

NEW LIGHT
ON
PSYCHOLOGY



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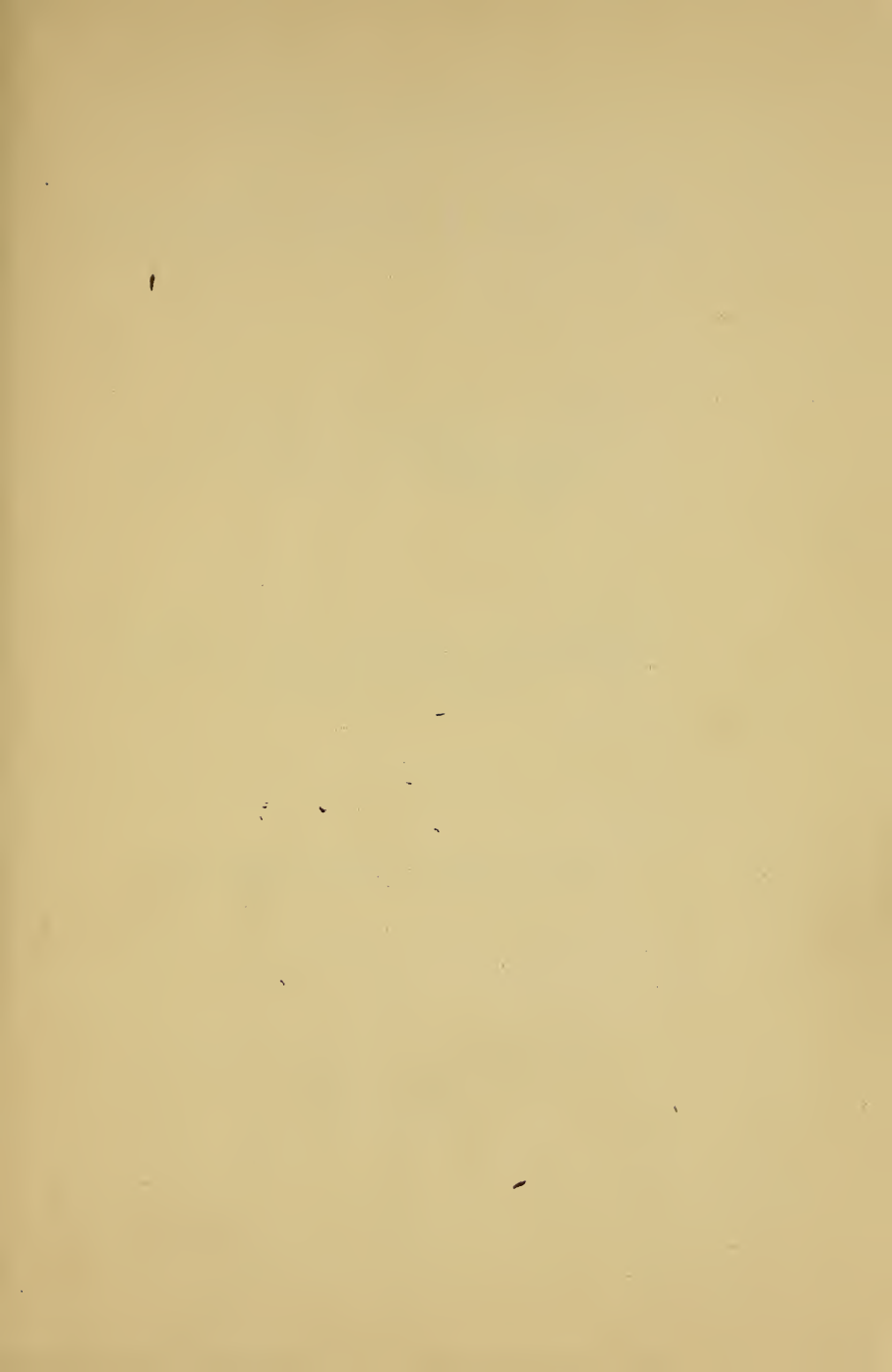


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NEW LIGHT
ON
PSYCHOLOGY



DEFINITIONS OF VARIOUS AUTHORS, A BRIEF RECITAL OF
TERMS AND LIMITED EXPLANATIONS, PREPARATORY
TO EXPERIMENTAL PSYCHOLOGY

WILLIAM NEWELL HULL, A. M.

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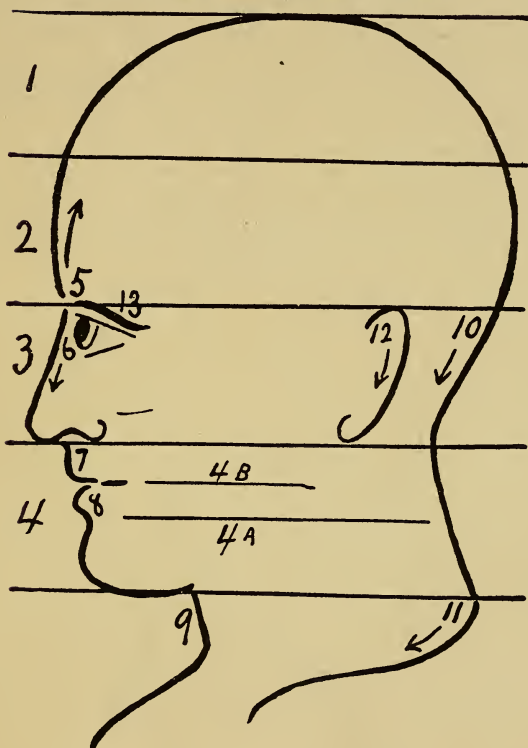
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E.W.F. July 7-10-

INSTRUCTIONS FOR DRAWING THE HEAD

PSYCHOLOGY can be made exceedingly
interesting by those who use the chalk



Explanation of the Cut.—Draw five straight, horizontal lines enclosing four fairly equal spaces, 1, 2, 3, 4.

Bisect 4, 4a, then bisect again, 4b.

Commence at 5 and draw a curved line upward and around to 10 within two spaces.

Make a more or less abrupt curve at 5 and draw the nose 6, a straight line down nearly to the space line, cut off the end of the nose diagonally, and finish with a horizontal double curve turned forward at the end.

Draw the upper lip down from the middle of the double curve 7, and turn the line straight toward the bisecting line 4b.

Draw an abrupt curve for the under lip and move down 8, on the chin, rounding under on or near the lower space line to 9, then make a straight slanting line for the neck and a finishing line forward.



Pick up line 10, making the head wider or narrower as may be necessary, turn the line on the third space line, make the neck line parallel to 9, and finish with a free double curve forward.

Put the ear between two space lines.

Start the eyebrow on or a little above the space line and make it a heavy double curve.

Put in the other lines of the eye as clearly indicated. See page opposite.

In a child's head the lines are less angular and the spacing need be observed and followed only in a general way.

PSYCHOLOGY — INTRODUCTION

OUR aim is to speak in terms that the common school teacher will understand, to avoid, as far as possible, technical terms, such as are employed by authors of master works on this subject. This little book is for teachers, not for other authors. We shall try to avoid such statements as these, "Apperception is the subsumption of new subjects under old predicates," or "Apperception is that activity of mind in which the significance of mental events is brought out, through being explicitly conscious of the relations involved in it. It is the appropriation of the intellectual, or qualitative value of an experience merely momentarily felt," or "Apperception is the movement of two masses of consciousness against each other so as to produce a cognition." It is possible that such language is perfectly clear to the originators of it, but it must seem somewhat misty to the young student of Psychology. Nevertheless, we hope each teacher may desire, after reading this book, to take up any or all of the scientific works on this interesting subject which is as yet imperfectly outlined, classified and reduced to set, and universally accepted forms, as evidenced by the three definitions of apperception given above.

A knowledge of the pupil's mind and its operations, the methods of studying it and training it must undoubtedly be of immense value to the teacher, and therefore the necessity for the study of Psychology is taken for granted without discussion. The argument is only for something simpler, more in the line of the teacher's work, told in language that can be understood and in an order

of subjects and terms that are natural and comprehensible.

An author can hardly be pardoned for using such words as these: Dubiety, quasi-hallucinatory thinghood, dynamogenic, continuum, ratio-cinative, kinaesthetic, philosopheme, pathognomonic, onomatopoetic, and the like, even in a scientific school book on Psychology, unless he were writing in competition with other authors and not for common school teachers.

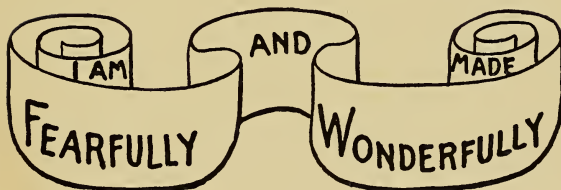
Teaching is not merely telling facts or imparting truth, but it is exciting the mind to desire and disciplining it to acquire more truth. Hence a knowledge of the mind, how to make it work, is exceedingly desirable to accomplish the best results.

Something of theoretical Psychology must be acquired before students can take up experimental Psychology. Terms and definitions must be learned and understood and the language of the science mastered.

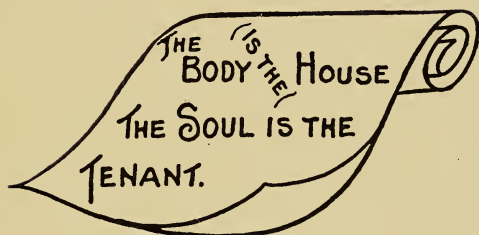
This book contains such matter only as must necessarily precede any practical work upon the living mind.

