectacles of an opposite character, and with concave glasses, become necessary. Mice are said to be short-sighted; hence the affection has been termed myopia or myopiasis, literally “mouse-sight.”

Skew sight, or *sight askew*, is a condition of our vision only accurate when the object is placed obliquely, in consequence of some partial obfuscation of the cornea, frequently from slight scars, scarcely, if at all, observable. In this lateral vision the axis of the eye affected usually coincides with that of the sound eye. In squinting, on the contrary, the two axes do not coincide.

In *false sight*, imaginary objects float before the sight; or, at other times, objects assume imaginary forms and qualities. The latter species has been divided in cases where the objects that are supposed to be seen have no real existence, and in cases where actual objects have assumed qualities that do not appertain to them. The first are termed ocular phantasms or spectres; the latter, ocular transmutations or illusions. These spectres sometimes form dark spots, called by physicians *muscæ volitantes*. In another species, a net-work seems to be spread before the eyes; hence called *visus reticularis*. In a third form sparks scintillate, and this appearance is experienced when the eye has been struck. The eye is also troubled with an imaginary sense of dazzling, constituting the *myrmaryge* of the Greek writers; at other times, an iridescent appearance, exhibiting the colours of the rainbow, is experienced, although sometimes this impression is confined to a single colour. Dr. Heberden relates the case of a lady of advanced age, lodging on the eastern coast of Kent, in a house that looked immediately upon the sea, and exposed to the glare of the morning sun. The curtains of her room were white, a circumstance which added to the intensity of the light. When she had been there about ten days, she observed one evening, at the time of sunset, that first the fringes of the clouds appeared red, and soon after the same colour was diffused over all the objects around her, especially if they were white. This lasted the whole night, but in the morning her sight was again perfect. This alternation of morbid and sound sight prevailed the whole time the lady resided on the coast, which was three weeks; and for nearly as long after she left it, at which time it ceased suddenly of its own accord.

There exists another variety of false sight, that Plenk has denominated *metamorphopsia*, and in which objects appear changed in their natural qualities, producing error of form, error of motion, error of number, and error of colour. I had a patient in Lisbon who fancied that all the horses he saw carried horns or extensive antlers. A young lady whom I attended beheld every one of a gigantic height. Dr. Priestley has given a curious case of error of colour in five brothers and two sisters, all adults. One of the brothers could form no idea whatever of colours, though he judged very accurately of the form and other qualities of objects; hence he thought stockings were sufficiently distinguished by the name of stockings, and could not conceive the necessity of calling them white or black. He could perceive cherries on a tree; but only distinguished them, even when red-ripe, from the surrounding leaves by their size and shape. One of the brothers appeared to have a faint sense of a few colours, but still a very imperfect notion; and, upon the whole, they did not seem to possess any other distinguishing power than that of light and shade, into which they resolved all the colours presented to them,—so that dove or straw colour were regarded as white; and green, crimson, and purple, as black or dark. On looking at a rainbow, one of them could distinguish that it consisted of stripes, but nothing more. Dr. Nicholl relates the case of a boy who confounded green with red; and called light red and pink, blue. His maternal grandfather and one uncle had the same imperfection. The latter was in the navy, and having a blue coat and waistcoat, purchased a pair of red breeches to match. The same physician knew a gentleman who could not distinguish green from red; a cucumber and a boiled lobster did not offer the least difference in colour. His brother and his niece laboured under a similar affection.

Some philosophers are of opinion, that in the power of conceiving colours there is a striking difference in individuals, and are inclined to think that in many instances the supposed defects of sight ought to be ascribed to a defect in the power of conception, arising probably

from some early habit of inattention. This theory is scarcely tenable. The utmost inattention and indifference regarding surrounding objects could never lead to a delusive view of any colour; also, it is more than probable that, in the case of a child in whom such a defective vision was observed, his attention would be incessantly called on by those around him, to correct, if possible, so strange a delusion. Moreover, this defect of vision, as we have seen, appears in some instances to be hereditary; and to prevail in families.

Phrenologists of course are of opinion that the judgment of colours resides in a particular organ, remarkably full and prominent in painters distinguished by the perfection of their colouring. According to Gall, a local deficiency of brain is observable where the power of distinguishing colours is wanting.

The sense of vision exhibits more variety in the different classes of animals than any of the others. In man, and the greater number of quadrupeds, this organ is guarded by an upper and a lower lid, both of which in man are fringed with lashes. This is not the case in most quadrupeds. In the elephant, opossum, seal, cats, other mammalia, birds, and all fishes, we find a third eyelid, or nictitating membrane, as it is called, arising from the internal angle of the eye, capable of covering and protecting the eye from danger, either wholly or in part. In the dog this membrane is narrow; in oxen and horses it extends half over the eyeball. It is by means of this veil that eagles are capable of fixing their eyes on the noon-day sun. The largest eyes in proportion to the size of the animal are found in birds,—nearly the smallest in whales; but the most diminutive are those of the shrew and mole, the latter's not exceeding the size of a pin's head.

The situation of the organs of vision differs materially. In man and monkeys they are placed directly under the forehead; in some fishes, such as the turbot and flounder tribes, both eyes are placed in the same side of the head. In the snail they are situated on the horns; and in the spider, distributed over various points of the body, and in different arrangements.

Eyes, however, are not indispensable to become sensible of the presence of light. Several zoophytes, that do not possess the organs of vision, are perfectly alive to its influence. A distinct organ is not always indispensable for a distinct sense. It is probable that in those animals that appear to be endowed with particular senses, without displaying particular organs relating to them, the senses are diffused like that of touch, over the whole surface. This subject has been admirably commented on by Cuvier.

Hellebore

From time immemorial this substance has been considered an efficacious remedy in mania. The Greeks pretended that the daughters of Prœtus, smitten with insanity by Bacchus, were restored to reason by the shepherd Melampus, who gave them some milk drawn from goats that had eaten hellebore. It is supposed that the use of purgatives arose from this fabulous tradition, whence this plant was called *melampodium*.

The ancients described two varieties, the white and the black. The first, according to Theophrastus, was found on a part of Mount Œta called Pyra, on which the body of Hercules was burnt. It is not certain whether they confounded our hellebore with our veratrum. Pinel supposes that the veratrum album was their hellebore, as it is not probable that the veratrum nigrum should have been thus confounded. Tournefort, in his travels in the Levant, fancied that he had discovered the root of the ancients in one that the Turks called *zopteme*, which answered in its character to the description recorded in older writers.

Howbeit, it was considered a powerful purgative and emetic, especially indicated in the treatment of mental affections. Celsus forbade its exhibition in summer and during the winter, or whenever febrile symptoms were prevalent. This precaution, however, applied to all purgative medicines; and to this day, in several parts of the continent, similar injunctions are usual; and even in France practitioners of the old school prepare a patient several days before any opening medicine is given,—a learned precaution, that has but too frequently rendered every medicine useless.

The exhibition of this drug was a matter of so much importance amongst the ancients, that it was specifically termed *helleborism*; and it was considered of so powerful a nature in mania, that the treatment of the malady was called *navigare Anticyras*, since it was near the town of Anticyras that the plant was generally gathered. If this process of helleborism proved efficacious, it is more than probable that its beneficial results proceeded from the violent evacuations that preceded it. The following was the mode adopted with the helleborised: The patient was first well fed for several days until the decline of the moon, when a powerful emetic was given to him; five days after a similar dose was prescribed, and then good living ordered for a month: at the expiration of this invigorating respite, emetics began again to work him every three days. After the last attack on his digestive head-quarters, he was bathed, fed again, and hellebore was given after he had been submitted to several hours' friction with olive oil. The emetics were invariably administered on a full stomach, which was cleared either by medicine or the excitement of the beard of a quill poked down the unfortunate patient's throat. At other times, (by way, no doubt, of variety,) rejection was excited by making the patient eat a pound or more of horseradish; after which he was walked about for some time; and then, after a short repose, the fingers or the quill were brought into action. After this operation he was lulled to sleep by a regular shampooing. It appears that, despite of all these practices, the stomachs of the ancients were sometimes so pertinaciously retentive, that more powerful means to *relieve* them were adopted; and when the longest feather that could be plucked from a goose proved unavailing, gloves dipped in the oil of cyprus were put on, and the fingers thus inuncted replaced the feathers. When this failed, the obstinate sufferer was made to swallow a quart or two of honey and hot water, in which rue had been infused; and when this proved ineffectual, he was slung in a hammock to produce the sensation of sea-sickness. In some cases it appears that, despite this practice, the patient thought proper to faint. On such occasions little wedges of wood were driven between his obstinate and rebellious teeth clenched against medicine, so as to allow the introduction of

the goose-quill, while cephalic snuff of the precious hellebore and euphorbia was blown up his nostrils to produce sneezing. The last trial to relieve him was tossing the ill-fated wight in a blanket. After this experiment the patient was left to nature or to his friends, if he *would* not recover. These friends immediately proceeded to give him punches in the stomach, roll him about the floor, and endeavour to restore him to his senses by driving him out of them by every possible noise that could frighten him, if his *frightful* condition was at all susceptible of any thing left in the arsenal of medicinal ingenuity.[45]

Small doses of hellebore seem to have been taken not only with impunity, but were supposed to assist the mental faculties. According to Valerius Maximus and Aulus Gellius, orators were in the practice of using this stimulus before their disputations. Such, it is said, was the habit of Carneades, whose doctrines might well have been applied to this very day to many theories, since he denied that any thing in the world could be perceived or understood.

Hellebore is to this day an ingredient in many of the fashionable pills vended by successful quacks. This introduction, at any rate, shows that their compounders have candour enough to think (although they may not acknowledge it) that the intellectual faculties of the purchasers of their nostrums do stand in need of some medicinal aid.

[45] That serious accidents might have resulted from the use of hellebore is most likely, since various plants resembling it have been mistaken for it; chiefly the *adonis vernalis*, *trollius Europæus*, *actæa spicata*, *astrantia major*, *veratrum album*, and the *aconitum neomontanum*, the last of which is a most virulent poison.

Sympathies And Antipathies

The constant effects produced by causes which do not appear connected with them, are phenomena both of organic and inorganic nature which have long fixed the attention of philosophers, and have not yet been satisfactorily explained. This operation between distant bodies cannot be traced to any medium of communication. It arises from an attractive and a repulsive power that cannot be defined. Almost every substance evinces inclinations or antipathies; is attracted with more or less strength by one body, indifferent towards a second, and constantly avoiding a third; nay, bodies appear to act where they are not present, and where no communication can exist. We are as ignorant of the nature of these phenomena as of those of gravitation, magnetism, and electricity. Still, although this medium of communication is not evident, it must be admitted by inference that there must exist a connecting channel, although its nature be unknown.

The ancients called sympathy *consensus*, and the moderns have also defined it a *consent of parts*; nor is this definition incorrect, since sympathy arises from the relative ties that mysteriously unite our several organs, however distant and unconnected they may appear; thus establishing a beauteous harmony between all the functions of the animal economy. Sympathies must therefore constitute the chief study of the physiologist: on this alone can the physician ground his investigation of the various disorders to which flesh is heir. Symptoms arise from sympathies: without a knowledge of the one we can never attain a clear insight in the other.

Sympathies are of a physical or a moral nature. The first consist, as I have already stated, of a consent between the different parts of the organism; the latter of certain impressions, unaccountable, unconquerable, that harmonize in a multiplicity of phenomena various individuals, or that induce them, without their being able to assign any reason or motive to warrant the repugnance, to avoid each other, and not unfrequently to entertain a feeling of disgust or horror. A secret voice has spoken,—organism instinctively obeys. Moral sympathies have been defined as faculties that enabled us to partake of the ideas, the affections, or the dislike of others; although this sentiment is by no means reciprocal, and we often dislike those who fondly love us. So far sympathy is instinctive; yet, like many instincts, it is more or less under the control of our reason. We often acquire an artificial partiality to substances that we naturally disliked. Our senses may be considered the instruments of our sympathies; yet senses are regulated by education and habit. Oil, olives, tobacco, and various other substances, are naturally, one might say instinctively, unpleasant to most individuals; yet by custom they are not only relished, but ardently wished for when they cannot be obtained. It is the same with our relative partiality or aversion towards individuals; and indifference is often turned into affection, while the most ardent love is not far remote from hate, when vanity more especially, removes its boundaries.

If we admit that our sympathies are lodged in certain specific organs, we must consider that we are the slaves of organism; whereas it is pretty positive that to a certain extent we are the slaves of habit. Even the most ardent and prevailing passions, the indulgence in which has become an absolute necessity, cease to be brought into action when they have long remained dormant. To associate our moral sympathies with physical consents of parts is to level man with the brute creation; although we hourly see the most decided instinctive dislikes in animals overcome by education. A mouse may be brought up with a cat, and a hawk with a sparrow; although a chicken has been known to dart at a fly the moment its head was out of the egg.

Nor can we view in the same light the affinities of inorganic bodies. They are subject to chemical laws; each is endowed with specific qualities that seldom or never vary, and some other body must be interposed to check their attraction; and that body, in the relation of inorganic matter, may be compared to the influence of the mind in intellectual beings. In animals, the very laws of nature are not unfrequently unheeded; and in these instances natural instincts appear less powerful than the mechanical discrimination that we witness in vegetable life, where germs, and molecules, and fibrils not only select each other, according to nature's harmonic institutions, but actually attract each other from distant situations. This attractive power is beautifully illustrated in the mysterious vegetation of the *vallisneria spiralis*, an aquatic plant, in which the male and female are distinct individuals. The organization of the male qualifies it to adapt itself to the surface of the water, from the bottom of which the plant shoots forth, and to float in the middle of the deep and rapid tide. The female, on the contrary, is only found in shallow waters, or on shores where the tide exerts but little influence. Thus differently formed and situated, how does their union take place? It is a wonderful mystery. As soon as the male flower is perfect, the spinal stem dries away, and the flower thus separated sails away towards the shore in pursuit of the female, for the most part driven by a current of wind or the stream; yet as soon as it arrives near its destination it obeys a new influence, and is attracted towards the object of its pursuit, despite the powers of that wind and tide which until then directed it. No hypothesis, however ingenious, can explain this phenomenon.

Notwithstanding the doctrines of various writers, I am of opinion that our passions are clearly instinctive, but fortunately more or less under the control of our mental faculties in well-regulated individuals, who do not yield to these instinctive feelings an unbridled course; and I doubt much if there does exist a single passion, however inordinate it may appear, that cannot be mastered. Both good and evil qualities are frequently artificial, and arise from peculiar moral and physical conditions. Self-preservation is an instinctive feeling; yet man will wantonly risk his existence from false views regarding his social position. Courage has been considered as differing in its quality (if I may use the term), and arises sometimes from a natural animal or brute propensity, at others from calculation and reflection; and the latter most unquestionably may temper the former. Duclos' distinction between what is called the courageous heart and the courageous mind, is by no means as objectionable as some of his opponents maintain. If courage is an instinctive faculty, residing in a certain organ, how comes it that this organism varies at different periods? How comes it, moreover, that this variety depends upon circumstances? I have seen a desperate duellist disgrace himself by a cowardly flight in the field of battle. I have known an arrant poltroon defend himself desperately against robbers; and a man, considered of undoubted courage, surrender his arms to a single footpad. In our instincts, our sympathies, we are to a certain extent the children of circumstances; and it would be as absurd to maintain that we cannot control our moral sympathies, as to excuse the commission of murder or of theft.

Our physical sympathies are of a nature totally different. Here they are brought into action according to certain laws of the organization, as uncontrollable as chemical affinities; and I doubt much whether our unaccountable antipathies may not be considered as appertaining to this category: they seem to depend upon certain laws of attraction and repulsion. The channel of this communication, as I have already observed, will perhaps remain for ever in utter obscurity. To this day we know not in what manner certain articles of food and medical substances find a path to the kidneys with such a rapidity as to render it improbable that it was through the medium of the circulation. The nature of other physiological phenomena is equally unexplained. Through what channel of communication does the cat-hater know that one of these animals is in the room, although unseen by him? Yet these antipathies might be

conquered. A man was wont to fall into fits at the sight of a spider; a waxen one was made, which equally terrified him. When he had recovered his faculties, his error was pointed out, the wax figure was put into his hand without inspiring dread, and shortly the living insect no longer disturbed him.

Certain antipathies appear to depend upon a peculiarity of the senses. The horror inspired by the odour of certain flowers may be referred to this cause. Amatus Lusitanus relates the case of a monk who fainted when he beheld a rose, and never quitted his cell when that flower was blooming. Scaliger mentions one of his relations who experienced a similar horror when seeing a lily. In these instances it is not the agreeableness or the offensive nature of the aroma that inspires the repugnance; and Montaigne remarked on this subject, that there were men who dreaded an apple more than a musket-ball. Zimmerman tells us of a lady who could not endure the feeling of silk and satin, and shuddered when touching the velvety skin of a peach. Boyle records the case of a man who felt a natural abhorrence to honey. Without his knowledge, some honey was introduced in a plaster applied to his foot, and the accidents that resulted compelled his attendants to withdraw it. A young man was known to faint whenever he heard the servant sweeping. Hippocrates mentions one Nicanor who swooned whenever he heard a flute: our Shakspeare has alluded to the effects of the bagpipe. Julia, daughter of Frederick, king of Naples, could not taste meat without serious accidents. Boyle fainted when he heard the splashing of water; Scaliger turned pale at the sight of water-cresses; Erasmus experienced febrile symptoms when smelling fish; the Duke d'Epernon swooned on beholding a leveret, although a hare did not produce the same effect. Tycho Brahe fainted at the sight of a fox, Henry the Third of France at that of a cat, and Marshal d'Albert at a pig. The horror that whole families entertain of cheese is generally known. Many individuals cannot digest, or even retain certain substances, such as rice, wine, various fruits, and vegetables.

There are also antipathies that border upon mental aberration. Such was the case with a clergyman who fainted whenever a certain verse in Jeremiah was read. I lately dined in company with a gentleman who was seized with symptoms of syncope whenever a surgical operation or an accident was spoken of. St. John Long's name happened to be mentioned, and he was carried out of the room. I have also known a person who experienced an alarming vertigo and dizziness whenever a great height or a dizzy precipice was described. A similar accident has been occasioned by Edgar's description of Dover Cliff in King Lear. All these sympathies may be looked upon as morbid affections, or rather peculiar idiosyncrasies, beyond the control of our reason or our volition, although it is not impossible that they might be gradually checked by habit. Our dislikes to individuals are often as unaccountable, when we are obliged to confess with the poet Martial:

Non amo te, Sabidi, nec possum dicere quare;
Hoc tantùm possum dicere, Non amo te.

It is the same with our affections. The ancients, amongst others Empedocles, fancied that attraction and repulsion constituted the principal actions of life, and harmonized the universe. Hesiod dispels Chaos through the agency of Love. Aversions were attributed to the influence of an evil eye. To avoid its direful effects, strange practices were adopted, according to Tibullus; and to check the malefices of wicked crones, it was customary to spit three times in an infant's bosom,

Despuit in molles et sibi quisque sinus;

while the well-known amulet representing the god Fascinus, was suspended round the child's neck. Maidens were veiled to guard them against this noxious power, and secrecy and retirement were deemed the most effectual means of security.

Latendum est dum vivimus, ut feliciter vivamus.

In a preceding article I have given a sketch of the custom of administering love-philters.

The singular sympathies that forewarn a future union between the sexes have in some instances been most surprising. The following example, that came within my knowledge, is perhaps one of the most singular: Mr. ——, a brother officer of mine, was a man of taciturn and retired habits, seldom frequenting public places of amusement, and, when there, felt any thing but gratification. One evening after dinner he was, however, prevailed upon to go to a ball. We had not been long in the room when, to my utter surprise, he expressed great admiration of a young lady who was dancing, and, what still more amazed us all, he engaged her to dance. Such an act of apparent levity on his part struck us as a singularity which might have been attributed to an unusual indulgence at table, had not the contrary been the case, for he was remarkably abstemious. The dance was scarcely over when he came to me, and told me with a look of deep despondency, that his lovely partner was a married woman. The tone of sadness in which he addressed me was truly ludicrous. A few minutes after he left the ball-room. The strangeness of his conduct led me to fear that his mind was not altogether in a sound state; but I was confirmed in my apprehension when he told me the following morning that he was convinced he should be married to the object of his admiration, whose husband was a young and healthy clergyman in the neighbourhood. Here matters rested, and we both went abroad. We did not meet until three years after, when, to my utter surprise, I found that his prediction had been verified. The lady's husband had died from a fall from his horse, and the parties were married. But what rendered this circumstance still more strange is, that a similar presentiment was experienced by the young lady herself who, on returning from the ball, mentioned to her sister with much emotion, that she had danced with a stranger, to whom she felt convinced that she was destined to be married. This conviction embittered every moment of her life, as, despite her most strenuous endeavours, she could not dismiss her partner from her constant thoughts, reluctantly yielding to the hope of seeing him again.

The sympathetic power of fascination is another unaccountable phenomenon. It is well known that in regions infested with venomous snakes, there are persons endowed both by nature and by art with the power of disarming the reptiles of their poisonous capacities. The ancient Cyrenaica was overrun with poisonous serpents, and the Psylli were a tribe gifted with this faculty. When Cato pursued Juba over the Cyrenaica desert, he took some of these Psylli with him to cure the poisoned wounds that these reptiles might have inflicted on his soldiers. Bruce informs us that all the blacks in the kingdom of Sennaar are perfectly armed by nature against the bite of either scorpion or viper. They take the cerastes, or horned serpent, (one of the most venomous of all the viper tribe,) in their hands at all times, put them in their bosoms, and throw them to one another, as children do apples or balls; during which sport the serpents are seldom irritated to bite, and, when they do bite, no mischief ensues from the wound. It is said that this power is derived from the practice of chewing certain plants in their infancy. This is most probably the fact; these substances may impregnate the body with some quality obnoxious to the reptile. The same traveller has given an account of several of these roots. In South America a similar practice prevails, and a curious memoir on the subject was drawn out by Don Pedro d'Orbies y Vargas, detailing various experiments. He informs us that the plant thus employed is the *vejuco de guaco*, hence denominated from its having been observed that the bird of that name also called the serpent-hawk, usually sucked the juice of this plant before his attacks upon poisonous serpents. Prepared by

drinking a small portion of this juice, inoculating themselves with it by rubbing it upon punctures in the skin, Don Pedro himself, and all his domestics, were accustomed to venture into the fields, and fearlessly seize the most venomous of these serpents. Acrell, in the *Amœnitates Academicæ*, informs us that the *senega* possesses a similar power. The tantalus or ibis of Egypt, that derives its chief food from venomous animals, depends in a like manner on the protection of antidotes. This power of fascinating serpents is so great, that they remain totally torpid and inactive under its influence, and are not even able to offer any resistance when skinned from tail to head like an eel, and eaten alive. According to Bruce, they sicken the moment they are laid hold of, and are exhausted by this invincible power as though they had been struck by lightning or an electric battery, shutting their eyes the moment they are seized, and never attempting to turn their mouth towards the person that holds them. It has been asserted that the Hindoo jugglers render serpents innocuous by the extraction of their teeth, and although this may be the practice in some parts of India, it is not generally resorted to in other countries.

Dr. Mead and Smith Barton of Philadelphia endeavour to explain this power by the influence of terror. This supposition, however, is not correct, since the serpent will injure one man and not another, if the latter is gifted with this faculty and the former one is not. Major Gordon of South Carolina attributes the fascinating power of reptiles to a vapour which they exhale and shed around them; and he mentions a negro who, from a peculiar acuteness of smell, could discover a rattlesnake at two hundred feet distance. That certain odours are overpowering there is not the least doubt; and trout and other fresh-water fishes are charmed and caught without resistance when the hand is smeared with asafœtida, marjoram, and other aromas. The fishes, delighted no doubt with this odour, or intoxicated by its power, will actually flock towards the fingers, and allow themselves to be laid hold of.

Thieves and housebreakers have been known to possess the power of quieting watch-dogs, and keeping them silent during their depredations. Lindecrantz informs us that the Laplanders can instantly disarm the most furious dog, and oblige it to fly from them with every expression of terror. The strange faculty of taming the most unmanageable horses, possessed by an Irishman, hence called the *Whisperer*, is well known. Several horse-breakers have appeared at various periods possessing the same art, and they would make the wildest horse follow them as tamely as a dog, and lie down at their bidding. It has been affirmed that these whisperers introduce a globule of quicksilver, or some other substance, into the animal’s ears. It is, however, more probable that these charmers derive their power of fascination from some natural or artificial emanation. The most singular power of fascination is perhaps that exhibited by the jugglers of Egypt, who, by merely pressing the serpent called *haje* on the neck, stiffen the reptile to such a degree, that they can wave it like a wand.

To explain this sympathetic influence that living beings exercise on each other, as I have already observed, has long been the study of philosophers. Their chief theories may be divided into those of the advocates of *pneumatism* or *spiritualism*, who maintained that the nerves transmitted a subtle fluid susceptible of external transmission. Such were the disciples of Plato; and, amongst the moderns, the Arabian writers, Paracelsus, Van Helmont, Willis, Digby, Wirdig, and even Boerhave. The *mechanicians* formed another class, refusing to admit the doctrine of influences, and submitting all sympathetic phenomena to the laws of mechanism and chemistry. Amongst these we find the Cartesians, Boyle, Hoffmann, and Haller. Their doctrine had already been established amongst the ancients by Asclepiades. The third system was that of the *organicians*, who attributed these effects to our organization, governed by a principle of free agency. In this school are recorded the names of Hippocrates, Galen, Stahl, Bordeu, and many illustrious writers of various ages. An investigation of these discrepancies would be foreign to these sketches. I can only observe, that none of them are

tenable, and have only tended to display scholastic learning and ingenuity, without any practical beneficial results. Indeed, the only advantages that might possibly accrue from these pursuits would be the shedding of some faint light upon our systems of early education, by finding out the most judicious method of counteracting innate dispositions and peculiar idiosyncrasies.

The life of man is a relative and external existence. He lives in communion with all around him, and before his ultimate dissolution he is doomed to die with every object of his affections that perishes before him. To these objects he has been united by the secret powers of sympathy. The organism of both appears to have been subject to mutual laws; and grief and joy, our pains and pleasures, are transmitted with the rapidity and power of the magnetic fluid. Nor time nor distance can affect these sympathies, which have been known to remain latent in our breasts till called into action by accidental circumstances. Thus, a man has never known how fondly he loved until he was suddenly deprived of the object of his sympathies, although until that moment this affection had been unknown even to himself. This circumstance clearly proves that these sympathies are not under the influence of our imagination. Although it is to this creative faculty that these reminiscences are attributed by Madame De Staël in the following exquisite words, "The creative talents of imagination, for some moments at least, satisfies all our desires and wishes,—it opens to us heavens of wealth; it offers to us crowns of glory; it raises before our eyes the pure and bright image of an ideal world: and so mighty sometimes is its power, that by it *we hear in our hearts the very voice and accents of one whom we have loved*."

Sympathies might be denominated a moral contagion in mankind: in the brute creation they merely produce a physical impulse. Reid attributed to the nervous system an atmosphere of sensibility, influencing all that came within its range. Ernest Platner maintained that our soul could diffuse itself in mutual transmission; and in another paper I have shown that life may be prolonged by sacrificing the health of others, when the genial warmth of youth is surreptitiously communicated to decrepitude.

What is then this invisible vital fluid, this electric principle, that the touch, the breath, the warmth, the very aroma of those we are fond of, communicates, when trembling, fluttering, breathless, we approach them? that enables us, even when surrounded with darkness, to recognise by the feel the hand of her we love? Nay, whence arises the feeling of respect and veneration that we experience in the presence of the great and the pre-eminently good? It may be said this is the result of our education; we have been taught to consider these individuals as belonging to a superior class of mortals. To a certain extent this may be true; yet there does exist an impressive contagion when we are brought into the presence, or placed under the guidance, of such truly privileged persons. Their courage, their eloquence, their energies, their fanaticism, thrill every fibre, like the vibration of the chord under the skilful harpist's hand. Actuated by this mystic influence the coward has boldly rushed into the battle, the timid dared imminent perils, and the humane been driven to deeds of blood. Fanatic contagion has produced both martyrs and heroes. Example stimulates and emulates, despite our reasoning faculties. *Regis ad exemplar totus componitur orbis.* Imitation is the principle of action, the nursery of good and great deeds. We either feel degraded by the ascendancy of others, when we fancy, however vainly, that we may attain their level; or devote ourselves to their cause and their service, when we tacitly recognize their mastery. It is more particularly in our devotion and in our love,—two sentiments more analogous than is generally believed,—that this *mutuality* of sympathies prevails; and when Galigai was asked by his judges by what means he had obtained his influence over Mary of Medicis, his reply was similar to that of the Moor when describing his course of love,—the witchcraft he had used to win his Desdemona, when with a greedy ear devouring his discourse.

There is no doubt that education, circumstances, our state of health, predisposes us more or less to the action of these sympathetic powers, for then our feelings are actually more or less morbid. Affliction, for instance, predisposes to tender sentiments. There is perhaps much psychological matter of fact in the old story of the Ephesian widow; and our immortal Shakspeare felt the truth not only of the contagion of grief, but of its consoling power when reciprocally felt, although no doubt the reciprocity has often been assumed to woo and win.

Grief best is pleased with grief's society.
True sorrow then is feelingly surprised,
When with like feeling it is sympathized.

Fortunately for our frail race, sympathies are liable to be worn out by their own exhausting powers. Attrition polishes but indurates at the same time: thus does social intercourse harden our gentle predispositions. The mathematical world dispels the illusions of our fervent youth, as chilling truth banishes fancy's flattering dreams. Experience is to man what rust is to iron; it corrodes, but at the same time protects the metal to a certain degree, from the magnet's mighty power.

Although the nature of sympathies most probably will never be ascertained, their study is essential both to the moralist and the physician, and both may be materially aided in their vocations by the temperament of the pupil or the patient; for, as I shall endeavour to show in a subsequent sketch, our temperaments generally indicate individual characteristics. It is in vain that some philosophers may deny the power of innate faculties and dispositions. The very expression '*human nature*' implies their existence. To encourage their growth, or to check their developement, becomes the duty of those who are entrusted with the education of youth, when yielding to, or counteracting propensities, becomes as necessary as the care the horticulturist devotes to his plants. By the inclination that trees have taken, we can generally learn the prevalent winds of a district. The plastic hand of our early teachers may, in most instances, obtain a similar result; though in the vegetable kingdom, as well as in the animal kingdom, there will be constantly found stubborn trunks that will resist all influence. Were we to admit that our material organism cannot be counteracted, we should inevitably fall into many lamentable errors, and many a crime would be extenuated on the plea of fatalism. It is to be feared that some of our ingenious theorists have too frequently tortured organism on a Procrustean couch, to suit their favourite phantasies. We might reply to the visions of these enthusiasts in the words of Iago, "Our bodies are our gardens, to which our wills are gardeners—either to have it sterile with idleness, or manured with industry. The power and corrigible authority of this lies in our wills. If the balance of our lives had not one scale of reason to poise another of sensuality, the blood and baseness of our natures would conduct us to the most preposterous conclusions."

The Archeus Of Van Helmont

One of the most ingenious fictions of those speculators who have endeavoured to explain the mysteries of our wonderful organization, was perhaps the Archeus of Van Helmont, a term derived from αρχη, *origin*, *principle*, *authority*, *power*. According to the doctrines of this physician, the archeus was an internal agent that commanded and regulated all the vital functions. I cannot better describe it than by partly borrowing the language of the founder of the doctrine.

The archeus and matter are the natural causes of all. The molecules of matter, essentially inert, receive from this principle their movements, their order, their distribution, their conformation: the archeus is the internal agent that penetrates them, the nucleus of their inspiration; it is the mould in which they are elaborated, brought into form by this plastic influence meeting in this material substance the requisite docility to realize its ideas of perfection. Thus the archeus is an active and an intelligent power, possessing the faculty of amalgamating and identifying itself with matter; penetrating its inmost recesses, it modifies and changes each particle of matter, producing that incomprehensible series of oscillations of spontaneousness and equilibrium, that catenation and marvellous automatism, that constitute the consciousness of our existence, and whence springs the only notion we can form of its causation. It is the archeus that presides over our sense of smelling, of tasting, and consequently the selection of our food; it is *he* that dissolves it in our digestive organs, liquefies it, and prepares it for due assimilation; it is he that imparts a conservative action to the blood, and converts this vital fluid into bone and muscle. Should any particle of our aliments have escaped from this transforming power, these substances become foreign bodies, irritating by their presence this sovereign power, calling forth his energies and his activity, and exciting his indignation and wrath by their repeated provocations. His just fury stimulates and accelerates the vital functions; but, instead of wreaking its vengeance on external matter, it overwhelms all internal obstacles, whether diffused in the system or concentrated on any given point. It is this tumultuous confusion that constitutes maladies, which arise from two evident causes,—an alteration in matter and a reaction of the archeus.

