

## ILLINOIS

Known as the Prairie State, Illinois exhibits a length of 378 miles and a width of 210 miles, with its 56,000 sq. mi. sloping slightly to the southwest. Containing more than 275 rivers, the state is bounded along  $\frac{3}{4}$  of its circumference by navigable waters, primarily the Ohio and Mississippi rivers. The highest elevations are the *Mounds* along the northern borders, rising only to a altitude of 900 to 1,000 feet above sea level.

Though well endowed with fossils, Illinois has little to offer gem and mineral collectors, even though the state produces more sandstone, silica sand and **Fluorspar** than any other state in America. Most specimen collecting is done in the **Lead-Zinc** mining dists. of northwestern Illinois, the glacial drift of the Late Pleistocene Wisconsin glaciation, the bluffs and detritus of the Ohio and Mississippi rivers, and in the southern **Fluorspar** region.

Fossil hunters are well aquatinted with the famed *Coal Measures* so often mentioned in Illinois geology. These measures constitute the Upper Carboniferous system of repeated alterations of sandstone, shale, bituminous slates, thin bands of limestone, and seams of coal usually underlain with clay. In these coal seams the collector may often find **Marcasite** and **Pyrite**. The measures are 1,200 to 1,400 feet thick in the south, grading to 600 to 800 feet thick in the north.

### ALEXANDER COUNTY

FAYVILLE, area stream gravels—**agate**, **jasper**, rare alluvial **Diamond**.

THEBES: ① area gravel deposits, pits, bars of the Mississippi R.—**agate**, **jasper**; ② RR siding of Clay—**agate**.

### CALHOUN COUNTY

AREA, shores of the Mississippi R., in the Warsaw formation that surrounds Warsaw, Hamilton, and Nauvoo in western Illinois—**geodes** (lined with botryoidal **chalcedony**, occasionally with pale **Amethysts**, or **Quartz** crystals).

### CRAWFORD COUNTY

PALESTINE, area deposits—**Siderite**.

### EDWARDS COUNTY

AREA, T. 1 S, R. 10 E, regional deposits—**Siderite**.

### FULTON COUNTY

FARMINGTON, W 6 mi. on Rte. 116 to the Rapatee No. 5 strip mine—**pyritized gastropods** (Pennsylvanian age).

### GRUNDY COUNTY

AREA: ① Regional rd. and RR cuts and banks of Mason Cr.—**fossils**; ② Coal City, on area mine dumps from sedimentary overburden—oval **concretions** (containing *Mason Creek* fossils).

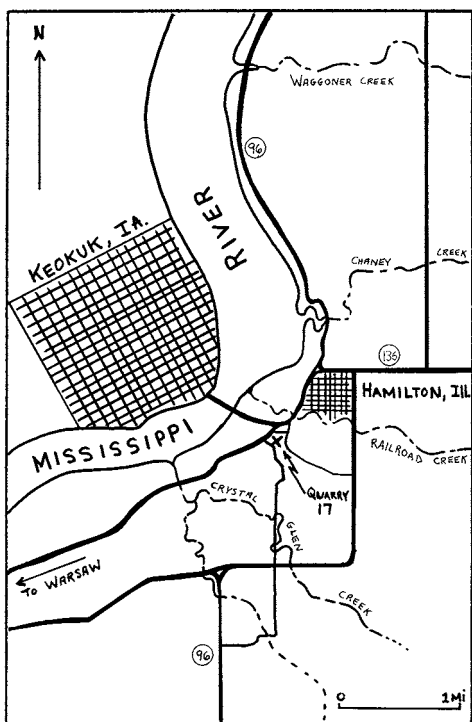
## A Location Guide for Rock Hounds in the United States

EAST BROOKLYN (SE of Gardner), area coal mine dumps—**Marcasite, Pyrite.**

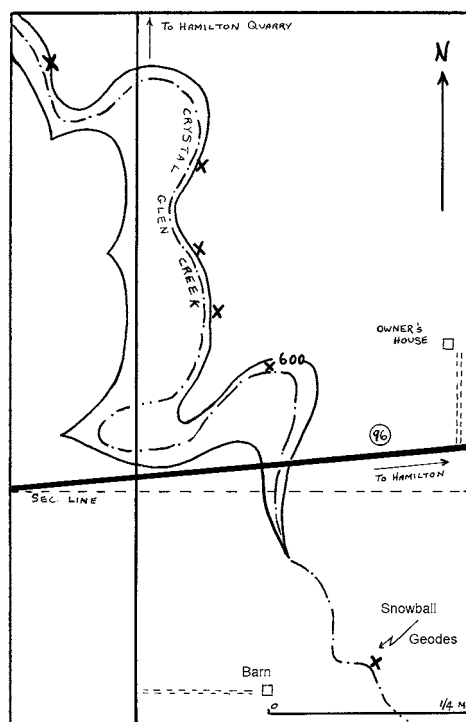
HANCOCK COUNTY

DALLAS CITY: on the Dallas Cr. (see map next page) —**geodes** (lined with **Chalcopyrite**, brown **Calcite** and sometimes **Malachite**).