Psychology

THE SCIENCE OF THE MIND AND SPIRIT



The Location of the Mind Within the Body



THE BRAIN THE SEAT OF THE MIND

It is universally granted that the brain is the seat of the mind, or soul. It is known too that the gray matter of the brain originates and that white matter conducts. Let us think of this for a moment.

Animals have brains with white and gray matter. What is the distinction between them and man? The snake crawls upon the ground and his brain lies well back in the head: what faculties or qualities does he possess? A desire to procreate, some love of offspring, memory to a limited degree, but not mirth nor music, reason nor judgment. As the animal rises from a crawling to a standing position, the brain enlarges forward and new faculties are added. The dog and horse have brains and white and gray matter like man and the snake. The dog possesses all the mental powers of the snake and more. He loves and cherishes his offspring, has the same desire to procreate, but his memory is larger and his capabilities of cultivation and education are keener and more energetic, showing a larger amount and a finer quality of gray matter, yet he lacks reason and judgment, and though playful, has no idea of mirth or music, and cannot distinguish between right and wrong. We have seen the so called educated seals; it should be known that they are starved into doing what they do; they go through certain mechanical performances or movements because they remember that at the end of such movements hitherto they have been rewarded with a fish, and now they go through the same performance, looking eagerly for more fish.

Sugar or salt is a better material than a club for training a horse; he will do certain things because

he remembers a reward, not because he reasons that IF he performs so and so he will receive something he likes. In the circus he is afraid of the whip.

Baldwin says, "The brute has consciousness and mind. They are endowed with intellect as well as instinct." Roark says, "Modern psychological methods have opened up the interesting inquiry whether the lower animals have mind. No intelligent observer of the acts and habits of animals can doubt that they afford all the *indications* of mind that man exhibits. They can attend and form habits, can feel fear, joy, shame, can reason in some degree and can will. It remains to be determined whether animals have a sense of guilt following upon wrong doing, and a sense of pleasure after right doing, and whether they have a real self-consciousness. There could be no grander demonstration on the part of science than to show that there is a universal consciousness working everywhere, animating and transforming lower life forms into higher, manifesting itself as the divine purpose."

Darwin says, "I have nothing to do with the origin of the mental powers any more than I have with that of life itself."

Even if all that Baldwin and Roark say be true, it must still be confessed that animals lack what God breathed into Adam when he became "a living soul." The things that brutes lack make man immortal. Thought and speech identify the man. The body was formed out of the dust of the ground but that which the Infinity breathed into it—a part of his own infinity—made it a living spirit. When a child is born, God breathes into it also a living soul. The body must return to dust, but the soul (mind and spirit) unto God who gave it.

Plato thought the soul within the body to be like a prisoner in a cell. The soul within the brain may

rather be likened to a tenant in a house. He occupies it three score years and ten, if the house is not abused, and then vacates, to give an account of his training, discipline and acquisitions here to Him of whom he has always been a part and from whom he had his rentals. When the tenant goes the house falls into decay. What the future holds for him is confided to Faith and Love.

Bain says, "I cannot see why the body may not exist without the soul, and the soul exist independent of the body."

The Soul uses the gray matter of the body as its dwelling-place and workshop, and the nerves or white matter as telegraph wires for bringing in and sending out messages. The brain is the central office and Consciousness is the presiding officer. How do we know these things? Because other parts of the body, even the white nerves may be destroyed and yet the Soul live, but when the gray matter is destroyed the Soul disappears. When the gray matter is injured the Soul is irregular or unnatural.

Therefore the purpose of training the body is that it may be a suitable dwelling-place for the Soul.

The purpose of training the Mind is that it may understand the works of the Creator, the works of man, and improve the conditions of living.

The purpose of training the Spirit is that love may crown man's labors and that he may put himself and his works in harmony with his Maker.

Hence the great Apostle says, "Know ye not that ye are the temple of the living God and that the Spirit of God dwelleth in you? If any man defile this temple, him shall God destroy."

PSYCHOLOGY

DIVISIONS OF THE SUBJECT

MAN is a being of a threefold or tripartite nature, viz., BODY, MIND OR SOUL, and SPIRIT.

The BODY is studied properly under the subject of PHYSIOLOGY.

MIND AND SPIRIT are the province of PSYCHOLOGY, with the divisions given below :

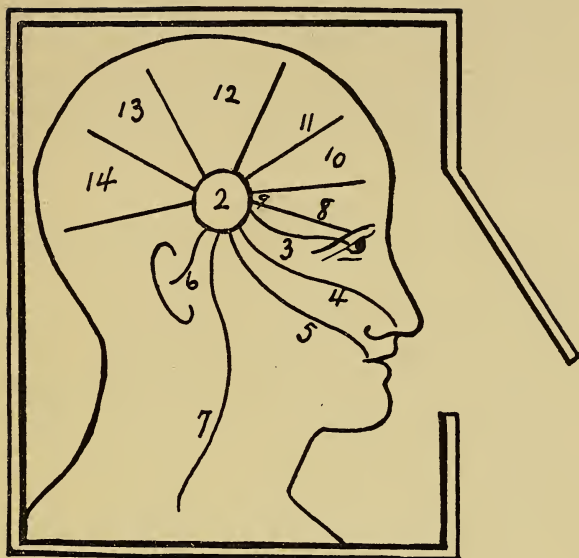
1. Attention.
2. Consciousness.
3. Memory.
4. Phantasy.
5. Imagination.
6. Thinking, Thought.
7. Inner Attention.
 - (a) Reflection.
 - (b) Comparison.
 - (c) Abstraction.
 - (d) Classification.
8. Judgment.
9. Reason.
10. The Will.
11. The Spirit.
 - (a) GOOD, or powers that elevate.—
Love, Joy, Peace, Hope, Faith,
Meekness, Long-suffering, Pa-
tience, Humility, etc.
 - (b) BAD, or powers that debase.—
Hate, Anger, Jealousy, Covetous-
ness, Cowardice, Pride, Re-
venge, etc.

Attention

ATTENTION ESSENTIAL TO KNOWLEDGE



PSYCHOLOGY



Explanation of the Figure,—

1. The Door of Attention.
2. Consciousness.
3. The Eye Road to Consciousness.
4. The Sense of Smell Road.
5. The Sense of Taste Road.
6. The Hearing Road.
7. The Sense of Touch Road.
8. Memory.
9. Recollection.
10. Phantasy.

11. Imagination.
12. The Reflective Powers.
13. The Will.
14. The Spirit.

Remark.—No one would for a moment presume that we have *located* the faculties of the mind in the above picture. It is merely a graphic device to hold attention and assist the student in remembering the forces of the mind.

ATTENTION

The Door of Attention May be Opened and Kept Open—

1. By the presentation of objects.
2. By pictures of objects.
3. By telling stories about the object.
4. By throwing some mystery around the object.
5. By personifying the object, that is, making the object talk.
6. By changing the voice.
7. By pausing.
8. By a change of work or occupation.
9. By anticipation,
and in many other ways.

THE DOOR OF ATTENTION

When the door of attention opens, outward perceptions are conveyed through the Senses to Consciousness, and through Consciousness into the vault of Memory, to be reproduced and elaborated or worked over later, perhaps, by the reflective powers and restored to Memory again in an improved state. It is like a porter at the outer gate receiving gifts and passing them in to the King.

The Sense of Sight (3) takes note of size, color, light, shade, form, distance, motion, etc., and con-

veys these facts to Consciousness ; the eyes are like searchlights constantly moving hither and thither and focusing upon objects. Payne says, "Sight is the most powerful of all our senses, the richest in perceptions, and also the one whose recollections are revived with the most clearness."

The Sense of Smell (4) takes note of odors and their qualities and Consciousness receives and appreciates them.

The Sense of Taste (5) grasps the sweet and the sour—the qualities of all soluble substances and transfers these qualities to the "I Know."

The Sense of Hearing (6) comprehends sounds, pitch and loudness, and serves as a medium to transmit them from the outside world to the inner realm of thought and feeling.

The Sense of Touch (7) located all over the surface of the body conveys inward such qualities as rough and smooth, coarse and fine, elasticity or inertia, and all other tangible qualities and the Ego is conscious of them.

So the inner becomes conscious of the outer ; the world of tangible facts without, becomes a pictured world within.

Dewey says, "In a broad sense every act (fact ?) of knowledge may be regarded as due to attention." Attention is the active connection of the individual with the universal. Anticipation precedes and sharpens attention.

In the figure the door of attention is nearly closed. The individual himself opens and shuts the door. It is mostly under the control of his will, he can close it when he pleases and entirely shut out all external impressions ; he may or may not be conscious that the gate of attention is closed ; he may have eyes to see and not see ; he may have ears to hear and not hear ; he may be under the teacher's

instruction, yet his thought be elsewhere; he is roaming the fields, looking at his traps and his snares; he sees the swimmers in the pool; he hears the skaters on the ice; a song bird or a sweet spring flower charms him, for he is out in nature's school studying the open book of brooks and birds, fruits and flowers; he reads the sermons in the stones and they do not tire him; the door of attention is positively closed to arithmetic and grammar, and the teacher's voice falls on muffled drums that carry no message to Consciousness. Many a business problem is solved in church whose solution the sermon did not block.

A subject is introduced to the pupil's mind that is distasteful to him; he is like a shying horse, he does not like it, so he resolves not to listen; he closes the door of attention and the mind takes up some other business and occupies itself with something entirely foreign to the teacher's instructions; his wandering eyes reveal a wandering mind. The teacher must discern this and change the style of his instruction at once or close his work; it is love's labor lost to continue pounding upon a closed and locked door.

"No admittance," says the boy.

"We'll see," replies the teacher.

Immediately he commences to tell a story; it becomes interesting; the boy turns to listen; his eyes and mouth gradually open; he smiles, he laughs. The door of attention is wide open to the teacher.