Of these two morbid elements, the first is susceptible of a thousand varieties both in nature and extent, and therefore produces as many modifications in the corrective power. Then does the archeus, threatened on different points in different manners, regulate his plans and operations both of defence and of attack, selecting his weapons according to the nature of his antagonists. In this mutual struggle our archeus wisely checks the impetuosity of his onset, husbands his forces, and merely detaches them from the main body according to the circumstances of the conflict; thus ever keeping a powerful reserve. It is this wisdom of conduct that ultimately restores tranquillity, and compels the rebellious molecules to submit to the laws of organization. For what constitutes the cure of a disease, whether obtained by nature or by art? Nothing more than the dignified repose of the mighty archeus, when the fire of his wrath has consumed his foes. Diseases, therefore, are simply the execution of vast and complex projects that inspire the archeus, and which he carries into execution as the statuary embodies on the marble the conceptions of his genius. When the morbid idea is in conformity with his plans, a favourable result will ensue; if, on the contrary, the archeus labours under a misconception, if he is thrown by erroneous impressions into disordinate steps, then may this power, excited without a just motive, or a determinate and proper object, turn its arms against itself, and destroy the ties that united it to matter. It is then that art, whose aim it is to meet the foe with his own weapons, must have recourse to medicine for the purpose of rousing the

torpor of the archeus, reanimate his energies if he droops, overthrow him if he becomes unruly, and finally compel him to yield, by a salutary terror; forcibly bringing him back to that judicious equilibrium in action, when all the functions contribute in harmony and concert to the general welfare of the system.

Such were the truly poetical ideas of Van Helmont, who might have written an epic on the government, revolutions, and battles, in the archean state, similar to the Holy War of our ingenious Bunyan; for, like the cobler poet, our theorist divided and subdivided his legions and their officers. The archeus is merely the sovereign commander, whose head-quarters and throne were in the stomach; all the other viscera have distinct commandants, receiving their orders from their chief, who employed the nerves of his *aides-de-camp*. Nor was it an easy matter to keep all these captains in a proper state of discipline. Their irregularities occasioned constant tumults; for the court of the archeus, like all other courts, was most depraved and capricious in its practices, and intriguing in all its machinations, and the archeus had great trouble in keeping his subordinates in a proper state.

The most rebellious of his generals was the one who commanded the uterine district. There it was in vain that the articles of war were constantly read,—that solitary confinement and prison-diet were resorted to. Its constant mutinies not only demanded the utmost vigilance, but it was no easy matter to prevent its dangerous influence from contaminating the other branches of the service; and treasonable correspondences were not unfrequently discovered with the staff of the brain. This rebellious province, indeed, excited incessant apprehension, constantly agitated the entire commonwealth, and, on the plea of national welfare and liberty, it hoisted at times a standard of defiance, and precipitated the country in all the miseries of civil war; the more to be dreaded, as it always put forth the most specious pleas, destroying with words of peace.

This whimsical doctrine is not unlike the Platonic theories, and resembles the *naturism* or ενορμον of Hippocrates, and the autocracy of the soul, of Stahl. Van Helmont not only established his archei in animals, but in plants, and even in our food. The archeus of man he sometimes called *ens seminale*, *ens spirituale*, *impetum faciens*, *aura vitalis*. Well aware that the most powerful despot cannot reign without rival powers, Van Helmont admitted certain *imperia in imperio*: for instance, there was a troublesome minister in his own cabinet, whom the archeus frequently could not control,—one *pylorus rector*, or master of the ceremonies; then he had to apprehend the power of a secret faculty possessed by the stomach and spleen, which he called a *duumvirate*,—*jus duumvirat'*. The sensitive and immortal soul was another check on his sway; while the spirit of life residing in the blood was not easily managed. All these vexations occasioned frequent attacks of illness in the monarch, and Van Helmont has described these several affections; for, although he possessed the power of conceiving and executing plans of disease, like many physicians, he did not know how to cure himself.

When we consider that systems similar to this absurd doctrine, if not more extravagant, have ruled the medical schools for centuries with a despotic sway, can we marvel that medicine should have incurred the invectives of scepticism, or the scurrility of wits? In the very ratio of their absurdity have these flitting systems been maintained with scholastic fury; their proselytes would have vied in excesses with monastic persecutors, had they been able to assume a religious mask. It is painful to observe that unbelief and impious ridicule in theologic matters may be referred to the same causes as medical scepticism,—the vain and presumptuous endeavour of man to explain that which the Creator has most probably willed to remain inexplicable. Instead of wisely referring all that is mysterious to the Almighty Power that knows no limit, man has sought to explain and comment upon human principles,

nay upon human motives; and when they could no longer attribute evil to God, they crossed the *pons asinorum* to call in the Devil. In like manner, when they proudly fancied that they had regulated all the functions of the animal economy in that harmonious manner that they were modest enough to call admirable and wondrous, they endeavoured to account for a derangement of this equilibrious condition, either by the introduction of some evil spirit, or the unmanageable rebellion of some organ, some principle, some agency, and for this purpose they gave individuality and specific vitality to those agents, each of the *dramatis personæ* having a particular part to perform in bringing on a tragic catastrophe or a happy *denouement* of the drama of life.

Let not the learned doctors of modern schools exclaim, that these were the errors of former days and of dark ages. They themselves are grovelling and groping in the dark whenever they pretend to fly from the trammels of empiricism, and, like our forefathers, account for what is unaccountable. But, above all, let them be meek and modest (if they can) in passing judgment upon others, and inscribe upon the doors of their splendid libraries the saying of the olden sage, “All that we know is our own ignorance.”

Monsters

Philosophers have puzzled their brains to no purpose in endeavouring to account for the unnatural formation of animals. The ancients, amongst whom we may name Democritus and Epicurus, attributing all organization to an atomic aggregation, fancied that matter was endowed with an elective faculty and certain volition in attaining this organism; and considered monstruosities as mere experiments on the part of these atoms to produce some other species or races. This chimera was of a par with the archeus and his satellites of the preceding article. There is no doubt, however, that in the myriads of organized creatures various circumstances may tend to affect most materially the regularity of these developments, in the same manner as the properties and peculiar qualities of their organs may depend in a great measure upon similar influences. Conservation and reproduction are in the ratio of this perfection and imperfection. It is true, generally speaking, that the healthy and the best organized are less liable to engender an ill-conformed offspring; yet parents of this description have been known to produce monsters. Still the *fortes creantur fortibus* of Horace has become a proverbial expression; and some fanciful wanderers in the mazes of imagination framed rules for their *megalanthropogenesy*, or the art of creating illustrious men and distinguished women by uniting the learned and the witty.

Generation is a wondrous mystery. Many casual circumstances may check the mechanism of its action, (if I may be allowed the expression,) and affect its results. Any sudden physical or moral impression acting violently might produce this result; although, despite the theories and experiments of philosophers, it has not been proved that conception depends in the slightest degree upon the passions, being an act of nature totally independent of the control of mental emotions or bodily sufferings. This fact is clearly proved in cases of brutal violence.

The ideas entertained by several naturalists, that organized beings were cast in a certain mould, were not altogether visionary, or unfounded in observation. The great resemblance between children, and their hereditary mal-conformation and defectuosities in whole families, would seem to a certain degree to warrant this conclusion; but it is more probable that imagination may have some influence in this irregularity, although at the time we may be unconscious of the relative action of moral agency on physical functions. The supporters of the existence of this plastic mould in which organized matter is cast, would then maintain that the mind having once influenced the conformation of the matrix, it would ever after preserve this deviation from nature’s general laws.

It is evident that different species of animals and vegetables have disappeared on the face of the earth, some within the memory of man. We neither know how these species have ceased to exist, nor whether all that possibly can be created has hitherto been brought into being; neither can we form any idea regarding the perpetuity of the races that surround us. Perpetuity and eternity (as far as regards this world) are conventional terms: races were supposed to be perpetuated by the successive evolutions of germs, as I have observed in a former article. To a certain extent this doctrine is correct, and is rendered evident in the evolutions of plants arising from their seed. Preternatural conditions are merely irregularities in this germination. The doctrine, that at each creation a true generation and gradual formation of a new conception from the formless genital matter takes place, does not appear to me reconcileable with sound physiology, nor supported by observation; for, were this the case, it is more than probable that preternatural formations would be more frequent. It was upon this doctrine that the learned Blumenbach founded his *nisus formativus*, an expression that he thus explains: “The word *nisus* I have adopted chiefly to express an energy truly vital,

and therefore to distinguish it as clearly as possible from powers merely mechanical, by which some physiologists formerly endeavoured to explain generation. The point upon which the whole of this doctrine respecting the *nisus formativus* turns, and which is alone sufficient to distinguish it from the *vis plastica* of the ancients, or the *vis essentialis* of Wolff, and similar hypotheses, is *the union and intimate co-exertion of two distinct principles in the evolution of the nature of organized bodies*,—*of the* physico-mechanical *with the purely* teleological;—principles which have hitherto been adopted, but separately, by physiologists in framing theories of generation."

The ingenuity of this hypothesis must be admitted, but it does not militate against the pre-existence of germs. Germs are visible in the ovum before fecundation; in these germs the very primordia of future organization can be distinguished. It is by no means necessary to allow these germs an exciting power, or a formative power, as has been objected: they are more or less profuse, and under the influence, as I have already said, of accidental circumstances. It has been maintained that monsters are more common in domesticated animals than in wild ones. This is by no means evident, since we have little opportunity of ascertaining the case in forests and in wildernesses; but, admitting the fact, it only tends to corroborate my opinion regarding the influence of accidental causes in physical development, since domestication must expose animals to many emotions unknown in their natural condition. It has been said that monsters are especially observed among sows. There perhaps is no animal under the subjection of man, excepting, perhaps, the unfortunate donkey, more exposed to physical injuries during gestation; and as the Portuguese maintain that a *cajado* (a stick) springs from the earth whenever an ass is born, so our bumkins and malicious urchins fancy that every one owes a kick to a gravid sow. Howbeit, I doubt much whether the swinish multitude are more subject to bear monstruosities than other animals; and preternatural conformations are, I believe, as frequent in lambs, and calves, and chickens; and double-headed and double-legged specimens of these animals are more frequently exhibited than monstrous pigs.

Monstruosities are of two kinds, and exhibit either an excess of parts or a defect. Thus, some children are born with more limbs than usual, whilst others are deprived of their natural proportions. It is not unlikely that in the former case twins were being developed; whereas, in the other, the proper nourishment of the parts that are either wanting or stunted in their growth had somehow or other been impeded in its assimilation. This opinion seems to be warranted by the facts observed in the artificial incubation of eggs, the different parts of the chick being more or less perfect where the heat had been more or less steadily applied; the produce of those eggs that had enjoyed more warmth being invariably the stronger. The same remark applies to plants. Eggs and seeds are in most respects ruled by similar laws in the phenomena of their germination: the arms and legs grow from the animal fœtus, as the branches originate from the trunk of the tree. These ramifications are frequently as symmetrical as human limbs. When there are preternatural excesses in formation, it is probable that twins were intended: thus we see fœtuses with double heads, or with two bodies. The same irregularity is observed in double and triple cherries, and other fruits. It is probable that this union took place when these bodies were in a soft state, and the vessels inosculated in their intricate ramifications with greater facility, until further development had consolidated the junction.

If a proof were wanting that monstruosities do not arise in the original organization of the embryo, but from subsequent accidents during gestation, it might be sought in those preternatural appearances that arise from frights or longings, and constitute what are called *nævi materni*. Thus are infants born bearing the marks of some fruit the mother had desired, or some animal that had terrified her. This phenomenon plainly shows that there does

exist a wonderful sympathy between external objects and the uterine system; yet this sympathy is not as surprising as that which is subsequently observed between these marks and the fruit they represent. It is a well-authenticated fact that they will assume a tinge of maturity when the fruit is ripening, and become gradually more pale as it is going out of season. The same observation has been made in regard to animal marks; for instance, these marks have displayed a deeper colour when the mouse or the rat that had occasioned them was mentioned. I know a lady who, during her pregnancy, was struck with the unpleasant view of leeches applied to a relative's foot. Her child was born with the mark of a leech coiled up in the act of suction on the identical spot. Mr. Bennett has published a remarkable instance of this uterine sympathy. A woman gave birth to a child with a large cluster of globular tumours growing from the tongue, and preventing the closure of the mouth, in colour, shape, and size exactly resembling our common grapes, and with a red excrescence from the chest, as exactly resembling in figure and appearance a turkey's wattles. On being questioned before the child was shown her, she answered that, while pregnant, she had seen some grapes, longed intensely for them, and constantly thought of them; and that she was also once attacked and much alarmed by a turkey-cock.

Various writers have positively denied these facts. Gerard tells us that he had known three pregnant women whose minds had been constantly occupied with the unpleasant recollections of a cripple, of a dancing-dog fantastically dressed, and a basket of beautiful peaches; yet their offspring bore no marks of these objects. This is no argument. No rational person could imagine for a single moment that every impression thus received is to be transmitted. Buffon, who also doubts this influence, thus expresses himself: "We must not expect that we shall be able to convince women that the marks their children may bear have no analogy with ungratified longings. I have frequently asked them, before the birth of their infants, what had been their wishes, and consequently what would be the marks that they might expect? By this question I frequently gave unintentional offence."

Now, with all due respect to this celebrated naturalist, this argument is by no means conclusive. We perfectly well know that pregnant women are frequently alarmed without such consequences, and the most fantastic phantasies may cross their idle brains, without any such result. It has been observed on this subject, "that when a circumstance may proceed from many causes, we do not universally reject any one because it is frequently alleged without reason." We have too many well-authenticated cases before us to doubt this strange effect of maternal impressions, so clearly observed and recorded in Holy Writ in the following passage of Genesis: "And Jacob took him rods of Green poplar, and of the hazel and chestnut tree, and pilled white strakes in them, and made the white appear which was in the rods. And he set the rods which he had pilled before the flocks in the gutters in the watering-troughs, when the flocks came to drink, that they should conceive when they came to drink. And the flocks conceived before the rods, and brought forth cattle ring-straked, speckled, and spotted."

The sympathy that evidently exists between bodies separated from each other, but previously connected, has given rise to many absurd stories. It is told of Taliocotius, that having made a nose for a patient, cut out of a pig, the poor man's snout fell off the moment the hog was slaughtered. A similar belief prevails among horticulturists, who assert that the graft perishes when the parent tree decays. A very singular phenomenon is observed in wine countries, where the wine in wood enters into a state of slight effervescence, and even efflorescence, when the vines begin to throw out their blossoms.

It therefore appears to me more than probable that monstruosities are by no means original mal-conformations, but arise, during gestation, from physical or moral influences that affect

the mother, however unconscious she may be of their action. We have frequent instances of violence occasioning preternatural developements. Mr. Giron Buzareingues mentions that a violent blow was given to a gravid bitch, who produced eight pups, all of which excepting one, had the hind-legs wanting, malconformed, or weak.

A further disquisition would lead me beyond the limits of a sketch. I shall therefore relate some curious cases of monstruosities, that would seem to set at nought our ideas regarding the *indispensability* of certain organs to the functions of life.

Various instances are recorded of the union of two or more fœtuses. We have lately seen the Siamese twins, and such a preternatural formation is by no means uncommon. In the Journal de Verdun, 1709, a case is related of two twin female children who were united at the loins, with only one intestinal canal. They were seven years old, could walk about, embrace each other in the fondest manner, and both were proficient in several languages. Buffon gives the history of two Hungarian girls, who were also joined together in the lumbar region. Helena, who was the first-born, became tall and straight; Judith, her sister, was of a diminutive size, and slightly arched. At six years of age she was attacked with hemiplegia, and never recovered perfect health. Helena was sprightly and intelligent. With the exception of the smallpox and measles, under which they laboured at the same time, their ailments were always distinct. They lived until the age of twenty-two, when Judith was attacked with a fever, that shortly terminated her existence. The horror expressed by Helena in beholding her dead companion, with whom she had been identified in sisterly love for so many years, cannot be described; but her agonies were of short duration, for in three minutes she also had ceased to live. On their *post mortem* examination each was found to have possessed distinct viscera. The aorta and vena cava were united above the origin of the iliac arteries, so that no severing operation could have been performed without destroying them both.

Duverney relates the case of twins united at the lower part of the abdomen. They only lived six days; the strongest of the two died first, and was followed by his companion three hours after. Haller records upwards of thirty cases of a similar nature; and various skeletons of this description are to be seen in our museums. Munster saw two girls united by the forehead. They had then attained their tenth year, when one of them died. It therefore became indispensable to separate them, but the unfortunate creature did not survive the operation. Daubenton describes two children united at the back of the head.

Such miserable junctions naturally suggested the idea of effecting a separation by surgical means; but I believe this operation was only once performed with a successful result. Two little girls were united from the xiphoid cartilage to the umbilicus. The uniting substance was an inch in thickness, six lines in breadth, and five inches in circumference. In the centre of the junction was the umbilical ring common to both. The umbilical vessels were separated and tied; the ligature fell at the expiration of nine days; and then Zwingler, the operator, proceeded to divide the remaining bonds.

Various monsters have been seen with four arms and three legs, or four legs and two or three arms. The history of the double-headed infant of Oxford is curious. This creature had two heads diametrically opposite, four arms, one body and two lower extremities. These heads were doubly baptized; one by the name of Martha, and the other Mary. The features were different; Mary’s was smiling, Martha’s dejected. The latter died two days after her birth, and Mary expired a quarter of an hour after.

A curious monster of a similar description is recorded to have lived at the court of James IV. of Scotland. It had been taught several languages, and music. One head was intelligent, the other remarkably stupid. This creature lived twenty-eight years, when one of the individuals

died. The other survived several days, but gradually drooped as the body of his late companion was decomposing. In olden writers we have many curious cases. How far they may be entitled to credit I cannot say; although we have no reason to deny the fact, when we daily witness the most singular malconformations. Liceti relates the case of a child with two legs, but seven heads and seven arms. Bartholinus mentions one with three heads, each of which uttered the most horrible cries, and then expired.

While these unfortunates were visited with several heads, instances have been known of heads that had attained a most enormous volume. In Tunis, there was a Moor of thirty years of age, whose head was so large, that crowds followed him in the streets; and his mouth was of such a capacity, that he could devour a large melon as easily as an apple. This man was an idiot. At Lucca, Benvenuti saw a lad, otherwise well-proportioned, whose head at the age of seven began to increase so rapidly, that when he was twenty-seven it measured thirty-seven inches eight lines in circumference, and his face was fifteen inches long.

Singular monstruosities have been seen, where heads and bodies seemed actually to be growing from or hanging to individuals. Winslow knew an Italian child, of eight years of age, who carried a little head under the third left rib, and peeping out as if the body of the one had been concealed in that of the other. Both heads had been christened; the one James, the other Matthew. When the ear of little Matthew was pinched, his host James forthwith began to roar. The Bengal child, whose case is related by Valentin and Horne, is equally singular. Here one head was placed above the other, the superior one nearly as well conformed as the lower; both adhered intimately. The upper face assumed somewhat of an oblique direction. Each head had its distinct brain: sometimes one head was fast asleep while his neighbour was wide awake, and one head would cry most piteously if you pulled the hair of the other; but, what was still more singular, when the one was fed, its companion expressed its gratification, and water flowed from its mouth. This monster lived four years, and probably would have lived much longer, but for the bite of a venomous reptile.

In a former article I alluded to encephalous and anencephalous cases, where there were either no heads or heads without brains. Of the first variety Béclard relates the following: A woman at Angers was delivered of twins, one of which not only was without a head, but only showed the inferior part of the body; without arms, a small stump-like excrescence growing from the upper part of the chest; the feet were turned inwards, and without toes. The creature was of the male sex. The body presented one cavity without any diaphragm; nor could any trace of liver, spleen, œsophagus, or stomach be detected: the intestinal tube commenced at the upper part of the body, but was impervious; the pancreas and kidneys were as usual; the umbilical vein arose from the cava, and the umbilical arteries from the hypogastric. There were ten ribs on each side, and the spinal marrow threw out its regular nerves.

Brunel has recorded the case of a male infant born without brains. The frontal bone was thrown back, and flattened on the sphenoid in such a manner that the eyes appeared above his head. The parietal and the squamous portion of the temporal were wanting, although the organ of hearing was well conformed. Not a vestige of brain could be discovered; yet the carotid and vertebral arteries crossed the basis of the cranium. The spinal marrow arose from the fourth cervical vertebra. The organs of sight were perfect. Saviard describes an infant in which all the bones of the cranium were wanting, and, instead of a brain, the skin merely covered a cyst, containing a red pulpy substance resembling brain, whence arose several nerves.

It is, no doubt, to these malconformations that we are to attribute the various stories of children with heads of monkeys, goats, pigs, &c., or of that child whose face represented the devil, and who was described as “Cacodæmonis picturæ quàm humanæ figuræ similius,” &c.

The idle tales of Cyclopes are also to be sought in such accidental preternatural appearances, and several instances are recorded of children born with a single eye in the forehead. It would be useless to dwell longer on this painful subject. Those who wish for more information may gratify their curiosity by consulting the works of Haller, Sœmmering, and other writers, who have treated this matter *ex professo*.

In conclusion, it appears to me that monstruosities are purely accidental, subject to no laws of nature, but deviations from them. We leave to theologasters the question of their being visitations of divine wrath. The only theories that can admit of discussion are the following: 1st, The imagination of the mother; 2nd, Accidental causes; and 3rd, An original monstrous germ. Maternal marks arising from longings and terror, as I have already observed, seemed to warrant the first conclusion; yet it is not tenable. What has imagination to do with the vegetable kingdom, which also presents monstrous conformations? Are we to attribute the same power of imagination to the brute creation? and, although we may fully admit the sympathy that exists between the uterine system and external objects, yet we cannot refer headless and double and triple embryos to this influence. The last hypothesis is also fraught with objections. We have every reason to believe that all germs or seed are perfect in themselves. Were there monstrous germs, there would ensue monstrous races. That germs may be accidentally vitiated and impaired there can be no doubt; but such an adventitious occurrence does not constitute an original monstruosity. Duverney and Winslow maintained that, in the case of a double monster, the monstruosity arose in the primitive germ. Lemery and other physiologists, on the contrary, insisted that double fœtuses arise, as I have already stated, from a junction or fusion between two separate bodies, or, in short, the union of twins or triple conceptions, &c. Anatomical investigations confirmed this opinion, since in double-headed fœtuses two distinct sets of organs are generally found.

This subject has occupied the most ingenious philosophers for centuries; and the result of their experiments and debates seems to warrant the probability of these melancholy deviations from nature, foolishly denominated *lusi naturæ*, being purely accidental. The experiments of Jacobi seem to confirm this opinion, since he was able to produce preternatural fecundation in the eggs of fishes.

This investigation may appear idle; yet, in a physiological point of view, it is fraught with interest as regarding the generation of animals and plants. Its study affords a lively illustration of those laws of attraction and repulsion that regulate the universe, and which seem to admit that every particle of matter should be endowed with a specific vitality, a specific individuality. This attraction is daily seen in the fecundation of the spawn of fish. Myriads of these eggs are accumulated in ponds and rivers; yet in this mass the fecundating principle solely selects and impregnates those that naturally claim its vivifying powers. Wonderful harmony, that man alone endeavours to destroy!—harmony so perfect, that Aristoxenus and Alcmæon maintained that it was an emanation of the diapason of celestial music between the planets, our globe, and our five senses, forming a diatonic series of seven tones; while Hippocrates justly denominated these organic laws the confluxus unus, conspiratio unica, consentientia omnia.

Longevity

The greater the complexity of a piece of machinery, and the more labour it is called upon to perform, the more rapid will be its wear and tear. This applies to human life as well as to mechanism. The derangement of its component parts—its springs and wheels, will also be in the ratio of their complication. Thus do we find that the brute creation are less subject to those affections that abridge their days than mankind. Their life is natural, except when under the sway of domestication: ours is artificial; and high civilization tends to render it still more unnatural than it would most probably have been in a simple and patriarchal existence. Endowed with more acuteness of sensibility than animals, we are rendered more susceptible of the extremes of pleasure and of pain; and our voluptuous enjoyments are perhaps more prejudicial than our sufferings. Had not the Creator wisely granted us the faculty of reasoning, we should have been the most wretched of all organized beings.

The tenure of life depends upon the sum of vitality originally deposited, and the extent of our drafts upon this capital, which we too frequently exhaust by untimely expenses. Experience has proved that under ordinary circumstances, man can live six or seven times longer than the years required to attain puberty. This epoch is placed at our fourteenth year. This calculation would therefore yield from 84 to 98 years of age. Our own imprudences, and the disorders resulting from them, are more hostile in abridging this period than nature, all-wise and all-bountiful. Indeed, when we reflect on all the excesses to which we expose our frail and complicated being, as if we were resolved to try by every possible experiment how far it possesses the power of resisting destructive agents, we can only marvel in beholding so many instances of longevity. In this wasteful existence how many valuable hours do we not lose? how many real enjoyments have we not deprived ourselves of? When compared to the immensity of time, life is but an idle span. Let us deduct even from old age the years of infancy, the years of caducity, and the years of sleep,—alas! what remaineth of our many and our energetic days? Maupertuis calculated that in an ordinary life man could scarcely enjoy more than three years of happiness, mixed up with sixty or eighty years of misery or insipidity; and yet how miserable are we at the thought of quitting this short-leased tenement, though every wretchedness renders our abode a constant scene of uneasiness. It has been computed that out of about nine hundred millions of human beings that are scattered over the globe, it is more than probable that we could not find nine thousand individuals blessed with happiness, even taking happiness in its most limited sense—content. Were it not for the terrors of futurity, it is more than probable that our existence would lose much of its value. Socrates termed philosophy “the preparation for death;” the same may be said of our existence.

Happily for man, life is a dream, all is illusion; sufferings alone are positive; Pandora’s box is its best illustration. Could we have slept away our existence in constant visions, we should have lived as long as in a waking state. When we contemplate the flocks of human beings scattered like cattle on the face of the universe, with scarcely more intellect than the beasts of the same field, we might ask for what were they created? doomed to all the horrors of sickness or of war, victims of their own follies or the ambitious projects of others! As far as regards this life, it is worse than idle to seek a solution of the problem. In these inquiries we too often seek to guess that which we can never know, and to know that which we can never guess! We all complain and murmur like the woodman in the fable, yet are loath to accept the relief we loudly call for.

The longevity of the first races, and the patriarchs, are records foreign to the investigations of natural history; we must seek for more recent examples. Haller had collected the cases of many centenaries, amounting to sixty-two who had reached from 100 to 120; twenty-nine from 120 to 130; and fifteen from 130 to 140. Few instances are authenticated beyond this period: yet we find one Eccleston, who lived 143 years; John Effingham, who attained his 144th; a Norwegian, who counted a century and a half; and our Thomas Parr would most probably have passed his 152nd year but for an excess. Henry Jenkins lived to 169; and we have on record the case of a Negress, aged 175. The Hungarian family of John Rovin were remarkable for their longevity: the father lived to 172, the wife to 164; they had been married 142 years, and their youngest child was 115; and such was the influence of habit and filial affection, that this *child* was treated with all the severity of paternal rigidity, and did not dare to act without his *papa's* and *mamma's* permission.

By the calculations of Sussmilch, out of one thousand individuals, only one attained 97; and not more than one lived to the age of 100, out of one hundred and fourteen thousand. In the census of Italy, taken under Vespasian, there were found fifty-four of 100, fifty-seven of 110, two of 125, four of 130, and three of 140. In China, under Kien Long, in 1784, there were only four individuals who had attained their 100th year. According to Larrey, there were at Cairo thirty-five persons who had exceeded their century. In Russia, in 1814, out of eight hundred and ninety-one thousand six hundred and fifty deaths, were three thousand five hundred and thirty-one from 100 to 132. In a register of deaths in Paris, taken in 1817, there were found in twenty-one thousand three hundred and ninety-two, nine from 95 to 100, and the general proportion of centenaries in that city is one to three thousand.

What are the circumstances most favourable to longevity? This question is not easily answered; for we find in instances of advanced age that some individuals have led a most regular and abstemious life, while others have indulged in various excesses. These observations, however, are by no means calculated to form a conclusive opinion, as the constitutional vigour and peculiar idiosyncrasies of individuals differ widely. It is probable that a regular mode of living is the most likely to prolong our years, whatever may be that regularity in a comparative point of view. A sober man, who commits occasional excesses, is more likely to suffer than another man who gets drunk every night, provided that these excesses do not differ in regard to the quantity or quality of stimulus. In these melancholy instances the excitement is constant, and the indirect debility which it may produce has scarcely time to break down the system ere it is again wound up to its usual pitch, to use the vulgar expression, "by a hair of the same hound." The principal attribute of life that renovates for a while its moral and its physical exhaustion is *excitability*, and a constant *excitement* is therefore indispensable, to serve as fuel to the consuming fire. This was to a certain degree the basis on which Brown founded his doctrine. He traced a scale of life like that of a thermometer,—health in the centre, death at each extremity: one scale ascending from health was graduated according to stimulating agency, the other to debilitating causes; and therefore the system was to be stimulated or lowered according to this gradation. It would be foreign to this work to point out the absurdity of this theory, although we must admit its ingenuity, and to a certain extent its correctness. The chief practical objection to it was the diversity of constitutions and idiosyncrasies, and the different action of stimulating or depressing agents in health and in disease; the effects of alimentary and medicinal substances being totally different in these several conditions.

According to habit, a certain sum of stimulus is requisite to keep up the necessary excitement; and this sum cannot be immediately and suddenly withdrawn in weak subjects without some risk; in health, perhaps, the experiment may be safely made at all times, and under any circumstances, although it might be wiser to operate the change by degrees; and it must

moreover be recollected, that an habitual drunkard is in a morbid condition, and must be treated accordingly.

Six causes chiefly exert their influence upon life:

1. Climate and soil.

2. Difference of races.

3. Complexion and stature.

4. Period of development during gestation, and of subsequent growth.

5. Mode of living.

6. Moral emotions, occupations.

Climates that are moderately cold are more favourable to long life. This observation equally applies to the vegetable kingdom; and trees that have scarcely attained their full growth in northern regions are drooping in the south. There also we find beasts and birds resisting the inclemency of the weather by the thickness of their coats and plumage, or a layer of grease; while many animals burrow in the earth to seek a state of torpor and insensibility, until restored to active life by a more genial temperature. Dryness of soil is another source of health and life; and the hardy mountaineer's existence is seldom abridged by the diseases that visit the inhabitants of damp and swampy regions. Steril plains are more salubrious than regions covered with a rank and exuberant vegetation, or highly cultivated grounds, from many obvious reasons. The humid earth is not turned up, and decayed vegetable substances are not acted upon in a deleterious manner by the solar heat. When we consider the various causes of disease that must abound in crowded and corrupt cities, we might imagine that mortality would be much greater than in the country; yet observation has not proved this difference to be as material as one might expect, at least as regards disease, the sad effects of poverty and starvation not being taken into account. Various reasons may be assigned for this apparent anomaly. In cities a more regular state of excitement prevails, and man's constant occupations scarcely give him time to attend to slight ailments, that, under other circumstances, might be aggravated. Moreover, intermittent fevers and visceral affections are more frequent in the country; and cottagers are exposed to more constant damp and severer revolutions in the atmospheric constitution than citizens. The mortality amongst men is greater in cities than in women; the latter do not enjoy so long a life in the country. March and April have been found the most fatal months. They are periods of atmospheric transition from cold to a higher temperature, and must therefore prove trying to the weak and the aged. The end of autumn is also deemed a sickly period; and the equinoxes have ever been considered critical, the solstices much less injurious. In Great Britain and the north-westerly regions of Europe, northerly and easterly winds are more prevalent in March, April, and May, owing, it is supposed, to the currents established to replace the warmer air, as it rises from the surface of the Atlantic and more southerly countries. These winds are generally dry and cold, followed by fogs, and give rise to catarrhs, bronchial and pulmonary affections. It is calculated that in our climes pulmonary affections carry off one-fifth of the population, or 191 in 1000.

In regard to the variety of races, it has been observed that those people who sooner attain pubescence are the shortest-lived. Precocious excitement must bring on premature old age. Negroes seldom attain an advanced period of life; and the progress of years is more rapidly descried in their features and their form than in Europeans who have migrated to their clime. The negroes of Congo, Mozambique, and Zanguebar, seldom reach their fiftieth year. In northern latitudes longevity is more frequent: this is observed in Sweden, Russia, Poland,

Norway. Some writers have looked upon the established religion of a country as influencing the duration of life; and Toaldo asserted that Christians are shorter-lived than Jews. To this observation it may be remarked, that Jews are in general a very sober, industrious, and active race, circumstances that must materially tend to prolong their days. Moreover, by their legislation they are very careful in the choice of the meat they consume. In Catholic countries fasting may be taken into calculation, not from the effects of abstemiousness, which would be more favourable to health than injurious, but the sudden return to feasting and gormandizing, by way of revenge, when the fast is over. Shrove Tuesday and Easter Sunday are noted in red letters in the gastronomic almanac; and the suppers that follow the midnight masses of Christmas generally require the apothecary's aid on the following morning.[46]

In regard to conformation, very tall and spare subjects are seldom long-lived; and the same observation applies to the stunted and diminutive. A well-set body, with a broad and deep chest, a neck not over-long, with well-formed and firm muscles, generally hold forth a fair prospect of old age.