HAMILTON: ① area gravels and glacial drift deposits—**agate, jasper, geodes** (containing blue gray chalcedony); ② (a) S of the Keokuk bridge, in stream banks and gravels —**geodes** (lined with crystals); (b) Hamilton Quarry, the lower Warsaw section at the top of the quarry (see map) —**geodes** (lined with **Marcasite & Pyrite** with rhombs of **Calcite, Sphalerite**); ③ extensive exposure S of town on Crystal Glen Creek—**geodes** (lines with **Aragonite, Barite, Calcite, Chalcopryite**, pink **Dolomite, Goethite, Jarosite, Marcasite, Malachite, Pyrite, Pyrolusite, Quartz, Selenite, Smithsonite** and **Sphalerite** in any combination).



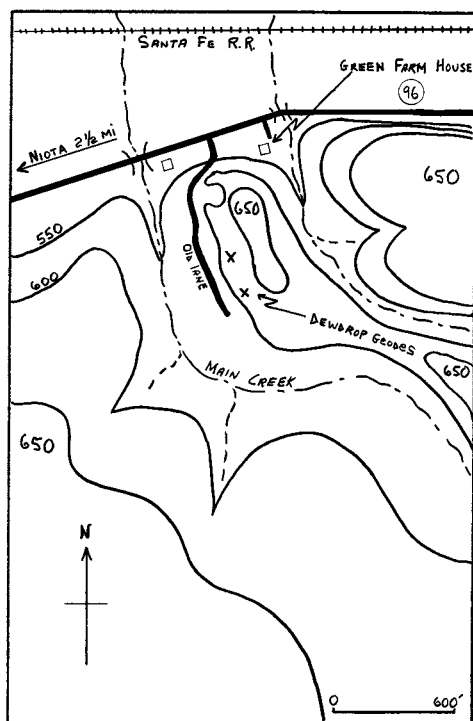
### Hamilton Quarry Location



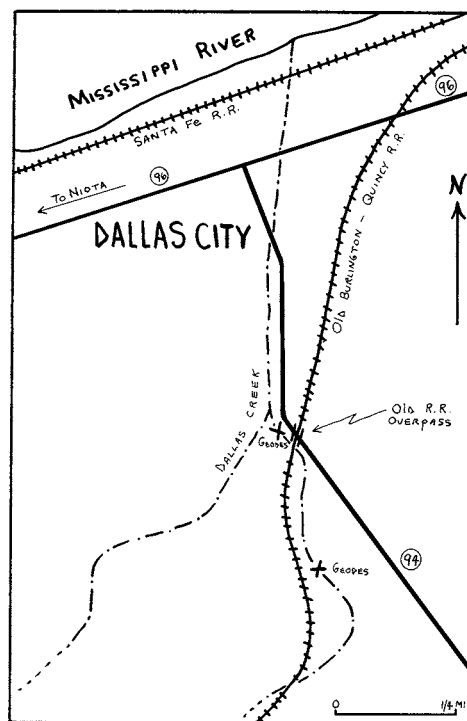
### East Branch Crystal Glen Creek

NAUVOO, area stream and creek tributaries and Mississippi R. gravels, in cuts, pits, banks, etc.—**geodes**.

NIOTA: ① area excavations, pits, stream banks and gravels—**fossils, geodes**; ② S 2 mi., at Tyson Cr.—crystal lined **geodes**; ③ Dewdrop Diamond Locality S of Hwy. 96 (see map next page) —**geodes** (with blue and pink chalcedony); ④ 4 mi. E on Hwy. 96, S on Pontoosue Rd. is Spillman Cr. (see map next page) —**geodes** (lined with either brown **Calcite**; or **Pyrite** on **chalcedony**, **Sphalerite** on **chalcedony** or **Calcite**, **Quartz**).

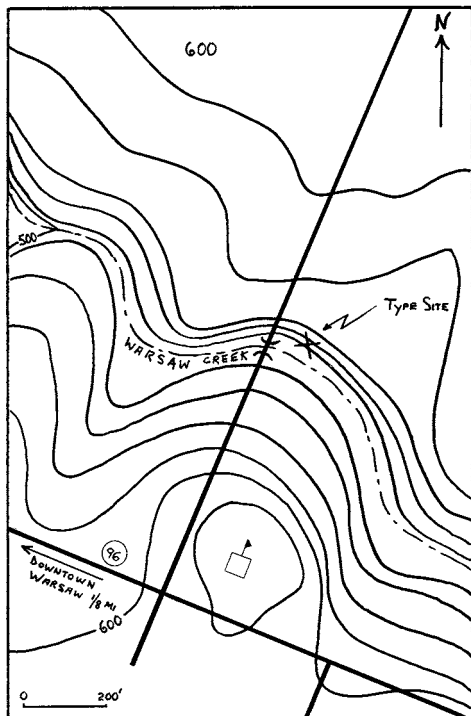


Niota Dewdrop Diamond Geode Location

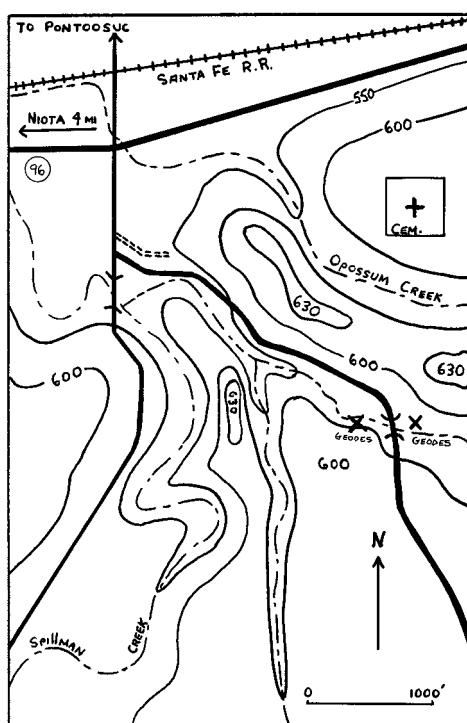


Dallas City Geode Location

WARSAW, area rd. cuts, pits quarries, gravels, banks along regional creeks and streams (see map)—geodes.