"The square described upon the hypotenuse of a right angled triangle"—again the door closes with a slam, or with what Hood calls a wooden oath, and with it close the mouth and the mind. But now the boy is thinking of the story; he goes over it again in his thoughts; he pictures the characters, the incidents, the outcome; he smiles again, but the fact

of the equal areas of squares has never entered his Consciousness, of these his mind is blank: the teacher's work is practically lost.

The main question with the teacher, therefore, is, how to open, and for a certain length of time to keep open the door of attention. We would answer: The door of attention is opened:

1. By introducing objects to which the instruction pertains. One reason for this is that all the senses are involved in the endeavor to understand the object. We see, hear, smell, taste, and feel.

It seemed a simple thing for the preacher to hold a leaf in his hand while he discoursed upon the text—"We all do fade as a leaf." Yet he secured the attention of his congregation by the concrete, where the abstract might have failed.

We shall need an apple, an orange or some candy in teaching fractions; the measures, in yards, pounds, bushels, etc.; the globe in Longitude and Time; real money in interest; real checks, drafts and notes in business; a pair of scissors and paper or card-board in square root; a large potato and carving knife in cube root, etc. The school room looks like a workshop; there are shelves and hooks, trunks, cupboards and boxes. Darius Green's workshop was not more curious.

"With thimble and thread,
And wax and hammer and buckles and screws
And all such things as geniuses use,
Two bats for patterns—curious fellows,
A charcoal pot and a pair of bellows,
Some wire and several old umbrellas,
A carriage cover for tail and wings,
A piece of harness and straps and strings,
And a big strong box in which he locks
These and a hundred other things."

How can you make pupils understand, for instance, what a caisson is without showing them? Take an

empty chalk box and turn it upside down in a bucket of water; push it down and build on it with your wooden blocks to represent building stones. It is pushed down to solid rock, it touches bottom, a hole is made in the top of the box, the dirt and water are pumped out, the box filled with concrete, and the abutment is solid as rock itself; the caisson helped to build the abutment; the hollow pier or abutment rises to be built upon by the steel bridge.

Stretch a wire from one corner of the school room to the other; tap on it with a lead pencil once for e, twice for i, three times for s, four times quickly for h, five times for p, etc., and pupils will begin to think of the telegraph. Spell out pie, his, sip, see, hip, etc.

Nor does thinking stop when pupils leave the school room, but on the way and at home, they will think and talk and question. They look up at the telegraph wires and hear them hum. "I wonder if it is electricity that makes them hum. I'll ask teacher." The teacher will now understand that teaching is not all telling, but that it is exciting the mind to desire and disciplining the mind to acquire. The facts which the teacher imparts must be but the seed in the mind which, aroused to grasp, assimilates, enlarges, and hungers for more.

Farmer A went to Farmer B to buy some pigs of a certain breed, for Farmer B had the reputation of raising the finest hogs in the market. Farmer B sold the pigs and when he boxed them for shipment he put several ears of corn into the box and remarked: "There, Farmer A, are your pigs, and there," pointing to the corn, "is the breed."

If a boy does not thrive at school it is because he does not have the right kind of food; undoubtedly truth made visible by objects is the best food for mental growth. I am not sure but this is true

for all ages. The door of attention is not likely to close when the eyes see, the nose smells, the mouth tastes and the hands fondle.



THE DOOR WIDE OPEN, A FIXED ATTENTION AND
A DETERMINATION TO KNOW

I brought from Morro Castle a two-pound cannon ball, and from Cabanas Castle a loaf of bread; with these two objects before us, my pupils never tire of hearing of Morro and Cabanas.

The door of attention is opened:

2. By pictures of objects.

Next in value to the objects are pictures of the objects. They occupy the sense of sight which is in more intimate relation with conception than any other single sense; it is the shortest road to the mind, yet is not aided by touch, taste or smell. If the teacher cannot use chalk upon the black-board skillfully enough to sketch even crudely the com-

mon objects of nature and art, there remains a work undone, and a preparation yet to be made for the most effective teaching. There is a fascination in rapid sketch-work even to the one who executes it, and this charm keeps the door wide open and consciousness bright. Dr. Gregory says, "There is a fascination also in pictures, from the crude sketch upon the blackboard to the finest work of the artist's brush, no teaching is more direct and effective than pictorial representation." Hence the maps and pictures on the wall and the illustrations in books. The language of pictures is universal, there is nothing foreign about them. Yesterday I looked through a German Art Book and believe I read all the pictures accurately without the aid of the German words below. As a rule there can be no misinterpretation; it is difficult to deceive the sense of perfect sight. The King affirms he is a most trustworthy servant.

3. By telling stories about the object.

Every one knows how attractive stories are; a good story well told, is like medicine to the sick and hungry soul; the teacher must always have a large stock on hand. Read up a few new ones every day. When attention lags, break away from the subject in hand, lay aside the book, drop the strong, serious talk, and take up a story; at once the door of attention opens wide, and if it can be kept open when the subject is resumed, a good point has been made. It is time lost to attempt to pour knowledge into vessels that have the lid shut tight.

4. By throwing something mysterious around the object.

Children delight in mysteries; fairy tales, stories of giants, impossible creatures and conditions, strange performances and hasty voyages anywhere, are their delight; the reason for this is that imagina-

tion is an active faculty in youth, and where the mind does not encompass the truth as a fact, imagination fills the void and its product is accepted for truth. In dealing with the mysterious, however, care should be taken not to overstep the bounds of common sense and reason, to avoid the ridiculous and the impossible.

5. By personifying an object. To illustrate, a most effective lesson may be given by holding a flower in the hand, talk to it and with changed voice, suppose it to talk back, in other words carry on a conversation with the flower. Take for instance a common dandelion, hold it at arm's length and say:

"Pretty dandelion, who made you?"

"God."

"But did not the sun give you your beautiful color?"

"Who made the sun?"

"Well, now I don't care to have you question *me*. I should say the sun,—why, the sun is a part of nature."

"And the moon, and all the planets?"

"There you question me again, Why, yes, all a part of nature."

"Did your watch have a maker?"

"I suppose it did."

"Is it not an easy thing to make a watch?"

"I think not, it looks to me very complicated."

"Don't you think, then, that the sun, moon, planets and stars, that count up to fifty millions or more, many times the number of wheels in a watch, and which roll around so smoothly, keeping the time, had a Maker?"

"Well, you are a pretty wise dandelion to know so much."

"And I am sorry to say, you are not wise if you do not know and love your Maker."

"I will, pretty dandelion, thank you for your lesson, good bye."

"Good bye."

6. By changing the voice.

Children become so tired of the one voice, by and by they do not hear it; it becomes monotonous; it sounds far off; the teacher is tired talking so much. Oh! that vinegar voice! high in pitch and sharp and piercing in quality! Train it down, make it soft and low, put sweetness into it. Teacher changes her voice, speaks soft and low and every one looks up to see what has happened; then the door is wide open for truth. The voice is a beautiful musical instrument; it may be cultivated, made melodious and enchanting; do not allow it to run up the scale again; we love to listen to a voice that is never strained, and where there is always a reserve of force. What a charming medium for the transfer of knowledge!

7. By pausing, then proceeding in lighter vein.

We make our work hard because we are too deeply in earnest and too serious. This is especially true with the extremely young. Pause and rest occasionally, then take up the work in lighter vein and you will be surprised at the result.

Attention may be attracted or it may be forced, but a forced attention will produce very poor fruit.

Dr. Rosencranz says: "To education the conception of attention is the most important of all those derived from Psychology."

The length of time that the attention can be held may be cultivated, in other words the attention may be lengthened by cultivation.

The attention is very intense in motor presentations, but if the motion becomes monotonous the attention will soon be diverted.

An intense attention makes Consciousness bright

and Memory lasting. The activity and persistency of attention determine the intensity of Consciousness and the accuracy and tenacity of Memory. The order is this. Given, an active, grasping attention, there follows an intense and appreciative Consciousness, a retentive yet yielding Memory, and a delightful, never-ending retrospect.

It is the eager child, seeking, looking till the eyes are bloodshot, answering with all energy and promptness every call to see, until weariness closes the sight and the tired brain sleeps.



THE CHILD IS ALL ATTENTION

The teacher must learn to know when the door of attention is wide open and drive truth home, also to desist when the door closes and change subjects, introduce some diversion, or give and take a rest.

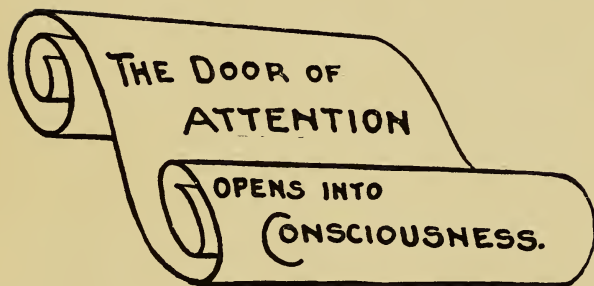
The power of commanding the attention and concentrating the mental energy upon a given object is, however, a power not easily acquired, not always possessed. The difficulty of the attainment is hardly less than its importance. It can be made only by an earnest effort, a resolute purpose, diligent culture and careful training. There must be strength of will to take command of the mental faculties and make them subservient to its purpose. This faculty, like every other, requires education in order to its due development.—HAVEN.

All mental activity is based upon the results of sense-perception with which it starts.

Perception is then the first form of knowledge.—DE GARMO.