Children born before the regular period of gestation, those who have been weaned too early, or given to nurses whose milk was not of a proper quality, are seldom strong. Too rapid a growth will also shorten the space of existence.

Our avocations and pursuits materially affect health and the consequent duration of life; and the nature of the excitement man is submitted to produces a remarkable effect. It has been calculated in France that one hundred and fifty-two academicians, whose aggregate years were ten thousand five hundred and eleven, averaged sixty-nine years and two months.

In regard to the mortality of musicians, we give with much pleasure the following extract from the same work:

"The ages of 468 persons at death, were all that could be obtained from a biography of musicians; of these, 109 born since the year 1740 are excluded, because some of their cotemporaries were yet living at the date of such biography, also 41 more are excluded as having died under 50 years of age. There remain then, the ages at death of 318 persons on which the present observation is made.

"From the ages of 50 years to the end of life, the *apparent* rate of mortality among musicians, appears very nearly with the lowest known rate, or that which prevails in villages, and it is scarcely probable that such rate should so agree without being the true one. For a musician to belong to the last class of human life, is very credible, when it is considered that eminence can only be attained by close mental devotion to an exalted science, and unremitting application to its practical acquirement, which abstraction would interrupt and intemperance destroy.

"The mean age of musicians, born *since* 1690, is 67¾ years, or two years greater than those born before 1690, from which it might be conveniently concluded, that the moderns were longer lived than the ancients. The case is precisely the reverse, at least for ages above 50, to which alone the materials are applicable. The expectation of life at the age of 60 of the ancients were nearly 15 years, of the modern musicians 13½. The materials (limited as they are) from which these conclusions are drawn, support the doctrine, that the mortality of the moderns is less at middle, but greater at advanced age, than the mortality of the ancients."

[46] The advocates of fasting have calculated that in one hundred and fifty-two hermits who had lived eleven thousand five hundred and eighty-nine years, the average age was seventy three years and three months.

Dr. Caspar's view of longevity are not only highly interesting but, if correct, may lead to many important conclusions. He maintains that—

1. The female sex enjoys, at every period or epoch of life, except at puberty, at which epoch the mortality is greater among young females—a greater longevity than the male sex.

2. Pregnancy and labour occasion, indeed, a considerable loss of life, but this loss disappears or is lost in the general mass.

3. The so-called climacteric periods of life do not seem to have any influence on the longevity of either sex.

4. The medium duration of life at this present time (1835), is in Russia, about 21 years; in Prussia, 29; in Switzerland, 34; in France, 35; in Belgium, 36; and in England, 38 years.

5. The medium duration of life has, in recent times, increased very greatly in most cities of Europe.

6. In reference to the influence of professional occupations in life, it seems that clergymen are on the whole, the longest, and medical men are the shortest livers. Military men are nearly between the two extremes, but yet, proportionably they more frequently than others reach very advanced years.

7. The mortality is very generally greater in manufacturing than in agricultural districts.

8. Marriage is decidedly favourable to longevity.

9. The mortality among the poor is always greater than among the wealthier classes.

10. The mortality in a population appears to be always proportionate to its fecundity—as the number of births increases, so does the number of deaths at the same time.

*****

If this last assertion be correct, Malthus's doctrine must have been idle.

It appears that in general more males are born than females—this difference has been attributed to the age of the parents; when the mother is older than the father the female offspring are more numerous—the same is observed when both parents have attained an advanced age—but when the father's age exceeds that of the mother's, sons are chiefly the result of their union, it has been also observed that widowers are most frequently blessed with daughters.

Quetelet has very justly observed that the laws which preside over the development of man, and modify all his actions, are in general the result of his organization, of his years, his state of independence, the surrounding institutions, local influence, and an infinity of other causes, difficult to ascertain, and many of which, most probably, never can be known. Still if we admit the fact, our wellbeing, in a great measure, rests in our own hands, as the progress of our intellectual attainments may gradually enable us to improve our condition, in most of the points to which we have alluded; and Buffon has observed "that we know not to what extent man may perfect his nature, both in a moral and a physical point of view."

Still the laws of our organization, and which regulate life, appear to be beyond human speculation; and it has been observed that, under ordinary circumstances, we are ruled by a harmonizing system tending to equalize society despite its institutions. Thus, births, marriages, and deaths, appear regulated on a certain scale in proportions singularly similar.

The criminal statistics of France have produced the following calculation: From 7000 to 7300 criminals are tried every year, out of which number 61 out of 100 are found guilty; 170,000

offenders are charged with minor offences and misdemeanors, of whom 85 in the 100 are condemned to various punishments.

To what are we to attribute this apparent regularity in the scale of births, deaths, and the commission of crimes? Are we ruled by *certain* laws that are only changed in the manifestations of Providence, by peculiar visitations, such as war, famine, and pestilential maladies? What a vast and curious field of research and reflection! what an argument for the fatalist! Man no doubt possesses a moral power that to a certain extent subjugates the creation to his influence and his will. Plants and animals seem to obey certain natural laws, that are only disturbed by perturbative agents; and it is difficult to point out what are the human actions that arise from natural impulses, or from accidental circumstances, although experience would tend to show that they bear a singular proportion in the similarity of their results; and one must come although reluctantly to the conclusion, that this perturbative power exercises but a slender influence on the laws of nature, which seem to set at defiance the destructive efforts of man. Thus have we seen of late years, that the most fearful and long-protracted wars, which one might have imagined would have devastated the fairest parts of Europe, have not checked a surprising increase in its population, and the destructive effects of the most fatal pestilence have vanished with a promptness that seemed to keep pace with the preceding havoc. Bigotry and fanaticism are the only scourges which appear to dare the benevolent views of Providence, and when we traverse the desolate fields of most Roman Catholic countries, one would imagine that Heaven has abandoned their inhabitants to their own blind wills and evil ways. Spain at this period and at many epochs of her bloody history, seems to corroborate the fable of the Titans who sought refuge in that ill-fated land from the anger of the gods.[47]

To return: we find in the preceding *resumés* of longevity that poets are the shortest-lived; next to them, authors on natural religion, dramatists, and novelists. May not this circumstance be attributed to the fervour of their imagination and to their unequal mode of living? A species of madness is the attribute of genius. Many authors on natural religion may come under the denomination of monomaniacs. The jealous irritability of poets and dramatists,—and next to them in the scale of vanity we find musicians,—may also contribute to wear them out, and bring on various chronic diseases, by digestive derangements; more especially as their habits of living are seldom regular, fits of sobriety alternating with bouts of merry-making. Moral philosophers, painters, and sculptors, whose average life appears the longest, follow more sedentary pursuits; and, although artists in general cannot boast of remarkable discretion in their mode of living, the nature of their profession requires much steadiness. It is moreover to be observed that, in the preceding calculation, historical painters have chiefly been noticed. Would the same calculation apply to the lighter branches of the art? It has been remarked that actors generally attain old age, notwithstanding the fatiguing and harassing nature of their profession. This may be attributed to the constant excitement of a similar nature to which they are subject, as well as to their continued exposure to the sudden transitions from heat to cold, which renders them less susceptible of the variations of temperature that affect those who can avoid these vicissitudes. Any person who would expose himself to the constant checked perspirations to which dancers are liable, would infallibly pay dear for the experiment; and those who have had occasion to witness the fatigues of their exercises, marvel at their not being constantly attacked with pulmonary inflammation, and the many maladies that result from similar exposures. On the very same principle, troops when engaged upon active service do not suffer from the inclemency of the weather, although saturated with wet by day, and sleeping under torrents of rain by night. So long as they are

[47] It is somewhat strange, but in the mountains of the South of Spain, there does still exist a dance called *los Titanos*, in which the performers raise their hands in threatening attitude against the heavens!

marching with an object in view, this excitement supports them, even against hunger; but the moment this excitement ceases, let them halt, in tranquil cantonments, or commence a retreat under unfavourable circumstances, that moment the invasion of disease is observed. The chief source of health and long life is an equilibrious state of the circulation. This condition a moderate mental excitement tends to maintain. Depression, on the contrary, will produce a languid flow of the vital stream, congestion, and chronic diseases.

On the same principle, good temper and hilarity are also necessary to prolong life. Violent passions must tend to occasion dangerous determinations, while the inward gnawings of offended vanity and pride corrode every viscus, and lay the seeds of future mental and bodily sufferings. Apathy and insensibility are, unfortunately, the best sources of peace of mind, and as Fontenelle observed, a good stomach and a bad heart are essential to happiness. Perhaps the best maxim to prolong our days, and render them as tolerable as possible, is the "*Bene vivere et lætari*."

I have just observed that conformation materially affects our existence; and this circumstance may in a great measure be referred to temper, and the wear and tear that it occasions in ill-conditioned individuals. Little people seldom attain the longevity of stronger individuals; and it is also a well-known fact that diminutive persons are generally spiteful and malicious. As Providence has bestowed destructive venoms on reptiles, so has it gifted these insignificant members of society with obnoxious qualities, to make amends for their want of physical power in the strategies of attack and defence. The same observation holds good with the deformed; but here we have a moral cause for this sourness of disposition. They too frequently are objects of ridicule, contempt, or pity, sentiments the most humiliating to mankind. In childhood they are not able to partake of the boisterous and active sports of their companions; they have not the power to resent an injury, and the more powerless we are, the greater is our thirst of revenge. Hence does tyranny degrade, and renders its victims cruel and vindictive. The deformed, moreover, find it necessary to improve their intellectual faculties, which in aftertimes fill their quivers with keen shafts of retaliation. In this study they also have more leisure, and they apply to their books while their comrades are at play. This very study adds to their sense of inferiority; they can never hope to share the warrior's laurels, or, what is perhaps still more painful, the myrtle of successful love. Their only chance of success in either of these careers is by kindling wars by their intrigues, or winning a woman's heart by intellectual superiority,—two very improbable events. Thus they gradually envy men who are looked upon by the world as their superiors, and hate women for the preference they show to those privileged individuals. In general we find these ill-shaped beings bitterly sarcastic whenever woman's name is mentioned. Pope, perhaps from these very reasons, was inexhaustible in his abuse of the sex: and Boileau abhorred them, since he had been emasculated by a turkey-cock.

The intellectual superiority of hunchbacks has also been attributed to their physical condition; and it is generally believed that with them the circulation of blood in the brain is more rapid than in well-conformed subjects, and this increased action is supposed to contribute materially to the vivacity of the imagination, and the quickness of apprehension. Another circumstance is said to increase their mental powers, and that is, their continence, considered both by the ancients and the moderns as a source of intellectual energies. Minerva and the Muses were virgins; and in this and other fabulous traditions, we find the ancients illustrating in their mythologic allegories many physical facts and observations. Our Bacon had made the same remark; and Newton, and many other great men, considered the passion of love beneath the dignity of science. Continence and abstinence were deemed by Horace as indispensable privations in the cultivation of genius. In the deformed both are to a certain degree natural, or at least cannot be lost sight of without endangering life. The digestive powers of the

deformed are generally weak; and this debility has ever been looked upon as a concomitant of superior intellects. Thus in Celsus, "*Imbecilli stomacho penè omnes cupidi litterarum sunt*;" while on the contrary, "*Obesus venter non parit subtilem intellectum*."

The common expression of a child being too clever to live, is unfortunately founded on observation. Scrofulous and sickly children are in general remarkable for the quickness of their intellects; and Rousseau maintained that a man who could meditate was a depraved animal. It is a fact that the perfection of one faculty can seldom be attained but at the expense of others. The more our faculties are generally called into action, the less perfect will they be individually;—"*Pluribus intentus, minor est ad singula*." Thus, the singing of birds is improved by depriving them of sight.

The influence of the mind upon our health is as evident as the influence of our health in the duration of existence. This corollary explains the shortness of life of the diminutive and the deformed, unconnected with such physical defects of organization as might impede the due exercise of their organs.

The fable of Prometheus is a strong illustration of the pernicious effects of intemperance; and by Darwin, and other physiologists, has been considered as comparing the celestial fire that he purloined, to the artificial inspirations of excitement that ultimately preys upon the liver and the other viscera like a voracious vulture. A much deeper philosophy is concealed in this theogenic allegory. Prometheus was the son of Japetus; brother to Atlas, Menœtius, and Epimetheus, who all surpassed mankind in fraud and in guilt. Prometheus himself scoffed the gods, and violated their shrine. Heaven and Earth had formed his father, who had united his destinies with Clymene, one of the Oceanides. Thus Prometheus and Epimetheus arose from the very cradle of the universe; and their very names, Προμανδάνειν and Επιμανδάνειν, signify foresight and improvidence,—*prædiscere et postea discere*,—the prevalent characteristics of all mortals, that either tend to promote or retard the progress of human reason and human happiness. Prometheus strove impiously to possess himself of Divine knowledge, and created man with a base amalgam of earth and the bones of animals, vivified by the celestial fire he had obtained. Jupiter, indignant at his audacity, commanded Vulcan to create a beauteous tempter in the form of woman, on whom every attractive gift might be conferred; and Pandora was sent upon earth with the fatal present of the father of the gods, the box that contained all the evils and distempers that were destined for mankind. The foresight of Prometheus resisted her charms; his improvident brother opened the dreaded casket. Have we not here an illustration of the vanity of science, that aims even at Divine attributes, and whose votaries, like Prometheus, would endeavour, if possible, to deprive wisdom of her power, and break down the boundaries of human intellects? His punishment describes in energetic language the endless and consuming studies of the learned, whose very viscera are corroded in lucubrations too often fruitless, and not unfrequently injurious to themselves and others. Hercules alone could relieve him from his torments:—and does not Hercules in this allegory typify the power of reason, that enables us to release the mind from the trammels both of ignorance and vanity, separated from each other by a gossamer partition? Prometheus, who could resist the most powerful of temptations,—beauty and talent combined,—dared Olympus to seek for that wisdom which would have doomed him to everlasting sufferings, had not strength of mind and the powers of reflection destroyed his merciless tormentor. Can we be surprised that the ancients consecrated games to this beautiful allegory?—games that are still carried on in our days; but, alas! where every vain competitor pretends that he has reached the goal with an unextinguished torch!

Cretinism

This singular disorder was first discovered and noticed by Plater, about the middle of the seventeenth century, among the poor inhabitants of Carinthia and the Valais, where, as in the valleys of the Lower Alps and the Pyrenees, it is also found to be an endemic affection. According to Sir George Staunton, it is also observed in Chinese Tartary. It has been erroneously confounded by some writers with bronchocele and rachitis, from both of which it is totally distinct.

Cretinism presents various modifications in kind, and every intermediate grade between that extreme degree of physical and mental debasement which is characterized by the utmost deformity, and entire absence of mental manifestation, the organic and vegetative functions only being performed. There are certain circumstances that distinguish cretins from idiots; and their infirmities appear to depend upon endemic or local causes, regarding which much diversity of opinion has prevailed both amongst medical men and travellers.

The cretins were also called *Cagots* and *Capots*. In Navarre these unfortunates go by the name of *Gaffos* and *Ganets*; and in various valleys of the Pyrenees they are called *Gézits* or *Gezitains*. Near La Rochelle, some of them are also found, and there they are known by the appellation of *Coliberts*; and in Britanny *Cacons* and *Cagneux*. The derivation of these names shows the contempt and disgust that they excited,—*Cagot*, according to Scaliger, being derived from *Canis Gottus*, or *Dog of a Goth*; *Colibert* is traced to *quasi libertus*, or slave. The Spaniards call them *Gavachos*, a term of reproach, which they also applied to the French during the Peninsular struggle.

The body of these poor creatures is stunted, their height not exceeding four feet. There is a total want of due proportion between it and the other parts, the height of the head with reference to the body being from one-fourth to one-fifth, instead of one-eighth, the natural proportion; the neck is strong, and bent downwards; the upper limbs reach below the knees, and the arm is shorter than the fore-arm; the chest narrow, the abdomen hemispherical, and of a length not exceeding the height of the head; the thighs, with the haunches, of greater width than the shoulders, and shorter than the legs, the calves of which are wanting; the feet and toes distorted. In the head, the masticating organs, the lower jaw, and the nose, preponderate considerably over the organs of sense and intelligence; the skull is depressed, and forms a lengthened and angular ellipsis; the receding forehead presents internally large frontal sinuses, to which the brain has yielded part of its place; the top of the head is flattened, instead of being vaulted; the occiput projects but slightly, and runs almost even with the nape of the neck, as in ruminating animals. The face is neither oval nor round, but spread out in width; the eyes are far apart, slightly diverging, small, and deep-seated in their orbits; the pupil contracted, and not very sensitive to light; the eyelids, except when morbidly swollen, are flaccid and pendent. Their look is an unmeaning stare, and turns with indifference from every thing that is not eatable. The elongated form of the lower jaw, the thick and puffed lips, give them a greater resemblance to ruminating creatures than to man. The tongue is rather cylindrical than flat, and the saliva is constantly running from the angles of their mouth. Enlargement of the thyroid glands generally prevails, sometimes to an enormous extent. Indeed, this appearance is commonly considered as a distinguishing sign of cretinism. The other glands of the throat are also obstructed. Many of these poor wretches are both deaf and dumb; yet do they appear unconscious of their miserable existence. Stretched out or gathered up under the solar rays, their head drooping in idiotic apathy, they are only roused from their torpor when food is presented to them.

This endemic malady is supposed to arise from the use of snow-water, or of water impregnated with calcareous earth. Both of these opinions are without foundation. All the inhabitants of districts near the glaciers, drink snow and ice waters without being subject to the disorder; and the common waters of Switzerland, strongly impregnated with calcareous substances, are most salubrious. At Berne, the waters are extremely pure, yet Haller observed that swellings of the throat are not uncommon. De Saussure has assigned another cause, and refers the disorder to the physical features of the mountainous districts in which it prevails. The valleys, he tells us, are surrounded with very high mountains, sheltered from currents of fresh air, and exposed to the direct, and what is worse, the reflected rays of the sun. They are marshy, and hence the atmosphere is humid, close, and oppressive. When to these chorographical causes, he further says, we add the domestic ones, which are also well known to prevail among the poor of these regions,—such as innutritious food, indolence, and uncleanliness, with a predisposition to the disease from an hereditary taint of many generations,—we can sufficiently account for the prevalence of cretinism in such places, and for the most humiliating characters it is ever found to assume.

This specious reasoning, however, is overthrown by observation. In the first instance, this character of the country does not affect its other inhabitants; and secondly, the *goître* is found in warm latitudes, and Mungo Park observed it amongst the Africans of Bambara, on the banks of the Niger. Marsden has also seen it at Sumatra. Moreover, this affection is scarcely ever seen in the mountains, but principally prevails in the valleys.

It is more than probable that these ill-favoured creatures belong to a particular race; for we must take care not to confound goître with cretinism, since goître is common where cretinism is prevalent. It has been remarked that the offspring of the natives of the Valais who intermarry with persons from the Italian side of the Alps, are more subject to goîtres than those born of native parents; and that females who have husbands from the higher Alps, seldom have children affected with this infirmity. It is pretty clear that in these observations, goître and cretinism are confounded.

That these miserable cagots belong to a particular race of men, most probably accidentally degraded in their transmission from our primitive stock, appears most likely. We have sought the derivation of the several terms of contempt and disgust attached to them in different countries, to which migration may have led their parents. Some writers have traced their descent to the Goths and Vandals, thus chastised for their devastations. Gébelin, Belleforêt, and Ramont consider them as descendants of the Visigoths; while Marca, bishop of Cousérans, denounces them at once as Jews and Saracens; and other clerical writers have maintained that they are the miserable relicts of the heretic Albigenses who had escaped the holy massacres of 1215; although there did exist cagots in the year 1000, in the abbey of St. Luc, as they are described in a *for* of Navarre, bearing date 1074, and issued by Ramirez.

These helpless beings have also been considered as the offspring of Bohemians and gipsies. Bishop, or rather Senator Gregoire, maintained that they sprung from the hordes of northern barbarians who overran the south of Europe in the third and fourth centuries. Whatever might have been the origin of these poor creatures, they seem to share that ignominious destiny that has marked various races in different countries. The *Agotos* of Navarre, the *Maragotos* of Leon, the *Batuecos* of Castile, the *Wendes* of Silesia, are all held in as much contempt as the *Parias* and the *Vaddahs* of India. Even in Otaheite a degraded caste was found, from which victims were selected to appease Divine wrath, or propitiate their gods.

The traditional contempt in which certain races are held, a contempt that seems to have affected their physical appearance, may perhaps be traced to the degradation of slavery, that seems to deprive man of all his proud attributes, both in a moral and physical point of view.

The effects of tyranny, and the distinctions that oppression has created in the several castes and ranks of mankind, are every where evident. What a difference exists in Scotland between the chieftains and the humbler individuals of their clans!—between the naïres of India and their vassals! In France, said Buffon, you may distinguish by their aspect, not only the nobility from the peasantry, but the superior order of nobility from the inferior, these from the citizens, and citizens from the peasants. “The field-slaves in America,” observes the enlightened Dr. Smith, “are badly clothed, fed, and lodged, live in small huts in the plantations, remote from the example and society of their superiors. Living by themselves they retain many of the customs and the manners of their ancestors. The domestic servants, on the other hand, who are kept near the persons or employed in the families of their masters, are treated with great lenity, their service is light, they are well fed and clothed. The field-slaves, in consequence of their condition, are slow in changing the aspect and figure of Africa; while the domestic servants have advanced far before them in acquiring the agreeable and regular features, and the expressive countenance, of civilized society. The former are frequently ill-shaped; they preserve in a great degree the African lips, and nose, and hair; their genius is dull, and their countenances sleepy and stupid. The latter are straight and well proportioned; their hair extends to three or four, sometimes even to six or eight inches; the size of their mouth is handsome, their features regular, their capacity good, and their looks animated.” Dr. Prichard has also stated that similar changes become visible in the third and fourth generations in the West India islands; and I have seen several negresses in those colonies perfectly beautiful. In the Bahama islands I knew a female slave of the name of Leah, belonging to my late friend Mr. Commissary Brookes, as black as jet, and descended in the third generation from African parents, whose features would have vied in symmetry with the fairest specimen of the Caucasian race.

Let us not, therefore, seek in snow-water or calcareous impregnations for the causes of deformity and degradation in any unfortunate castes of mankind. Their misery may more probably be traced to the iron rod of despotism, or the oppression of bigotry,—influences that mark out races as abject slaves, or objects of Divine wrath, that ought to be scorned by the wealthy and the powerful, and spurned and persecuted by the faithful and the elect; although, when it has served its purposes, priestcraft has held up the cagot, and the leper, and the idiot, as objects of veneration. When the tourist, in his Alpine and Pyrenean excursions, meets a wretched cagot, let him pause and contemplate the offspring of slavery, and reflect on what man is, and on what man might be,—nay, on what man *will* be.

Temperaments

The different prevalent propensities in various individuals, the development of which appeared to be under the influence of a certain and constitutional organization, have received the name of temperaments; or, rather, this term applies to this peculiar organization of the constitution or idiosyncrasy. The Greek physiologists were the first to classify these peculiarities, or *temperamenta*,—the *naturæ* of Hippocrates, the *mixturæ* of Galen. They considered organized bodies as an assemblage of elements endowed with different properties, but combined in such manner that their union should constitute a whole, in which none of them should predominate in a healthy condition; but, on the contrary, they were to modify and *temper* each other, their simultaneous action being directed and controlled by the spirit of life, *spiritus*. It was the due combination of these elements that constituted a perfect temperament; their aberrancy produced disease of body or of mind.

The ancients divided these elements into cold and hot, dry and moist; from the combination of these principles they classified the fluids of the body. The blood was hot and moist, the bile hot and dry, the phlegm cold and damp, and the melancholy cold and dry. This division led to a further classification; and temperaments, according to the predominance of these elements, were divided into the *sanguineous*, the *bilious*, the *phlegmatic*, and the *melancholic*.

These supposed radical fluids, influencing the whole animal frame, were dependent upon certain organs for their specific production. The blood was furnished by the heart, the phlegm by the head, the yellow bile by the gall-duct, and the black bile or atrabile,—the principle of melancholy,—by the spleen. Notwithstanding the many revolutions in the doctrine of physiology that have shaken the schools since the days of Hippocrates, this classification of his has remained to a certain degree to the present day, and has laid the foundation of all the systems of temperaments, constitutions, and natural characters, that have at various periods been advanced by philosophers; the only novel introduction in this ancient classification being the nervous temperament, which, after all, is only a modification of the four other categories.

To illustrate the operations of these temperaments, it became necessary to adopt terms expressive of their combination, and *temper* and *humour* were adopted. Both are Latin terms; the first, in its original sense, imports mingling, modifying, tempering the four radical fluids, and producing that equilibrious condition of the frame, termed *constitution*. *Humour* was derived from the Greek χυμὸς, *chumos*; and its radical sense imported moisture, or fluid of any kind. Hence *humid* and *humidity*. This doctrine of fluidity is still applied to many functions that we cannot otherwise describe, and we talk, although in a figurative manner, of the nervous fluid, the vital fluid; and a good humour, a bad humour, a vein of humour, or a humorous vein, are illustrations of peculiar tempers and temperaments,—for temperaments are still distinguished by the same terms applied to them by the ancients, and we describe one man as *choleric*, or bilious, for *choler* (χολὴ) means bile; another as being *melancholic*; a third of a *sanguine disposition*; and a fourth of a *phlegmatic habit*. The *sanguine*, that imports a predominance of the blood, indicated a warm and ardent exuberance of spirits; whereas the *phlegmatic*, denoting a thin and cold watery fluid, referred to a frigid and spiritless indolence.

We thus see that modern physiology has scarcely advanced this branch of science, for the *nervous temperament* may be considered as merely a modification of the other ones; and

it is more than probable that the old classification will long prevail, notwithstanding the ingenuity of modern hypotheses. Husson divided the temperaments into those that referred to the vascular system, to the nervous system, and to the muscular system, with subdivisions applied to regions and to organs; all these temperaments being either natural and primitive, or acquired. Dr. Thomas, of Paris, has founded his arrangement according to the predominance of the head, chest, or abdomen,—or the mental, circulatory, or digestive organs,—and according to the relative bulk and predominance of these three regions will be the relative energy of the mental, muscular, or abdominal functions. Notwithstanding the ingenuity of these systems, the old arrangement, as I have already observed, is likely to prevail; and as Blumenbach observes, that although this division was founded on an imaginary depravation of the elements of the blood, if made to stand alone it will prove both natural and intelligible.

This division I shall therefore endeavour to illustrate. In the *sanguineous temperament* the heart and arteries possess a predominant energy; the pulse is strong, frequent and regular; the veins blue, full, and large; the complexion florid, the countenance animated, the stature erect, the muscular forms marked and firm; the hair of a yellow, auburn, or chestnut colour; the nervous impressions acute, the perception quick, the memory retentive, the imagination lively and luxuriant, the disposition passionate but not vindictive, and passion is easily appeased; amorous, and fond of conviviality and good cheer.

In this temperament we find athletic strength and fortitude of mind in resisting the power of external agency, with mental tranquillity in the midst of danger; a calmness arising from a consciousness of power, and from less acuteness of external impressions and mental perceptions. Such a man, when roused to action, will endeavour to surmount every physical difficulty; but he will rarely attain pre-eminence in sciences and the fine arts, which require exquisite sensibility and mobility,—qualities seldom met with in such forms as those described by the poets in Hercules and Ajax.

In the *choleric* or *bilious* temperament the liver and biliary organs are as redundant in their power as the sanguineous vessels, and, for the most part, at the expense of the excernent or cellulous and lymphatic system. The pulse is strong and hard, but more frequent than in the sanguineous; the veins superficial and projecting; the sensibility extremely acute and easily excited, with a capacity of pondering for a long time on the same object. The skin is sallow, with a tendency to a yellow tinge; the hair black or dark brown; the body moderately fleshy, the muscles firm and well marked, the figure expressive; the temper of the mind abrupt, impetuous, and violent,—bold in the conception of a project, inflexible in its pursuit, persevering and dauntless in its execution. These are the temperaments that have urged men both to noble and to execrable deeds. Such were Alexander, Brutus, Mahomet, Cromwell, Charles the Twelfth, Robespierre, Napoleon. All these celebrated characters evinced from their earliest youth the ambitious nature of their dispositions; and though circumstances might have checked the development of their predominant passions, it was also to adventitious circumstances that they owed their elevation, and the opportunities of displaying their good or evil qualities. Most of these men were irascible, vindictive, and cruel, and equally susceptible of ardent love and mortal hate. In these temperaments we find a mixed exuberance of blood and bile in a constant struggle for predominance.

The *melancholy* or *atrabilious* temperament is of a different character. Here the biliary organs are brought into a constant and a morbid action, while the sanguineous system is weak and irregular. In these gloomy subjects the skin assumes a sallow, unearthly tinge, the pulse is hard and contracted, the digestive functions torpid and irregular, the imagination is gloomy and full of suspicion, and a dark gloom is shed on all around the morbid sufferer, for such he may be called, since the condition under which he labours may be considered one of disease.

These subjects are prone to various monomanias; uncertain, fickle, and oftentimes capriciously cruel. Tiberius and Louis the Eleventh are quoted as examples of this temperament. Many melancholic individuals have displayed great genius, and at the same time great depth of thought. Richerand considers Tasso, Pascal, Zimmermann, and Rousseau as illustrating this unhappy disposition.

The fourth temperament is the *phlegmatic*, *lymphatic*, *pituitous*, or *watery*, for all these terms used by different physiologists are synonymous. Here the proportion of fluids is too considerable for that of the solids; hence the body attains a considerable, unwholesome bulk. The muscles are soft and flaccid, the skin fair and transparent, the hair flaxen or sandy, the pulse weak and slow, all the vital actions are languid, the memory little tenacious, and the attention wavering; an insurmountable indolence prevails; and, averse to mental and corporeal exercise, the *far niente* is their greatest enjoyment, and a nightcap is preferable to a diadem. These subjects are generally good, easy persons; susceptible of kindly feelings, but of a transient nature. Their mind is generally depraved by effeminacy, and their love is purely animal. They are not courageous; yet they show great tranquillity of mind in moments of danger, and would rather quietly sink than struggle with the waves. If their dwelling was on fire, they would calmly walk out of it, but not exert themselves to put down the conflagration; and, when hereditary power places them at the helm of a state, a wreck of the vessel may be speedily expected, unless the sceptre is wrested from their feeble hands by the choleric or the atrabilious enthusiast.

The fifth, or *nervous* temperament, as I have already stated, may be considered of a complex nature, as it influences the sanguineous as well as the choleric, the melancholy, and the phlegmatic. In this constitution the sentient system predominates, and there exists a great susceptibility to all external impressions. This temperament is generally acquired, and proceeds from a sedentary life, too great an enjoyment of sensual pleasures, and fanciful ideas brought on by romantic readings and romantic thoughts indulged in hours of idleness. The determination of such individuals is prompt, but uncertain; their affections warm for a while, are selfish and fickle; their sensations are vivid, but leave no impressions. Women, especially when educated in boarding-schools, essentially belong to this class, and are subject to hysterical and convulsive affections that render them a plague to others and a nuisance to themselves. In man the muscles are small, flabby, and wasted. The nervous may possess much vivacity of conception, but no depth of judgment; and, in general, their productions are as morbid as their mind. This condition frequently attends the melancholy temperament, “that wings the soul, and points her to the skies.”

Nervous excitability seldom prevails in the sanguineous constitution, where muscular masses are pronounced in athletic forms. Hence the sanguineous are not easily brought into action; but, when once roused, their energies are irresistible. This power is beautifully described by Virgil in the conflict between Entellus and Dares; still are these exertions governed by nervous influence, and the result of the excitability and contractibility of the muscular fibre, termed by Chaussier its *myotility*.

Mason Good has very justly observed that these temperaments, or generic constitutions, are perpetually running into each other, and consequently that not one of them, perhaps, is to be found in a state of full perfection in any individual; he further aids this remark by the following illustration: “Strictly speaking, Mr. Pitt and Mr. Fox belonged equally, in the main, to the second temperament; there was the same ardour, genius and comprehensive judgment in both, with a considerable tendency to the sanguineous, and hence with more irritability, but more self-confidence, audacity, and sanguine expectation: the latter, while possessing the same general or bilious temperament, was at the same time more strongly inclined to the

lymphatic, and hence his increased corporeal bulk, and with less bold and ardent expectation he possessed one of the sweetest and most benevolent dispositions to be met with in the history of the world. The first was formed to be revered, the second to be beloved; both to be admired and immortalized."