Warsaw



East Branch Spillman Creek, Pontoosuc

## A Location Guide for Rock Hounds in the United States

### HARDIN COUNTY

CAVE-IN ROCK: ① area Fluorspar mines, and ② NW 4½ mi., mines—**Barite**, **Calcite**, **Cerussite**, **Chalcopryrite**, **Fluorspar**, **Galena**, **Pyrite**, **Silver**, **Smithsonite**, **Strontianite**, **Witherite**; ③ the Minerva No. 1 Mine, area minerals and also noted fluorescent minerals—**Alstonite**, **Barite**, **Strontianite**.

ELIZABETHTOWN, area—**Aragonite** (fluorescent)

ROSICLARE: ① area mines, especially Ozark Mahoning mine—**Calcite** crystals, **Fluorite** (blue, yellow, purple, clear), **Sphalerite**; ② the Empire and Fairview mines—**Fluorite**, **Galena**, **Pyrite**; ③ E, numerous mines—**Cerussite**, **Chalcopryrite**, **Fluorspar**, **Galena**, **Pyrite**, **Silver**, **Smithsonite**, **Witherite**; ④ N 0.8 mi. on Rte. 1 from Rte. 146 jct., then W on gravel rd. 2 mi. to the Mahoning Mine No. 3, on dumps—**Fluorite** crystals; ⑤ Fairview Landing, area mines—**Cerussite**, **Chalcopryrite**, **Fluorspar**, **Galena**, **Pyrite**, **Silver**, **Smithsonite**, **Witherite**. This Fluorspar region extends W into Pope Co.

### HENDERSON COUNTY

TERRE HAUTE, area gravels, pits, mine dumps—*Mason Creek fossils*.

### HENRY COUNTY

CORDOVA, Mississippi R. banks N through Whiteside, Carroll, and Jo Daviess counties to East Dubuque (actually on both sides of the river to include AI) —**agate**.

GALVA, N, at Bishop Hill, area—**agate**, **jasper**.

### JEFFERSON COUNTY

MT. VERNON, W 9½ mi. on US 460 from jct. with Int. 57, area cr. gravels (about 3½ mi. E of Ashley, Washington Co.), occasional—**Diamond**.

### JO DAVIESS COUNTY

GALENA: ① area mine dumps—**Cerussite**, **Galena** (cubes, coated with Marcasite), plume **Marcasite**, **Pyrite**, **Sphalerite**; ② NE 20 mi., many regional mine dumps—**Calcite** crystals, cockscomb **Marcasite**, **Lead-Zinc** minerals.

### McDONOUGH COUNTY

MACOMB, area stream and cr. gravels, occasional—**Diamond**.

## Illinois

### PIKE COUNTY

PERRY, 2 mi. N of town in McKee Cr., S of Hwy. 104 (about  $\frac{1}{2}$  W. of Hwy. 107 (see map) —**geodes** (lined pink scalenohedral **Calcite** and occasionally **Sphalerite**).

### POPE COUNTY

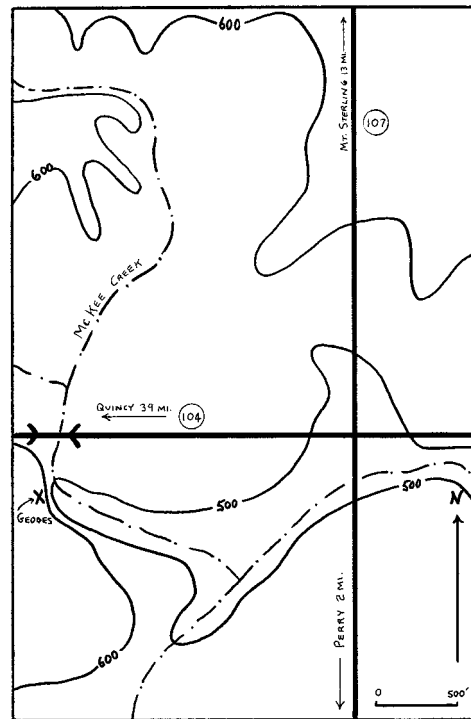
AREA, mines, including the Pittsburg, McClellan, etc.—**Cerussite**, **Chalcopyrite**, **Fluorite**, **Galena**, **Pyrite**, **Silver**, **Smithsonite**, **Witherite**.

### PULASKI COUNTY

GRAND CHAIN, in RR cut mi. to NE—brown **jasper**.

### RANDOLPH COUNTY

SPARTA: ① area mine dumps, pits, etc.—**Pyrite** disks (radiating); ② W, on dumps of numerous mines—**fossil blastoids**, etc.



South Perry Geodes

### UNION COUNTY

ANN, JONESBORO, WESTLAKE, regional deposits with large production and refineries at Jonesboro and near Westlake, lesser occurrences elsewhere in area—**tripoli**.