Consciousness

ATTENTION, THEN CONSCIOUSNESS



CONSCIOUSNESS

VARIOUS DEFINITIONS

Consciousness is the knowledge of sensation and mental operations or of what passes in our own minds.—WEBSTER. That condition of the mind in which it is cognizant of its own operations.—WAYLAND. That function of the intelligence which gives us information of everything which takes place in the interior of our mind.—COUSIN. The being aware of the phenomena of the mind.—DR. HENRY. The necessary knowledge which the mind has of its own operations.—TAPPAN. The state or act of being cognizant of its own phenomena.—HAVEN. Is the capability to perceive self acting.—BALDWIN. The knowledge which we have of ourselves.—PAYNE. Is the totality of our own inner, unextended, time conditions, mental states or ideas.—DEGARMO.

The word consciousness is derived from the Latin, *con*, with or together, and *scio*, I know.

I know all these sensations or outward perceptions when they come in to me and I know all the inner operations of the mind.

Consciousness is the center and compass of all recognitions, there is no sensation or movement, no operation or process that it does not grasp and oversee; it is the central telephone station where all the wires terminate, over which messages are sent from the outer world, and where the inner wires terminate which carry messages of the inner operations or processes of the mind.

A sight, a sound, a taste, a smell, a touch comes from the wires and Consciousness says, "I know." The fact is immediately transferred to Memory and kept till wanted.

When the "elaborative faculties" are at work they telephone in to Memory for such and such materials or percepts. Consciousness wires them out to Reason, Judgment, etc. They are considered, "elaborated," worked over, judged, classified and wired back to Memory. A diamond may be sent up in the rough and come back cut and polished.

Consciousness telephones her finished products out to the world through speech. Or Consciousness may be compared to the head office of a vast and complicated manufacturing establishment. Raw materials come in, are checked off, stored in the warehouse till wanted in the factory, sent in to be worked into finished products, checked off again in the office, then shipped all over the world. Consciousness gives unity to the mind; it binds together the different faculties and secures concerted action; it is the hub of the wheel; it is the first to awaken in the morning, and the last to retire at night. To be unconscious is not to know.

Consciousness is not at all times in the same condition or state of brightness or clearness or keenness. It may vary as a light varies from an electric light to a candle. It is very dim and dull in the brain of the workman who labors all day with pick and shovel. It is very bright in the brain of the speaker who stands upon the platform before a large and appreciative audience, grasping ideas and endeavoring to shape them into thought and speech and transfer them to other minds.

When attention is exceedingly intense, Consciousness will be keenly alive to the sensations received and recognized. Also when an inner problem is to be solved Consciousness is at a white light to receive the new-born concept.

Therefore percepts and concepts both arouse

Consciousness. To illustrate, a percept: I stood within the pilot-house of a steamer entering the harbor of Havana for the first time; the morning sun was bright upon the water and the long stretches of rugged scenery to the north and south of the island of Cuba; Morro Castle, a massive shell-rock structure, built out upon the high, rugged rocks at the very edge of the sea, loomed up three hundred and fifty feet on the left, its light-house flashing every minute twenty-five miles out upon the Gulf. A mile beyond it, Cabanas Castle, full of dark caverns and dungeons and Cuban bones, frowned down upon the harbor with its old Spanish guns and weather stained rocks; on the right, the buildings of Havana roofed with red tile and tinted cream and blue, smiled a morning welcome; between, upon the peaceful waters of the harbor, floated warships, steamers and sail boats innumerable, among which our dusky Cuban pilot confidently guided our steamer in safety to her anchorage. It was a charming scene, enchanting in the extreme; attention was ravenous in its grasp of the whole view at large as well as of minute details of the historic, quaint surroundings; Consciousness was quickened to an emotional intensity, and now when years have passed away, Memory holds, and ever will hold, the picture as a brilliant acquisition.

Again, as a concept:

I have an idea that I can make a rope clasp or rope buckle that shall answer the same purpose on ropes, as buckles on straps; I think about it intently; I bring out from Memory all the forms I have ever seen; I study them, compare them, reason out their defects and good qualities; a new form flashes into Consciousness. I dwell upon it, hoping it is what I want, but see faults and dis-

card it; the brain wearies and I drop it. After refreshing sleep my mind again tackles the subject of a rope clasp; I have nothing before my eyes, nothing affecting any sense; it is all an inner process. I concentrate my mental power; the utmost energy is exerted; various forms come over and over again that are examined "with the mind's eye" and rejected. At last I grasp a form without bolt, rivet, screw, or spring; it grows and takes shape as I think; the parts come together; there are but three; they work perfectly; they accomplish the object; my labor is done; I rest. I go to a model-maker and the clasp takes tangible form in brass.

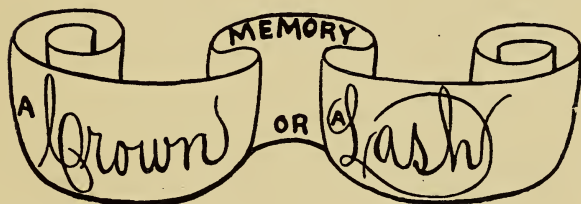
Consciousness appreciated all this mental strain and labor, was clear in all the struggle, recognized every act of Reason, Judgment and Will, and now, having committed to Memory the result, she holds there the perfect form to be yielded up whenever wanted.

The teacher will see the importance of securing the sharpest attention of pupils to instruction; there can be no lasting results till this is accomplished; memory has too slender a grasp upon some truths; they cannot be fully and clearly recalled, because they were dim in Consciousness and confused in attention.

Now it will be seen that percepts come from without, while concepts are born within. Memory cannot hold the objects but only the pictures of the objects seen, heard, smelled, tasted or touched.

From Consciousness to Memory

MEMORY WILL BE THE EVERLASTING CROWN OF
EXCEEDING JOY AND PEACE, OR THE LASH
OF TORMENT IN ETERNITY



MEMORY

VARIOUS DEFINITIONS

THE faculty of unaltered reproduction.—DE GARMO. The intellectual function which preserves and renews inner states of consciousness.—PAYNE. The soul's power to recognize objects and ideas, or to know them again as having once been known.—HILL. The power to reproduce our acquisitions just as we experience them.—BALDWIN. Knowledge of particular events or things once present, but no longer so.—DEWEY. That form of mental activity in which the mind's former perceptions and sensations are reproduced in thought.—HAVEN.

Memory is the great storehouse of the past. While Memory may be said to hold everything that has passed through Consciousness its acquisitions are twofold, viz., percepts and concepts, i. e., what has come from without through the senses, and what has been evolved from within in the processes of reasoning.

Memory retains all its possessions, hence one of the properties of Memory is retention.

Memory restores and revivifies the past; it reproduces facts and experiences; it is the most familiar of all our mental faculties; we are momentarily conscious of its activity; we have memories of sights and sounds, odors and tastes, and qualities of objects through the nerve touch; we remember only things that have passed through Consciousness. "Slight attention, dim consciousness and faulty memory," BALDWIN.

Memory cannot create; her acts are purely mechanical; she gives and holds what she has received. The capacity of Memory is infinite. What is stored away, is something marvelous. Last win-

ter I sat listening to a famous violinist, his wife accompanied him upon the piano; she looked for and followed her music, but he played selection after selection of the most difficult composition without looking at a note; I said to him, "Major, I don't see how you can carry, remember and recall all that 'stuff.'" His answer came instantaneous and sharp, "I can't get rid of it."

All the events of history, all the multitudinous facts of science, literature, mathematics, music and art, forms of a million objects, sounds, tastes, colors, qualities and combinations, personal experiences interwoven with a thousand experiences of others are locked up in this illimitable vault. Every day certain facts are wanted; they are brought out into the light of Consciousness, used, and restored again to Memory. He ought to be the greatest and happiest who remembers most.

Recollection is the doorkeeper of Memory. The word means—re, again, collect-ion, the act of—to collect again. The swinging door from Memory into Consciousness has by it always the faithful servant—Recollection. A fact is wanted. Recollection stirs himself, searches the vault of Memory for the fact, finds it, brings it out into the light of Consciousness. Consciousness recognizes the fact and disposes of it as desired; it may go to the factory of thought for elaboration or it may go out to the world in the same form in which it came in, as a percept through the senses; but in any case, Memory cannot lose it and, like a pebble on the beach, a fact may be polished or made more easily recognizable by use in transition back and forth. We call this repetition.

The one who thinks over his experiences most, and weaves them into systematic relations with each other, will be the one with the best memory.—JAMES.

Memory is usually distinguished from *remembrance* and also from *recollection*. Memory is more properly the power or faculty, and remembrance the exercise of that power in respect to particular objects or events. When this exercise is voluntary—when we set ourselves to recall what has nearly or quite escaped us, to *re-collect*, as it were, the scattered material of our former consciousness—we designate this voluntary process by the term *recollection*.—HAVEN.

Recognition is a property of Consciousness, not of Memory. The office of Memory is to hold; it is Consciousness whose other name is "I Know." I recognize this fact as *the* fact that was committed to Memory. There they lie, each in its dark casket or drawer, until the occasion arises for their use, then Recollection re-collects them and brings them into the light of recognition.

Make an experiment. Let some one ask you a question and watch your mind as it goes through the process of obtaining the answer. I will ask, "What is the capital of Madagascar?" Immediately Recollection jumps from his seat, rushes through the swing door into Memory and searches for the fact; he may be some time in finding it; a score of circumstances may aid or obstruct the search. You say, "Why, I know that, I learned it in such and such school," and the school, the teacher, the class, the associates and a hundred other caskets are opened before Tananarivo is found; at last Recollection brings it out to Consciousness and Consciousness says, "Yes, I know it to be Tananarivo."

Payne says, "The old comparison, which likened the Memory to a treasury or storehouse is amply justified."

If the brain contains six hundred millions of cells and several thousand millions of fibres, surely there is ample room for all that Memory may be called upon to hold.