I apprehend that a profound study of human temperaments and propensities may afford a more desirable guide in the education of youth, and the selection of men in the different concerns of life, than that of either physiognomy or phrenology; although the temperament must materially affect the general character of the countenance. Yet, from the apparent prevalence of any temperament we are not to form a rash and hasty judgment in regard to the future capacities or propensities of youth. As one temperament runs into another, and assumes a complex form, so can education regulate the one that naturally predominates, and modify it by a fusion with another. Thus, the restlessness of the bilious and choleric may be attuned to a phlegmatic state by the power of reason, and the brute courage and audacity of the sanguineous checked by inspiring sentiments of true valour. That every temperament, excepting perhaps the phlegmatic, is capable of displaying bravery, has been well described by Joanna Baillie in the following lines:

The brave man is not he who feels no fear,
For that were stupid and irrational;
But he whose noble soul its fear subdues,
And bravely dares the danger nature shrinks from.
As for your youth, whom blood and blows delight,
Away with them!—there is not in their crew
One valiant spirit.

Solar Influence

While both ancient and modern physiologists were of opinion that the various phenomena of organized bodies were influenced by lunar phases, the power of the solar rays was not less active in regulating our functions both in health and in disease. The name of Phœbus signified the torch of life, and Apollo was the father of medicine and the fine arts. The sun was considered as a deity in most countries, the Supreme Being,—the father of light, Diespiter,—Jupiter, Jehovah, the creator of all living matter,—the residence of the Most High—*In sole posuit tabernaculum suum*, said the Psalmist;—and in Egypt three hundred and sixty-five priests were ordained to watch its heavenly movements during the year, while many philosophers attributed the propagation of the human race to the union of man with the orb of day. The disciples of Plato and Pythagoras considered it as possessing a soul; and Origenus, in his Periarchon, maintained that it displayed both virtues and vices,—an heretical doctrine very properly condemned by the second Synod of Constantinople; and, although St. Augustin was of that opinion, it was warmly combated by St. Basil and St. Ambrose, and many other beatified divines. Anaxagoras, on the contrary, considered this luminary to be a burning stone; Plato called it a compact fire; Aristotle maintained that it was formed of one-fifth of the elements that constitute the planets; Epicurus, a mass of lava, or ignited pumice-stone; Xenophon asserted that it was fed by exhalations, and Zeno by watery vapours; Empedocles considered it a translucent body; Philolaus, a concave mirror, concentrating the rays of light from every part of the universe to reflect it upon nature. Kepler was of a similar opinion, and further insisted that the sun was composed of a limpid fluid upon which a luminous æther was reflected, whence its centre was blue, while the limbs were yellow. A modern philosopher, Woodward, attempts to show that the sun and fixed stars are masses of electric fluid, requiring no alimentation, yielding no smoke, and the light that emanates from them offers the bluish brilliancy of the electric spark. It has been justly observed, that if, like Eudoxus, we endeavoured to approach this luminary, the better to study and describe its nature, we should still remain in impenetrable darkness,—in which I must leave the matter, to confine myself to those influences which experience seems to show that the sun actually exercises on the animal economy.

The genial and invigorating glow that moderate solar heat produces has ever been considered as tending to prolong our life. Hippocrates observed, that old men are double their age in winter, and younger in summer. To enjoy this reviving influence, the ancients had terraces on their house-tops called *solaria*, in which, to use their own expression, they took a solar air-bath. Pliny the younger, in speaking of his uncle, tells us, *Post cibum, æstate, si quid otii, jacebat in sole*. The ancients fancied that when the sun rose diseases declined, and *Levato sole levatur morbus* became a medical axiom. Aristotle records the case of an innkeeper of Tarentum, who, although able to attend to his business by day, became insane so soon as the sun had set. The moderns relate many similar instances of derangement brought on by the absence of solar influence. Bouillon mentions a woman who lost her senses at sunset, but who recovered them at break of day. Other cases are recorded of a different nature, when maladies were aggravated by this influence. Sauvage tells us of a woman who became maniacal whenever the sun was at its zenith; an influence that could not be prevented even by various stratagems, such as keeping her in a dark room, and deceiving her in regard to the hour. Humboldt knew a Spanish lady in Madrid who lost her voice the moment the sun dipped in the horizon, but the paralysis of the nerves of the tongue ceased the following morning. A removal to Naples cured this singular affection. Parham relates the cases of several individuals who were deprived of vision when the sun had set. In a former paper I

have alluded to the effects of a vivid flood of light upon the Italian peasantry, as observed by Ramazzini. Daily practice shows us that the paroxysms of fever and various maladies are under a similar influence; and the evening gun in our garrisons is often the signal of severe exacerbation in certain febrile cases, while the *reveillée* develops acute aggravation in others. Sydenham and Floyer had observed that the gout and asthma were usually ushered in after our first sleep; and I have noticed that, during the prevalence of the cholera, the invasion of this fatal disorder generally occurred towards daybreak. The ancients divided their elementary predominance according to the diurnal cycle: thus, morning regulated the blood, noon the bile, evening the atrabile, and night the cold phlegmatic influence. Nor was this arrangement unnatural; we more or less observe it in a state of health, when man awakes refreshed and active at morn; towards noon his train of thoughts becomes more serious and busy; in the evening his mind is more gloomy and susceptible of unpleasant impressions; until night either sheds its poppies o'er his couch, or agitates his frame with its fearful dreams. The repose of night is ever more refreshing than that of day, however we may have changed the natural applications of our hours, and find, as Seneca said of Roman civilization, that *antipodes habemus in urbe*. The influence of night and day is equally observable in animals. Towards evening myriads of insects, who had shunned the solar heat, hum around us; while night calls forth its choristers; and as they cease to sing other creatures proclaim the dawn. Some animals, such as the *simia beelzebud*, and the *simia seniculus*, salute both the setting and the rising sun with fearful howls; and it may be considered as a law of nature, that we cannot turn night into day with impunity.

Dr. Balfour's opinion on the influence of the heavenly bodies is of great weight: he conceives that the influence of the sun and moon when in a state of conjunction, which he names solar-lunar influence, produces paroxysms or exacerbations in continued fever, in all cases at least where paroxysms are observable. As this influence declines in consequence of the gradual separation of these luminaries from each other, and their getting into a state of opposition, a way is left open for a critical and beneficial change; in other words, that paroxysms and exacerbations in fever may be expected to take place at spring-tides, and crises at neap-tides.

It has been observed in intermitting fevers, that paroxysms of the quotidian recur in the morning, the tertian at noon, and the quartan in the afternoon; in no instance do they take place at night.

There can be no doubt that lunation, more especially in tropical climes, influences diseases; but the effects of insolation are every where observable. One of the most serious accidents resulting from this exposure is the *ictus solis*, the *coup de soleil* of the French, and the σιρίασις of the Greeks, from the star *Sirius*, to whose influence they attributed the scorching heat of the dog-days. This attack is in general sudden, and the patient falls down as if struck with a blow on the head. Troops on a march, and labourers in the field, frequently are the victims of this solar power, which usually kills them on the spot. It has been known to destroy great numbers. In Pekin, from the 14th of July to the 25th, in the year 1743, it is related that eleven thousand persons were struck dead. On a hot day's march in Portugal, I lost six men in a brigade under my charge. They first reeled as if under the influence of liquor, and then fell dead with a slight convulsive struggle. One of them, the bâtman of the paymaster of the 3rd foot, or Buffs, was struck dead while speaking to me. A great number of greyhounds perished on the same march; but no other species of dog seemed to suffer, although we had many pointers and spaniels with us. Horses, mules, and cattle were also exempt from the attack, though it proved fatal to some weak donkeys who were following the troops. The shakos worn by our army are well calculated to preserve the soldier from these accidents, to which troops are constantly exposed during summer operations.

Sweating Fever

This disastrous pestilence, which proved, if possible, more fatal and terrific than the cholera, made its first appearance in London, in 1480 or 1483, first showing itself in the army of Henry VII. on his landing at Milford Haven. In London it only broke out a year or two after, and visited that capital occasionally for upwards of forty years. It then spread to Holland, Germany, Belgium, Flanders, France, Denmark, and Norway, where it continued its ravages from 1525 to 1530; it then returned to England, and was observed for the last time in 1551.

Dr. Caius calls it a pestilential fever of one day; and it prevailed, he says, with a mighty slaughter, and the description of it was as tremendous as that of the plague of Athens. Dr. Willis states that its malignity was so extreme, that as soon as it entered a city it made a daily attack on five or six hundred persons, of whom scarcely one in a hundred recovered. This malignant fever ran its course in a single paroxysm; and the cold fit and hot fit were equally fatal. If the patient was fortunate enough to reach the sweating stage, he was in general saved. It commenced its attack with a pain in the muscles of the neck, shoulders, legs, and arms, through which a warm aura seemed to creep; after these symptoms a profuse perspiration broke forth. The internal organs grew gradually hot and burning, the pungent heat extending to the extremities; with an intolerable thirst, sickness soon followed by jactitation, coma, and delirium. At Shrewsbury it raged for seven months, and carried off upwards of one thousand patients. The invasion of this terrific disorder was generally preceded by a thick noisome fog, especially in Shropshire. A dark cloud usually took the lead, and the distemper followed its course. It is somewhat singular, but most fatal contagions have been ushered in, both in ancient and modern times, by noxious fogs or mists, with clouds of various insects, either bending their course in innumerable bodies, covering vegetation, or falling in dead heaps upon the ground. The disease was generally supposed to arise from inclement seasons and injured grain; particularly wheat infested with the mildew or smut, or rye attacked with the spur. It was observed by Dr. Willan, that the contemporary inhabitants of Scotland and Wales, who fed on barley and oats, were not affected.

One of the most singular features of this malady was its only attacking the English. Foreigners, and even the Scotch and Irish, in England, seemed to be exempted from this scourge, which attacked the monarch himself, and two Dukes of Suffolk, who sunk under its virulence. In Westminster the number of daily deaths averaged one hundred and twenty. It may be easily imagined that this special liability of Englishmen to contract the disease was attributed to Divine wrath for their manifold offences; and we find the following lines in Phemtophius:

Cœlestia numina nobis
Nil sunt quàm nugæ, fabula, verba, jocus:
Indè fames nobis, pestes, Mars; denique fontem
Hinc etiam inclemens ιδοωνρετος habet,
Sævum, horrendum, atrox genus immedicabile morbi,
Nostræ perfidiæ debitum.

Dr. Armstrong has also recorded this peculiar visitation in the following:

Some, sad at home, and, in the desert, some,
Abjur'd the fatal commerce of mankind.
In vain: where'er they fled, the Fates pursued.
Others, with hopes more specious, cross'd the main,

To seek protection in far distant skies;
But none they found. It seemed, the general air
From pole to pole, from Atlas to the East,
Was then at enmity with English blood;
For, but the race of England, all were safe
In foreign climes; nor did this Fury taste
The foreign blood which England then contained.

That the atmosphere was saturated by this disease was obvious from the circumstance of vast numbers of birds falling dead, when, upon examination, pestilential swellings were found under their wings. Schiller attributed the disease to sideral influence. England, however, was not the only country where the wrath of Heaven was considered as having fulminated this scourge! and at Marburg it had such an effect, that it actually put an end to the violent disputes between Luther and Zuingle concerning the Eucharist, and which were on the eve of kindling a religious war.

A disease somewhat similar manifested itself in Picardy in 1773, having first appeared at Hardivilliers, five leagues from Beauvais; but, instead of terminating in a single day, it ran on to the third, fifth, and seventh: a fever of the same description was also observed in Gascony.

But of all the maladies that affect cutaneous transpiration, *diapedesis*, or sweating of blood, is the most singular; so much so, indeed, that its existence has been doubted, although several well authenticated cases are on record, both in the ancient and modern annals of medicine. It is mentioned by Theophrastus and Aristotle, while Lucan thus describes it:

Sic omnia membra
Emisere simul rutilum pro sanguine virus.
Sanguis erant lacrymæ; quacumque foramina novit
Humor, ab his largus manat cruor: ora redundant,
Et patulæ nares; sudor rubet; omnia plenis
Membra fluunt venis: totum est pro vulnere corpus.

The detestable Charles IX. of France sunk under this disorder, thus described by Mezeray: “La nature fit d’étranges efforts pendant les deux dernières semaines de la vie de ce Roi. Il s’agitait et se remuait sans cesse; le sang lui rejalliait par les pores et par tous les conduits de son corps. Après avoir longtems souffert, il tomba dans une extrème faiblesse et rendit l’ame.” The same historian relates the case of a governor of a town taken by storm, who was condemned to die, but was seized with a profuse sweating of blood the moment he beheld the scaffold. Lombard mentions a general who was affected in a similar manner on losing a battle. The same writer tells us of a nun who was so terrified when falling into the hands of a ruthless banditti, that blood oozed from every pore. Henry ab Heer records the case of a man who not only laboured under diapedesis, but small worms accompanied the bloody secretion.

In the Memoirs of the Society of Arts of Haarlem, we read of the case of a sailor, who, falling down during a storm, was raised from the deck streaming with blood. At first it was supposed that he had been wounded, but, on close examination, the blood was found to flow from the surface of the body. Fabricius de Hilden mentions a case that came under the observation of his friend Sporlinus, a physician of Bâle; the patient was a child of twelve years of age, who never drank any thing but water: having gone out into the fields to bring home his father’s flocks, he stopped upon the road, and contrary to habit, drank freely of white wine. He shortly after was seized with fever. His gums first began to bleed, and soon after an hæmorrhage broke out from every part of the integuments, and from the nose. On the eighth day of the malady he was in a state of extreme debility, and the body was covered with livid and purple

spots, while every part from whence the blood had exuded was stopped with clots. A case is also related of a widow of forty-five years of age, who had lost her only son. She one day fancied that she beheld his apparition beseeching her to relieve him from purgatory by her prayers, and by fasting every Friday. The following Friday, in the month of August, a perspiration tinged with blood broke out. For five successive Fridays the same phenomenon appeared, when a confirmed diapedesis appeared. The blood escaped from the upper part of the body, the back of the head, the temples, the eyes, nose, the breast, and the tips of the fingers. The disorder disappeared spontaneously on Friday the 8th of March of the following year. This affection was evidently occasioned by superstitious fears; and this appears the more probable from the periodicity of the attacks. The first invasion of the disease might have been purely accidental; but the regularity of its subsequent appearance on the stated day of the vision may be attributed to the influence of apprehension. Bartholinus mentions cases of bloody sweat taking place during vehement terror and the agonies of torture.

The case of Catherine Merlin, of Chamberg, is well authenticated, and worthy of being recorded. She was a woman of forty-six years of age, strong and hale. She received a kick from a bullock in the epigastric region, that was followed by vomiting of blood: this discharge having been suddenly stopped by her medical attendants, the blood made its way through the pores of various parts of her body, every limb being affected in turn. The sanguineous discharge was invariably preceded by a prickly and itching sensation; frequently this itching exudation proceeded from the scalp. The discharge usually occurred twice in the twenty-four hours; and on pressing the skin, the flow of blood could be accelerated and increased.

Dr. Fournier relates the case of a magistrate who was attacked with diapedesis after any excitement, whether of a pleasurable or a painful nature.

A singular idiosyncrasy was transmitted to her male children by an American Female named Smith, occasioning a severe hæmorrhage wherever the skin was slightly pricked or scratched. This loss of blood would sometimes continue for several days. Several of her sons sunk under the affection, which was found at last to yield to the sulphate of soda. What is most singular, all her daughters were exempted from this fearful predisposition.

It is probable that this strange disorder arises from a violent commotion of the nervous system, turning the streams of blood out of their natural course, and forcing the red particles into the cutaneous excretories. A mere relaxation of the fibres could not produce so powerful a revulsion. It may also arise in cases of extreme debility in connexion with a thinner condition of the blood.

Curious cases are recorded of a sandy sweat, in which the perspiration becomes crystallized on the surface of the skin. Bartholinus, Schunig, and Mollenbroek have related several cases of the kind. It is probable, as Mason Good observes, that this morbid secretion may arise from an excess of uric acid, translated from the kidneys to the skin; this sand is generally of the same red colour as that of the renal secretions deposited in a lateritious sediment.

Scented perspiration is another singular peculiarity. This odour, frequently unpleasant, has also been known to shed an agreeable aroma, compared to the perfume of violets, roses, and musk. This quality is common in various animals; in the *Simia jacchus*, hedgehogs, hares, serpents, and crocodiles. The *Viverra zibetha* and *V. civetta* yield this odour abundantly; and it has been observed in a faint degree in our domestic cat. Many insects exhale an agreeable odour; especially the *Cerambix moschatus*, the *Apis fragrans*, the *Tipula mochifera*.
The *Cerambix suaveolens* emits a delicious smell of roses, and the Petiolated sphex a highly fragrant balsamic ether. In the Memoirs of the Queen of Navarre, we read that Catherine de

Medicis was a perfect nosegay; and Cujacius and Lord Herbert of Cherbury were equally distinguished by the suavity of their transpiration.

The general perspiration of every man seems to be of a peculiar nature. Savages can distinguish their friends and foes by the scent. The boy born deaf and dumb, whose history is related by Dugald Stewart, distinguished persons by their odour; and the dealers in hair can ascertain by the smell the nation to which the hair belongs.

The quantity of perspiration secreted by a well-grown adult weighing about one hundred and forty-six pounds, is at the rate of twenty-eight ounces in the twenty-four hours, sixteen ounces during the period usually allotted to waking, and twelve ounces during sleep.[48] It is not so much increased by moderate elevation of temperature as might be imagined; it appears increased after meals and during sleep. While the skin thus secretes so considerable a quantity of watery fluid, its powers of absorption are wonderful, and are frequently resorted to for medicinal purposes. This absorption evidently tends to assist in repairing the strength. A boy at Newcastle who had been greatly reduced for a race, gained thirty ounces in weight in the course of an hour, during which time he had only taken a glass of wine. Dr. Home, after going to bed much fatigued and supperless, gained two ounces before the morning. Keill says that one night he gained eighteen ounces in his sleep. Immersion in water and damp air materially increases this power. Frogs, toads, even lizards, increase in weight although only partially dipped in water; and remarkably so if previously deprived of part of their moisture by exposure to air. The power of absorbing medicinal substances when immersed in their solution has been demonstrated by Dr. Massy, an American physician, who found that if the body was immersed in a decoction of madder,[49] this substance immediately tinged the renal secretion. Dr. Rousseau made a similar experiment with rhubarb. It is now clearly demonstrated that friction is not necessary to produce absorption.

The keenness of the deaf and dumb boy in ascertaining the effluvium of various individuals, to which I have alluded, induces me to give a short sketch of this curious individual. His name was James Mitchell; and having no other source by which he could discover or keep up a connexion with surrounding objects than those of smell, taste, and touch, he depended chiefly upon the first, like a domestic dog, in distinguishing persons and things. By this sense he identified his friends and relations; and conceived a sudden attachment or dislike to strangers. It was difficult, however, to ascertain at what distance he could thus exercise this faculty; but, from Mr. Wardrop's observations, it appears that he possessed it at a considerable distance. This was particularly striking when a person entered the room, as he seemed to be aware of this before he could derive any information from any sense than that of smell. When a stranger approached him, he eagerly began to touch some part of the body, commonly taking hold of his arm, which he held near his nose; and, after two or three strong inspirations through the nostrils, he appeared to form a decided opinion concerning him. If it were favourable, he showed a disposition to become more intimate, examined more minutely his dress, and expressed in his countenance more or less satisfaction; but if it happened to be unfavourable, he suddenly went off to a distance, with expressions of carelessness or disgust.

[48] The matter of insensible perspiration is calculated at being daily equal weight to one half of the food.
[49] Madder, when given to animals tinges the surface of their bones with a red hue.

Smallpox

The first description we have of this dreadful disease is to be found in the writings of Almansor of Rhazes, published about the end of the ninth or the beginning of the tenth century. He, however, quotes an Alexandrian physician of the name of Aaron, who had treated the same subject so early as the year 622. There is no substantial ground to warrant a belief that it was known to the Greeks or Romans. The opinion of Hahn, who considered it to have been their anthrax, is absurd. Had this pestilence prevailed amongst the ancients, and left the traces of its ravages,—which have marked most fearfully so many individuals,—it is probable that these impressions would have been attached to their names, as they were in the habit of designating many of their illustrious personages by their physical peculiarities, either natural or accidental. Hence we find Ovidius *Naso*, Tullius *Cicero*, Horatius *Cocles*, Scipio *Nasica*, Curius *Dentatus*.

The term *variolæ*, which this disease bears, was first applied to a malady presenting the same symptoms, by Marius, bishop of Avanches, and appears to be derived from *varius*, spotted. Howbeit, to whatever region we may be indebted for this scourge, it appears that it existed in Asia, and especially in China, long before its introduction into Europe. About the middle of the sixth century, it was supposed to have been carried from India to Arabia by trading vessels, where no doubt the Arabian and Saracenic armies introduced it into the Levant, Spain, and Sicily. In 640, under the caliphate of Omar, the Saracens spread the contagion over Syria, Chaldæa, Mesopotamia, Egypt, and Persia. Its appearance in Europe may be referred to the eighth century. In the ninth century, as I have stated, we find it described by the Arabian physicians. In the tenth century we find it described by other Arabian writers, chiefly Avicenna and Hali Abbas. In 962, Count Baudouin of Flanders, died from its attack. It appears certain that it prevailed in Gaul long before; we find in the works of Marius, already mentioned, the following passage: “Hoc anno (570) morbus validus, cum profluvio ventris et *variolis*, Italiam Galliamque valdè afflixit.” About the same period we find Dagobert and Clodobert, sons of Chilperic, falling victims to the disorder; and Austregilda, wife of Gontran King of Burgundy, died of it in 580, at the age of thirty-two, so enraged with her physicians, Nicholas and Donet, that she insisted that they should accompany her to the other world, to reward them for causing her untimely end. Her affectionate and disconsolate husband Gontran of course had both their throats cut upon her tomb.

In the eleventh and twelfth centuries we find the smallpox in all the southern parts of Europe. The north was for a long time tolerably exempted from the scourge, until the Holy War introduced it into those regions; and it appears to have been the only trophy that the English and Germans brought home to commemorate their exploits in the Crusades.

In the thirteenth century the Muscovites, Laplanders, and Norwegians were free from the disorder, the progress of which seemed to have been delayed by the cold; although at the same time, according to the relation of Gordon, it was most destructive all over France. Most physicians at this period partook of the opinion of the Arabians, who considered the disease as being in the blood, thrown by it into a state of ebullition, particularly in childhood and youth. According to the Arabian Auaron, or Ahron, it sometimes affected the same individual twice. This doctrine of the boiling up and bubbling forth of the blood to throw out its peccant qualities, tended not a little to increase the mortality and exasperate the disease; as the physicians, to encourage this concoction, were in the habit of wrapping up their patients in

warm clothing, and keeping their apartments as hot as possible;—a fatal practice that subsequent experience has rejected as destructive.

In 1517 the Spaniards carried it to St. Domingo, nearly depopulating the country. South America soon received this additional visitation, said to have been carried amongst them by a negro. So terrific were the ravages of this pestilence, that the Americans considered its invasion as one of the *data* of their melancholy chronicles. The brother of the noble Montezuma was one of its earliest victims; worthy attendant on the Spanish banners, it accompanied their detested hordes in all their conquests.

The northern districts of America were free from the contagion, when the English carried it with their commercial productions amongst the natives of Boston in 1649, and subsequently to Virginia and Carolina, and the remaining provinces. The Spaniards infected Nootka Sound, and the Russians desolated Kamtschatka about the same period.

Inoculation appears nearly as ancient as the disease, if we can credit the missionaries, who were sent into China by the Church of Rome, and who, from their address and insinuation, gained access to the historical records: they have transmitted detailed accounts of the history of the Chinese, and of their knowledge in various branches of science. There is a memoir written on the smallpox by the missionaries at Pekin, the substance of which is extracted from Chinese medical books, and especially from a work published by the Imperial College of Medicine, for the instruction of the physicians of the empire. This book is entitled *Teou-tchin-fa*, or a treatise from the heart to the smallpox; which states that the disease was unknown in the very early ages, and did not appear until the dynasty of Tcheou, which was about 1122 years before Christ. The Chinese name for the malady is a singular one, *Tai-tou*, or venom from the mother's breast; and a description is given of the fever, the eruption of the pustules, their increase, flattening, and crusting. In the same Chinese book there is also an account of a species of inoculation discovered seven centuries previously; but, according to a tradition, it had been revealed in the dynasty of Long, that is, about 590 years before Christ. Father d'Entrecolles, the Jesuit, in his correspondence from China, gives some information respecting the smallpox, which confirms the material part of the above information; for he notices having read some Chinese work which mentions the smallpox as a disease of the earliest ages. He also describes a method of communicating the disease, which was called *sowing the smallpox*; this was generally performed by planting some of the crusts upon the nose,—an operation which was approved of by some but disapproved by others.

Although the tradition of the smallpox being a disease originally transmitted to man by camels may be fanciful, yet the existence of the vaccine in cows might give some probability to its having been the case. Moore thus expresses himself on the subject: "This notion probably took its rise from the circumstance that land commerce from Egypt to India was only practicable by means of this animal. But such kind of traffic was tedious and difficult, and it is conjectured that no person known to have the smallpox would ever have been suffered to join himself to a caravan." Now this observation would rather confirm the fact than invalidate it; since, if no individual affected with the malady could have carried the contagion, the disease might have been spread by their camels.

In regard to the antiquity of the practice of inoculation amongst the Chinese, I cannot do better than give Mr. Moore's own words on so very interesting a subject. "No account is handed down of the origin of this custom; but the reverence in which agriculture is held by the Chinese may have suggested the name (sowing of the smallpox) and the usual manner of performing the operation: for they took a few full dried smallpox crusts, as if they were seeds, and planted them in the nose; a bit of musk was added in order to correct the virulence of the poison, and the whole was wrapped up in a bit of cotton to prevent it dropping from the

nostrils. The crusts employed were always taken from a healthy person who had had the smallpox favourably; and, with the vain hope of mitigating their acrimony, they were sometimes kept in close jars for years, and at other times fumigated with salutary plants. Some physicians beat these crusts into powder, and advised their patients to take a pinch of this snuff; and when they could not prevail upon them, they mixed it with water into a paste, and applied it in that form. In Hindostan, if tradition may be relied upon, inoculation has been practised from remote antiquity. The practice was in the hands of a particular tribe of Brahmins, who were delegated from various religious colleges, and who travelled through the provinces for this purpose. The natives were strictly enjoined to abstain during a preparatory month from milk and butter; and, when the Arabians and Portuguese appeared in that country, they were prohibited from taking animal food also. These were commonly inoculated on the arm; but the girls, not liking to have their arms disfigured, chose that it should be done low on the shoulder: and whatever part was fixed upon was well rubbed with a piece of cloth, which afterwards became a perquisite of the Brahmin. He then made a few slight scratches on the skin with a sharp instrument, and took a bit of cotton, which had been soaked the preceding year in variolous matter, moistened it with a drop or two of the holy water of the Ganges, and bound it upon the punctures. During the whole of this ceremony, the Brahmin always preserved a solemn countenance, and recited the prayers appointed in the *Attharna Veda*, to propitiate the goddess who superintended the smallpox. The Brahmin then gave his instructions, which were regularly observed. In six hours the bandage was to be taken off, and the pledget allowed to drop spontaneously. Early next morning, cold water was to be poured upon the patient's head and shoulders, and this was to be repeated until the fever came on. The ablution was then to be omitted; but, as soon as the eruption appeared, it was to be resumed and persevered in every morning and evening till the crusts should fall off. Confinement to the house was absolutely forbidden; the inoculated were to be freely exposed to every air that blew; but when the fever was upon them, they were sometimes permitted to lie on a mat at the door. Their regimen was to consist of the most refrigerating productions of the climate; as plantains, water-melons, thin gruel made of rice or poppy-seeds, cold water, and rice."

While sowing the disease was thus prevalent in some countries, selling and buying it was adopted in others, when children bartered fruit in exchange for the infection. It does not appear that the faculty took any notice of inoculation until the year 1703, when Dr. Emmanuel Timoni Alpeck wrote an account of his observations in Constantinople, in a letter to Woodward: a Venetian physician, of the name of Pylamus, about the same time noticed the success of the practice in Turkey. Lady Mary Wortley Montagu pursued the inquiry in her voyage to that country, by causing her son Edward to be inoculated by Maitland, surgeon to the embassy, and, on her return to England in 1722, had the operation tried with successful results on her daughter. Still, although two of the princesses of the royal family had also been inoculated with equal benefit, inoculation was furiously opposed by the profession, and even from the pulpit; and so successful was this opposition, that it succeeded in bringing it into disuse both in England and throughout Europe, many cases of smallpox of a confluent character having made their appearance after inoculation, and in 1740 the practice had nearly fallen into disuse. In this virulent controversy, a singular circumstance was observed: while regular practitioners stated the practice to be unsuccessful, whenever it was adopted by quacks, monks, and old women, the result was invariably favourable; and the report that reached Europe of a Carmelite friar having inoculated thousands of Indians, an old woman being equally fortunate in Greece, while at the same time a planter in St. Christopher's inoculated three hundred persons without the loss of a single patient, the practice was again resumed, chiefly in our seaports, and gradually extended over the country. Mead materially assisted its progress by stating that the Circassian ladies chiefly owed their beauty to this

salutary preservative. In the year 1763, Daniel Sutton, son of a surgeon in Suffolk, recommended the practice, modified, however, in the treatment of the malady, and brought inoculation into general repute.

It appears, however, that inoculation was by no means a novel introduction even in England, as it had been long practised in Pembrokeshire and several parts of Wales. On the Continent it had been tried at Cleves. Bartholinus mentions it as adopted in Denmark; and traces of its adoption were evident in Auvergne and Perigord.

Various modes of performing this operation were adopted. The Arabians inserted the virus with a pointed instrument between the thumb and the index; the Georgians on the fore-arm; and the Armenians on the thigh. The traveller Motraye mentions a Circassian old woman who used to inoculate with three pins tied together. It appears that this practice was generally prevalent in Turkey in 1673. Trinoni and Pilarini observed that the natural smallpox was generally fatal in Constantinople, while the disease produced artificially was most benign. Bruce relates that from time immemorial inoculation was practised in Nubia by old Negresses or Arabs.

Strange to say, it was only in 1727 that inoculation became general in France; and its adoption was materially forwarded by Voltaire, who also took special care to acquaint the fair sex that it was to this practice that the Circassian and Georgian odalisks owed their beauty.

The terrific mortality that attended this disease was much increased by the injudicious treatment to which patients were submitted. Instead of adopting the natural plan resorted to by eastern nations, and allowing the patients a free current of air, with a refrigerant diet, cordials and a hot regimen were enforced, under which the disorder soon assumed a destructive malignity. Cold affusion, which has also been extolled by modern physicians as a recent improvement in medical practice, we have seen, was also employed centuries ago. Sutton, who is generally, but erroneously, considered as being the introducer of inoculation, did nothing more, as I have already observed, than modify the treatment of the disorder. Thus do we daily see impudence and quackery receiving rewards for supposed discoveries, and the keepers of the public purse on such occasions seem much less careful of it than of their own. In our days, for instance, chain-cables have been decreed a discovery, and their inventor entitled to a national recompence, whereas we read the following passage in Cæsar's Commentaries, when speaking of the shipping of the Gauls,—"Anchoræ, pro funibus, ferreis catenis revinctæ:" any schoolboy could have given this information to our sapient legislators.

The reappearance or supposed increased prevalence of the smallpox after vaccination, for the last few years, may call for some observation. Ever since the year 1804 a belief was entertained by many persons that the cowpox only afforded a temporary security. This doubt, however, never did rest upon any solid foundation. Dr. Jenner maintained in the most strenuous manner, that to render the cowpox efficient, it was absolutely necessary to attend most carefully to the character of the pustule, and the time and quality of the lymph taken from it; on the very same principle inoculation of the smallpox also failed. For it must be clearly understood, that Jenner considered the smallpox and the cowpox as identic maladies, and by no means dissimilar in their nature: on this important subject I feel much gratification in quoting a passage from a late valuable publication,[50] to which I refer the reader. "It was then clearly ascertained, that there were deviations from the usual course of smallpox, which were quite as common and infinitely more disastrous than those which took place in vaccination. These deviations regarded two apparently different states of the constitution. In the one the susceptibility of smallpox, was not taken away by previous infection, while, on

[50] The life of J. E. Jenner, M.D. &c., by John Bacon, M.D. &c.

the other hand some constitutions seem to be unsusceptible of smallpox infection altogether. It was found, that similar occurrences took place in the practice of vaccination, but as the security which the latter afforded was never more likely to be interfered with by slight causes than the former, it became absolutely necessary that great care should be shown in watching the progress and character of the pustule. Dr. Jenner had from the beginning felt the propriety of this watchfulness; and had distinctly announced that it was possible to propagate an infection by inoculation conveying different degrees of security, according as that affection approached to or receded from the full and perfect standard. He also clearly stated that the cause of the vaccine pustule might be so modified as to deprive it of its efficacy. That inoculation from such a source might communicate an inefficient protection, and that all those who were thus vaccinated were more or less liable to the subsequent smallpox."