### VERMILION COUNTY

DANVILLE, area quarries in dark shale—**Marcasite** replacement of marine **fossils**.

### WILL COUNTY

LEMONT, area quarries—glistening Quartz replacement **fossils**.

WILMINGTON, regional mines in the coal formations, on dumps—**fossils**, **Marcasite**, **Pyrite**.

## INDIANA

The geologic formations of the Hoosier State are predominantly sedimentary of Ordovician to Pennsylvanian age, that is, from 550 to 330 million years ago, with many Silurian exposures (430 million years old) outcropping east and west across the state in the latitude of Newton and Adams counties. The oldest formations occur in the eastern counties, with the youngest rocks appearing in the southwest. The most important formation is the Mississinewa shale, lowest of the Niagaran series, and loaded with fossils. There are no igneous or metamorphic rock outcrops in Indiana.

The four great periods of glaciations of the Pleistocene period successively smoothed off the irregularities that may originally have existed in the northern counties. The debris pushed ahead by the ice was dropped throughout the central agricultural area, blanketing nearly five-sixths of the state to considerable depths in places. This morainal detritus contains what few gems and minerals there are in Indiana, mainly **agate**, **jasper**, **fossilized corals** and **petrified wood**. **Copper** nuggets have been found scattered over eighteen counties between the eastern and western boundaries and as far south as Vanderburgh Co., brought down by glaciers from the Lake Superior Copper regions. Similarly, cubes of **Galena** also transported by the ice have given rise to many false reports and legends of Lead mines in Indiana.

The moraines of thrice glaciated Morgan Co. yield quartz gemstone pebbles, some Topaz, and now and then bits of Corundum. This and adjoining Brown Co. have also produced an astonishing 30 Diamonds over the last century. These glacial-drift gems were found during gold panning operations in the regional streams that produced small quantities of Gold.

In the central and southern counties are many coal mines containing usual associated mineral of **Goethite**, **Marcasite**, **Pyrite**, **Selenite** and **Sphalerite**. Regional limestone quarries produce some gemmy **Apatite**, **Calcite**, **Glauconite**, **Marcasite**, **Pyrite** and **Quartz**. Now and then **Barite**, **Celestite**, **Dolomite** and **Siderite** can also be found in regional limestone quarries.

### ALLEN COUNTY

FORT WAYNE: ① area farms, as glacial float—**agate**, **jasper**; ② gravels of the Maumee R.—**agate**, **jasp-agate**, **jasper**, **fossil coral**, **petrified wood**.

### BARTHOLOMEW COUNTY

ELIZABETHTOWN, NE 2 mi., at the Meshberger Stone Co. quarry—**Calcite** (fluorescent, UV pink-blue type), **Fluorite**, **Marcasite**.

### BROWN COUNTY

AREA: ① glacial drift gravels throughout Co.—**Corundum**, **Quartz** pebbles, **Topaz**, occasional **Diamond**; ② stream sands, especially of Greenhorn Cr., placers **Gold**; ③ rd. and RR cuts throughout Co., stream beds, banks, cliffs, washes, pits, quarries, etc.—**geodized fossils**, locally termed *Crystal Geodes* which have the shapes of fossil brachiopods, plectyopods, crinoid heads, corals, etc., but do not contain any fossil material.

BEANBLOSSOM (5 mi. N of Nashville), along Beanblossom Cr.—**geodes**.

NASHVILLE, SW 2 mi., in rd. cut on Rte. 46, 100' N of entrance to Brown Co. State Park—**geodes** containing crystallized **Goethite**, prismatic crystals of **Marcasite**, or

## Indiana

**Aragonite** crystals on **Quartz** crystals. (In some geodes, Pyrite has been altered to nearly perfect spheres of Goethite.)

TREVLAC: ① area stream beds, particularly Bear Cr.—**geodes** (Quartz lines); ② gravels of Lick Cr. (about 15 mi. SE of Martinsville in Johnson Co.) —**Diamond**; ③ N, to Yellowwood State Forest, along the Yellowwood Trail—**geodes**.

### CASS COUNTY

LOGANSPOUT, E 2½ mi., the France Stone Co. quarry—**Apatite** (associated with collophane), **Calcite** (crystals with **Marcasite** along cleavage planes), **Pyrite**, **Quartz**.

### CRAWFORD COUNTY

AREA, caves and caverns (some commercial) in limestone formations of the hilly Ohio R. country—**Aragonite**, **Calcite**, **travertine**.

MARENGO, NE edge roof of Marengo Cave—**Aragonite**, **Hydromagnesite**.

WYANDOTTE, just NW, in Wyandotte Cave—**Calcite**, **alabaster**, **flint**, **Epsomite** (beautifully crystallized).

### DEARBORN COUNTY

WEISBURG, area RR and rd. cuts, of Ordovician age—**trilobites fossils** (well preserved).

### DECATUR COUNTY

NEW POINT, N 1 mi., a stone quarry—**Chalcopyrite** (as tiny crystals encrusting blackish dolomite).

### FOUNTAIN COUNTY

ATTICA, S 2½ mi., in a coal mine—**Sphalerite**, associated with notable quantities of Cobalt.

KINGMAN, NE, at the Norgan Company coal mine—**Marcasite**, **Pyrite**.