The quality of Memory is affected by conditions.

1. Good health implies an active brain. Growing youth are generally healthy and Memory is called good.

2. Native vigor of all the mental faculties, or strength and activity of the brain powers, in a word, capacity. This is improved by application.

3. The degree of attention that can be concentrated upon a subject. This is influenced by the will, desire, novelty, etc.

4. Frequent review of a fact, bringing it out, putting it back, Recollection becomes familiar with its particular strong box or casket.

5. Keen emotion or appreciation of the subject or surroundings or incidents; Desire excites attention which concentrates and sharpens; Attention arouses Consciousness.

The value of Memory is inestimable. The poet says, "My mind to me a kingdom is." Memory is the preserver of truth. What books and libraries are to the world of knowledge, Memory is to each individual, his happiest, proudest, grandest possession. It will be the everlasting crown of exceeding joy and peace, or the lash of torment in eternity.

Phantasy

TAKES HIS PLAYTHINGS FROM MEMORY



PHANTASY

TAKES his playthings from memory.

Phantasy, not fancy, is the play-faculty of an unconscious mind. It differs from imagination in being an involuntary and undirected action of brain power, building fantastic shapes, events, or scenes, while imagination is under the control of the will, is directed and regulated in its building, and its acts are recognized by Consciousness.

VARIOUS DEFINITIONS

Phantasy is the safety valve of the soul, it is undirected representation, it is lawless representation, it is self-drifting, it pleases and refreshes.—BALDWIN.

Phantasy is the power to bring before the mind images, severed from all relations.—PORTER.

Phantasy is the power to bring before the mind a series of images of which it is itself a spectator.—SCHUYLER.

The soul as Phantasy is the spontaneous source of reveries and dreams.—HOPKINS.

Phantasy is the power to spontaneously make phantasms which seem realities.—WHITE.

Fancy is the delicate touch of the Imagination.

The acts of Phantasy are carried on

1. In dreams.
2. In reveries or day dreams.

When we awake or come out from our reverie, we are conscious of a mind movement, always curious, often ridiculous. We are often able to review, trace and examine these movements and we sometimes laugh and sometimes shiver at the view of the pictures Phantasy has made. We should

say they are shadow pictures for they soon fade away and seldom leave a trace of their existence.

Phantasy is the clown of the circus. He, however, plays alone, all the other faculties, even Consciousness, are asleep, and when they awake and become active, Phantasy sneaks away and will not play.

We have a door from Phantasy into Memory and there Phantasy gets his materials for his play-building, his shadow specters, and thus Memory is somewhat disturbed, and afterward, when fully awake, may dimly recall Phantasy's movements. Phantasy distorts and exaggerates what Memory gave him and no attempt is made at order, time or fitness. If he were a living being we should call him crazy, and if we were to ask him why he does these things, he would probably answer like Shylock that such was his humor.

Remembered phantasms may often be put in order by Imagination and even Reason and Judgment may assist in giving order and system, and Phantasy's products thus become things of beauty and joys forever.

Phantasy is a faculty not to be cultivated or encouraged; pupils waste too much time in day-dreams or reveries; the mind has other recreations more profitable.

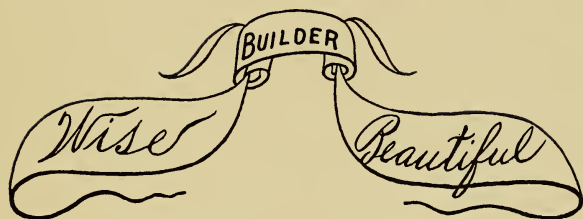
The following vivid picture of a day dream or reverie is from Prof. James's *Psychology*, Vol. I., p. 404.

"The eyes are fixed on vacancy, the sounds of the world melt into confused unity, the attention is dispersed so that the whole body is felt, as it were, at once, and the foreground of Consciousness is filled, if by anything, by a sort of solemn surrender to the empty passing of time. In the dim background of the mind we know, meanwhile, what we ought to be doing; getting up, dressing ourselves, answering the person who has spoken to us, trying to

make the next step in our reasoning. But somehow we cannot start; the *pensée de derrière la tête* fails to pierce the shell of lethargy that wraps our state about. Every moment we expect the shell to break, for we know of no reason why it should continue. But it does continue, pulse after pulse, and we float with it, until—also without reason that we can discover—an energy is given, something—we know not what—enables us to gather ourselves together, we wink our eyes, we shake our head, the background ideas become effective, and the wheels of life go around again.”



Imagination



IMAGINATION

THE word Imagination means the act of making images. Imagination is the artist of the mind. It changes the real into the ideal.

VARIOUS DEFINITIONS

Imagination I take to be the power of conceiving the ideal.—HAVEN. Our power to intentionally represent our acquisition in new forms.—BALDWIN. Is the soul's power to recombine representative ideas.—HILL. Is that representative power which gives us concepts of absent objects, not as they are or were, but as they might be.—HEWITT. The power of the mind to work up our experiences into new forms.—SULLY. The power to make new combinations, GARVEY. The capability of the mind to rearrange its acquisitions and create new wholes.—HOPKINS. The power to recombine and construct anew materials furnished by experience.—PORTER. The faculty to form and the power to construct ideals.—DAY. The power to modify and recombine the products of Memory.—WHITE. The capability to embody an idea in an image.—DEWEY. The power of the mind to present to itself vividly new phenomenal forms.—BASCOM.

"Imagination, in the sense of the poet has no reference to images that are a faithful copy, existing in the mind, of absent external objects; but it is a word of higher import, denoting operations of the mind upon these objects and processes of creation or composition governed by fixed laws."—WORDSWORTH.

"It is the divine attribute of the Imagination that it is irrepressible, unconfined; that, when the real world is shut out, it can create a world for itself,

and with a necromantic power can conjure up glorious shapes and forms and brilliant visions, to make solitude populous and irradiate the gloom of the dungeon."—WASHINGTON IRVING.

"And as Imagination bodies forth

The forms of things unknown, the poet's pen
Turns them to shapes, and gives to airy nothing
A local habitation and a name."

—SHAKESPEARE.

It will be observed from these various definitions of imagination that the majority of authors call it a power—the mind's power to take percepts and concepts, give them romantic shapes, clothe them in fantastic garments, and make them perform in wonderful ways, to the delight of itself and the other faculties.

Percepts come from the external world through the senses, are recognized by Consciousness and laid away in Memory. Concepts or inner creations Consciousness also stores away and they are clothed in natural garments, brought out at any time, reviewed and restored unchanged. Imagination takes these facts and combines them in new forms; these forms may be beautiful, wonderful, grand, sublime; or they may be ugly, coarse and repulsive. Imagination is under the control of the Will, is guided by Reason and Judgment, and its creations are recognized by Consciousness. Imagination is very active in youth, its products often taking the place of truth, and needs not to be cultivated but only directed.

Life may be made very bright, sunshiny and full of happiness by its proper direction. Live a pure life, think pure thoughts, introduce into the mind beautiful and perfect things, poetry, music, pictures, etc., and imagination will play with them, and be a source of great joy and comfort to its possessor.

Thinking—Thought



THINKING — THOUGHT

We have thus far seen how the sight, the hearing, the smell, the taste, and the touch may bring into the mind distance, forms, colors, odors, savors, qualities and incidents of objects in the external world; how Consciousness says, "I know them"; how they are stored in Memory; how Phantasy uses them to work out unnatural, weird and wild forms; how Imagination, under the control of the higher faculties and recognized by Consciousness, builds them into things of beauty and joys forever, but we have as yet no thinking,—no thought.

We have spoken of the factory; it will be seen that we have now the raw material all checked off, paid for and in the warehouse; we are ready to look inside the factory and see the process of making thought.

An idea is a mental picture. A thought is a predication of ideas; i. e., something said or affirmed of those mental pictures.

To illustrate: I have a picture of a teacher in my mind, and with this picture brought out from Memory into Consciousness, comes a troop of other pictures, by association, the schoolhouse and room, groups of romping, bright-eyed, happy children, the getting quiet, the little song or prayer, and then the work. A thousand pictures crowd for room and clamor for recognition that I wish I could exclude and keep only the one I wish to elaborate. This is the *one* picture—teaching—what is it? I see the teacher tell,—impart a truth,—and I say, "Teaching is telling." Now I have a thought,—something affirmed of teaching,—teaching is telling. What did the teacher tell? She said, "Some

fishes have no eyes." A boy pricked up his ears; anything about fish interests him; he has mental pictures—ideas—blind fishes. He begins to think; his mind is excited; he wonders why some fishes have no eyes.

Usually his quickest, shortest way of finding out such things is to ask questions; children are often solid interrogation points.

Perhaps the encyclopedia at home will tell why. Here he finds the statement that fishes in the Mammoth Cave are blind. He begins to reflect, judge, compare; he gets the ideas of light and darkness,—the association, light with eyes and blindness with darkness.

At last he is ready to affirm, "Fishes that live in caves and dark caverns have no eyes." The law of association works again; he sees the white potato sprouts in the cellar and the yellow leaves of turnip sprouting in the dark; he observes how the celery bleaches when it is covered with dirt and the light is shut off, and again he questions if the fish not only have no eyes but if they are white or yellow; he thinks and questions and searches till he finds the truth: they are. Again he is ready to make affirmation, "Fishes that live in water in the dark have no eyes and are white or yellow excluded from the sun."

Recurring again to my mental picture of teaching, and with this experience before me, I see that my affirmation of teaching is too limited—teaching is telling,—but the teacher excited that boy's mind to desire, and disciplined his mind to acquire more truth; so I elaborate my statement and say that teaching is telling or imparting truth and exciting the mind to desire, and disciplining it to acquire more truth.