Dr. Bacon is of opinion that the cowpox is now what it was at the beginning. There are instances, in which it has passed from one human subject to another for more than thirty years, consequently through fifteen or sixteen hundred individuals, but yet in which no degeneration has taken place. He nevertheless admits that recent lymph from the cow should be preferred, when it can be procured; he is further of opinion that the occurrence of smallpox after inoculation does not exceed in number the cases of smallpox after smallpox. My own experience confirms these views. I was in practice in Bordeaux during the prevalence of what is called smallpox in vaccinated cases,—the cases were rare, doubtful, and very seldom fatal.

There is little doubt that the smallpox would sweep away thousands of our dense population but for the protecting power of vaccination, the failure of which, ought more frequently to be attributed to the vaccinator, or the constitution of the patient, than to Jenner's immortal discovery. Dr. Severn has just published an essay on this most important subject, and it appears by his statistical tables, that such has been the decrease of mortality since the introduction of vaccination, that the number of patients admitted into the smallpox hospital from 1775 to 1800,—were 7017—the deaths 2277—whereas from the year 1800 to the year 1825, the number admitted was 3943, and the deaths 1118—not half the number, although the population of London had doubled during that period. Dr. Severn further calculates that the proportion of failures is 6 in 3000.

We read with feelings of deep regret in his late bibliography, that the man at whose intercession the magic of his name obtained the liberation of Napoleon's prisoners, could not obtain an appointment for the members of his own family from the British Government; nay, the College of Physicians despite the exertions of Dr. Baillie, refused to admit him to a fellowship in their learned body. It was when reflecting on such national ingratitude, that he wrote to a friend, "Never aim, my friend at being a public character, if you love domestic peace." And not long before he terminated his invaluable career he made this remarkable expression: "I am not surprised that men are not thankful to me; but I wonder that they are not grateful to God for the good which he has made me the instrument of conveying to my fellow-creatures."

It is in vain that France with her usual *jactance* pretends that the first idea of vaccination arose in that country, they have no more claim to the discovery than their Marshals to Wellington's immortal glory.

Generative Animalcules

Microscopic experiments daily demonstrate the existence of myriads of animalcules in every substance. They have recently been discovered in the progress of certain crystallizations; and some philosophers maintain that most inorganic bodies are formed of the remains of organic substances. The existence of animalcules in the generative secretion was first noticed by Lewis Hamme, a young German student, and shown by him to Leeuwenhoeck, who published an account of them. Hartzoeken wrote upon the subject the following year, and asserted that he had seen these animalcules three years before they had been observed by Hamme. This curious subject soon attracted the notice, not only of physiologists, but of priests, artists, and even courtiers, for we find our Charles II. making curious inquiries on this investigation. Although many opticians could not discover these creatures, the eyes of courtiers were more keen than theirs, and to gratify their royal master's depravity, described them most minutely. Their length was $^{3}/_{100000}$ of an inch, their bulk such as to admit the existence of 216,000 in a sphere whose diameter was the breadth of a hair, and their rate of travelling nine inches in the hour. They saw them in the seminal secretion of every animal; and, what was still more remarkable, they were of a similar size whatever might have been that of the animal: they saw them in the sprat and in the whale; they could distinguish the male from the female; and they all moved along in gregarious harmony like a flock of sheep: nay, more; Dalenpatius actually saw one of them, more impatient than his companions, burst from his ignoble shackles, and actually assume the human form. At other times they were discovered swimming in shoals to given points, turning back, separating, meeting again, and frisking about like golden fish in a pond. Kauw, Boerhaave, Maupertius, Lieuland, Ledermuller, Monro, Nicholas, Haller, and indeed most of the philosophers of Europe, were convinced of their existence.

Buffon, however, and other naturalists, contended that these were not animalcules, but organic particles; and Linnæus imagined them to be inert molecules, thrown into agitation by the warmth of the fluid. Finally, to determine the question, Spallanzani began an assiduous course of observations and experiments. He found these animalcules in the human species to be of an oval form, with a tail tapering to a point. This appendage, by moving from side to side, propelled them forward. They were in constant motion in every direction. In about twenty-three minutes their movements became more languid, and in two or three hours they generally died. The duration of their life, however seemed to depend, in a great measure, on the temperature of the medium: at 2° (Reaumur) they died in three quarters of an hour; while at 7° they lived two hours, and at 12½° three hours and three quarters. If the cold was not too intense, they recovered upon the temperature being raised; when only 3° or 4°, they recovered after a lethargy of fourteen hours; and according to the less intensity of the cold, they might be made to pass from the torpid to the active state more frequently. They were destroyed by river, ice, snow, and rain water; by sulphur, tobacco, camphor, and electricity; even the air was injurious to them: in close vessels their life was prolonged to some days, and their movements were not constant and hurried. They were of various sizes, and perfectly distinct from all species of animalcules found in vegetable infusions, &c. In short, Spallanzani completely confirmed the principal observations of Leeuwenhoeck, and satisfactorily explained the sources of the inaccuracies of other inquirers. Prevost and Dumas have recently confirmed the observations of the Italian physiologist.

This doctrine of life being perpetuated by the transmission of animated particles, or animalcules, is by no means of modern date. We find this theory advanced by Hippocrates,

and Aristotle, and Plato. Democritus described worms that assumed, in the progress of their development, the human form; and Lactantius thus refuted his ideas: “Erravit ergo Democritus, qui vermiculorum modo putavit homines effusos esse de terrâ, nullo auctore, nullâque ratione.” Hippocrates plainly says, that the seminal secretion was full of animalcules, whose several parts were developed, and grew afresh; that nothing did exist that had not pre-existed; and that what we term birth was nothing more than that transition of these hitherto imperceptible animalcules from darkness to light.

Gesner has endeavoured to prove that the word ψυχή, so frequently found in the writings of Hippocrates, and translated *anima*, was synonymous with *insectum*, *animalculum*, *papilio*. Plato, when expressing himself on this curious subject, compares the matrix to a fertile field, in which animalcules are gradually developed, at first of such a small size that they are imperceptible, but, by taking the food prepared for them, grow in strength until they are brought to light in a state of perfect generation; and St. Augustine thus follows: “Hunc perfectionis modum sic habent omnes ut cum illo concipiantur atque nascuntur; sed habent in ratione, non in mole, sicut ipsa jam membra omnia sunt latenter in semine; cùm etiam natis nonnulla desint, sicut dentes, ac si quid ejusmodi.” In the works of Seneca we also find the same notions: “In semine omnis futuri hominis ratio comprehensa est, et legem barbæ et canorum nondum natus infans habet; totius enim corporis, et sequentis ætatis, in parvo occultoque lineamenta sunt.”

It may be said that these opinions were similar to those of the *Ovarians*, who, as we have observed already, believed that every thing arose from the egg. Such were Aristotle, Empedocles, and other philosophers: “For the egg is the conception,” said the first of these great men, “and after the same manner the animal is created;” but there was a manifest difference in their systems. Harvey, Haller, De Graef, were amongst the most warm advocates of this doctrine, which indeed prevails to the present day, as it would be difficult to find organized beings that did not spring from an original germ.

It thus appears that, notwithstanding the absurd doctrines of generation being founded upon the existence of these animalcules, they clearly do exist. Modern microscopic experiments daily confirm the fact; not only in the generative secretion, but in the other fluids of the body: creatures of an inch to an inch and a quarter in length have been found to inhabit the mesenteric arteries of asses and horses. Mr. Hodgson found them in seven asses out of nine. They have also been found in the blood of female frogs, salamanders, and tadpoles. What wonders are perhaps in store for the microscopic observer and the physiologist! All living matter seems to be animated by particles, by atoms, equally possessed of life. Does the vitality of these constituent molecules hold any influence over our existence? Is their life necessary to the preservation of ours? Is any agency destructive to them injurious or destructive to us? In a former paper I have recorded recent observations, where animalcules of a peculiar description were found in the purulent secretion attending various affections. A morbid condition seems thus to produce a new series of animated beings, or this new series of living atoms perhaps have produced a morbid state. Many eruptive maladies are either caused by the presence of insects, or insects are subsequently developed in their pustules. Wichmann, and many other physicians, have maintained that the itch was produced by an insect of the genus *acarus*, or *tick*.

Latreille has given a minute description of this creature in his *Genera crustaceorum et insectorum*, and calls this offensive species the *sarcoptes scabiei*. Linnæus classed it among the *aptera*, and termed it the *acarus scabiei*. This insect is nearly round, with eight legs; the four fore-legs terminated with a small head, the hind ones with a silky filament. The Arabian Avenzoar had long since observed them, and it was from his writings that Mouffet was

induced to pursue the inquiry. Redi, an Italian physician, was the first propagator of this doctrine in modern times, and published, in 1685, a paper of Cestoni of Leghorn, who had frequently observed mendicants and galley-slaves extracting these insects from the pustules of itch with the point of a pin, in the same manner as *chigoes* are extracted from their cyst in the West Indies.

It was this communication of Cestoni that led to a further and more minute investigation. Curiosity was every where excited, and the most learned and intelligent naturalists and physicians, amongst whom we find the illustrious names of Borelli, Etmuller, Mead, Pringle, Pallas, Bonani, Linnæus, Morgagni, strove with incessant diligence to ascertain this important fact, which certainly was likely to shed a new light on our pathological speculations. The existence of the acarus was established.

The most conclusive experiments on the subject were those of Galès, in 1812. The following is the account of them: “I placed under a microscope a watch-glass with a drop of distilled water, after having carefully ascertained that it did not contain any visible animalcules. I then extracted from an itch pustule a small portion of the virus, which I diluted in the water with the point of a lancet. I watched most attentively for upwards of ten minutes, without having been able to notice any animation. Two similar experiments were equally ineffectual. Disappointed in my expectations, I was about giving up the task, when an idea struck me of submitting the liquid of the first experiment to another trial. I had left it in the watch-glass, exposed to solar heat. I then was not a little surprised when I discovered a perfect insect struggling with its legs to extricate itself from the viscid fluid that confined it. Having succeeded in reaching a more limpid part of the liquor, its form was so distinct that Mr. Patrix, who was with me, was enabled to take an exact drawing of its configuration.”

This curious result naturally induced Galès to pursue his inquiries, and he discovered that this insect chiefly occupies the pustules that are filled with a thin serum, and avoids those that contain a thicker secretion. Hence the watery pimples in itch are invariably those that produce the most intolerable prurience.

The next important question was to decide whether this insect was the cause of the disgusting disorder. For this purpose Galès placed several of them on the back of his hand. He then covered the part with a small watch-glass, kept in place with a bandage. Three hours after he awoke, experiencing a sensation of itching on the part. The following morning three itch pustules were evident, and convinced him that he had succeeded in inoculating himself with the loathsome complaint. This fact he communicated to Olivier, Duméril, Latreille, and Richerand. Experiments in the hospital were immediately directed to be made, and all produced a similar result; affording a convincing proof that these insects could produce the affection, which they had merely been thought to have complicated.

Many writers, who, like Mason Good, had decided that “whenever these insects appear, they are not a cause but a consequence of the disease,” opposed and contradicted the statement of Galès, and the numerous practitioners who had procured and witnessed facts, which are never “stubborn things” to speculative minds. These writers maintained that whenever any organ was weakened, or in a morbid condition, it was apt to become a nidus for some insects or worms to burrow in. Hence the numerous varieties of invermination in debility of the digestive organs. But it is needless to observe that their objections cannot stand against the imbodied evidence brought forward in proof of their error. Bosc, Huzard, Latreille, Duméril, and many other naturalists, subsequently found these acari in the eruptive diseases of many animals.

I repeat it, this subject is replete with interest; and microscopic experiments may some time or other throw a material light on the practice of medicine. Those substances that are known to destroy the insect that produces the itch, cure the malady. May not this analogy lead to singular results?

Circulation Of The Blood

The circulation of the blood was first taught by the unfortunate Servetus in 1553, who was burnt to death as a heretic; and, a century afterwards, demonstrated by our Harvey, who is justly considered as having discovered the wonderful mechanism of the motion of the vital fluid.

There is no doubt, however, that the ancients had formed, if not a correct, at least an ingenious, idea of it. Hippocrates tells us “that all the veins communicate with each other, and flow from one vessel into others; and that all the veins that are spread over the body carry a flux and movement originating in a single vessel.” He avows that he is ignorant of the principle whence it arises, or of its termination, it appearing to be a circle without beginning or end. He further states, that the heart is the source of the arteries, through which blood is carried over the body, communicating life and heat; and he adds, that they are so many rivulets that irrigate the system, and carry vitality into every part: the heart and veins are in constant motion; and he compares the circulation of blood to the course of rivers, that return to their source by extraordinary deviations. He therefore directs blood-letting to restore a free current of the blood and other spirits in apoplexies and other diseases of a similar nature, which he attributed to obstruction in the vessels intercepting the flow of their contents. He also observes, that when bile enters the blood, it deranges its consistence, and disturbs its ordinary course towards another point: and he compares the circulation to balls of thread, the threads of which return to each other in a circuitous manner, terminating at the point whence their motion arose.

Plato thought that the heart was the source of the veins, and of the blood, that was rapidly borne to every part of the body. Aristotle tells us that the heart is the principle and source of the veins and of the blood. He considered that there were two veins proceeding from this organ, one from the left side, the other from the right; the first he termed *aorta*: and he further maintained that the arteries communicated with the veins, with which they were intimately connected.

Julius Pollux taught, in his *Gnomasticon*, that the arteries are the channels through which the spirits circulate as the veins propel the blood; and he describes the heart as having two cavities, one communicating with the arteries, and the other with the veins. Apuleius tells his disciples that the heart propels the blood through the lungs, to be afterwards distributed over the system.

In the writings of Nemesius, bishop of Emissa, we read that the movement observed in the pulse originates in the heart, chiefly from the artery of the left ventricle of the viscus. This artery is dilated, and then contracted, by a constant and powerful harmonious action. When dilated the vessel draws towards it the most subtile portions of the neighbouring blood, and the vapour or exhalation of this fluid, that feeds the animal spirits; but when it contracts, it exhales, through various channels of the body, all the vapours that it contains.

Strange as it may appear, doubts were once entertained as to the actual situation of the heart, whether it was lodged in the right or the left side of the body. The question was finally settled by a professor of Heidelberg, who for the purpose killed a pig in the presence of the Margrave of Baden, Durlach, who then laboured under a supposed disease of that organ, which it was then clearly shown occupied the left side. The result of this experiment, however proved somewhat detrimental to his Highness’s physician, who was dismissed,

although he maintained with all becoming courtesy and respect, that the heart of his princely master could not *possibly be* in the same position as that of a hog.

Michael Servetus, in his work, *De Christianismi restitutione*, also in the 7th book, *De Trinitate Divinâ*, for which he was sentenced to the stake a very short time after its publication, gives us the following description of this important function: The blood, which is a vital spirit, is diffused all over the body by *anastomoses*, or inosculation of two vessels through their extremities. The air in the lungs contributes to the elaboration of the blood, which it draws for that purpose from the right ventricle of the heart through the pulmonary artery. This blood is prepared in the lungs by a movement of the air that agitates it, subtilizes it, and, finally, mingles it with that vital spirit which is afterwards retransmitted to the heart by the movement of the diastole, as a vital fluid proper to maintain life. This communication and preparation of the blood, he further states, is rendered evident by the union of the arteries and veins in this organ; and he concludes by affirming that the heart, having thus received the blood prepared by the lungs, transmits it through the artery of the left ventricle, or the aorta, to every part of the body.

Great care was of course taken to destroy this abominable heretical publication, which was burnt by the common hangman in Geneva, Frankfort, and several provinces of France. The work thence became so scarce, that it is said only three or four copies of it are in existence. One of them was in the library of the Landgrave of Hesse-Cassel.

John Leonicenus relates that the celebrated Paul Sarpi otherwise named Fra Paolo, had also discovered this circulation, and demonstrated the valves of the veins, which open to afford a free passage to the blood, and close to prevent its return. This discovery, it is pretended, was made known to Fabricius ab Aquapendente, professor of medicine in Padua in the sixteenth century, and successor of Fallopius, and who communicated the fact to Harvey, then a student in that university.

Some time before Harvey's discovery, Cesalpinus had described with great precision the pulmonary circulation; and, on finding that veins swelled under a ligature, he attributed this enlargement to the warmth of the blood. This warmth, he says, proceeds from a spirit residing in the blood. The left ventricle is filled with blood of a spirituous nature; and one can trace the movement of the blood towards the superior parts, and its return (*retrocessus*) to the internal ones,—that is to say, a return by which it comes back from the extremities to the heart, when awake or sleeping, from every part of the body; for if you tie the vessels, or if they are obstructed, the current of the blood is stopped, and then their smaller ramifications tumefy towards their origin. The following are his words: "Sic non obscurus est ejusmodi motus in quâcumque corporis parte, si vinculum adhibeatur, aut aliâ ratione occludantur venæ: cùm enim tollitur permeatio, intumescunt rivuli quâ parte fluere solent." From these expressions it is clear that Cesalpinus suspected the great circulation, and had a fair idea of its nature; yet there is no doubt but that it was to our Harvey that the first demonstration of this wondrous function was reserved.

Drunkenness

At all periods this degrading vice appears to have been more or less prevalent. We find it frequently mentioned in the early history of the Jews. Tacitus informs us that it was common amongst the ancient Germans; and in Greece and Rome it was not only common, but frequently extolled as beneficial—as medicinal:

Si nocturna tibi noceat potatio vini,
Horâ matutinâ rebibas, et erit medicina.

Socrates considered the indulgence in wine pardonable. Thus, C. Gallus:

Hoc quoque virtutem quondam certamine, magnum
Socratem palmam promeruisse ferunt.

According to Horace, Cato the Censor had often recourse to its exhilarating virtues:

Narratur et prisci Catonis
Sæpe mero incaluisse virtus.

Seneca informs us that even the Roman ladies frequently indulged in these potations. The drunkenness of the ancients bore all the disgusting character of the present day, and was thus admirably described by Lucretius:

Cum vini penetravit—
Consequitur gravitas membrorum, præpediuntur
Crura vacillanti, tardescit lingua, madet mens,
Nant oculi; clamor, singultus, jurgia gliscunt.

However, from the language of the ancients, we cannot come to the conclusion that Socrates, and other great men who were accused of inebriety, were habitual drunkards, or even that, under the influence of their potations, they were occasionally deprived of their reason. On the contrary, there is every reason to believe that the ancients both ate and drank a great deal during their repasts; and thus mingling their wine and their food, like most of the continental nations, they were less subject to the inconveniences that arose from their indulgence in liquor. Indeed, the term sobriety applies to a proper regulation of our ingesta, according to our constitution and our state of health. Extreme abstinence on some occasions may prove as prejudicial as intemperance; and there are peculiar idiosyncrasies where a certain quantity of stimulus is absolutely requisite to keep up the animal spirits, and at the same time assist assimilations which become languid under mental depression. No doubt, this necessity has arisen from habit,—most probably a very bad habit; still, when it does exist, physicians should be cautious in suddenly forbidding customary indulgences: we must also consider on such occasions the pursuits of different individuals. The laborious classes, who require more frequent refection, from the constant exhaustion to which their avocations expose them, can bear with impunity a moderate use of strong liquors. Such a practice would destroy the sedentary and the studious. Temperance is essentially requisite to perfect not only our intellectual faculties, but many of our physical functions. The senses both of man and the brute creation are rendered much more keen by abstinence. The scent of the dog, the vision of the hawk, are less acute after feeding; and this is one of the chief causes of the greater perspicuity in our ideas when fasting in the morning. The ancients had an axiom founded upon observation, "*if you wish to become robust, eat and labour; if you wish to become wise, fast and meditate*." The Greeks called sobriety, σωφροσυνη; or, according to Aristotle, as

though they said, σωζουσαν την φρονησιν, it assisted our intellectuals. Plato tells us that Socrates termed this quality σωτηριαν της ψρονησεως, or the health of the mind. Xenophon maintained that it prevented men from spitting or blowing their noses, as we were not in need of superfluities when we decreased the consumption of what was necessary. The ancients looked upon sobriety as a bent bow, that required occasional relaxation.

It is said, but I know not on what authority, that Hippocrates recommended an indulgence in potations once a month. Celsus recommends persons in perfect health not to be too rigorous in their diet; sometimes to fast, and at others to live more freely. In more modern times this supposed precept of Hippocrates has been advocated, and we find two theses on the subject, entitled "*Non ergo singulis mensibus repetita ebrietas salubris*," and "*Non ergo unquam ebrietas salubris*," by Hammet and Langlois. Zacchias, in his medical questions, asks if a physician can recommend such a departure from the laws of temperance without committing a sin. This query has been also debated by divines. Frederick Hoffmann maintained that poets required this indulgence, and attributes in a great measure the falling off of genius amongst the modern Greeks to the destruction of their vineyards by the Turks. In ancient Iconography we oftentimes find Bacchus placed near Minerva. The allusions of Heathen mythology to drunkenness, its effects, and the means of tempering its influence, are curious. Silenus, the preceptor of Bacchus, although represented as always intoxicated, was a philosopher, who accompanied his pupil in his Indian expedition, and aided him by the soundness of his judgment. Virgil makes him deliver the principles of the epicurean doctrines on the formation of the world, and the nature of things. Ælian gives us his conversation with Midas regarding the unknown world of Plato and other philosophers. He was also considered an able warrior and a wit. Ælian derives his name from *Sillainein*. The nymphs who follow his train were considered as typical of the water necessary to dilute his potations, and the influence of love in checking intemperance.

Montaigne informs us that the celebrated Sylvius recommended an occasional debauch; and the late Dr. Gregory was of opinion than an occasional excess is, upon the whole, less injurious to the constitution than the practice of daily taking a moderate quantity of any fermented liquor or spirit. Experience, however, does not uphold the doctor's opinion; and, as I have observed in a preceding article, occasional excesses are far more injurious than habitual indulgences, under which, in the most unfavourable climates, men attain advanced years. An occasional excess actually brings on a state of sickness, which, in persons habitually sober, may not only last for several days, incapacitating them from any pursuit, but be frequently followed by serious accidents. Of course I am not alluding to a constant state of intoxication, which will often bring on delirium, tremor, apoplexy, and other destructive accidents.

The appearances after death in drunkards exhibit great derangement in organic structure. The brain is generally firmer than usual. Serum is not unfrequently found effused in its cavities; and, what is singular, this watery fluid is often impregnated with the odour of the deceased's potations, such as rum, gin, or brandy. Schrader relates several instances of the kind. Æther has also been detected after the medicine had been freely exhibited. Dr. Ogston states that above four ounces of fluid were found in the ventricles of a drunkard's brain, that had all the physical qualities of alcohol. He thinks that this effusion takes place previously to the coma of intoxication, as he found it in considerable quantities in two cases of drowning in the stage of violent excitement from spirituous liquors. The mucous coats of the stomachs of drunkards, instead of being "worn out," according to the vulgar expression, are thickened, and sometimes softened; but in most cases they are found hardened. This condition is not likely to accelerate death; on the contrary, the stomach is less susceptible of the action of stimulating articles of diet, or excess in eating or drinking, than when in a healthy state of

excitability. When drunkenness proves fatal, it appears that a portion of the spirituous part of the liquor is actually absorbed and carried into the circulation and the brain. Dr. Copeland has given the following very luminous and correct view of the pathology of drunkenness. "During the general nervous and vascular excitement consequent on the stimulus, increased determination to the head takes place, attended by excited vascular action, which soon terminates in congestion as the excitement becomes exhausted, and gives rise to drowsiness, sopor, and coma. With this state of the disorder effusion of serum takes place in the ventricles and between the membranes, heightening the sopor and coma. When the congestion or effusion amounts so high as to impede the functions of the organs at the basis of the encephalon and of the respiratory nerves, respiration becomes unfrequent and laborious, and consequently the changes produced by it on the blood insufficiently performed. In proportion as the blood is less perfectly changed in the lungs, the circulation through them is retarded, and the phenomena of asphyxy,—congestion of the lungs, right side of the head, brain, and liver; the circulation of unarterialized blood; the imperfect evolution of animal heat, and sedative effects upon the brain and nervous system generally,—follow in a more or less marked degree, according to the quantity of the intoxicating fluid that has been taken, and either gradually disappear after some time, or increase until life is extinguished. These phenomena are heightened by cold, which depresses the vital action in the extremities and surface to which it is applied, and increases the congestion in the above organs. The fatal consequences of intoxication are often averted by the occurrence of vomiting, the stomach thereby being relieved from a great part of the poison."

Besides wine and spirituous liquors various other substances have been employed to bring on this supposed pleasurable state. The Syrian rue (*Peganum Harmala*), was constantly used by Sultan Solyman. The *Hibiscus Saldarissa* of the Indians, which furnishes their *bangne*, is supposed to be the *Nepenthes* of the ancients. The *Penang* or Indian beetle, the *Hyosciamus Niger*. The *Belladonna*, the *Cocculus Indicus*, are drugs that have been resorted to by various nations. The last ingredient has made the fortune of many of our wealthy brewers, at the expense of public sobriety and health.

In the accidents that follow intoxication, bleeding has frequently been resorted to. Nothing can be more hazardous than this practice, justly condemned by Darwin, Trotter, and most physicians, who have had frequent opportunities of witnessing the distressing train of symptoms that inebriety brings on. Coffee and green tea will be found the most efficacious antidotes, when no sickness prevails. Nausea is counteracted by effervescent and aromatic draughts, such as soda-water, (so highly appreciated by Byron, when accompanied by a sermon, after a night's conviviality,) spruce-beer, Seidlitz powders, &c. The ancients had recourse to various means to counteract the effects of wine, and amongst others we find olives and olive oil, wormwood, and saffron. The Greeks used a solution of salt, a common remedy among seafaring men to the present day; and the Romans surrounded their heads with wreaths of various refreshing plants. When Aristotle tells us that Dionysius of Syracuse remained in a state of intoxication for eighty days, we must suppose that he got drunk every morning.

That the ancients were in the habit of diluting their wine with water, there cannot be a doubt. The Lacedæmonians accused those who drank it pure of acting like Scythians,—an expression introduced ever since Cleomenes the Spartan had learned to drink freely amongst them. The Thracians were also accused of this practice, which clearly proves that it was not general. Philochorus reports that Amphictyon, king of Athens, learned to mix wine and water from Bacchus himself, on which account he dedicated an altar to the god. According to Athenæus, this dilution was of various strength; sometimes in the proportion of one to two, at others of one to five. The Lacedæmonians used to boil their wine till the fifth

part was consumed, under the impression that they thus deprived it of its spirituous qualities. Sometimes this boiled wine was laid by for four years.

To add to the intoxicating power of wine various means were resorted to, and a mixture of myrrha was supposed to produce this effect. Such was the *murrhina* of the Romans, mentioned in St. Mark's gospel, and which was given to malefactors before their execution.

Notwithstanding the sobriety of the ancients, my fair readers may perhaps be glad to know that the ladies were allowed to indulge in an occasional stoup; and the Greek matrons and virgins were by no means restricted in a moderate use of the grape's delicious juice, as illustrated by Homer in Nausica and her companions. In the ancient entertainments the first libation was offered up to Vesta, as being, according to Cicero, *rerum custos intimarum*, or keeper of things most concealed; or, according to Aristocritus, for the services rendered by this goddess to Jupiter in his war against the Giants. However, without any erudite comments, it is very probable that even the poor Vestals were sometimes delighted when they could take a drop of wine to beguile their solitude.

The phenomena of drunkenness have been so ably described by Macnish, that I most gladly transcribe the following passage from that author's excellent work, called the "Anatomy of Drunkenness."

"First an unusual serenity prevails over the mind, and the soul of the votary is filled with a placid satisfaction. By degrees he is sensible of a soft and not unmusical humming in the ears, at every pause of the conversation. He seems, to himself, to wear his head lighter than usual upon his shoulders. Then a species of obscurity, thinner than the finest mist, passes before his eyes, and makes him see objects rather indistinctly. The lights begin to dance and appear double, a gaiety and warmth are felt at the same time about the heart. The imagination is expanded, and filled with a thousand delightful images. He becomes loquacious, and pours forth, in enthusiastic language, the thoughts, which are born, as it were, within him.

"Now comes a spirit of universal contentment with himself and all the world. He thinks no more of misery: it is dissolved in the bliss of the moment. This is the acme of the fit—the ecstasy is now perfect. As yet the sensorium is in tolerable order, it is only shaken, but the capability of thinking with accuracy still remains. About this time the drunkard pours out all the secrets of his soul. His qualities, good or bad, come forth without reserve; and now, if at any time, the human heart may be seen into. In a short period, he is seized with a most inordinate propensity to talk nonsense, though he is perfectly conscious of doing so. He also commits many foolish things, knowing them to be foolish. The power of volition, that faculty which keeps the will subordinate to the judgment, seems totally weakened. The most delightful time seems to be that immediately before becoming very talkative. When this takes place a man turns ridiculous, and his mirth, though more boisterous, is not so exquisite. At first the intoxication partakes of sentiment, but, latterly, it becomes merely animal.

"After this the scene thickens. The drunkard's imagination gets disordered with the most grotesque conceptions. Instead of moderating his drink, he pours it down more rapidly than ever, glass follows glass with reckless energy. His head becomes perfectly giddy. The candles burn blue, or green, or yellow, and when there are perhaps only three on the table, he sees a dozen. According to his temperament, he is amorous, or musical, or quarrelsome. Many possess a most extraordinary wit, and a great flow of spirits is generally attendant. In the latter stages, the speech is thick and the use of the tongue in a great measure lost. His mouth is half open, and idiotic in the expression; while his eyes are glazed, wavering and watery. He is apt to fancy that he has offended some one of the company, and is ridiculously profuse in his apologies. Frequently he mistakes one person for another, and imagines that some of

those before him are individuals who are in reality absent or even dead. The muscular powers are all along much affected; this indeed happens before any great change takes place in the mind and goes on progressively increasing. He can no longer walk with steadiness, but totters from side to side. His limbs become powerless and inadequate to sustain his weight. He is, however, not always sensible of any deficiency in this respect, and while exciting mirth by his eccentric motions, imagines that he walks with the most perfect steadiness. In attempting to run, he conceives that he passes the ground with astonishing rapidity. In his distorted eyes all men and even inanimate nature itself, seem to be drunken, while he alone is sober. Houses reel from side to side, as if they had lost their balance; trees and steeples nod like tipsy bacchanals; and the very earth seems to slip under his feet and leave him walking and floundering in the air.

“The last stage of drunkenness is total insensibility. The man tumbles, perhaps, beneath the table, and is carried off in a state of stupor to his couch *dead drunk*.

“No sooner is his head laid upon the pillow, than it is seized with the strongest throbbing. His heart beats quick and hard against his ribs. A noise like the distant fall of a cascade, or rushing of a river is heard in his ears—rough—rough—rough—goes the sound. His senses now become more drowned and stupified. A dim recollection of his carousals, like a shadowy and indistinct dream, passes before the mind. He still hears, as in echo, the cries and laughter of his companions. Wild fantastic fancies accumulate thickly around the brain. His giddiness is greater than ever; and he feels as if in a ship tossed upon a heaving sea. At last he drops insensibly into a profound slumber.

“In the morning he awakes in a high fever. The whole body is parched; the palms of the hands, in particular, are like leather. His head is often violently painful. He feels excessive thirst; while his tongue is white, dry, and stiff. The whole inside of the mouth is likewise hot and constricted, and the throat often sore. Then look at his eyes—how sickly, dull and languid! The fire which first lighted them up the evening before is all gone. A stupor like that of the last stage of drunkenness still clings about them, and they are disagreeably affected by the light. The complexion sustains as great a change: it is no longer flushed with gaiety and excitation, but pale and wayworn, indicating a profound mental and bodily exhaustion. There is probably sickness, and the appetite is totally gone.

“Even yet the delirium of intoxication has not left him, for his head still rings, his heart still throbs violently, and if he attempt to get up, he stumbles with giddiness. The mind also is sadly depressed, and the proceedings of the previous night are painfully remembered. He is sorry for his conduct, promises solemnly never again so to commit himself, and calls impatiently for something to quench his thirst.

“Persons of tender and compassionate minds are particularly subject, during intoxication, to be affected to tears at the sight of any distressing object, or even on hearing an affecting tale. Drunkenness, in most characters, may be said to melt the heart and open the fountain of sorrow. Their sympathy is often ridiculous, and aroused by the most trifling causes. Those who have a lively imagination, combined with this tenderness of heart, sometimes conceive fictitious cases of distress, and weep bitterly at the woes of their own creating.