### HARRISON COUNTY

CROYDEN, area quarries—**Calcite**, **Fluorite**, pink **Dolomite** crystals, **Quartz**.

### HUNTINGTON COUNTY

HUNTINGTON, E edge, in Erie Stone Co. quarry—**Calcite**, **Marcasite** (crystals), **Pyrite** (fine grained), **Quartz geodes** (small), **Sphalerite**.

### KNOX COUNTY

BICKNELL, area coal mines—**Marcasite**, **Pyrite**.

## LAWRENCE COUNTY

AREA: ① all regional stream beds and banks, rd. and RR cuts, pits, excavations, etc., especially around towns of Clearsprings, Erie, Guthrie, Heltonville, Pinhook and Zelma—*Indiana* **geodes**; these geodes contain inclusions of **Quartz** and **Calcite** crystals, **Siderite**, **Sphalerite**, **Goethite**, **Dolomite**, **Limonite**, **Kaolinite**, **Celestite**, **Fluorite** and **chalcedony**; ② Garner Mine Ridge, Sec. 28, T. 4 N, R. 2 W, as a deposit—**Allophane**, **Allophane-Evansite**, **Crandallite**, **Halloysite**; ③ Sec. 28, T. 5 N, R. 2 W, as a deposit—**Hematite**; ④ entire Co. exposures—**fossils**.

BEDFORD: ① N, at community of Oolitic, in exposures of limestone—**oolitic limestone**; ② E, in area cuts, pits, banks—**geodes**; ③ E 6 mi., in Cr. banks—**geodes**; ④ roadcut along State Hwy. 37, 10.5 mi. N, in a 15 ft. cherty layer of limestone, **geodes** (containing **Ankerite**, **Aragonite**, **Goethite**, **Honessite**, **Marcasite**, **Millerite**, **Pyrite**, **Siderite** or **Sphalerite**)

BUDDHA, SE 2 mi., abandoned quarry and cut along the B & O RR—**Barite**, **Calcite**, **Celestite**, **Gypsum**, **Strontianite**.

GEORGIA, W ½ mi., the Nally Quarry—**Barite** crystals, **Dolomite**, **Strontianite**.

GUTHRIE, area excavations, stream gravels, pits, rd. cuts, banks, etc.—**geodes**.

HELTONVILLE: ① area—**geodes**; ② Salt Cr. gravels—**Quartz geodes**.

MEDORA, E 4 mi., in Cr. banks and gravels—**geodes**.

MITCHELL, NE 2 mi., the Lehigh Cement quarry—**Anhydrite** (weak to moderate pink fluorescence), **Gypsum**.

SPRINGVILLE: ① SW 2 mi., the Ralph Rogers Co. quarry—**Allophane**; ② SW 3½ mi., the Webster Quarry—**Barite** crystals.

## MARION COUNTY

INDIANAPOLIS: ① all area Cr. beds—**moonstone**; ② Williams Cr.—**Amethyst**, **Quartz** crystals.

## MARTIN COUNTY

SHOALS, S near Coal Hollow—**Siderite**.

## MIAMI COUNTY

ERIE, area stream banks, rd. and RR cuts, excavations, etc.—**geodes**.

PERU, as morainal deposits—**Diamond**.

## MONROE COUNTY

BLOOMINGTON: ① area quarries, wide variety on minerals—**Fluorite**, a new species **Smytheite** (dark acicular crystals included on peach-colored Dolomite, often as pockets in a greenish matrix); ② N ½ mi., the Bloomington Crushed Stone Co. quarry, 15 recorded species of minerals including—**Aragonite**, **Calcite**, **Barite**, **Strontianite** (as fuzzy white hemispheres on calcite); ③ N 2 mi., in rd. cut on Rte. 37—**Quartz** geodes, with **Aragonite**, **Calcite**, **Pyrrhotite**, **Siderite**.

HARRODSBURG: ① area rd. & RR cuts—**Calcite**, **Dolomite**; ② N on Rte. 37, rd. cuts—**Aragonite**.

STANFORD, S 2.8 mi., the Quimby and Stephen Quarry—**Marcasite**, **Pyrite**.

UNIONVILLE, E ½ mi. on Rte. 45, a quarry—**Barite**, **Dolomite**, **Glauconite**, **Goethite**, **Pyrite**.



## Indiana

### MORGAN COUNTY

AREA: ① all regional stream and Cr. gravels and glacial moraines—**Quartz** pebbles, **Corundum**, rare **Diamond**, **Topaz**; ② Highland Cr. gravels (7 mi. NNW of Martinsville in Johnson Co.) —**Hematite**, **Magnetite**, placer **Gold**, **Pyrite**, **Ilmenite**, **Corundum**, **Garnet**, **Diamond**, **Zircon**. (Diamonds from Indiana's stream gravels, found while panning for Gold in placer sands, have come principally from this county.) ③ surrounding Cr. sands, especially Greenhorn Cr., placers—**Gold**; ④ along Highland Cr., numerous glacial gravel bars—**Quartz** pebbles, **Corundum**, rare **Diamond**, **Topaz**.

MARTINSVILLE, in gravels of Highland Cr. 7 mi. NW—brown chatoyant **Sapphire**.

MORGANTOWN, in Gold Cr. and other small streams through glacial drift—**Sapphire**, **Garnet**.