Thus it will be seen that objects in the world

external to the mind, once observed, become thereafter mental pictures. These are what Consciousness recognizes and Memory stores away.

Conception is the act of analyzing our mental pictures and preparing them for Judgment and Reason.

Inner Attention



INNER ATTENTION

INNER attention is the eye of the mind. It is under the control of the will. A student sits down to study or a workman begins his work; he retires, shuts himself in, excludes everything that would divert, and applies his mental powers to the business in hand. The first act is attention; the inner eye must be directed upon the objects and watch the processes. He takes from Memory a percept and elaborates it into concepts. When his work is done the percept is returned to Memory as it was without change, and all the concepts are stored away with it.

This thought factory involves:

1. Reflection.
2. Comparison.
3. Abstraction.
4. Classification.

REFLECTION

To reflect is to linger over ideas, to tarry, to brood over them, to concentrate, to exclude, to force action with a resolute grasp, to suppress all the elements except the one desired to be considered, to dwell upon it to the utmost and to exhaust its applications.

It is the digestive process of the mind of which percepts are the food. Reflection also involves comparison, abstraction and classification or generalization.

COMPARISON

To compare is to group together objects, qualities, or properties and examine them in detail side

by side. Thus we put leaves side by side to compare them and then lay those that are alike or similar in separate piles. We perceive points of similarity or difference. Distinguishing likeness or difference is called comparison.

ABSTRACTION

The word abstraction is from the Latin *abs.* from, and *traho-traction*, to draw. Hence we understand the word to mean the drawing from, or out of objects and incidents, their qualities, values, or properties. Thus, with a rose in my hand, and examining it intently, my mind draws out the qualities of color, perfume, beauty of form, delicacy, species, name, adaptation, etc.

An abstract noun is the name of a quality abstracted, or drawn out of an object,—thus, from the quality rich, comes the name richness; from red, redness; sweet, sweetness; shapely, shapeliness, etc.

It will be seen that adjectives describe the quality and the abstract noun names it, hence abstract nouns are usually derived from adjectives. This knowledge enlarges our vocabulary of words in a wonderful degree; it is good discipline to form nouns on adjectives.

It is a rose, is the only affirmation that could be made until the mind has abstracted properties and detached each or all of its qualities, then a predication may be made of each quality. Thus, I abstract the quality of redness, affirmation,—the rose is red; I abstract the quality of sweetness, affirmation,—the rose is sweet; I abstract the quality of delicacy, affirmation,—the rose is delicate, etc.

CLASSIFICATION

When I have abstracted all the qualities of an object, I put these qualities into classes or associate them. Everything that is red I put with the redness of the rose; everything that is sweet, with the sweetness of the rose; everything that is delicate, with the delicacy of the rose, etc.

Hence arises another act of the mind, that is classifying or classification.

The prefix *ad* means *to*. In the word apperception the prefix *ad* is changed to *ap* for euphony. The word apperception therefore means perception *to* perception. Mr. Roark (p. 163) has given the best definition and illustration we can find. He says:

"A concept having been once formed, all objects observed to have properties from which the concept is made up, are immediately classed with the concept already formed. If any new thing be perceived, the mind at once tries to assimilate it (make it similar) to some concept already acquired. This spontaneous act of the mind in immediately seeking something in its store of ideas with which to classify some new idea (perception *to* perception) is sometimes called apperception." See definitions in preface.

Johnnie watched his aunt shelling peas. After a little he picked up a pod, handed it to his aunt and said, "Please, aunty, unbutton this one." Johnnie was endeavoring to classify the *unbuttoning* of peas with some other process of unbuttoning that he had in his mind.

Another little fellow said, "Papa never crawls through the fence he unbuttons the bars."

Apperceiving is the greatest work of life. It is

like rolling a snowball, accumulating, enlarging and making up the sum of our knowledge.

The second chapter of DeGarmo's *Essentials of Methods* is worthy of the closest study.

Through the processes of reflection, comparison, abstraction and classification I have analyzed the rose. My percept is the simple rose alone, my concept is the rose analyzed.

The teacher and all other objects necessary to the processes of teaching are the percepts, the analyses of the acts of teaching with all their multiform accompaniments are the concepts.

Dr. James says: "At the outset we merely have the topic then we *operate* on it; and finally we have it again in a richer, truer way."

A percept is the raw food. A concept is the same food cooked and ready to be eaten and assimilated.

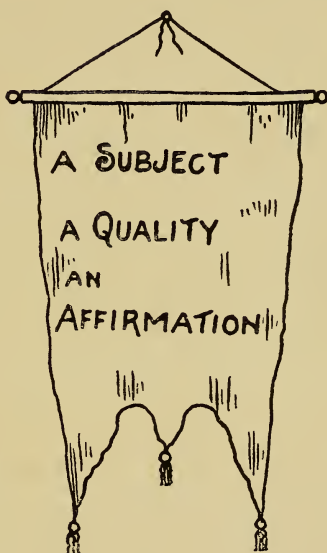
Judgment and Reason follow in affirmation. Conception enlarges wonderfully the mind's power and multiplies its possessions. Every percept has its keeping place, and all concepts, like pictures, hang in order upon the walls of Memory.

Consciousness envelops and accompanies all the operations of the mind.

The crowning act of thought is affirmation, and affirmation, fixed in books, becomes permanent and constitutes the sum of our knowledge.

Judgment

PUTTING THREE THINGS TOGETHER



JUDGMENT

The evolution of truth is pre-eminently the office of Judgment.—BALDWIN.

Judgment is an intellectual operation by which the mind affirms, either the existence of an object, or the relation of two ideas.—PAYNE. The faculty by which conception is effected is Judgment.—ROARK. Is the process of asserting agreement or difference between ideas.—HILL.

The service of Judgment is required to formulate facts. It is, or it is not, is the form of the Judgment.

The mind is a unit and all of its acts or processes are so interwoven and blended that usually no time intervenes between the reception of a sensation, its recognition by Consciousness, its grasp by Memory and the reflection, comparison, abstraction and classification before a judgment is pronounced. It is or it is not,—it is white, it is large, it is useful, it is true,—these agreements or the denials, it is not true, it is not useful, etc., flash with instantaneous movement through the mind and the Judgment is immediately spoken or it may be mentally reserved.

Decision and action may instantly follow reflection.

Every act of intelligence terminates in a judgment.

In every judgment there are three elements.

1. The idea of an object.
2. The idea of a quality.
3. The act of affirmation.

We are looking at an animal and we affirm a judgment.

All sheep are woolly.

Here we have the object sheep and the quality woolly and the affirmation of a perceived relation. This constitutes a judgment.

This animal is a sheep.

Here we have an object that we affirm belongs to a certain class, another judgment.

Therefore this animal is woolly.

This statement is the conclusion reached in a line of reasoning.

"The several propositions that constitute a chain of reasoning are so many distinct judgments."

Thus we see the connection between Judgment and Reason and their intimate relation.

Judgment is the crown of intelligence; instinctively we may come upon and pronounce the truth, or it may come slowly and deliberately through a long chain of reasoning. "A quick wit," "a clever mind" reaches results without effort. Portia perceived truths in the verbiage of the bond that stupid lawyers would brood over till the time for action had passed and the revengeful Shylock had cut Antonio to the heart.

"A fool's wit comes an hour too late," but here is a woman's wit, and it is on time. "The bond," she says, "is legal, it may be executed, but it calls for not one drop of blood, nor the variation of a hair's weight from an exact pound,"—two judgments threatening the life of him who should carry out the bond and rendering its execution impossible.

"The sentence is the symbol or representation of the judgment."

The Spaniards were cruel to the Cubans, is the expression of a judgment. It may be expanded by adding the elements of time, manner, space, reason, etc., but the subject, Spaniards, the quality, cruel

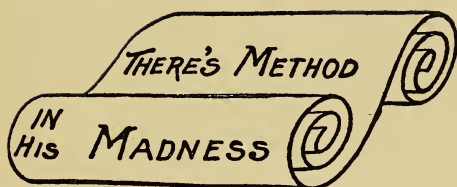
and the copula were, are all that are necessary to form a judgment.

The Spaniards during the Cuban war were intensely cruel to the inhabitants of Havana and the island of Cuba, whose only crime was to think of freedom and to shout "Cuba libre."

Out of this expansion the subject and predicate may be easily selected and the plain affirmation be distinguished from its adverbial modifications. This is a splendid exercise in the analysis of language.

Education leads to correct, strong, mature judgments; the choice of right words with which to affirm; coolness and carefulness of expression; absolute control of mind over the body so that neither in face, feature nor gesture is there any diversion from the main thought, but only an insistent emphasis. The pupil becomes the scholar. His judgments ripen, mature and become convictions; his word is not disputed; his decisions are correct; he is a judge; he is accepted as a leader; his friends worship him, his people love him, the world honors him; he puts his shoulder against the world, exerts his strength and pushes it up the steps of progress and purity nearer to God.

Reason



REASON

HAVING compared objects, drawn out their qualities and set them in classes, we are prepared to make affirmations.

We make an affirmation then deduce others, until we have exhausted the subject, if that is possible. These affirmations are styled judgments. This working of the mind through a line of concepts, inferences and statements is called reasoning.

VARIOUS DEFINITIONS

Reasoning is that process of inference in which a new judgment is derived from other known judgments.—HILL. Is that process by which we reach conclusions.—ROARK. Is the capability to discern conclusions.—BALDWIN. Is that act of the mind which recognizes those relations of any content of Consciousness through which it has the meaning which it has, or what it is.—DEWEY.

The purpose of Reason is to make one or more truths evolve other truths.

The process of reasoning is to take two or more associated judgments and deduce a new judgment.