“There are also some persons on whom drunkenness calls forth a spirit of piety, or rather of religious hypocrisy, which is both ludicrous and disgusting. They become sentimental over their cups, and while in a state of debasement most offensive to God and man, they will weep at the wickedness of the human heart, entreat you to eschew swearing and profane company, and have a greater regard for the welfare of your immortal soul. These sanctimonious drunkards seem to consider ebriety as the most venial of offences!”

Inebriety has sometimes a curious effect upon the memory. Actions committed during intoxication may be forgotten on a recovery from that state.

Drunkenness differs materially according to the nature of the intoxicating potation. Wine in general may be considered as less injurious, and its effects more transient than spirituous liquors, that produce great excitement, followed by indirect debility and visceral obstruction. The inebriety produced by alcoholic preparations, moreover, is attended with a delirious state, furious and uncontrollable, or followed by congestion and torpor. Malt liquors render their victims heavy, stupid, and more obstinate than violent, and a long continuance in their use produces a state of imbecility, observed so early as Aristotle.

Similar differences are observable in the effects of different liquors on the imagination. Wine most undoubtedly produces a greater vivacity of ideas and a more brilliant scintillation of wit and fancy. Hoffmann, indeed, considered the juice of the grape as indispensable to poetic inspiration, and it is very doubtful whether Pegasus was ever benefited by a draught of beer. But, alas! of what avail are the considerations regarding the effects of the pernicious habit of drinking? When once accustomed to the cheering stimulus of liquor, it matters not what the drunkard takes, and if Champagne or Burgundy are not at hand, gin or rum will prove a substitute, perhaps less grateful, but still not unwelcome. Drinking becomes the only refuge from those cares which owe their very origin to excesses, and they must be drowned in any bowl that can be filled to drive away the blue devils.

Vina parant animos, faciuntque caloribus aptos,
Cura fugit, multo diluiturque mero:
Tunc veniunt risus, tunc pauper cornua sumit;
Tunc dolor et curæ, rugaque frontis abit,
Tunc aperit mentis ævo, rarissima nostro
Simplicitas, artes excutiente Deo.

Decapitation

As I have observed in a preceding article, much doubt exists whether decapitation puts an end to our sufferings, as it has not and most probably will never be ascertained, whether the body or the head are first deprived of sensation or vitality. Galvanic experiments had been resorted to, but were warmly opposed by Professor Ferry on the plea of humanity, as he maintained that unless we were certain that sensation had ceased, we had no right to submit the unfortunate culprits who had been decapitated to this trial. Guillotin (whose name was given to the terrific machine so closely connected in our recollection with the horrors of the French Revolution, which he introduced from the East and Germany) maintained that the moment the head was severed from the body all sensation ceased. Cabanis and Petit were of a similar opinion. Sue, Aldini, Mojon, Weicard, Liveling, Castel, and other physiologists, founded their belief in a contrary doctrine, upon numerous experiments on various animals. Sue grounded his arguments upon two chief points: first, the sudden effect produced by decapitation upon the two most powerful regulators of the functions of life, the brain and the heart; and secondly, on the consideration that the section of the neck was often uneven and jagged, splinters of bones irritating the bruised nerves, vessels, and spinal marrow.

According to this view of the matter, existence was not immediately destroyed by decollation. Castel thought that this principle was extinguished in the head sooner than the body. Sue and Julia de Fontenelle were of a different opinion. Dubois of Amiens endeavoured to prove the non-existence of pain after decapitation, by showing that convulsive movements, epileptic and hysteric attacks, were not accompanied by any painful sensations. In decapitation, he thinks that the suddenness and violence of the blow must produce insensibility, for we cannot imagine that the section of the spinal marrow thus violently performed can occasion pain; and if any sensations were experienced in that awful moment, it is more than probable that the violent perturbation would render them obtuse. As to any feelings of the separated head, he does not think that any muscular convulsions observed in it can indicate the existence of pain.

To these arguments of the Amiens physiologist, Julia de Fontenelle replied that it was never maintained that convulsive movements were expressive of pain, although it was not impossible that epileptic and hysterical patients may have experienced painful sensations during their attacks that might be forgotten upon their recovery, as somnambulists bear no recollection of what passed during their disturbed slumbers. The convulsive affections alluded to by Dubois were frequently expressive both of pleasure and of pain, or marked with a character of stupor or of indifference, whereas the convulsive movement observed in the features of the decapitated invariably expressed anguish; in support of his firm belief in the existence of the power of sensation after execution, he refers to the observations of Sœmmering, Mojou, and Sue, who had remarked that when the head was turned towards the solar rays, the eyes instantly closed,—a phenomenon that could not take place if the eyes were dead. Dr. Montault jocosely observes that it is to be regretted that, to decide this controversy, recourse cannot be had to the experiments, recorded by Bacon, of an inquisitive person who hanged himself for the purpose of ascertaining if strangulation was a painful operation. One of his friends very fortunately cut him down ere it was too late, when the curious experimentalist was quite satisfied that hanging was by no means painful or unpleasant, and that the moment strangulation took place, he had been struck with a flickering light, that was instantly followed by utter darkness.

Various cases are recorded of individuals thus cut down, when hanged by accident, or executed. In most instances they stated that they had experienced a pleasurable sensation as strangulation took place. I have already alluded to the curious fate of the well-known composer of the “Battle of the Prague.”

Mummies

Much doubt exists regarding the derivation of the word *mummy*. Bochard, Menage, Vossius, attributed it to the Arabic noun *mum*, meaning *wax*. Salmasius derives it from *mumia*, a body embalmed and aromatized. The Persian word *múmiyà*, means bitumen or mineral pitch. Abd-Allatif, an Arabian physician, describes mummy as a substance flowing from the tops of the mountains, and which mixing with the water that streamed down, coagulates like mineral pitch.

Many are the opinions relating to the custom of embalming men and various animals in ancient Egypt. By some it has been considered a superstitious practice, by others the result of affection. To keep the remains of those we loved upon earth free from the destructive power of death, and preserving in some degree those forms that once flitted before us and around us in all the enjoyments of life, is a natural, one might almost say an instinctive, sentiment;—preserving those fond remains upon earth, exempted from the painful sight of beholding them committed to the earth—earth to earth—for ever! How different must have been the feelings of the relatives of the departed, when leaving the body reposing in the tomb, still preserving the form of its mortal coil—still in the world—where all we loved might be visited and spoken to in the language of affection and regret—how different must have been these feelings when compared to those that compress the respiration and check our utterance, after seeing that body separated from us, and leaving a chasm around us deeper still than the grave. We are, however, to seek in this practice other motives. The wisdom of the theocratic government of ancient Egypt was most admirable, and not founded upon mortal affections and dislikes. The sovereign priesthood had to attend to concerns of greater magnitude. The first inhabitants of Egypt, migrating most probably from the upper regions of Ethiopia, had to colonize an unhealthy region, to struggle with swamps and marshes, and destroy myriads of animals, whose decomposition added to the dangers they had to encounter when settling in such an unhealthy land. Pestilence, no doubt, as in after times, frequently desolated the infant kingdom. Their priests, in whose temples were recorded in mystic legends all the science of the age, must have applied their experience and their judgment to meet the evil, and surmount it, were it possible. The ideas of corruption are closely connected with those of putrescency; and putrescency has ever been considered the chief source and focus of pestilential maladies. To avoid corruption and putrescence, then, became one of the most important Hygienic studies; and, like Moses, who had received his early education in Egypt, its priesthood enforced salutary laws as the injunction of the Creator; nor was the task as difficult as it might have proved in a more extensive and more diversified region. The population resided in a land of no very great extent; their climate did not vary according to prominent topographical circumstances; and the produce of the soil, as regarded alimentary substances, admitted of little variety. Thus it became easy to establish salutary institutions to regulate the mode of living of the obedient people, who looked upon the commands of their sainted legislators as dictates from the eternal throne.

Impressed with the conviction of the immortality of the soul, the Egyptian priesthood imagined, or, at any rate, endeavoured to persuade the multitude that the immortal part of our being was retained within its earthly house so long as the corporal form could be preserved entire, and if (which is most probable) they believed in the resurrection of the soul either in its human form or that of some other animal, this doctrine may be easily accounted for as founded upon reason, and grateful to the sensitive feelings. A belief in the transmigration of

souls naturally led to the desire of retaining them as long as it was possible in their former abodes; and the lines of Virgil—

Animamque sepulchro,
Condimus,

would seem to warrant this belief amongst the ancients. St. Augustine clearly tells us that the Egyptians did believe in a resurrection.

Amongst other prophylactic means to resist epidemic diseases the embalming of the dead must naturally have occurred to the sacred college as one of the most effectual means of checking or preventing contagion. Not only was man submitted to this process, but every animal, domestic or obnoxious, was equally preserved. It may be said, if destruction was rendered a prudent step, why were not these bodies consumed by fire? The reason appears to me obvious. It was necessary to check the consumption of animal food; therefore were various animals considered sacred, and not allowed to be immolated for the use of the multitude; other animals were considered noxious, and as such their use was forbidden. Religion thus stamped them with the irrevocable dye of holiness or corruption. Mystic characters were traced upon their remains. The sanctity of these animals sometimes varied in different districts, and the ibis was venerated where the serpent was disregarded. When we contemplate the thousands of crocodiles in the caverns of Samoun, the myriads of the ibis in the desert of Hermopolis, Antinoë, Memphis,—when we behold even the eggs that were destined to perpetuate their race thus preserved,—had not these animals been thus respected, they would have become the food of the inhabitants, and, both from their abundance and their unwholesome qualities, have added to the frequent scourges that desolated the land.

Here again we find that this anomaly was unavoidable: those myriads of animals, from the nature of the climate and the soil would have increased to such numbers as to overrun the land. What was to be done? Had they been considered edible, most unquestionably they would have been devoured as food; it therefore became necessary to destroy and embalm them: this destruction was no doubt inculcated as a religious duty; otherwise, how should we find even to the present day, such numbers of these creatures, preserved through the lapse of ages, with their very eggs,—another proof that even their incubation was checked. Placed between the desolate desert and the sea, numerous must have been the races of animals who sought refuge in this wondrous region; and, as Lagasquie observes, in the Necropolis of Alexandria and Memphis, at Arsinoë, Charaounah, Achmin, Beni-Hacan, Samoun, Hermopolis, Thebes, and in innumerable hypogean monuments, we find the remains of thousands—nay of millions—of ibises, crocodiles, cats, rats, dogs, jackals, wolves, monkeys, serpents, nay, fishes of various kinds. Passalacqua found at Thebes numbers of birds, rats, mice, toads, adders, beetles and flies, all embalmed together. Nay, Herodotus informs us that the animals considered sacred in one city, were held in abhorrence in others, a difference of opinion that not unfrequently occasioned bitter hostilities. Thus the Ombites fought with the Tentyrites on account of the sparrowhawks, and the Cynopolitans waged war with the Oxyrhynchites from disputes about dogs and pikes. These schisms no doubt arose from priestly ambition, each temple claiming its especial shrine of adoration, for whatever might have been the original motive that led to those theological practices, there is no doubt but all these animals were to a certain degree typical of the good and evil propensities of the various deities, as manifested in their several habits, whence they were selected in the symbols and attributes of the sovereign powers. Abbé Banier endeavours to prove that the bull was the symbol of Osiris and Isis, and that these divinities were themselves symbolic of the sun and moon. Thus the worship of the bull, Mnévis and Apis. The inhabitants of Mendes adored the god Pan, and worshipped him under the figure of a goat, and Mercury is represented with the

head of a dog, the most intelligent of animals. Thus in time people lost sight of the origin of the worship, and transferred their adoration to the symbols, as many Roman Catholics transfer their worship of the saints to their wooden images.

The priesthood of Egypt sought not their power in terror, but in affection and gratitude. They strove to convince the people that they were their true friends and real benefactors; their sole study was their welfare, their greatest pride the nation's prosperity. Gratitude appears to be the sentiment they most sought to inculcate. The serpent was held in veneration, because it destroyed noxious vermin; the ibis was respected from the same motive; the crocodile for the protection it afforded their navigable waters; yet, by one of those strange anomalies that we find in most mythological *reveries*, animals were held sacred, although they constantly destroyed other sacred creatures; and while the crocodile was worshipped, the ichneumons that destroyed its eggs were also entitled to respect. Such was the value of the remains of departed relatives and friends, that their embalmed bodies were often pledged for large sums. The more readily advanced, since their redemption was considered a sacred duty. Thus do we find worldly regulations, bearing the sanctity of a theologic seal. Then again how mighty must have been the hierarchy from whose doctrines emanated the Pharaonic splendour of their stupendous monuments—works of art, that attracted the notice and the admiration of all the civilized part of the globe, whose travellers while they flocked to view their magnificence, were taught to cultivate the sciences and arts, which the priesthood professed, smatterings of which those visiters proudly carried back as a precious gift to their country. Moreover what occupation must have been afforded to the people and to their numerous captives, whom they continually dreaded, from the apprehension that in their constant wars, their prisoners might join their enemies—a circumstance fully proved in Holy Writ, where we find, in Exodus i. 10, that the Hebrews were oppressed, "lest when there falleth out any war, they join also unto our enemies and fight against us."

This overwhelming power, most fortunately wise and humane, was maintained by every artifice that ingenuity could devise. Egypt has justly been denominated the *Alma Mater* of superstition, since we have every reason to suppose, that with much less wisdom and learning, every successive hierarchy has sought by similar means to retain an equal sway. In Egypt this influence must have been amazing, they held the first rank after the sovereign, whom they assisted in the performance of all his public duties, were present in all his councils, and directed his judgment from the lessons which were laid down for his conduct in the sacred records. All the judges and principal officers of state were also selected in the priesthood; their number must also have been very considerable, since we find them classed as chief priests or pontiffs, and inferior priests of various grades belonging to the sacred deities, prophets, judges, hierophants, magistrates, hierogrammats, or sacred scribes; Basilico grammats, or royal scribes; Sphragistæ, whose office it was to examine the victims, and to put a seal of approbation on them before the sacrifice. Hierostoli, who had access to the Adytum, to clothe the statues of the gods; doctors, embalmers; hierophori, or the bearers of sacred emblems; pterophori, or bearers of the fans carried before the gods; præcones, or pastophori, bearers of the holy images, and keepers of the sacred animals; hierolaotomi, or masons of the priestly order, besides innumerable painters, sculptors, sprinklers of holy water, and flappers to drive away the flies.

Kings were chiefly selected from the priestly order, and when they had been members of the military class, they were obliged to enter a sacerdotal college before they could ascend the throne; even then, they were only allowed to be attended by the children of families belonging to the priesthood.

If such was the influence of priests, that of the priestesses were not the less powerful. The Pellices, or Pallacides of Amun, filled offices of the highest importance, and not unfrequently queens and princesses prided themselves in performing their duties. The subdivision of the female attendants of the temples was also sanctified, and they were chiefly selected in the families of priests. If we are to believe the Grecian accounts, these holy women were not remarkable for their chastity; their indiscretions, however, were confined to their own circle. These assertions, have been by no means general, nor is it probable that a class of men who affected so much purity, and observed such a rigid abstinence to obtain the character of sanctity to which their power was due, would have exposed themselves to the results of such an improvident mode of living.

My view of the origin of embalming both men and animals is borne out by another striking circumstance. The moment the practice of embalming the bodies of men and animals ceased in Egypt, pestilence appeared. At the period when Christianity was introduced into Egypt, the new religion had to encounter many obstacles in overcoming the obstinate prejudices of the ancient creed. During the four first centuries of its propagation, the ancient customs were persevered in; at last the cross triumphed and was enthroned, and the practice of embalming was abolished. In 356, St. Anthony, upon his death-bed, anathematised it as sacrilegious; his last injunction according to St. Athanasius, his historian, had such an effect, that an injudicious zeal prevailed in Rome, in Constantinople, and other large cities, and led to the practice of inhuming bodies in churches and cemeteries, notwithstanding the prohibition of the magistracy. While the dead were interred in towns, or their vicinity, in dwelling houses and gardens, the remains of animals were scattered abroad to become part of the soil, and thus this most dangerous innovation hurried on the development of the most dangerous of diseases. In 1542, under Justinian, Egypt was avoided as the focus of pestilence. It would be difficult to point out the exact period when the custom of embalming fell into disuse; but it had ceased to be practised at the time when pestilence burst forth over the land in all its irresistible horrors. The coincidence was too remarkable not to have been noticed.

It is certainly true that the plague had visited Egypt at former periods, recorded in holy writ, when we know not to what extent the preparation of mummies might have been carried, although we find that Jacob was embalmed by physicians; but when we consider the topography of Egypt presenting a vast plain exposed to a yearly inundation, its soil preserved for centuries from the admixture of animal substances, but of a sudden changed into a mass of corrupted bodies of men and animals, acted upon by heat and moisture,—when the inhumation of man was neglected, and the offals of beasts and reptiles accumulated in pestilential heaps,—we may easily imagine what a luxuriant field was submitted to the scythe of death.

The Egyptians had, no doubt, introduced the practice of embalming the dead from Ethiopia, a country abounding in various gums, which served them to preserve the remains of their relatives. The transparency of these substances had induced some travellers to assert that the bodies were imbedded in glass, like insects found in amber. De Pau, and many other writers, have exposed the absurdity of such a report, since it is more than probable that glass was scarcely, if at all, known amongst them. The Persians enveloped their dead in wax; and the Scythians sewed them up in skins.

While the foresight and wisdom of the Egyptian sacerdocy was thus distinguished by Hygienic institutions, their interests were not neglected; and the art of embalming, which they monopolized with every other branch of learning, tended not a little to add to their emoluments. Every dead body was their property. Herodotus tells us, that if the corpse of an Egyptian, or a stranger, was found in the Nile, or cast upon its banks, the priests alone had the

power to touch it, and afford it a sepulture. This interesting, although not very veracious author, gives the following account of the process. There are in Egypt a particular class of people whose sole business consists in embalming bodies. When a corpse is shown them, they exhibit models of mummies depicted upon wood. These models are of three kinds, and vary in prices. The bargain being concluded, the embalmers commence their labours. The brains are first extracted through the nose with a crooked iron instrument; an incision is then made in the side of the body with a sharpened Ethiopian stone, through which the viscera are drawn. These are cleansed out, washed in palm wine, and then strewed with pulverized aromatic substances. The abdomen is stuffed with powdered myrrha, cinnamon, and other perfumes, but without incense. After these manipulations, the body is sewn up, and salted with natrum for seventy days. This period elapsed, the corpse is again washed, and swaddled up with rollers of linen, covered with gum, which the Egyptians commonly use instead of glue. The relations, after this operation, carry home the body, and place it in a wooden case resembling the human form; afterwards locking it up in chambers destined for the purpose, and placing it upright against the wall. This is the most expensive process. The next is more economical. Syringes are filled with an unctuous fluid, extracted from the cedar; this liquor is thrown into the body through an incision performed in the side, and is of such a nature that it gradually corrodes and destroys the viscera: after the body has been duly salted, nothing then remains but the bones and skin, which this substance does not affect.

Diodorus Siculus gives an account somewhat similar, but adds some curious particulars. The first class of funerals cost a silver talent; the second twenty minæ; and the third scarcely any thing. The embalmers divide their labours into various offices. The first, or the scrivener, points out the part of the body on the left side where the incision is to be made. The next operator is the incisor, who uses for the purpose a sharp Ethiopian pebble; the viscera are then drawn out, with the exception of the heart and kidneys; and the body is then washed with palm wine and aromatics. The corpse is afterwards inuncted with the gum of cedar, and strewed with myrrha, cinnamon, and various spices. It is ultimately returned to the family of the deceased, in such preservation that the eyebrows and eyelids are uninjured, and the countenance preserves the character that distinguished it during life.

Porphyrius informs us that the embalmers, after having extracted the intestines, exposed them to the sun, putting up a prayer to that luminary, and declaring that if the deceased had ever been guilty of any act of gluttony, the intestines alone were guilty, and they were therefore cast into the Nile. Plutarch alludes to a similar ceremony. The *incisor* appears to have been considered a degraded being, for Diodorus tells us, that, after the operation, he was pursued by the relations of the defunct, and pelted with stones, as having polluted the remains of the dead.

These accounts of the ancients have been warmly impugned by modern antiquaries, who maintained that the various substances stated to have been made use of in the process of embalming, did not possess the qualities attributed to them,—especially the liquor called *cedria*, drawn from the cedar-tree. Rouyer, a member of the Egyptian commission of sciences and arts, corroborates in a great measure the accounts of ancient historians; and, in a very interesting paper on the subject, we find that the bones of the nose are destroyed in some mummies, but left intact in others,—a circumstance that would lead us to think that on such occasions the brain was left in the cranium. The opening in the side did not appear to have been sewn up, but the lips of the incision merely brought into apposition. He divides mummies into those in which tanno-balsamic substances had been introduced, and those that had merely been salted. The first species were found stuffed either with aromatic resinous substances, or asphaltum and pure bitumen. These resinous substances emitted no odour, but, when cast into the fire, a thick smoke arose, and a strong aroma became evident. The

mummies thus preserved were light, dry, and fragile; preserved their teeth, their hair, and eyebrows. Some of them had been gilded all over; in others, the gold had only been applied to the face, the hands, and the feet, and other parts. This practice of gilding was so general, that it does not warrant the belief that it was only the remains of the illustrious and wealthy that were thus ornamented. These mummies, so long as they were kept in a dry place, were unaltered; but were soon decomposed, and emitted an unpleasant effluvium, when exposed to atmospheric moisture. The mummies thus prepared were of an olive colour, while those preserved with bituminous substances were of a reddish tinge; the integuments hard and shining, as if varnished. The features were not altered, and the cavities were filled with a black, hard, and inodorous resinous substance. The ingredients thus employed were similar to the bitumen of Judea; most of them were gilded.

Other mummies were found without any lateral incision, when, most probably, the intestines were drawn out through the rectum. These cavities were filled with the substance termed by historians *Pissasphaltos*. In the mummies merely cured with salt, when this ingredient is abundant, the features are obliterated, the surface of the body having been smeared with bitumen. These mummies which of course are the remains of the poorer classes, are the most common. They are heavy, hard, and black, and shed an unpleasant odour. They boast of no gilding; only the palms of the hands, the soles of the feet, and the nails, had frequently been decorated with a red tinge; most probably by the application of the *henne*. These were the mummies which were sold by the Arabs in former times for medicinal purposes. For a further description of the mode of enveloping the bodies and the history of embalming, I must refer to the valuable labours of Mr. Pettigrew.[51] The process of embalming appears to have consisted simply in extracting the viscera, or destroying them by some corrosive injection; dissolving the mucous and fatty matter by the long application of natrum; and, finally, in desiccating the corpse by exposure to air or stoving.

Mummies have been also found in the Canary islands, where they were named by the Guanchi *xaxos*. They were light, dry, of a yellow colour, shedding a slight aroma, and carefully enclosed in goat-skins. The operation was also performed with a sharpened Ethiopian stone, called *tabona*. Humboldt found numerous mummies in Mexico, where desiccated bodies have not unfrequently been seen in the open air.

Certain soils appear to possess a preservative quality, without any apparent preparation having been made use of. In the catacombs of Bordeaux and Toulouse, these dried bodies may be seen, the hair and eyebrows still intact; but they are dark and shrivelled, and it does not appear that the contents of the cavities had been extracted or heeded, the process of desiccation being general. The miraculous conservation of bodies recorded by Calmet in his History of Vampires was nothing more than instances of a similar preservation.

Various experiments have proved that the progress of chemistry has been so great, that we might equal the Egyptians in the preparation of mummies, if ever such an absurd practice were introduced.

In the sixteenth and seventeenth centuries mummies formed one of the ordinary drugs found in Apothecaries shops, and as considerable sums were expended in its purchase as had been laid out upon the *besoards* of various rare animals. It became a lucrative branch of trade to the Jews. The demand not being easily supplied from the vigilance of the Egyptian Government, various frauds were introduced. So powerful were the supposed qualities of mummies, that Francis I. always carried a small parcel of it about him mixed with rhubarb. Lord Bacon tells us that mummy has great force in stanching of blood. Boyle assures us that

[51] History of Egyptian Mummies, &c. &c., 1834.

it is one of the useful medicines commended and given for falls and bruises. The Arabs to this day make use of mummy powder mixed up with bitters. This preparation is called *mantey*, and is esteemed a sovereign remedy for bruises.

Hydrophobia

This term has been erroneously applied to the disease arising from the bite of a rabid animal, since many instances are recorded of mad dogs not only drinking freely of water and other fluids, but actually swimming across rivers; while, on the other hand, the horror of water has attended maladies totally unconnected with rabid injuries: Sauvages plainly expresses himself on this subject. “Apud Gallo-provincales, experientiâ, canes lubosque rabidos bibisse, munducasse, flumen transnasse, ut olim Maralogis et bis Forolivii observatum, adeoque nec potum aversari.” Dr. James relates the case of a mad dog that drank both milk and water, and swam through a pond. Similar cases are recorded of mankind.

This disease was known to the ancients, and the Greek term for rabies was *lyssa*, referred to several times by Homer, when Hector is compared to a mad dog by Teucer and Ulysses. It was also known by the name of *cynolisson*, *phobodipson*, and *hygrophobia*. According to Plutarch, the disease was first observed in the time of Asclepiades. Cœlius Aurelianus is the most correct of the ancient writers on the subject. This disease, although it may appear in every climate, is far less common in hot regions than in those of a moderate temperature. In the West Indies it is unknown; nor has it been observed in South America. In Egypt and Syria it has never been seen. Mr. Barrow informs us that at the Cape of Good Hope, and amongst the Caffres, their dogs are exempt from the malady, although constantly fed upon putrid meat.

Water-dread has been observed in various rheumatic and inflammatory affections, and frequently arises in a spontaneous manner; while many cases are recorded of the alarming symptoms being witnessed when no rabid bite has been inflicted. Violent passions, both in men and animals, seem to impart a peculiar acrimony to the saliva. Meekren, Wolff, Zacutus Lusitanus, mention fatal cases after the bite of a man in a passionate fit. Le Cat gives a case of death produced by the bite of an enraged duck. Thiermayer gives us two fatal cases of the bite of a hen and a goose, and Camararius has an instance of epilepsy produced by the bite of a horse.

Of the cause of this disease we are utterly ignorant: thirst, without the means of quenching it,—the use of putrid food,—sultry weather, have been considered as producing the fearful disorder; but no one instance is recorded that can justify the opinion. The streets of Lisbon are crowded with dogs, feeding upon disgusting offal, under a burning sky, yet rabies is scarcely ever observed among them. It is more probable that certain mental emotions, such as anger and fear, have a peculiar influence on the animal. All the aggregate symptoms of the disease show that the nervous system is disturbed; and the singular effect of confidence in the treatment of persons bitten by a rabid animal, confirms the fact. This is further proved by many cases of hydrophobia unconnected with rabid bites. Marcel Donat relates the case of a woman who complained of pains in the neck and right arm, with constant trembling. In three days the pain ceased, but the tremor continued; a sense of suffocation followed, which was attended with a horror of water and every liquid, although the throat was burning. In five days she died in excruciating agonies, but preserving her senses until the last. Kœhler saw a young soldier, who, having fallen asleep against a stove, was suddenly awakened with a sensation of intense thirst, which he quenched with a draught of cold water. Hydrophobia immediately ensued, and the next day terminated his existence. Selig relates the case of a man at Neukirchen, who was attacked with all the alarming symptoms of this malady after having laboured in the fields on a very hot day, and bathed in the river. The following day he was affected with violent rheumatic pains, which shortly ushered in an intolerance of fluids, and

inability of swallowing. In the course of twenty-four hours he expired. It appeared upon inquiry that a year before he had purchased from the hangman of the town some dog's grease, to rub himself to relieve some troublesome affection; and it was stated that the dog had been killed by a gamekeeper, who suspected him of being mad.

Cases of plague have been attended with water-dread. Lalius Diversus saw a woman labouring under the epidemic, who was thrown into agonies when she even saw other persons drinking. Sarcotius, in his history of the epidemic diseases of Naples, informs us that the fever was invariably attended with hydrophobic symptoms. The fever that prevailed at Breslau in 1719, presented the same peculiarity.

Various venene substances have also been known to give rise to this disease. Professor Brera, of Pavia, witnessed it after the use of stramonium. Rancid oils have caused similar accidents. In regard to the causes that produced madness in dogs, numerous experiments have been made, particularly in the Veterinary School of Alfort: one dog was fed with salted meat, and totally restrained from drinking; another was allowed nothing but water; and the third was not allowed food or drink of any kind. The first died on the forty-first day; the second on the thirty-third; and the third on the twenty-fifth; not one of them evincing any symptoms of rabies.

It appears that a peculiar predisposition renders some individuals more subject to the accidents that follow the bite of rabid animals than others. Mr. Hunter gives an instance in which, out of twenty persons who were bitten by the same dog, only one received the disease. It appears, however, that this virus is less volatile than most others, and is capable of remaining in a dormant state for a very long period; and if we are to give credence to many reports on the subject, it may linger in the system for several years. At other times, its destructive nature has proved immediately injurious. Heisler has given a case where a man was affected by merely putting into his mouth the cord by which the mad dog had been confined. Palmarius relates the case of a peasant, who, in the last stage of the disease, communicated it to his children by kissing them. It has, however, been clearly demonstrated, that inoculation of rabid saliva does not propagate the distemper. Experiments were made both by Magendie and Breschet in 1813. In 1800, when a dresser in the Hôtel Dieu of Paris, I witnessed several experiments of the kind, and with similar results. At the same period, I had occasion to observe the effect of imagination in many cases. Several persons had been bitten by a rabid dog in the Faubourg St. Antoine, and three of them had died in our wards; a report, however, was prevalent that we kept a mixture that would effectually prevent these accidents; no less than six applicants were served with a draught of coloured water, and in no one instance did any accident ensue.

The period of the development of the accidents after the bite in animals is various. According to Meynall, the disease appears amongst dogs from ten days to eight months after the injury. In the hounds of Earl Fitzwilliam, who were bitten in June 1791, the intervals varied from six weeks to six months. Dr. James made a similar observation in Mr. Floyer's pack.

No malady has been submitted to more curious and fearful modes of treatment than hydrophobia; and in many cases such has been the dread of the disease, that patients have been smothered or drowned. Dioscorides seared the wound with irons heated to whiteness; other practitioners first excised the wounded part, and then applied fire or caustic. While fire was resorted to by some practitioners, water was recommended by others, and submersion in a river or a pond has frequently been urged as an effectual remedy. In the time of Celsus, the miserable sufferer was thrown without any warning into a fishpond, alternately plunging his head under water and raising it: when the poor wretch could swim, he was forcibly kept immersed until filled with water. After this experiment, which Celsus terms the *unicum*

remedium, for fear that the patient might be attacked with convulsions, he was taken out of the pond, and soused in warm oil. Van Helmont recommended that the poor devil should be kept under water while the psalm *Miserere* was sung, and most probably the terrified choristers were not expeditious in their performance. Morin relates the case of a young woman, twenty years old, who was plunged in a tub of water, with a bushel of salt dissolved in it, and dipped repeatedly, until she became insensible; however, much to the surprise of the bystanders, who thought her dead, she recovered, and could not only look upon water, but was able to drink it. Bleeding nearly to death, mercury, cantharides, and various medicines, have been also called into aid; but none have appeared to prove effectual in curing this dreadful disorder. One of the most singular modes of treatment was the introduction of rabid blood into the system of the patient,—in fact, a homœopathic plan of Dr. Rithmeister of Powlowsk, in Finland, who has recorded several cases to prove that the blood of a rabid animal, when drunk, is a specific against canine hydrophobia. The doctor communicates a letter from Dr. Stockmann, a Russian physician, stating this practice to be both common and effectual in White Russia.

With a view of producing a fresh poisonous action that might neutralize the former one, it has also been proposed that a venomous serpent should be made to inflict a wound under the bite of the mad dog. I do not believe that this experiment has ever been tried; and, as Good observes, the claim of ingenuity is, most probably, the only one it will ever have to receive. This fatal disease is enveloped in so much darkness, both as regards its causes and its treatment, that it may well be considered one of the opprobriums of the profession. The experiments of my late friend Sir David Barry are, however, of great importance; and in many cases of poisonous wounds, the application of cupping-glasses has been followed by evident favourable results.

To ascertain the existence of rabies in animals, more especially in dogs, is a matter of great importance, as being frequently the source of moral depression or of sanguine hope, that may tend to increase or diminish the severity of the accidents. One may apprehend madness in a dog when we see the animal dull, and seeking solitude and darkness, his sleep disturbed, and when awakened refusing food or drink. Its head droops, the tail hangs between the legs. The animal soon quits the abode of his master, the mouth secreting a viscid foam, the tongue pendulous and dry, the eyes bright and sparkling. His gait soon becomes uncertain; now precipitate, then slow and undecided. Impatient, and parched with a burning thirst, he cannot rest; and the sight of any fluid occasions an instinctive shudder. The rabid symptoms now become more violent; the animal will attack and bite other dogs, although much superior in strength. It is asserted that dogs avoid him with terror. On these occasions the fury of the animal is not to be controlled; all ties of attachment are dissolved; and his master is but too frequently the first victim of his indiscriminate rage. Hence the absurd popular notion that mad dogs inflict their first bite on those to whom they are attached,—a circumstance that simply can be attributed to the natural endeavours of a master to check the violence of a domestic creature whom he generally can control. Mad dogs seldom bark, but express their angry uneasiness with a growl, which gradually becomes weaker, until the animal staggers, droops, and dies. Yet as there may exist many maladies amongst animals in which these symptoms are observed, to destroy them, as is usually the case, is a most absurd practice, since the individuals whom they may have bitten will sink into a fatal despondency; whereas, by allowing them to live, if they recover, it is evident that the patient will be easily persuaded that the dog was not in a rabid state.