### OWEN COUNTY

FREEDOM, SW 3 mi., the Hahn Bros. Quarry—**collophane**, **Hematite**.

SPENCER: ① area limestone quarries, Cr. banks, rd. and RR cuts—**Barite**, **Celestite**, **Siderite**; ② NE 3½ mi. in Dunn Limestone Quarry (4 mi. E of jct. of Rte. 46 and a secondary rd. leading toward Gosport) —**Barite**, **Celestite**, **Siderite**.

### PARKE COUNTY

AREA, Coal mines, dumps, seams, banks, cuts, excavations, etc.—**Goethite**, **Marcasite**, **Pyrite**, **Selenite**, **Sphalerite**. (The mines, rd. cuts, banks, etc. of most of central and southern Indiana produce an abundance of these minerals.)

COXVILLE, area coal mines and dumps—**Pyrite**.

SPURGEON, NW 2 mi., the Enos Coal Mine—**concretions** of Iron Sulfides.

### SHELBY COUNTY

NORRISTOWN, W ½ mi., the Cave Stone Co. quarry—**Calcite** (lamellar, Fluorescent, UV pink-blue var.), **Fluorite**, **Marcasite**.

### SPENCER COUNTY

MAXVILLE, W 2½ mi. rd cut on Rte. 70 about 0.2 mi. W of jct. with Rte. 66, encrusting shale above Coal Measure III as Euhedral crystals to 1 mm. dia.—**Copiapite**, with other sulfates (perhaps **Melanterite**, **Coquimbite**, **Siderotil**).

### WARREN COUNTY

RAINSVILLE, W 1½ mi., in bluff along Mud Pine Cr.—**Sphalerite** (in fossil wood preserved by limonite), **Barite**, nodules of **Siderite**, **Marcasite**, or **Pyrite**.

### WASHINGTON COUNTY

PEKIN, W 1¼ mi., an abandoned quarry—**Barite**, **Calcite**, **Selenite**, **Sphalerite** (in vugs, as twinned crystals).

## **A Location Guide for Rock Hounds in the United States**

### **WAYNE COUNTY**

RICHMOND, SE 3 mi., the Debolt Quarry—**Calcite**, **Dolomite**, **Marcasite**, **Pyrite**, **Apatite**, **Barite** (fluorescent), **Goethite** (as red coatings or as pseudomorphs after pyrite).

### **WELLS COUNTY**

BLUFFTON, N 1½ mi., the Erie Stone Co. quarry—**Dolomite**, **Marcasite**, **Pyrite**.

## IOWA

Iowa is primarily a prairie state of moderate relief, with low hills in the unglaciated northeastern section and rich, rolling tablelands interrupted by many streams elsewhere. The highest point in the state is a knoll rising 1,675' above sea level west of Sibley in the northwestern corner of Osceola Co. The present surface features are a result chiefly of the uneven mantling of preexisting indurated rocks by glacial drift, since all of Iowa was included within the region of the Pleistocene glaciers.

For much of the Mesozoic era, and especially during the whole of the Cretaceous period, Iowa lay under a broad shallow, epicontinental sea; therefore, the subsurface formations are dominated by sedimentary deposits. Throughout the state almost any road or railroad cut, erosional gully, cut bank, stream bank, quarry, or other excavation, however shallow, is a promising place in which to look for Quartz family gemstones and fossils. Indeed, beautifully colored silicified colony corals and stromatoporoids are commonly encountered, capable of being cut and polished into unusual gemstone art objects. These gemmy fossils occur principally in Devonian limestone exposures which outcrop over much of Iowa, being most typical and best known around Iowa City.

### ADAIR COUNTY

ORIENT, 5 mi. N and E in washes and clay hillsides—**agate**, **Quartz** crystals, **petrified wood**.

### ALLAMAKEE COUNTY

HARPERS FERRY, area Mississippi R. mud beds, in mussel shells—**pearls**.

LANSING, an abandoned nearby mine (make inquiry) —**Cerussite**.

NEW GALENA, area mines and dumps—**Galena**.

### APPANOOSE COUNTY

CENTERVILLE: ① area quarries—**Gypsum**; ② SE, on all regional coal mine dumps (many) —**Pyrite**, **Selenite**.

### BLACK HAWK, BREMER, BENTON COUNTIES

AREA, any limestone quarry, rd. or RR cut, stream bank, gravel bar, or pit—*Coldwater* **agate** (nodular, fortification type, gem quality; filled with blue, gray, pink, amethystine centers, or crystals).

LaPORTE CITY, in gravel pit—**agate**.

WATERLOO, at Burton Ave. quarry and Mitchell Ave. gravel pit near Cedar R. —**geodes**.

### BUCHANAN COUNTY

BRANDON, in Cr. bed both inside and outside of town—**geodes**, **fossils**.

## A Location Guide for Rock Hounds in the United States

### BUTLER COUNTY

SHELL ROCK, just N at gravel pit—*Lake Superior* **agates**.

### CLAYTON COUNTY

AREA, many mines and dumps in the Lead and Zinc region—**Lead** minerals (mainly **Galena**), **Limonite**, **Pyrite**, **Sphalerite**.

GUTTENBERG: ① area mines—**Galena**, **Smithsonite**; ② both N and S of town, in washes, cut banks, etc.—**agate**, cave **onyx**; ③ S of town, in washes, etc.—**jasper**.