“Conception is the faculty of the mind by which we form our general, abstract notions or concepts.

“Judgment is the faculty of the mind by which we know the relation between the objects of knowledge.

“Reason is that faculty of the mind by which we gain new truth from truth already known.”

Listen to an inquisitive little child,

“What is that?”

“That is ice, my dear.”

“What is ice?”

"Ice is frozen water,—water that is made hard by cold."

"What for?"

"I am going to use it to freeze cream."

"Ice cream?"

"Yes."

"Goody! goody! What is that other thing?"

"That is salt."

"What you put in salt for?"

"To make the ice melt."

"What for?"

"To make it cold. Ice is coldest just when it melts."

"Can you make ice colder than ice?"

What shall you answer? *Can* you always answer?

"Who can tell what a baby thinks?" Reason is budding.

First, there are the objects, ice and salt.

Secondly, qualities or properties are abstracted—cold, melt, cold to the highest degree, etc., then comes the reasoning. If we add salt to ice it will cause it to melt, and ice, just when it is melting, is at its coldest point, hence our cream will be more likely to freeze. It might freeze, probably would, without the salt, but it would take longer time.

"What for you turn the wheel?"

"To throw the cream against the outside of the vessel where it is cold."

"And make it freeze?"

"Yes."

"Please let me look in and see if it is freezed."

Now, it is not likely that the child comprehends these facts or he understands them but superficially and they soon pass from the mind, but the interrogation point continues to wag and grow. The gray matter of the brain enlarges and refines. The

octopus shows longer tentacles and grasps more and more tenaciously.

Now, let us observe a man reason.

Mr. Westinghouse watches a brakeman turn a wheel to which chains and small iron rods are attached to press the brake against the wheels and stop the train. There is a man for every car. It is hard, straining work. The pressure upon the wheels is not very strong. The train stops slowly. Mr. W. reasons.

"A man on each car causes the pressure. Why may we not convey air through rubber tubes and make it press the brakes upon the wheels? The engineer shall work the levers that cause the machinery to drive the air through the tubes to the brakes. Dismiss all the brakemen. The swift-moving train can be stopped in a distance less than one hundred feet."

Mr. W.'s reasoning has made him a millionaire.

Such reasoning we call genius. George Eliot says, "Talent is only a great capacity for labor." It is the tireless mind, clinging with ever-renewed tenacity to one subject, gathering from all available sources and associating with his leading thought all similarities, enlarging and enriching his subject by abstractions and comparisons, bringing concept after concept into battle array and forming long lines of judgments, looking often forward and backward to see that every step of his reasoning is sound and every term in place, that reaches conclusions that startle the scientific world and secures the reward of the title of genius.

Genius is the hare in the race, but the plodder, talent, sometimes wins the goal and secures the prize. Genius is an inherited gift, while talent comes out of a long and persistent grind. Genius

associates similarities to an extreme degree, talent is slower but more persistent.

Darwin was a man of unusual intellectual energy. His mind grew by what it fed on.

"Association by similarity is the prime condition of success."

Roy Knabenshue reasons that because the air is like water, his airship should take the form of a fish rather than a bird.

"Beware of the man of one idea," when he clings to that idea from day to day, from month to month and from year to year, when he surrounds it with all similar ideas; when he expands and magnifies it by severe thought and unwearied experience; when he applies the line of right and the square of truth; when he is altruistic in his aims and lives and labors in the sunlight of love.

A teacher of a Geology class was once asked to explain the nebular hypothesis. The teacher admitted, much to his credit, that his study had not led him along that line and he did not understand the nebular hypothesis. "But," said he "I am as good a student, I trust, as any of you and if you will agree to study and strive to understand it I also will study it, and whoever gets it first shall explain."

Day after day passed, and each day, the students who were matured young men and women, reported progress.

At length one day, a student raised his hand and said that he thought he could explain the nebular hypothesis. He was directed to take a place at the blackboard with chalk, draw his diagrams or sketches and explain. The teacher and class heard him through without interruption and then the teacher remarked, "You are wrong in some of your reasoning but you have led *me* into the full

truth. What I lacked, my thinking, sharpened by your explanation, has discovered. I can now explain it, but you must give me a few days to trace up my lines of reasoning to see that I reach correct conclusions."

His day of explanation came. He started with the word *nebular* and the conclusion was reached that it meant a cloud or a dust cloud. Then the word *hypothesis* was analyzed and the class rested on the word guess. The conclusion then was, "I guess that the solar system began in a dust cloud." Around this conclusion the class had assembled suns, planets, moons, stars, *nebulae*, rings, centrifugal force, centripetal force, creations, makings, rotations, revolutions, time, space, and many other abstractions and conceptions.

None of the class were astronomers yet it seemed that Professor Newcomb was put to shame, when it came out in the discussion that the great cloud mass, in irregular globular form, left a shell, instead of rings, as Professor Newcomb states, when the great mass within drew away from the great shell without. To illustrate: Suppose the mass in the center of an orange to contract and draw towards the center by the law of centripetal force and leave the peel or rind. Would not this be a shell? Yet Professor Newcomb says they were rings. These shells might later have assumed the form of rings but not at first. The order was, —first a shell; secondly, possibly but not necessarily, rings; thirdly, planets.

Thus reasoned Malcolm Stuart one of the students, who gave the explanation at the blackboard and who presumed to differ from Professor Newcomb.

What a noble fight! What splendid results! That one victory gained prepared the class better

than any other struggle in their curriculum of study to reason out some of the stern problems of life and of living.

From my study window I see a workman unloading a wagon into a ravine, he climbs up on one of the horses to fix the harness; they take fright and run; they plunge over the bank into the ravine and there they lie dying or dead. If the horses could have reasoned, leaving out the element of fright, their reasoning would have been something like this.

We desire to live and be safe, safety lies along the road, not in the ravine, therefore we will run along the road and not into the ravine.

Alas! how many desolate graves there are of men who never learned that,

A feast of reason and flow of soul

Are not found in the poisoned bowl,—

men who drank to drown trouble and sorrow at a time when the brain should have been clear and the reason unclouded to grasp the great lessons intended to be taught and to accept the discipline under them.

The saddest of all ruins is reason overthrown.

The Will



EVERY MAN THE MAKER OF HIS OWN DESTINY.

THE WILL

THE Will is an operation of the mind that leads to certain possible, physical movements, or tenets of belief.

Duty, desire, may prompt deliberation; deliberation may lead to decision; decision leads to action.

To execute is as necessary as to decide. An act of the will therefore consists of—

1. The resolution to do or believe.

2. The doing or believing.

To wish is not to will. We may wish for the impossible, we can only will the possible.

Desire may prompt me to go to church; duty prompts me to stay at home with a sick one; the sick one releases me from duty and I immediately execute my desire—I dress and go to church.

Deliberation may lead into a state of indecision, and a process of reasoning goes on, in which motives, duties, desires, rights and wrongs are involved, but when a decision is reached the execution follows at the right time.

I once read a novel, and a friend who is opposed to reading yellow-backed literature asked me in a scornful tone if I got any good out of it. My reply was: "Yes, I secured a sentiment that I think will remain mine all my life, and influence me, I know not how, nor how much." "Well, what was it?" in another scornful tone, as if nothing good could come out of Nazareth. I replied, "This is the sentiment—Self-denial, hard as it is, is easier than repentance." In other words, not to do is easier than to undo.

The acts resulting from the will are far-reaching,

pregnant with results, and determinative beyond recall.

A little girl was once asked whether it were worse to lie or to steal. "To lie," replied the wise little one, "for you can take back what you steal, but a lie is forever and ever."

Volumes have been written on the WILL as if it were the most important faculty of the mind; it probably is the most comprehensive in its results. We win fortunes or poverty in our decisions; we have health or disease, wife, children, home, comfort, plenty and peace, or eat our bread in singleness of heart and reap what we sow.

We are free, "moral agents," that is, no one can hinder us in our power to choose. All our life long we are brought face to face with questions that require from us a yes or a no, and on these answers will hang mighty results. Many questions that do not involve right or wrong must be settled. Will we do this or that? It may simply be a question of policy or what is best for all concerned.

Pupils should be taught that conscience is the infallible guide to right action, and to listen to its voice in the hour of decision. Is it right or wrong? This double question plainly answered and the will to always do the right builds a character that will stand the tests of time and the final judgment.

The Spirit



THE SPIRIT

EXPLANATION: In giving the classification of Body, Mind and Spirit, we have resolved to follow the teaching of the oldest book in the world on Psychology, and if we differ from other writers, we wish to say that we take this course not to be peculiar nor to excite comment, but because we believe *it is right*.

We believe the word soul is oftener applied to the spirit than it is to the mind. In theology the word soul *always* means spirit, hence we have chosen to use the terms.

1. Body as applied to the physical or mortal,
2. Mind as applied to the intellectual,
3. Spirit as applied to the spiritual or moral.

These THREE constitute the entire man, and the mind and the spirit, wonderfully and beautifully united, are the immortal part of man.

If we have used the word soul, in this book, we mean the union of mind and spirit.

The ordinary course of authors of Psychologies is to make the final chapters of their books treat of *THE SENSIBILITIES—EMOTIONS—AFFECTIONS—DESIRES*, etc.

These are not faculties or powers or forces of the mind but of the spirit.