The following cases, recorded by Dr. Perceval, are curious instances of the dormant state of this fearful virus, the effects of which are accidentally developed.

A wine-porter was labouring under a low fever; after a time appeared some symptoms of hydrophobia, and much inquiry elicited the recollection of his having been slightly bitten by a dog six weeks before. In the interval he was convicted of some fraudulent practice in the cellar of his master, to whom he owed great obligation, and was dismissed with disgrace. Anxiety on this event seemed to produce the fever, which terminated in rabies.

Lately an officer was bitten by a dog, whose madness being recognised, the bitten part was excised immediately: after an undisturbed interval of two months, he was advised to go to England to dissipate the recollection of the accident. There he exercised himself violently in hewing wood, felt pain in the hand which had been bitten, embarked for Ireland, had symptoms of hydrophobia on board the packet, and died soon after his arrival. From the varying period of attack, we might infer that the influence of occasional causes is very considerable. In the last patient, hydrophobia supervened exactly five weeks from the time of the bite: he lost one hundred and twenty ounces of blood in twelve hours, which sunk him much; violent perspiration, and at length delirium, attended the water-dread; during the last twenty-four hours he swallowed, and recovered his senses; and died slightly convulsed, whilst cutting an egg. These cases seem to point out agitation of mind and feverish excitation as powerful occasional causes.

Herman Strahl has recently related the following case of rabies in which the dog that had bitten the patient was not mad. In the month of January, 1833, an innkeeper was taken ill. The doctor found him dressed, and stretched upon his bed. He did not complain of any particular ailment, but loathed all food. He at last admitted that he experienced some difficulty in swallowing; and his mother having offered him a cup of tea, he refused it with a sense of horror, and his countenance immediately assumed a character of ferocity that terrified the bystanders. An apple having been given to him, he ate it without repugnance. It was now discovered that, five weeks before, he had been bitten by a dog he was training; and the wound was slow in healing. The dog was sought, and did not show the slightest sign of disease,—barking, playing, and drinking freely. In the evening the patient’s case was aggravated; and it was with the utmost difficulty that he was made to swallow a spoonful of ptisan. The next day he was seized with a violent attack of rabies: seeing one of his sisters drinking, he fell into a furious rage, dashed a looking-glass to pieces, and entreated his relatives to withdraw, as he otherwise would inevitably bite them. This outrageous paroxysm lasted half an hour; at its expiration he fell into a tranquil sleep. But at night he was seized with another attack; and he began to howl and imitate the barking of a dog, and commenced breaking every thing in the room of a shining appearance. His sisters fled in dismay; but he seized his mother, a woman of sixty-five years of age, cast her on the ground, and bit her in the cheek. After this desperate act, he seemed to be struck with a conviction of what he had done, and became more tranquil; but, half an hour after, on entering his chamber, he was found dead, his head under the bedclothes. His mother did not experience any accidents from the injury.

It is singular that, in this miserable condition, the patients will frequently show singular partialities; and, although repulsing any fluid offered to them by some individuals, will take it from others, and attempt, however vainly, to drink. In the Hôtel Dieu of Paris, a young girl, affected with hydrophobia, would only take a cup of ptisan from me; but with looks of inexpressible anxiety returned it to me, after having struggled to moisten her burning lips. At Boulogne, a postilion, bitten by a mad dog, was violent with every one but one of my nephews: from him he also accepted drink, although unable to swallow it; before dying in excruciating agonies, he repeatedly asked for him, and begged that he might be sent for. He would not allow, even in his last moments, any other person to come near him;—another

striking instance of that unknown power of sympathy to which I have frequently alluded in the preceding pages.

On The Rise And Progress Of The Science Of Medicine

In a former paper I have given a sketch of the progress of the Chirurgical profession, relating the many difficulties its members had to encounter in their endeavours to attain that degree of perfection to which surgery has risen; a perfection which we have every reason to believe will still continue to be improved by the daily discoveries of the Physiologist, whose labours may be considered the theoretical guide of the practitioner. The history of medicine is equally fraught with much interest, since its being a science more or less conjectural, it has opened a vast career to the speculative mind, and a wide field for the ambitious. Having been long considered a divine inspiration, priesthood in every age considered this science an attribute of their vocation, adding to their spiritual and temporal power.

In a rude state of society it is more than probable that the art of curing diseases, as well as that of healing injuries, did not constitute a special profession, but was practised indiscriminately by all persons whose experience and position in the midst of their uncivilized kinsfolks, gave some weight and importance to their advice. Warriors attended their wounded companions in arms. Parents sought to relieve their offspring, and children endeavoured to alleviate the sufferings of their aged and infirm sires. Thus, I may say, was the art of healing instinctively taught, and not unfrequently the brute creation guided the efforts of humanity; when man contemplated the means animals resorted to when labouring under disease. Plutarch affirms that it is to these instinctive efforts of animals that we are indebted for the knowledge of the various properties of plants. The wild goats of Crete pointed out the use of the *Dictamus* and vulnerary herbs—dogs when indisposed sought the *Triticum repens*, and the same animal taught to the Egyptians the use of purgatives constituting the treatment called *Syrmaïsm*. The hippopotamus introduced the practice of bleeding, and it is affirmed that the employment of enemata was shown by the ibis. Sheep with worms in their liver were seen seeking saline substances, and cattle affected with dropsy anxiously looked for chalybeate waters. This study might therefore have been called an instinctive school.

Herodotus tells us that the Babylonians and Chaldeans had no physicians, and in cases of sickness the patient was carried out and exposed on the highway, that any persons passing by who had been affected in a similar manner, might give some information regarding the means that had afforded them relief. Shortly, these observations of cures were suspended in the temples of the gods, and we find that in Egypt the walls of their sanctuaries were covered with records of this description. The priests of these shrines soon considered these treasures as their property, and turned their possession to a good account. Amongst the Hebrews we find that the Levites were considered as the only persons who could cure leprosy, and the practice of medicine became their province.

The priests of Greece adopted the same practice, and some of the tablets suspended in their temples are of a curious character which will illustrate the custom. The following votive memorials are given by Gurter: “Some days back, a certain Caius, who was blind, learned from an oracle, that he should repair to the temple, put up his fervent prayers, cross the sanctuary from right to left, place five fingers on the altar, then raise his hand and cover his eyes. He obeyed, and instantly his sight was restored amidst the loud acclamations of the multitude. These signs of the omnipotence of the gods were shown in the reign of Antoninus.”

“A blind soldier named Valerius Apes, having consulted the oracle, was informed that he should mix the blood of a white cock with honey, to make up an ointment to be applied to his eyes, for three consecutive days: he received his sight and returned public thanks to the gods.”

“Julian appeared lost beyond all hope, from a spitting of blood. The god ordered him to take from the altar some seeds of the pine, and to mix them with honey, of which mixture he was to eat for three days. He was saved, and came to thank the gods in presence of the people.”

The *Ex volos* of modern times suspended at the altars of saints in Catholic churches, are similar testimonials of superstitious credulity, and priestly fraud, and constitute a lucrative branch of business, more particularly to waxchandlers, who fabricate simulacra of every organ or member of the body that may be diseased.

Such was the study and practice of medicine, until the days of Hippocrates, justly named the father of medicine. But even this great man in his study of the problematic science, attributed to divine influence all that could not be comprehended and explained, giving the appellation of sacred, to that which appeared prodigious and inexplicable. This divine influence which was considered as invincible, setting at nought all human speculation and mortal efforts, he denominated the τὸ θεῖον the *Divinum quid*, he also fancied that the principle of fire was the source of all animation; for the which opinion, more modern writers pronounced him an atheist, amongst other bigots, who thus accused him, we find Gundling and Drelincourt, and even Mosheim; while on the other hand, Will Schmidt, Fabricius, and Bellunensi have sought to reconcile his doctrine with the scriptures; and so far from this accusation being founded, it is well known that Hippocrates had such an implicit belief in the power of the gods, that he got himself initiated in the Eleusinian mysteries at Athens. We find in his Prænotum the following singular passage: “Nevertheless, there does exist in all diseases something of a divine nature, and the physician who is able to foresee their results, must be admired for his judgment.”

This divine *something*, has been the subject of much research and angry disputation. Galen considered it to reside in the atmosphere. Fernel considered it the principle of putrefaction and disorganization. Mercuriali placed it in sideral influence, while Professor Martianus maintained that Hippocrates had a firm belief in demons and malevolent spirits. It would be endless to recount all the idle disquisitions on this matter, which have too frequently converted universities into Pandemoniums.

The earliest teachers of medicine were the philosophers, amongst whom we must remark Pythagoras, who founded the school of Crotona, where assuming the sanctity of the priesthood he obtained such an authority over his disciples, that it gave rise to the common expression of *jurare in verba magistri*. This truly wonderful man had learnt in Egypt the secret symbolic mode of writing of the priests, and he certainly did apply his extensive acquirements to the welfare of his country and the benefit of mankind; according at least to his views of the subject, which we have every reason to believe were conscientious. From his youth, when he bore away the prize in the Olympic games, his lofty ambition, which scarcely knew any bounds, constantly urged him on in a career of perfection in every branch of learning, which ultimately placed him on the highest ground that ever philosopher attained.

After Pythagoras, we find medicine taught by Anaxagoras, Democritus, Heraclitus; but Hippocrates was justly considered the father of medicine, and deserved the name of *great*—every line of his immortal works breathes a deep knowledge of the phenomena of nature, and an ardent desire to release the most important of all human sciences from the degrading trammels of ignorance and imposture. Nothing can afford a more convincing proof of the

purity of his motives, and the integrity of his principles than the formula of the oath which he exacted from his disciples, and which runs as follows:

“I swear by Apollo, by Esculapius, by Hygeia, and all the gods, to fulfil religiously the solemn promise which I now do make.

“I will honour as my father, the master who shall teach me the art of healing, and convince him of my gratitude, by endeavouring to minister to all his necessities. I will consider his children as my own, and will gratuitously teach them my profession should they express a desire to follow it.

“I shall act in a similar manner to all my brethren who are bound by a similar engagement, but shall not admit any other to my lessons, my discourses, or the exercises of my profession.

“I shall prescribe to my patients, such a course of regimen as I may consider best suited to their condition, according to the best of my judgment and capacity, seeking to preserve them from any thing that might prove injurious.

“No inducement shall ever lead me to administer poison, nor shall I ever give a criminal advice, or contribute to an abortion.

“My sole end shall be to relieve and cure my patients, to render myself worthy of their confidence, and not to expose myself, even to the suspicion of having abused this influence, more especially when a woman is in the case.

“I shall seek to maintain religiously both the integrity of my conduct, and the honour of my art.

“I will not operate for the stone, but leave that operation to those who cultivate it.

“To whatever dwelling I may be called, I shall cross its threshold with the sole view of succouring the sick, abstaining from all injurious views and corruption, especially from any immodest action.

“If during my attendance, or even after a recovery, I happen to become acquainted with any circumstances of the patient’s life which should not be revealed, I shall consider this knowledge a profound secret, and observe on the subject a religious silence.

“May I as a rigid observer of this my oath, reap the fruit of my labours, enjoy a happy life, and obtain general esteem—should I become a perjurer, may the reverse be my lot.”

At this period the physician who founded a school taught every branch of the science, and after examining his disciples, gave them a permission to practise the profession when properly qualified. Hippocrates was succeeded by his sons Thessalus and Draco.

The school of Hippocrates was followed by that of Plato who founded the dogmatic sect, but his speculative views were succeeded by the more sound doctrines of Aristotle, who was one of the first philosophers who applied himself to practical anatomy in the frequent dissections of various animals, and he struck out the important path which his successor Herophilus was fortunate enough to follow for the welfare of mankind, by submitting human bodies to the scrutinizing scalpel under the protection of Ptolemy Lagus, a protection which became the more necessary as he had been actually accused of having dissected living subjects. Tertullian affirms that he had thus sacrificed six hundred victims; but what faith can we place in such an absurd charge, which very probably arose from envy or prejudice; although his successor Erasistratus, was accused of a similar offence, and in more modern times Mondini, who was the first to reintroduce human dissections was exposed to a like charge. It was Herophilus who founded the celebrated school of Alexandria, where under the auspices of Ptolemy

Philadelphus, Erasistratus succeeded him, followed by Strabo of Berytus, Strabo of Lampsacus, Lycon of Troas, Apollonius of Memphis, and many other distinguished philosophers.

It was at this period that physicians began to practise surgery, which was first taught with great repute in the Alexandrian school, and where Ammonicus and Sostrates, surnamed the lythotomists, first distinguished themselves by this important operation.

While the science of medicine thus flourished in Greece and Egypt it was scarcely known in Rome, where the first physician who ventured to practise was Archagathus from Peloponnesus. At first the bold adventurer was favourably received, but his operations having shocked a people who constantly glutted their eyes in scenes of horror, and who beheld the blood of gladiators flowing in their arena or streaming under the lictors axe! the imprudent practitioner was stoned to death by the populace, and a hundred and fifty years elapsed ere another physician could be induced to visit the ungrateful country, nor was it until the time of Pompey and of Cæsar that any medical men dared to visit the "eternal city."

The first of these was Asclepiades, who commenced by giving lessons of rhetoric, which were succeeded by lectures on physic, in the first school of medicine which he founded in Rome. It was on these benches that Aufidius and Nico, Artonius and Niceratus were initiated in the art of healing, while Asclepiades formed his celebrated disciple Themison founder of the sect of the Methodists or Solidists. To this school are we also indebted for the learned Celsus justly called the *Cicero of medicine*. Under Trajan and Adrian the medical profession had attained great celebrity and splendour, and under M. Antoninus, and Marcus Aurelius the world became indebted to the glorious labours of Galen—but the bright days of the healing art were sinking with the star of Rome in the dark horizon of barbarism, and the works of these illustrious masters were sacrificed at the shrine of astrology, magic, and Eastern theosophy.

From this period we find Eastern superstitions mingled with the early practices and creed of Christianity, when, to use the words of Sprengel, "An allegorical explanation of words and even of the scriptures, was carried so far by the Jews that it was considered the utmost perfection of human learning. The essence of every science, and the only method of obtaining, without laborious studies, and in a state of idle contemplation, a degree of wisdom beyond the reach of all other mortals. It is thus that during the first century of our era the science of Cabala arose, a tissue of all the chimeras of Zoroaster, Pythagoras, and the Jews, and which in time, to the shame of human intellect, invaded the domain of learning, and became closely connected with medicine."

In the commencement of the second century of the church, Acibba published a work called *Jezirach*, and Cimeon-Ben-Ischai wrote his book entitled *Sohan*, in which their cabalistic labours sought to prove, that there existed a supreme being from whom emanated ten angels, who formed the first world, in which resided three personified abstractions—knowledge, intelligence, and wisdom.—Besides this first or primitive world, there existed three others moving in concentric circles—the world created, the world formed, and the world constructed! So united, so constructed, that whatever might happen in the last of these worlds had already existed in imagination in the first. From this theory it was maintained that the practice of physic was to call into action all the powers of the superior worlds; a problem that could only be solved by a cabalistic physician, who by his piety and contemplation had succeeded in rendering himself worthy of a communication with celestial agency.

Facts and observations recorded by long experience were now considered useless and contemptible *data*, and all terrestrial knowledge despised. Anatomy was deemed worse than

useless, and the established doctrines of various schools a dead letter. Chaldean, Phœnician, Hebrew words with mystic significations were introduced as symbolic illustrations of science: no language that could be understood, was deemed intelligible, and any system that could bear the test of reason was denounced as impious.

Thus was the career opened to the craft of priests boundless. It had been believed that the apostles were gifted with the power of healing by the mere apposition of their hands, and their self-named descendants pretended to possess the same divine attributes—and not only beatified monks cured with various oils and ointments; but their very mortal remains, became precious in the hands of their monastic successors. When their mouldering bones had been sold wholesale and retail as precious relics, their very sepulchres and their shadows brought hosts of pilgrims to herd round their shrines.

The study of medicine destroyed with the glories of Rome, was revived in Egypt, where Zeno of Cyprus delivered courses of lectures at Alexandria, a school which soon after dwindled into decay, sinking into obscurity with the once famed academies of Greece.

The Roman empire dismembered, Persia became an asylum for fugitive philosophy, and the Nestorians founded a medical school at Edessa in Mesopotamia, while other sectarians equally oppressed by ostensible orthodoxy, sought a refuge in the city of Dschondi-Sabour, where numbers of Persian and Arabian students flocked to learn their doctrines, and thus we have the origin of the celebrated school of Bagdad under the protection of their caliphs.

This regeneration of science was soon communicated to the shores of Europe, and the Caliph Alhakam founded a school at Cordova possessing upwards of 300,000 volumes, and Seville, Toledo, Saragossa, and Coimbra followed the bright example. Thus was a science, banished from Europe by bigoted and misguided Christians, restored to its former seat by Mohammedans.

The progress of the science of medicine under the Moorish government was so rapid in Spain, that we find one hundred and fifty medical writers in the schools of Cordova, and sixty-two in Murcia. While the Moors thus encouraged these important studies, the priests in the western states kept the nations under their control in a state of dense ignorance, and the practice of medicine such as it was, was confined within the cloisters of monasteries and nunneries. There does still exist a treatise of medicine written by Hildegarde, Abbess of a convent at Rupertsberg. Monks opened medical schools in several cathedrals, and we find Gregory I. sending one of these medical propagators to Canterbury, where Theodore, one of its archbishops, practised the healing art.

While the study of medicine had become a privilege of ignorant friars, it was destined to assume a semblance of learning in Italy, where some intelligent Benedictines founded a school at Salerno. Here the works of the Greeks, and Romans, and Arabian physicians were once more brought to light, and in the eighth century we find Salerno crowded with students, pilgrims, and invalids. In the eleventh century, this school had obtained a pre-eminence over every other medical institution, and at the period of the crusades its fame was universal—not that the ignorant and barbarous crusaders were capable of shedding any light on the improvement of their several countries from what they might have learned in Holy Land, but many of them who had happily returned to Europe, and been landed in the kingdom of Naples, were cured of their wounds and infirmities by these Benedictine doctors, who themselves owed much of their erudition to an African of the name of Constantine, who had studied at the school of Bagdad, and translated for the monks, who had offered him an asylum, Greek, Latin, and Arabian works, which to them were sealed volumes. Amongst the celebrated adventurers of rank who had escaped from the holy wars, was Robert, son of

William the Conqueror, who was cured at Salerno of a supposed incurable wound in the arm. In this manner was the fame of the Salernian school spread far and nigh, and soon Ferdinand II. founded universities at Naples and Messina.

The course of studies in the school of Salerno was three years of logic, and five years of medicine and surgery. At the expiration of these sessions, the student was admitted to examination, and after having passed, was still obliged to practise for another year under the immediate eye of an experienced physician. It was only upon his certificate as to his professional capacities, that a licence to practise was granted, upon his engaging himself by oaths, to observe the laws of the college, to attend the poor gratuitously, and to report to the magistracy all apothecaries that adulterated their drugs or neglected the proper preparation of medicines prescribed.

The custom of granting academic dignities may be traced to the Nestorians and the Jewish professors in the East, where it was carried into the Moorish possessions in Spain. The school of Salerno was the first collegiate body that adopted it in the western Christian institutions. The degree they conferred was that of *Magister*. Previous to the granting of this distinction seven years study were required, and the candidate was to be upwards of one-and-twenty years of age. He had to explain in a public meeting the *Articella* of Galen—a passage of the *Aphorisms* of Hippocrates, and of the first book of Avicenna, after which he was examined in the works of Aristotle, he then received the degree of *Magister Artium et Physices*. It was only the professors who bore the title of Doctors.

In this manner did the science of medicine struggle for several centuries with obstacles that appeared insurmountable—in turn practised and persecuted—anathematized by the clergy, and soon after becoming a lucrative privilege of the church—prejudice, superstition, and ignorance had closed anatomical theatres, and from the days when flourished the school of Herophilus until the fourteenth century, the dissection of animals was alone permitted, and it was only by stealth that the student sought some knowledge of the human structure, from mouldering bones purloined from the cemetery. A brighter era arose in the year 1315, when Mondini de Luzzi, Professor of Anatomy at Bologna, ventured to dissect human bodies—a bold attempt, as seventeen centuries had elapsed since this investigation of the book of nature, the only record where errors can be detected and truth sought for, had been prohibited. The example of Mondini, who had written a practical anatomical manual was followed in various other schools, but a barber was the person charged with the opening of the subjects, and with no other instrument then his razor he endeavoured to demonstrate the parts which Mondini's work described.

From this period we may date the revival of medicine, although in the following century it made but little progress, still clogged by astrological absurdities and Arabic errors—and a Florentine physician, Marcillo Ficin, obtained a high repute by promulgating the doctrine that the vital spirits of man were similar to the ether which filled space and directed the planets; concluding that if man could obtain this ethereal principle he might prolong his days beyond human conception, he recommended the use of preparations of gold to obtain longevity and even advised the aged to drink youthful blood to prolong their precarious life. These absurdities were refuted by Chancellor Gerson, and the faculty of Paris condemned the Florentine's visions as diabolical and perilous—but what could have been the facilities offered at that time for the study of anatomy when we find Professor Montagnana, of Padua, boasting of having examined *fourteen* subjects.

However the fifteenth century was destined to witness a remarkable event in the annals of medical learning, Emmanuel Chrysolore, embassador of Emmanuel Paleologus, arrived in Italy, to solicit means from the Christian powers against the inroads of the Turks. Chrysolore,

during a protracted residence at Venice, employed the leisure which his diplomatic occupations left him to deliver lectures on various branches of science, and not only did he encourage the study of the Greek language, but corrected the many errors that teamed in the Arabic translation of classic works. It was to this learned man that the succeeding century were indebted for their knowledge of the works of Hippocrates, and we find that his doctrine formed the groundwork of medical studies over Europe.

But the study of the phenomena of nature founded on experience and observation was not sufficiently visionary and mystic, and soon we see cabalistic calculation and judicial astrology again subverting all doctrines that might lead to sound conclusions. Cornelius Agrippa of Cologne traversed the fairest cities of Europe, to expound the philosophy of Zamolxis and Abaris; maintaining that every Hebrew character had a natural signification, the Hebrew being, according to his ideas, not only the most ancient but a sacred language. He asserted that the language of demons was the Hebraic, and that all Hebrew letters being either favourable or hostile to these evil spirits, they might be conjured by a proper knowledge of their powers.

This visionary not only fancied that letters possessed this influence, but that it was shared by numbers. Thus to cure a tertian fever he directs the use of Verbena, to be cut at the third articulation of the plant; but in the treatment of a quartern, the disease would only yield to the fourth joints. He added that every man was under the influence of three demons—a sacred demon (a divine gift)—an innate demon—and a professional demon, sent us by the constellations and the celestial intelligences.

These reveries, however, were interrupted by the still greater absurdities of Paracelsus, a man whose ignorance could only be equalled by his vanity, since he maintained that as the genius of Greece had produced Hippocrates, the genius of Germany had created him for the salvation of mankind. He further assured his disciples that all the universities in the world had less knowledge than his beard, and that every hair of his head was more learned than all their writers.

Paracelsus was perhaps one of the most singular enthusiasts that ever swayed the schools of medicine, or assumed a despotic stand in science. To superstition, credulity, and disreputable living, he certainly did add a certain degree of genius, but more particularly a *tact* which established such a reputation, that, without much presumption, he might have claimed the title which he assumed, of "*Prince of Medicine*," to which he added the pompous appellation of *Aureolus, Philippus, Paracelsus Theophrastus Bombastus ab Hoppenheim*.

This strange personage was born in 1493, at Einsidlen, a village near Zurich; he studied under Fugger Schwartz, a celebrated professor of what was then called the *Spagyristic* school, or *Hermetic Medicine*, founded on a visionary doctrine that I shall shortly notice. He subsequently travelled over the greater part of Europe, chiefly courting a motley society of physicians, philosophers, old women, and barbers, culling all that he could from pretended science or unblushing ignorance. After having visited the German mines, where he became tainted with the superstition of the credulous workmen, he repaired to Russia, when he was made prisoner by a party of Tartars, who conducted him to their Cham. Taken into favour by their chief, he accompanied his son to Constantinople, where he pretended to have discovered the philosopher's stone. On his return to his native country, the magistrates of Bale appointed him to the chair of medicine; and in 1527 we find him delivering a course of lectures in the German tongue, being but an indifferent scholar. This sedentary life did not suit his roving habits; and being, moreover, likely to bring his ignorance into its proper light, he set out for Alsace with another enthusiast of the name of Oporinus, with whom however he shortly quarrelled. He continued to wander from town to town, scarcely ever sleeping, or changing

his linen, clad in the most slovenly manner, and generally in a state of intoxication, until at Saltzburg in 1541 he was taken ill at a miserable inn and died in the 48th year of his busy life.

He no doubt had obtained during his adventurous career much experience, having for a long time followed armies and attended at sieges, and during epidemic maladies; but he sought to disguise his want of a proper education by the assumption of a supernatural influence. One of his wildest flights of fancy was, perhaps, his receipt to make a man without conjunction.

His doctrines were founded upon Judicial Astrology, Alchymy, Cabal, and Chemistry. Grossly ignorant in the last science, he pretended that all our diseases depended upon its combinations,—the combustion of sulphur, the effervescence of saline particles, and the coagulation and stagnation of mercury in our humours: all under the influence of the *Ens Astrorum*, the *Ens Deale*, the *Ens Spirituale*, the *Ens Veneni*, and the *Ens Naturale*. *Mercury* was evacuated through the pores of the skin; *sulphur* emanated from the nostrils; *deliquescent sulphur* was discharged by the intestines; a *watery solution of sulphur* arose from the eyes, while *arsenic* oozed out of the ears. When these evacuations did not take place, the humour became putrid, and putrescency was *Localiter* or *Emunctor labiter*—as the humours were either retained or excreted.

This humoral doctrine of Paracelsus, strange to say, obtained for upwards of a century, and many were the learned men who distracted their brains and that of their disciples to multiply his errors, since we find Sanctorius calculates 90,000 morbid alterations in these peccant humours.

In another part of this work, I have related the absurdities of Van Helmont, another visionary of the seventeenth century. Endless would be the task of recording the many systems and doctrines that have in turn ruled the schools of medicine, and been supported both by professors and disciples with a degree of virulent hostility as implacable as religious controversies; and still, while we read with contempt the absurd doctrines of our forefathers, and smile at the folly of their visions, we ourselves are advocating systems which, after a lapse of some few years, will appear just as ridiculous and preposterous to our successors in the doubtful career.

One question naturally arises from all this controversial discrepance—has society benefited by the successive revolutions which have overthrown schools and doctrines, chairs and professors? have the advocates of Sangradian phlebotomy, and those who considered that the lancet has committed greater havoc than the sword—have the employers of antimony, and those who would have sent to the scaffold opponents who gave an antimonial preparation—have either of these enthusiasts diminished, in any sensible manner, the scale of mortality, or have they influenced the prevalence of disease? This is a most important question, and, however ungracious may be the task, I shall endeavour to consider it.

It is but too true, that, with the exception of the introduction of inoculation and the cowpox, the bills of mortality do not appear, at any period, to have been influenced by the prevalence of any one medical system. This circumstance, however, cannot be admitted as invalidating the claims of medical men to a due consideration of their respective merits. I have endeavoured to show, in a preceding article, that the laws of nature appear to have regulated the equilibrium of life and death and the progress of disease with such harmony, indeed, that we might say that our existence was regulated with arithmetical accuracy. If this is admitted, it might be alleged, that if such be our fated tenure of life, recourse to medical aid becomes useless, and the efforts of physicians must prove effete. Such a deduction would be fatalism in its most absurd form; for, admitting that our days are thus numbered, the human frame may be assailed by many ailments, that may not prove fatal, but admit of relief, if they cannot be

cured. It is, therefore, obvious, that the services of a physician are of great value, if he merely can alleviate our sufferings, and render a painful existence tolerable. Daily facts corroborate this assertion, and the most cruel pangs are constantly relieved by professional aid, although it is not equally evident that the same skill can prolong the patient's life, if "his hour is come;" but, as we know not when that fatal moment may strike, we must clearly seek to wind up the marvellous machinery, and keep it "going" as long as we can. We constantly behold individuals whose existence is most precarious, and yet who linger on for years, frequently to the disappointment of expectant heirs; for there is much truth in the old saying concerning those invalids who are considered to "have one foot in the grave," they find *that foot* so very uncomfortable, that they hesitate for a long time ere they thrust in its fellow.

There is little doubt but that much mischief has been done by ignorant men, yet, perhaps, if the truth were known, more vital injury has been inflicted on mankind by enthusiastic science—ignorance gropes its way, so long, at least, as modesty allows to doubt; but, so soon as presumption leads the way, then ignorance assumes dogmatic assurance, and places the hardy practitioner on the same line as presumptive science—or, at least, what is considered such. It is then that enthusiasm, combined with interested motives, seeks to maintain an acquired influence by experimental proofs of supremacy; and, as it has been truly said, "There is no writ of error in the grave," mother earth shrouds the fallacies, and every disease that the eminent practitioner cannot cure is deemed incurable.

On the other hand, the Creator has gifted mankind with an innate and latent power of resisting noxious influence—a power called by the schools the *vis medicatrix naturæ*, and which is generally sufficient to throw off morbid attacks, when this principle is not exhausted, and the functions not impeded by organic derangement which involves the healthy equilibrium of life; then it is, that the prudent and experienced physician will carefully watch this precious faculty, and instead of counteracting the efforts of nature, assist her bounteous labours. This watchful practice, which may, however, be sometimes too inert, has been called *expectant medicine*—a slow and tardy process for the energetic practitioner, who, assuming the reins of life in his bold hands endeavours to goad and drive on nature in spite of herself; this practice has obtained the name of *active medicine*, of which our British practitioners are accused, by the *expectant* continental physicians, who, to use a French expression, "*voient venir*," and the French themselves are so well aware of the imprudence of this hesitation in assisting nature, that they say "*Your physicians kill their patients, whereas ours let them die*." There is more truth in this remark than we perhaps are willing to believe.

The power of nature in the cure of diseases has been acknowledged by the most experienced and wise physicians. Stahl, in his dissertation, "*De Medicina sine Medico*," perhaps exaggerated the influence of this faculty. Bordeu maintains that out of ten patients, two-thirds are cured without assistance, and come within the circle of all those minor ailments to which flesh is the constant heir. The illustrious Boerhaave doubted whether the successful practice of the small number of able physicians was a compensation for the evils that arose from the errors of the ignorant; and, in this sad calculation, he seems disposed to think that it would have been better for mankind that the science of medicine had never existed.

All these deductions are both unjust and unwise; for, as I have already said, if physicians only possessed the means of affording relief, their mission upon earth is of the utmost importance. At the same time, while we watch the efforts of nature, it is our duty to rouse her energies when they become torpid, or to check inordinate action which would soon exhaust her power. Asclepiades very truly called the expectant practice of medicine "*a contemplation of death*." The powers of nature may be, and not inaptly, compared to those of the swimmer; however skilled in the art of natation, and able under ordinary circumstances to baffle an adverse tide,

are we not to hasten to his succour, when we find that he is borne away by an inevitable current, or deprived by a cramp, of the power of stemming the stream?

We are also willing to forget, that the turbulence of passions, the “wear and tear” of life, by excesses or irregularities, gradually tend to render the “medicinal power” of nature of little or no avail; and it has been truly said, that had we no cooks, we perhaps might not have needed physicians. Man in fact, in a high state of civilization, seems determined to counteract all the efforts both of nature and of art to relieve him from the manifold curses of intemperance; and it is fortunate that his own feelings of gradual decay prompt him more energetically to a reform in his habits, than the most persuasive language his physician could employ.

In this illiberal view of the profession, how often do we lose sight of hereditary transmissions—heir-looms of disease—ingrafting misery on the variegated woof of our destinies—germs of fatal maladies which we bring into the world—a scourge on our posterity!—and yet, strange to say, our vain self-estimation blinds us in the contemplation of this doom—for the gratification of our desires, we bring forth a fearful generation—scrofulous, insane! Nay, we glory in the smiling offspring blooming around us—heedless, that the very roses we admire on their transparent cheeks, the coral hue that tinges their lips, are typical of flowers scattered on a grave, and the joyful beams of their bright yet languid looks are but the harbingers of the smile of death—the last kind look on earthly things.—And the physician is expected to arrest the hand of Providence—to eradicate germs struck before birth!