### CLINTON COUNTY

BUENA VISTA, area mines—**Galena**, **Smithsonite**.

### DE MOINES COUNTY

BURLINGTON: ① all area Mississippi R. gravels and commercial dredging operations—*Lake Superior* **agates**; ② all regional Cr. beds—*Lake Superior* **agates**, **Quartz** crystals, **crystal geodes**.

### DUBUQUE COUNTY

DUBUQUE: ① all regional Lead and Zinc mines of Co.—**Galena**, **Cerussite**, **Limonite**, **Sphalerite**; ② all Mississippi R. gravels and commercial dredging operations—*Lake Superior* **agates**, **moss agate**, **moonstone**, **jasper**, **petrified wood**, **fossils**, **Diamond** (rare), occasional **oolitic agate**.

### FAYETTE COUNTY

AREA, all regional stream and Cr. gravels—*Lake Superior* **agates**.

### FRANKLIN COUNTY

CHAPIN: ① in area limestone quarry—**geodes** (crystal lined, to baseball sized); ② N to Sheffield along US 65—**geodes**.

SHFFIELD, in fields behind quarry—**geodes**.

### FREMONT COUNTY

AREA, all Devonian limestone outcrops, gemstone quality—**fossil corals** and **stromatoporoids**.

### HAMILTON COUNTY

STANHOPE, N to second cross rd., turn W and then N to a bridge, cross and park, area of Bells Mill, in veins and beds of sedimentary rocks—cone-in-cone **Calcite** (coal black, to 12" high).

## Iowa

### HARDIN COUNTY

ELDORA: ① are limestone quarries—crystal **geodes**; ② area stream gravels—**geodes**.

HUBBARD, S 5 mi. on Hwy. 65, then W 4 mi. on paved rd., turn S to next intersection and go 6 mi. W, then S to a quarry just N of the next intersection, in brown limestone formation—**geodes** (crystal lined).

STEAMBOAT ROCK, along Iowa R.—Quartz **geodes**.

UNION: ① all area quarries—crystal lines **geodes**; ② regional stream beds—**geodes**.

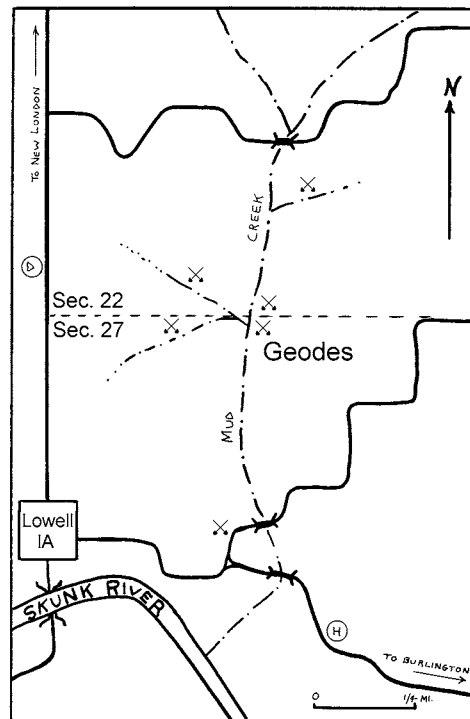
### HENRY COUNTY

AREA, the Skunk R. gravel bars from Rome SE to Lowell—*Keokuk geodes*, **petrified corals**, area deposits of brown **Limonite**.

LOWELL: ① in the southern part of Sec. 27 at the W end of the bridge in exposure of the Warsaw fm.; ② in the stream bed of the Mud Cr. In the N part of Sec. 22—*Keokuk geodes*, up to 24" dia. (see map).

MT. PLEASANT: ① S edge in exposures of Mississippian limestone—gemmy banded colored **chert**, Quartz crystal **geodes**; ② in gravels of Big Creek and Skunk R.; ③ and in pits—**agate**.

NEW LONDON, regional stream beds, banks, cuts, etc.—**agate**, **jasper**.



### JACKSON COUNTY

AREA, gravel pits—**agate**, **carnelian**.

BELLEVUE, Mississippi R. gravels and commercial dredging operations—*Lake Superior agates*, **carnelian**, **moss agate**, **moonstone**, **jasper**, **petrified coral**, etc.

IRON HILLS, area deposits—**Limonite** and **Hematite**.

### JASPER COUNTY

MONROE, area mines, used in the manufacture of metallic paints—**Hematite**.

### JOHNSON COUNTY

CORALVILLE (suburb of Iowa City): ① area farms—**silicified corals**; ② area quarries—**silicified** and **calcified corals**.

### LEE COUNTY

DONNELLSON, in gravel pit to S—**geodes**.

FARMINGTON, area gravel pits—*Keokuk geodes*, *Hexagonaria corals*.

## A Location Guide for Rock Hounds in the United States

KEOKUK: ① in all tributaries of the Des Moines R. NW to Ottumwa in Wapello Co.; ② along the Des Moines R. in gravel bars, banks, bluffs, etc.; ③ all regional quarries, gravel pits, rd. and RR cuts, excavations between the Mississippi R. at Keokuk and Ottumwa—*Keokuk geodes*, *Hexagonaria corals*. The famed Keokuk Geode Beds outcrop in a broad area around the jct. of the Des Moines and Mississippi R., where the states of Illinois, Iowa and Missouri come together. The geodes occur in the Warsaw formation and may contain any or any combination of the following: **Amethyst**, **Ankerite**, **Aragonite**, **Calcite** (pink, white), **chalcedony**, **Dolomite**, **Goethite**, **kaolinite**, **Limonite**, **Marcasite**, **Millerite** (as brassy hairlike inclusion in calcite or as woven masses on top of calcite crystals), **Pyrite**, **Sphalerite**. These geodes vary in size from golf ball sized to beach ball sized with the most common being 4" to 6".