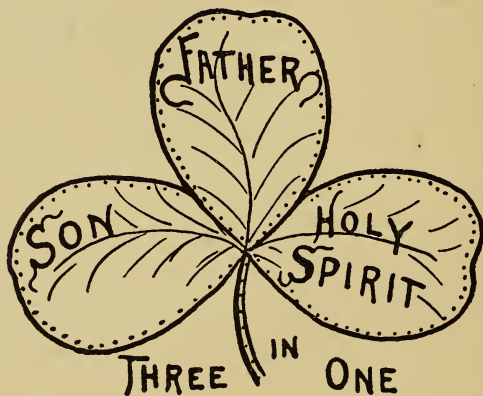
Man has physical feelings that enter so minutely into the body's wants and necessities that we mention them only because the mind appreciates them, not because they are parts or powers of the mind. They are in part:

1. The feeling of hunger and thirst,
2. The feeling of pain and bodily disease,
3. The desire for rest and sleep, etc.

The emotions and affections are movements of the spirit. Roark says, "One rarely does right because he knows (intellectually) what is right, he must also feel the necessity of right conduct. It requires the impelling force, not only of conscience, but a host of other feelings to induce men to follow righteousness."

Is it not evident that this pertains to the spirit? Again—"Each of us must do that which his own judgment affirms to be right. Judgment guides and dictates in matters of right while conscience lays upon us the obligation to do what judgment affirms to be right."

Thus do mind and spirit operate together. Judgment, a power of the mind, determines what is right, and conscience, a power of the spirit, prompts to right-doing.



As God is a being of three persons in one, the Father, Son and Holy Ghost, so man is a being of three natures.

1. Body, or sense consciousness,
2. Mind, or self consciousness,
3. Spirit, or God consciousness.

These are the *sarx*, the *psyche*, and the *pneuma*.

Illustrate the first statement by a clover leaf, one leaf with three parts.

Illustration of the last statement is given farther on.

St. Paul says in *Thes. i. v. 23*, "I pray God your whole spirit, and soul and body may be preserved blameless unto the coming of the Lord Jesus Christ."

A blameless body, a blameless soul, (mind) and a blameless spirit, make a perfect man. Such a character has been found only in our Lord Jesus Christ.

Man's spirit is an essential, vital force or center of energy, which is clothed at present in a body of flesh, dominated by a wavering mind.

A plant has a nutritive life only.

Animals have a nutritive and a sentient life.

Man has a nutritive, a sentient and a spiritual life.

CONSCIENCE is the essence of the spirit.

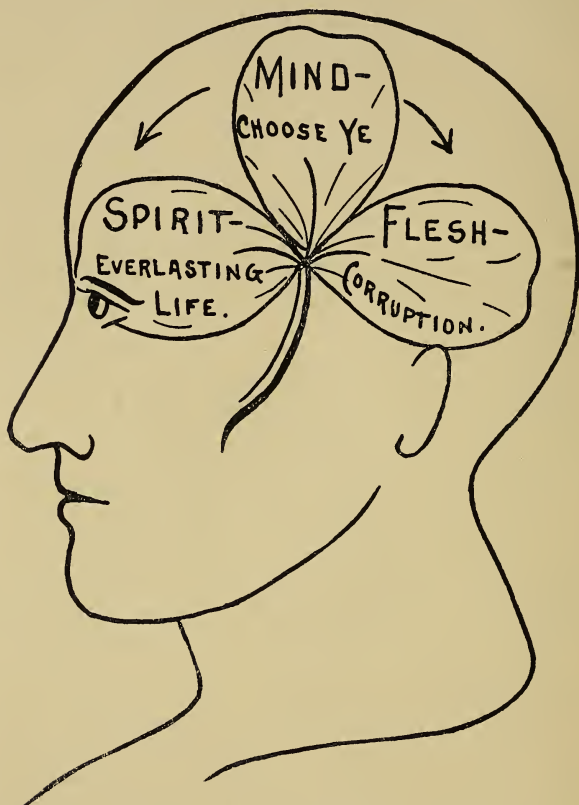
Conscience, thought and speech distinguish man from animals. Rev. J. B. Heard says, "It is the distinction between the soul (mind) and spirit that distinguishes Christian psychology from that of the schools."

This distinction should not be; there should be only a Christian psychology.

The mind is alive and interested to comprehend the works of God but indifferent as to his person and character. Botany, Geology, Biology, Astronomy, etc., are studied in their intricate details and bearings on the wants or necessities of man, but there is no hint or suggestion as to the person or character of the Creator.

The spirit, on the contrary, is wholly indifferent to the sciences and only seeks to know God.

In person, what is God? "God is a spirit and



they that worship him must worship him in spirit and in truth."

In character what is God? "God is love," and

the fruits of the spirit in man are love, joy, peace, long-suffering, gentleness, goodness, faith, meekness, temperance, etc.

The powers of the spirit are:

1. GOOD, in the sense of elevating or uplifting.
2. BAD, in the sense of debasing or dragging down.

Some of the good powers are enumerated above.

Some of the bad powers are hate, anger, fear, revenge, rage, jealousy, selfishness, malice, spite, etc. The exercise of these powers debases the character and drags the man down; the manly suppression of them and the cultivation of love, joy, hope, and the like, elevate the character of the man and bring joy and peace.

"He that soweth to the flesh, shall, of his flesh reap corruption, but he that soweth to the spirit, shall of the spirit, reap life everlasting." Gal. vi., 8.

In Adam, before the fall, the mind was firmly balanced between the flesh and the spirit, but his sin gave an inclination to the whole nature of man towards the flesh and his progress upward to a higher life is a courageous struggle. It is easy to drift down stream but it requires a strong will and brawny arms to row up stream. Even St. Paul said, "When I would do good, evil is ever present with me," but towards the end of life he spoke of having made a "good fight."

In the spirit, not with his mind, man worships God. His mind may apprehend, but his spirit admires and loves. "Spiritual things are spiritually discerned."

Water, a material substance, is made up of oxygen and hydrogen, two immaterial substances.

The human body, a material substance, holds the mind and the spirit, two immaterial substances.

Oxygen and hydrogen cannot be separated from water except by the destruction of the water.

The body dies when the mind and spirit (soul) leave it. "The body without the spirit is dead."

The proper function of the spirit is to pray for and receive the omnipotent Holy Spirit to which it is allied, and then pursue the good with a courageous, hopeful, steady self-discipline to the end.

Mind and spirit are so intimately related that independent action can hardly be detected or separated; as well dissect a cocoon to find the butterfly as to dissect body or brain to find the spirit. It is true the mind can act without the spirit; men are often intellectually great and spiritually small. We dare not say that the spirit can act without the mind. Imagination, memory, judgment, reason and the will, all recognized by consciousness, are active when the powers of the spirit act. How active the imagination when the book of Revelation is read! How vivid the memory of the day of conversion and the following days of joy and peace! How active judgment and reason when conscience argues that we should love our neighbors as ourselves! How the will holds us to our course, like the set rudder of a ship!

But while reason may convince us that God is a spirit, it does not lead us to love Him; this is a power distinctly of the spirit and is prompted by God's love for us.

Love is the supreme power of the spirit. "The greatest thing in the world is love," and in the universe, for aught we know. We quote from Baldwin. The parentheses are ours.

LOVE.—The soul energy that draws hearts (spirits?) together.

1. Supreme love.

God is love, and He is altogether lovely. Infinite loveliness awakens our souls (in the sense of spirits, not minds) to their deepest depths. I love the loving Father with all my heart. Veneration, reverence, worship, grow out of supreme love. Love tends to union. What attraction is to the physical universe, love is to the spiritual universe. The one unitizes the world of matter, the other the world of mind. (Why did he not say spirit, since he uses the word spiritual above?)

2. Parental love.

This is one of the purest and noblest of feelings. It unitizes the family, and works the highest good to offspring. Mother-love is the salt of the earth.

3. Conjugal love.

An absorbing, reciprocal affection makes two lives one. Each family, united by love, becomes a paradise. Happiness comes from a union of hearts, and union of lives.

4. Filial love.

Loving and loved, children cheerfully yield to parental authority and counsel, and grow into lovely and loving men and women.

5. Fraternal love.

The offspring of the same parents are bound together by strong ties. As the race is one great family, the realization of the brotherhood of man and the fatherhood of God leads to a higher exercise of filial and parental love.

6. Love of Friends.

He is the friend indeed who sticketh closer than a brother. The love between David and Jonathan, and between Damon and Pythias, surpassed the love between men and women. Friendship is an ennobling emotion. A man who is true to his friends, though a robber, is capable of great things. True friendship never dies.

7. Love of Country.

Love is the tie that binds together rational beings. We degrade this noble emotion when we call the instinctive affection of brutes, love! and much more when we call the brutal lusts of men love. But patriotism may well be called the love of country.

Love brings peace and joy; sustains in long-suffering; creates gentleness ("Thy gentleness hath made me great.") goodness, meekness; promotes temperance; strengthens faith.

On the contrary, the evil powers, when given free rein, lead to passion, intemperance, recklessness, murder and destruction.

"The reign of law, the beauty of the earth and sky, and the all-prevailing good fill me with a boundless joy."

Are these sentiments prompted by the mind or spirit? Evidently by the spirit, for when the same author says, "Poetry and eloquence and song and the beauty of holiness and the beautiful earth and the sublimely beautiful heavens fill us with rapture. God is beauty," he exhibits an aspiration of an earth-spirit towards the God-spirit.

The psalmist David said "Renew a right spirit within me," and when he died his last words were

"Into thy hands I commit my spirit." The Lord Jesus on the cross exclaimed, "Father into thy hands I commend my spirit."

Luke says of the child Jesus, that he waxed strong in spirit. The spirit then will grow and become strong. It will control the sin-seeking eyes; the mischievous, murderous hands; the feet, swift to evil; the mind, running to corruptible things; become supreme over mind and body; crush evil like a serpent under its foot; uphold and sustain through this worm or grub life of the world, by faith through the chrysalis of death, and emerge in indescribable glory and joy into the imago of immortality.



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