It must also be observed, that many of our maladies are, in fact, reactions of nature, endeavouring to overcome other affections—a struggle for harmonious unity—for healthy equilibrium. Thus do we see a burning fever, tending to cast upon the surface exanthematic eruptions—a febrile reaction which we call critical, and which too often, like a political crisis, destroys in fruitless endeavours to save. “*Si natura non moveat, move, tu, motu ejus*” was an ancient axiom; but how often, in seeking to trim the expiring lamp of life, do we not extinguish the last vital spark!

In regard to the influence of medicine on population, can it be expected, that when the most fatal pestilences do not thin it, the most erroneous medical practice can be more destructive? And, if nine-tenths of cholera, or pestiferated patients perish, on the other hand, nine-tenths of other cases of a less serious character are cured without medical intervention; and possibly, the chief study of a physician should be not to produce a more obstinate disease by the means he employs to cure an affection less formidable. Late years have proved that the effects of mercury were far more dreadful than the disease it was supposed to eradicate.

In the animadversions that are accumulated upon the physician, an insidious comparison to his disadvantage, has been made with the utility of the surgeon—a utility which man is compelled, however reluctantly, to acknowledge, since it is evident to his most gross senses—an amputated limb—a reduced luxation—are before his eyes, while the favourable changes operated on a morbid condition of the body are not self-evident, and can only be recognised by sound and unbiassed judgment. In this illiberal view, it is forgotten that the mere operative surgeon is nothing more than a mechanical agent—a butcher could perform the same operation with his rude knives and saws as the chirurgeon with his refined and improved instruments; it is the judgment that we look to, and the skill in attending to the general health of the patient, to bring him to a perfect cure; in these functions, of much more importance than the dexterity of the hand, the surgeon clearly assumes the duties of the physician; and it is not possible for a man to excel in one part of the profession without being conversant with the other; a surgeon must be a sound anatomist, and an observant physiologist—without the knowledge of these fundamental sciences, a surgeon and a

physician might be compared to the bungler who attempted to repair a watch, without a previous acquaintance with its intricate machinery.

Let us hope that the mischievous distinction between surgery and medicine may soon become an obsolete prejudice, that was never founded upon reason, but simply based upon ambitious lucre. Let us hope that the graduate of an university will not conceive it beneath his dignity to save a fellow-creature's life by breathing a vein, and not esteem a vain and pompous piece of parchment an immunity from humane feelings and philanthropic duties.

As good often results from apparent evil, the converse must also be frequently admitted. That much evil has occurred from errors in medical doctrine is unfortunately but too true, yet this evil has never attained the extent which is generally supposed. I have already alluded to the curative powers of nature, ever tending, while still enjoying a portion even of their energies, to repel obnoxious agents—this power has saved the lives of many; and indeed, when we daily witness the excesses committed by the sensualist and the drunkard with apparent impunity, although exposed to destructive agencies more powerful than the generality of medicinal substances, we must come to the conclusion that the kitchen and the cellar are, at least, as formidable as the officinal preparations of the pharmacopolist.

That the physician, guided by experience and sound observation, is able, in very many cases to afford relief, must even be admitted by the most hostile depreciator of his science, who refuses to admit that he possesses the power of curing. This simple admission of daily facts, must entitle him to some degree of weight in our confidence, whatever may be our sceptical view of his doctrines.

While the real merits of a physician are so frequently overlooked, we constantly see a blind confidence reposed in a quack. The cause is obvious. A man of real merit seldom extols his own good qualities, nor does he seek the fulsome adulation and praise of others. He rests upon his own deserts; but how seldom are they rewarded: when modesty places her light "under a bushel" who will bring it into view?

Duclos has explained in some measure this apparent anomaly.—"The desire," he says "to obtain a high stand in the estimation of society, has given rise to reputation, celebrity, and renown,—the mainsprings of worldly action—arising from a similar principle, but showing different means and results. Both reputation and renown may be enjoyed at the same time and yet be widely different. The public is not unfrequently surprised at the reputations that it had itself created. It seeks to inquire into their origin, but not being able to discover a merit which never did exist, it gradually admires and respects a phantom of its own evocation. As society thus bestows a reputation in a capricious manner, quacks will usurp one by their intrigues or by a barefaced impudence, which cannot claim the comparatively honourable denomination of proper pride and dignity. They themselves proclaim their merit to the world—at first their impertinence becomes a subject of derision, but they repeat the assertion of their superior skill so frequently and confidently, that they end by imposing themselves upon society. People forget where, whence, and from whom they heard these flattering eulogies, to which at last they yield their credence, and an adventurer who thus resolves to establish a reputation, with perseverance and impudence seldom fails."

It must also be remembered, that most medical men owe their success to woman's all-powerful aid. They are in general as blind and as pertinacious in their partialities as in their dislikes; seldom bestowing much judgment in either, but acting according to the impulses of their warm passions and flexibility. Females, from their situation in the world, stand in constant need of a friendly adviser, although they are rarely disposed to follow any advice, if their pleasures are marred by the suggestion, but when art and opportunity enable a man to

turn their flexibility, their *impressionability* to a good account, with the combined aid of vanity and weak nerves, he will in all probability succeed in obtaining a high estimation in the mind of a loquacious dame, who will blazon his fame far and near like the trumpeter of a mountebank. If this lady moves in an elevated and influencial sphere of life, to question her recommendation is to question her sense and power, both of which would be bold attempts; and thus have we seen an intriguing noble dame forcing a physician even upon royalty. Moreover, when we recollect that the wealthy send for a physician for every trifling real or supposed indisposition, which fashion or expediency may aggravate at will, to excite interest or carry a desirable point, it is manifest that the *cures* of such a practitioner must be most numerous, since the attainment of any desire constitutes a *panacea*; and frequently we have seen a box at the opera, a check on a banker, a new carriage, or a diamond necklace, more efficacious than the most renowned nostrum, while the expulsion of an unpleasant plain-spoken acquaintance, or the kind reception of a dangerous and treacherous inmate, may produce more sudden recoveries than the most approved specific. The great science of such practitioners is to practise with equal success upon every branch of the family, to whom in return for their confidence, they can ensure peace and pleasure if they cannot bestow health. I cannot better conclude this article than by quoting the following passage of the sceptic Voltaire:

It is true that regimen is preferable to physic. It is also true that for a long period of time, out of one hundred physicians were twenty-eight quacks, and it is also true, that Molière had very good reason to turn them into ridicule. It is also certain that nothing can be more absurd than to behold a crowd of silly women, and men, not less feminine in their habits, whenever they are satiated with eating, drinking, gambling, and late hours, calling in a physician for every trifling headache; consulting him as though he were a divinity, and praying for the miraculous gift of combined health and intemperance. It is nevertheless true, that a good physician in a hundred cases may preserve life and limb. A man falls down in an apoplectic fit, it will neither be a captain of infantry or a privy councillor that will relieve him. A cataract obscures my vision; my neighbouring gossips will not restore my sight; for here I make no distinction between the physician and the surgeon. For a long time the two professions have been inseparable. Men who would make it their study to restore health to their fellow-creatures on the sole grounds of humanity and benevolence, should be considered greater than the greatest man upon earth, and bordering upon divine attributes, for preservation and restoration stand next in rank to creation. The Romans were for upwards of five hundred years without physicians. Their people, continually employed in killing, thought but little of the preservation of life; what did they do when they were attacked with a putrid fever, a fistula, a hernia, or a pleurisy?—*They died.*

Medicine Of The Chinese

This singular people possess works on medical science which they trace as far back as three thousand years, and chiefly written by two of their emperors, *Chin-nong* and *Hoang-ti*. It has been asserted that they received the early elements of the science from the Egyptians, but it is more probable that they derived their information from their constant intercourse with the Bactrians, whose arts and sciences were flourishing at the period of Alexander's conquests, and the Chinese historians in support of this probability, state that several learned physicians came from Samarcand to establish themselves amongst them. Moreover, the doctrines of Erasistratus bear much resemblance to those of the Chinese.

The superstitious regard shown to the bodies of the departed, must naturally have materially retarded the progress of anatomical pursuits, although this people assure us that 2706 years before our era they possessed a work on this subject, entitled *Nim Kin*. Howbeit it seems probable, from their extreme ignorance of the structure of the human body, that this important branch of the science of medicine has remained stationary ever since the publication of the aforesaid treatise.

The Chinese physicians divide the body into a right and left portion, and three regions. The upper one, comprising the head and the chest, a middle one, extending from the lower part of the thorax to the umbilicus, and an inferior region, comprising the hypogaster and lower extremities. They admit twelve viscera as the sources of life, but they do not appear to have any distinct notion of the division, uses and conformation of the muscles, nerves, vessels, and the various tissues of the human economy. Their ignorance equally extends to the construction of animals.

They consider that man is influenced by two principles, heat and humidity, the harmony of which constitutes life, which ceases when their equilibrious state is destroyed. Vital moisture resides in the heart, lungs, liver, spleen, and kidneys, while vital heat pervades the intestines, the stomach, the pericardium, the gall-bladder and the ureters. These two principles are transmitted through the medium of the vital spirits and the blood by twelve canals, one of which carries a fecundating moisture from the head to the hands; another from the liver to the feet; a third from the kidneys to the left side of the body; and a fourth from the lungs to the right division.

In addition to these channels of vital transmission, they imagine that the state of our internal organs can be ascertained by the appearance of various parts of the head, which they consider as indicative sympathies of the action of the internal viscera. For instance, the head corresponds with the tongue, the lungs with the nostrils, the spleen with the mouth, the kidneys influence the ear, the liver acts upon the eyes, and thus they consider that they can form a correct idea of the nature of internal maladies by the complexion, the state of the eyes, the sound of the voice, the taste, and the smell of the patient.

The Chinese physiologists also consider the human body as a harmonic instrument, of which the muscles, tendons, nerves, arteries, &c. are vibrating chords, producing various sounds and modulations, and the pulse their chief guide in ascertaining the nature of disease, is but the result of a modification of these sounds as the chords are more or less extended or relaxed.

In addition to these singular views of the human economy, they imagine that the body is influenced by five elementary agents, earth, minerals, water, air, and fire.

Fire prevails in the heart and the thoracic viscera, which bear an astronomic relation with the south.

The liver and the gall-bladder are under the influence of air, which is in relation with the east, whence the winds arise, and it is towards spring that these organs are generally affected.

The kidneys and ureters are ruled by water, astronomically associated with the north—hence winter is the usual season of the maladies in these parts.

The stomach and spleen are regulated by earth, and are placed in connexion with the centre of the firmament, between the five cardinal points, and affections of these parts are observed in the third month of each quarter.

Diseases are distinguished by their vicinity to or their distance from the central part of the body, the heart and lungs, and are usually occasioned by vicissitudes in the atmospheric constitution—varying with cold, heat, and moisture.

The minuteness of their division of maladies is as great as the mechanical precision which all their labours exhibit: for instance, they admit no less than forty-two varieties of the smallpox; according to the shape, colour, situation of the pustules, which they compare to the cocoons of the silkworm—to strings of beads—chaplets of pearls—and lay equal stress on their being flat or round—black, red, or violet. This disease has, indeed, been described by them with much accuracy and judgment, as regards its benign or its confluent character; and there is no doubt that inoculation was practised among them from time immemorial, as I have already shown in the article on that head. Equally accurate have they been in detailing the various symptoms of gout, scurvy, elephantiasis, and syphilis, which also scourges the “Celestial empire.”

The chief guide, however, in their diagnosis and prognosis, is the state of the pulse, and a very curious work, called “The Secrets of the Pulse,” and said to have been written two centuries before our era, by *Ouang-chou-hó* or *Vam-xo-ho*. The pulse is divided into the external, the middle, and the deep—producing *nine* different pulsations called *Heon*, and the arterial beats were formerly sought for in the joint of the big toe; this custom is now abandoned, but they still follow the strange practice of taking up the right wrist in women and the left in men.

The external pulse, called *Piao*, is subdivided into several varieties.

1. The superficial P. in *Féou*, which yields to the slightest pressure.

2. The hollow P. *Kong*, which announces that the artery is empty when pressed upon.

3. The slippery P. *Hang*, which slides under the fingers, like the beads of a necklace.

4. The full P. *Ché*, striking against the fingers with a full caliber of blood.

5. The tremulous P. *Hien*, vibrating like the chord of a musical instrument.

6. The intermittent P. *Kin*, vibrating by starts, like the instrument called *Kin*.

7. The regurgitating P. *Hong*, the strong pulsation of a full and distended vessel.

These seven characters are considered much more favourable than the eight which follow, and which, arising from a deeper action, require a more forcible pressure.

1. The deep P. *Tehin*, only discovered by a firm pressure.

2. The filiform P. *Ouei*, a threadlike pulsation.

3. The moderate P. *Ouan*, slow and languid.

4. The sharp P. *Soe*, producing the sensation of a cutting or sawing instrument.

5. The slow P. *Tehis*, when the pulsations follow each other with languid intervals.

6. The sinking P. *Fou*, when the pulse, although pressed hard, sinks under the finger.

7. The soft P. *Sin*, which feels like a drop of water one might press upon.

8. The weak P. *Yo*, which yields the sensation of feeling like a worn-out texture, and ceases to be observed when pressed upon for any time.

To these are added nine other varieties, called *Tao*.

1. The long P. *Tehang*, full, smooth—feeling like a full tube.

2. The short P. *Toan*, presenting a pointed surface, that seems indivisible.

3. The empty P. *Hin*, insensible under moderate pressure.

4. The tight P. *Tsou*, which the finger feels with difficulty.

5. The embarrassed P. *Kié*, languid and occasionally stopping.

6. The intermittent P. *Tai*, when several pulsations appear to be missing.

7. The slender P. *Sié*, so slow and weak, that it feels like a hair.

8. The moving P. *Tong*, that one might compare to stones under water.

9. The tense P. *Ké*, feeling like a distended drum-head.

But as many Chinese doctors were not satisfied with this confusion in the classification of pulses, and, like practitioners in other countries, sought to render darkness still more visible—they sought to strike out a new career by increasing the multiplication, and introduced the following *addenda*:

1. The strong pulse, *Ta*, filling the vessel, yet yielding to pressure.

2. The precipitate P. *Son*, in which the pulsation was rapid in succession.

3. The scattered P. *San*, soft, slow, and non-resisting.

4. The stray P. *Li-king*, strong—not pulsating three times in each inspiration.

5. The firm P. *Tun*, consistent and resisting.

6. The lively P. *Ki*, pulsation rapid in succession.

7. The skipping P. *Teng*, pulsation unequal, sudden, and frequent.

In this minute attention to the many variations of the pulses, the Chinese aided their study, by attending to age, sex, stature, constitution, the seasons, the passions, and the comparative state of health and disease.

In a person of high stature, the pulse was full—concentrated in diminished individuals—deep and embarrassed in fat subjects—long and superficial in the meager—soft in the phlegmatic temperament—tremulous in the lively and the active—slower in man than in woman, excepting when threatened with disease—full and firm in the adult—slow and feeble in old age—soft and vivacious in infancy.

The rhythm of the pulse was affected by the passions, though chiefly in a transient manner:—moderately slow, in joy—short, in grief—deep, under the impression of fear—precipitate and regurgitating, in anger. In the spring, they maintained that the pulsation was tremulous—replete, in summer—spare and superficial, in autumn—dry and deep, in winter. Much

mysterious ceremony was observed by the Chinese physicians in this investigation; they felt the pulse with four fingers, which they alternately raised or dropped on the vessel, as if playing on a musical instrument.

In this profound study, they attributed to every disease a peculiar state of the pulse by which it could be recognised and ascertained, and at the same time it enabled them to form a favourable or unfavourable prognostic. Some of these rules are curious. If the pulses stop before fifty pulsations have been counted, disease is at hand; when an interruption in the course of the circulation takes place after forty pulsations, the patient has not more than four years to live; when an interruption takes place after the third pulsation, three or four days are the probable term of existence; but the patient may linger on for six or seven days more, when the interruption only succeeds the fourth pulsation.

Idle as these speculations may appear, it is to be feared that while the Chinese paid such minute attention to the state of the circulation, more distinguished and learned schools do not consider this powerful indication of the strength or weakness of the vital functions with sufficient care and discrimination, and perhaps a translation of the works of *Ouang-chou-ho*, might not be altogether useless in the present enlightened age. I have no hesitation in saying that this important investigation is sadly neglected in medical education—so much so indeed, that the different appellations given to the varied state of the pulse, are neither well defined nor generally understood. The French physician Bordeu has given much valuable information on this subject, which occupied the ancients as much as it seems to have fixed the attention of the Chinese. We find that the Indians, in the time of Alexander, accurately studied this important point.

Notwithstanding the assertion of Sprengel, Hippocrates was a most attentive observer of the state of the pulse. Thus we find him giving the name of σφυγμος to that violent and spasmodic beating of the artery, which was not only sensible to the touch, but evident to the bystander's eye—in more than forty passages of his immortal works do we find important references to the pulse, which he also declared could enable us to detect the secret workings of the passions. Many were the ancient physicians who have minutely entered into these investigations, amongst them we may name Herophilus, Erasistratus, Zeno, Alexander Philalethes, Heraclides of Erythræ, Heraclides of Tarentum, Aristoxenes. Several of the doctrines founded on these observations were most absurd, attributing the various conditions of the circulation to the *Pneuma* of the heart and arteries; such were the doctrines of Asclepiades, Agathinus, Galen, and many others; and amongst the Arabians we find *Thabeth Ebn Ibrahim* asserting that by the state of the pulse he could ascertain what articles of food had been taken—in more modern times Baillou, Wierns, Boerhaave, Hoffmann, have sedulously applied themselves to this most essential study, and Schelhammenn asserts that the pulse never once deceived him.

The effect of our passions on the circulation is much more powerful than is generally believed, and they are a more fertile source of our maladies than is commonly apprehended. We can readily conceive why the Spartan Chilo died through excess of joy whilst embracing his victorious son.[52]

In the treatment of disease, the Chinese, so fond of classification, divide the medicinal substances they employ into heating, cooling, refreshing, and temperate; their *materia medica* is contained in the work called the *Pen-tsaocang-mou* in fifty-two large volumes, with an atlas of plates; most of our medicines are known to them and prescribed; the mineral

[52] In a work on the "Anatomy of the Passions," which I am about publishing, I have entered most minutely into this important sympathy.

waters, with which their country abounds, are also much resorted to; and their emperor, *Kang-Hi*, has given an accurate account of several thermal springs. Fire is a great agent, and the *moxa* recommended in almost every ailment, while acupuncture is in general use both in China and Japan; bathing and *champooing* are also frequently recommended, but blood-letting is seldom resorted to.

China has also her animal magnetizers, practising the *Coug fou*, a mysterious manipulation taught by the bonzes, in which the adepts produce violent convulsions.

The Chinese divide their prescriptions into seven categories.

1. The great prescription.
2. The little prescription.
3. The slow prescription.
4. The prompt prescription.
5. The odd prescription.
6. The even prescription.
7. The double prescription.

Each of these receipts being applied to particular cases, and the ingredients that compose them being weighed with the most scrupulous accuracy.

Medicine was taught in the imperial colleges of Pekin; but in every district, a physician, who had studied six years, is appointed to instruct the candidate for the profession, who was afterwards allowed to practise, without any further studies or examination; and it is said, that, in general, the physician only receives his fee when the patient is cured. This assertion, however, is very doubtful, as the country abounds in quacks, who, under such restrictions as to remuneration, would scarcely earn a livelihood. Another singular, but economical practice prevails amongst them—a physician never pays a second visit to a patient unless he is sent for. Whatever may be the merits of Chinese practitioners both in medicine and surgery, or their mode of receiving remuneration, it appears that they are as much subject to animadversion as in other countries:—a missionary having observed to a Chinese, that their medical men had constantly recourse to fire in the shape of moxa, redhot iron, and burning needles; he replied, “Alas! you Europeans are carved with steel, while we are martyrized with hot iron; and I fear that in neither country will the fashion subside, since the operators do not feel the anguish they inflict, and are equally paid to torment us or to cure us!”

Experiments On Living Animals

However ungrateful the discussion of this subject may be, since, in truth and justice, it must be considered with an unbiassed and unprejudiced mind, and elicit observations which may prove offensive to many, and absurd to some, it is one of such moment on the score of humanity, that I undertake the task without hesitation or reluctance.

In support of the practice it has been urged, that mankind owes the most valuable discoveries in the science of medicine and its collateral branches to the vivisection of animals; that since the brute creation was intended for the use of our species, we could not apply them to a more important and justifiable purpose, than that of endeavouring to initiate ourselves in those wonderful functions of nature, a knowledge of which would give us a clearer insight of the mysterious machinery, and thereby the better enable us to remedy their derangement when in a morbid state. It has further been maintained, that when man to indulge his capricious appetites and his various amusements, tortures every creature that can minister to his depraved fancies or his unruly pleasures—he would be more excusable, if not fully justifiable even in the eyes of the most sentient philanthropist, in submitting these creatures to smaller or greater sufferings, if mankind could be ultimately benefited by this sacrifice of feeling. What, indeed, could be our commiseration when beholding the agonies of a mangled dog or a cat, if the throes of his sufferings, and the incalculable pangs he endured, could restore a beloved child to his disconsolate parents, or a sinking father to his helpless family. Moreover, is not man, from the very nature of his social position, created to suffer more than animals, not only from the many natural diseases to which flesh is heir, but to the torturing wounds received on the field of battle—the burning fevers of distant climes—the chances of war, pestilence, and famine—all of which are aggravated by that power of judgment, that reflection and consciousness derivating from the possession of an immortal soul, which makes the future more horrible than the present, however great its miseries may be. It has also been urged, that animals in their savage state, undomesticated by the *humane* interference of man, inflict upon each other injuries under which they linger and die in excruciating pain; and, therefore, when we submit them to similar agonies, we only fill up the intended measure of their destined sufferings.

It is painful to assert it, but all these allegations, I consider as not only unsupported by facts and experience, but grounded on speculative sophistry; for, in regard to the injuries which animals in their wild condition may inflict upon each other, they may be the result of the wise provisions of the CREATOR, with which man, however presumptuous he be, has nothing to do, and even were it in his power to check their furious and destructive propensities, it is more than likely, from what we daily witness, that he would turn them to a profitable or a pleasurable account, as most probably, the sight of a combat between a wild elephant and a rhinoceros (provided the spectators were perfectly secure), would attract a greater multitude, and *draw* more money, than a dog-fight or a bull-bait—a tiger-hunt, were it not attended with some personal danger which requires courage, would prove more delectable than the pursuit of a timid hare.

But I now come to a much more important consideration—the benefit to mankind that has occurred or that may be derived from such experiments. And here I must give as my most decided opinion, that if any such beneficial results did arise from the inquiries, they were not commensurate with the barbarity of the experiments; nay, I shall endeavour to show, that they are frequently more likely to deceive us, by propping up fallacious and tottering theories, than to shed any valuable light on the subject of investigation.

I readily admit that there does exist much analogy in the structure of man and certain animals in the higher grades of the creation; that the functions of respiration, digestion, absorption, locomotion, are to a certain extent similar, and that experiments made to ascertain the mechanism of these functions (if I may so express myself), may tend, in some measure, to teach us that which the inanimate corpse of man cannot exhibit; but, admitting to the full extent of argumentation, the analogy of these functions, I do maintain that the phenomena of life differ widely between man and animals, and the very nervous influences which we seek to discover are, in life, of a nature totally different. Were it not so, would the senses of different animals, rendered more or less acute or obtuse according to their natural pursuits and protective habits, be so materially unequal? Indeed, the laws of nature that submit every creature to the immutable will of Providence are totally unlike; and each apparatus of life in divers beings seems to be especially calculated for the identical race: what is poison to the one is an aliment to another; and the vivid light which the eyes of one creature can bear, would produce blindness in another; the same effluvia which one animal would not notice, would guide another over trackless wastes in search of friend or foe. I therefore maintain, that the mere material examination of the living organs of animals can no more tend to illustrate their vital principle, than the keenest anatomical labours can enable us to attain a knowledge of the nature of our immortal and imperishable parts.

I shall enter still more minutely into this subject. In the barbarous experiments to which I allude, animals bearing the strongest resemblance to man (at least in their conformation, for Heaven, in its mercy, did not gift them with what we call *mind*) are usually selected amongst such as possess a heart with four cavities, and double lungs. The dog—the natural companion of man, his most faithful friend in weal and woe, the guardian of his couch and property, the protector of his infants, the only mourner o'er the pauper's grave!—dogs, are in general selected for the scientific shambles; and this for obvious reasons,—they are more easily procured, and at a *cheaper rate*; moreover, they are more manageable and unresisting under the mangling scalpel. Well, thousands of these creatures have been starved to death with butter, sugar, and oil, to prove that they must die in all the aggravated pangs of hunger,—pangs producing ulcerated eyes, blindness, staggers, parched up organs, unless their food contains azote. Will any one maintain, that a similar nourishment would produce similar effects on man? Certainly not. The one was created by nature to consume animal substances highly azotized; the other, from the transition of life to which he is born to be exposed, is essentially polyphagous.

Then, again, millions of animals have had their bones broken, scraped, bruised in every possible manner, to discover the process of the formation of bone, called *Osteogeny*: has a single fracture of a human limb been more rapidly consolidated by these experiments, which fill hundreds of pages in the works of Duhamel, Haller, Scarpa, and other physiologists? Animals will digest substances that would kill a human being—have the experiments in which their palpitating stomach and intestines have been torn from them, lacerated, pricked, cut, separated from their surrounding vessels and nerves, increased our means of relieving the dyspepsia of the sensualist, the surfeit of the glutton, or the nausea of the dissolute? On the other hand, the gin, the ardent spirits in which the drunkard wallows, would soon destroy what we think proper to call a *brute*!

In many animals, moreover, there is a tenacity of life—highly convenient to the physiologist, since it enables him to prolong his experimental cruelties—which man does not possess; and we find the electric fluid acting much longer upon their muscles even after death, than on a human body or its severed limbs.

Another point to be considered is the assertion of the advantages to be derived from contemplating the living viscera in a healthy state. Good God! a healthy state!—what a mockery, what a perversion of language! Behold the dog, stolen from his master—(for theft is encouraged to supply the man of science—and theft of the worst character, since it is of the most cruel nature;—our goods, our money, may be restored, replaced by industry, but what hand can restore the faithful companion of our solitude, whose looks seem to study our thoughts! left us perhaps by the lost one of our heart, symbol of that fidelity which death alone abridged!) the poor animal hungry, chained up for days and nights pining for his lost master, is led to the butchery. Still he looks up for compassion to man, his natural protector, licks the very hand that grasps him until his feeble limbs are lashed to the table! In vain he struggles—in vain he expresses his sufferings and his fears in piteous howls: a muzzle is buckled on to stifle his troublesome cries, and his concentrated groans heave his agonized breast in convulsive throes, until the scalpel is plunged in his helpless extended body! His blood flows in torrents, his very heart is exposed to the torturer's searching hand, and nerves which experience anguish from a mere breath of air, are lacerated with merciless ingenuity,—and this is a healthy state! The viscera exposed to atmospheric influence are already parched, and have lost their natural colour, and not a single function is performed in normal regularity. One only effort is natural until vital power is exhausted—a vain instinctive resistance against his butchers!—The heart sickens at such scenes, when cruelty that would bid defiance to the savage's vindictive barbarity, sacrifices thousands of harmless beings at the shrine of vanity. For let the matter not be mistaken—these experiments are mostly made to give an appearance of verisimilitude to the most absurd and visionary doctrines; and if a proof were required of this assertion, it can be easily obtained by reading the works of various physiologists at different periods, who all draw *different* deductions from *similar* facts. For when the mind labours under a certain impression, or a reputation is founded upon the support of a doctrine, these facts are distorted with Procrustean skill to suit the views of the experimentalist.

Let us, for instance, consider the subject of digestion, to ascertain the nature of which, thousands—millions of animals have been ripped up alive. This practice has been attributed to *coction*, to *elixation*, to *fermentation*, to *putrefaction*, to *trituration*, to *maceration*, to *dissolution*, and to many other shades and shadows of similar theories; and were additional millions of living victims sacrificed in further scientific hecatombs, posterity may deem our present vain glorious physiologists as ignorant of the matter as they might consider their numerous predecessors in the same career of groping curiosity. Has the cruel extraction of the spleen from a thousand dogs to show that they could live without that viscous, explained the nature of its functions, or enabled us more successfully to control its obstinate diseases?

We know nothing of the phenomena of life; all our functions are regulated by an allwise Power that sets at naught human presumption—and Hippocrates justly called this harmonic organization a *concensus*, or a circle, in which we could not discover the commencement or the end.

There does however exist one course of experiments which probably might prove beneficial to mankind. The search of antidotes to various poisons that are too frequently administered by criminal hands; but here again experiments fall short of our expectations, for these substances act differently upon different animals, and even to some the prussic acid in large doses may be given with impunity. But I affirm, and can prove it, that in ninety-nine cases out of one hundred, in which such substances are given to animals, it is not with a view to discover antidotes, but to ascertain, according to the unfortunate creature's species, size, and condition, how long he can linger under the pangs of the poison, or what is the dose sufficient to occasion death. Of what benefit can it be to humanity to know that thirty drops of hydrocyanic acid destroys dogs and cats in the space of six, twelve, or fifteen minutes; that twenty-

six drops kill a rabbit in three minutes; that one drop introduced into the bill of a sparrow deprives it of life in eleven minutes; that a duck takes fifteen drops to put an end to its convulsive struggles; and that the exposing animals to the influence of hydro-cyanic acid gas destroys them in two, four, six, eight, and ten seconds? What benefit does society reap from the knowledge that, after the most excruciating suffering, a dog died in five hours after having taken half an ounce of tobacco, and that another ill-fated canine victim in whose limbs tobacco had been introduced, died of paralysis and in horrible convulsions in about an hour? Were antidotes sought in the thousands of similar cases that I could adduce? Certainly not—the experiments merely went to ascertain the power of the drug, and the only possible good that could have resulted from the barbarous trial, was the appearance of the viscera after death; a fact that one experiment could demonstrate as well as one thousand—but which could be more effectually exhibited in human creatures who died from the effects of deleterious substances. In short, these experiments are nothing more than cold calculations on the tenacity of life in various individuals. Every one knows that arsenic and prussic acid destroy life, and surely such an assertion on the part of a lecturer to his pupils should satisfy them on this head without having recourse to illustrations of the fact. In the case of supposed poison introduced into alimentary substances, and which are given to dogs to prove the criminal act, surely chemistry is not so little advanced in its boasted progress, not to be able to afford us a test of the presence of poison, without having recourse to so savage an expedient.

Another most absurd argument has been upheld in favour of these experiments in the presence of pupils, that of hardening their feelings in the contemplation of acute sufferings. This assertion is worse than idle and absurd; many of our most able surgeons and anatomists have never practised these cruelties, and yet their nerves have not been unstrung during the most fearful operations. With hands imbrued in blood I have performed the arduous duties of my profession in fourteen battles, yet I never could *witness* these heartless exhibitions without disgust, and I am sorry to say contempt. I am aware that these sentiments have been called *puling* professions of humanity; nay, that there are men and women who would weep bitterly over the sufferings of a sick pet, while they would view accumulated human misery unmoved. These are painful anomalies arising too frequently in disappointed minds, when the cup of life has been imbittered by ingratitude, and the “milk of human kindness” curdled by deceit. These are not reasons to prevent us from censuring acts of cruelty, when they may be considered *useless* in a scientific point of view, and *degrading* to mankind in regard to private feelings. I can readily believe that the best and the most humane of men, may be induced by an ardent desire to elucidate obscure parts of physiologic inquiry, to try such experiments; but most undoubtedly—unless the object to be so attained was commensurate with the sacrifice and abnegation of humane sentiments, I should deeply lament their obduracy, and be inclined to doubt their benevolence towards their fellow-creatures.

I would not enter on my list of friends
(Though graced with polish’d manners, and fine sense,
Yet wanting sensibility), the man
Who needlessly sets foot upon a worm.
An inadvertent step may crush the snail
That crawls at evening in the public path;
But he that hath humanity forewarned
Will tread aside, and let the reptile live.

In fine, whenever it is not evident that such practices can benefit mankind and increase our means of reducing the sum of human misery—it is a barbarous and criminal abuse of that power which the Creator has given us over the inferior grades of animated beings; and it is

deeply to be lamented that no legislative measures can be adopted to restrain it, if it cannot be altogether prohibited. At any rate, professors alone should be allowed the "*indulgence*," but in no instance should such pseudo-scientific practices become a public exhibition or a student's pastime. Brought up in early life, amidst all the complicated horrors of a revolution, I have been sadly convinced that the contagion of cruelty is much more doubtless and active than that of pestilence!

THE END