### LINN COUNTY

CEDAR RAPIDS, entire Co. area stream gravels—**silicified** and **calcified corals**.

### MAHASKA COUNTY

OSKALOOSA, area limestone quarries—**concretions** (coated with white Calcite crystals), **concretions** containing Dolomite crystals (bronze to black, iridescent).

### MAHASKA, WAPELLO, JEFFERSON, HENRY COUNTIES

AREA, extending SE from Oskaloosa to its jct. with the Skunk R., the bed, banks, and gravels of Cedar Cr. **silicified** and **calcified corals**.

### MARION COUNTY

KNOXVILLE: ① regional coal mine dumps—**concretions** (containing crystals of Barite, Calcite, Dolomite), **Siderite**; ② SE 8 mi. on Hwy. 60, turn E  $\frac{3}{4}$  mi. to the Pershing Mine—**Calcite** crystals (very long), **Pyrite** crystals (rare).

### MONROE COUNTY

ALBIA, entire region S through Monroe and Appanoose counties to Coal City, innumerable coal mine dumps—**Pyrite**, **Selenite** crystals.

LOVILLA, all area mine dumps—**Calcite** crystals (honey-colored or with dark hairlike goethite needle inclusions), **fossils**.

### MONTGOMERY COUNTY

RED OAK, W on Hwy. 34, 1 mi., turn N at motel onto country rd. to an area a short distance N of some large structures on the E, continue to large limestone quarry W of rd.—gemmy **chert**, locally termed *Protozoa agate*.

### MUSCATINE COUNTY

MUSCATINE: ① center of Mississippi R., pearl dredging operations with a second center at McGregor in Clayton Co. far to the N, in mussel shells—gem **pearls** (pink, gold, pigeon blood); ② S of town, gravel pits in a large alluvial flat—**agate** (Lake Superior, moss,

## Iowa

sagenitic), **chalcedony**, **Quartz** crystals; ③ S on US 61 through town past a pearl button factory and mill, turn E on Oregon St. to Steward St. gravel operations—*Lake Superior* **agates**, **silicified** and **calcified corals**, moss **agate**, **jasper**, **petrified wood**, **moonstone**.

### PALO ALTO COUNTY

EMMETSBURG, regional stream gravels—**agate**, **jasper**, **petrified wood**.

GRAETTINGER, regional stream gravels—**agate**, **jasper**, **petrified wood**.

### POLK COUNTY

DES MOINE

### STORY COUNTY

AMES, area stream gravels, quarries, excavations—**chalcedony**, **fossils**.

NEVADA, in Indian Cr. gravels to E—**agate**.

### VAN BUREN COUNTY

FARMINGTON, area stream beds, banks, excavations, etc.—**Quartz crystal geodes**.

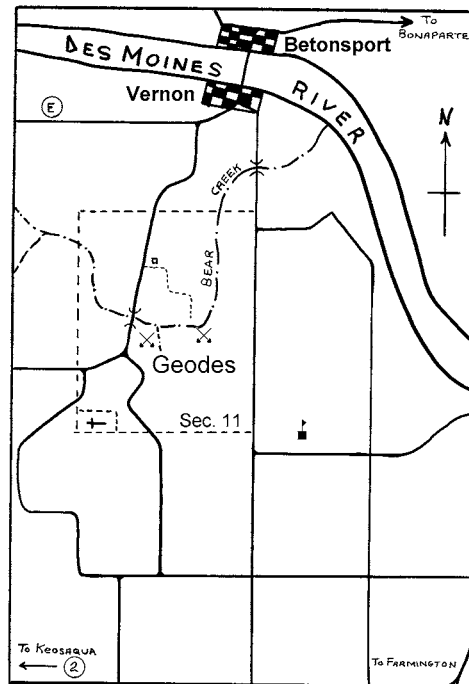
VERNON, south out of town, geodiferous outcroppings downstream from bridge area along Bear Cr (see map)—*Keokuk geodes* (see map).

### WASHINGTON COUNTY

KEOTA: ① cold water agate at Kaser Construction Co. quarry; ② at Ollie 10 mi. S on Hwy. 77, then W 4.6 mi. on Hwy. 78 past church, N ½ mi. and W 1 mi., and then N 0.3 mi. to quarry—**agate**.

### WEBSTER COUNTY

FORT DODGE, regional quarries—**Gypsum**.



## KANSAS

As a mineral producing state, Kansas is seldom appreciated even by its own residents. Economically, the mineral industry is second only to agriculture, and the state outranks most others except California in its mineral production. However, the mineral wealth derives primarily from Coal, Zinc, Lead, Gypsum and volcanic ash, in this order, now being superseded by great new reserves of oil and natural gas. As a collector, Kansas is likely to be bypassed by the traveling rock hunter, although in-state collectors find many interesting specimens worthy of being added to their collection.

Western Kansas comprises the rather rugged semiarid Great High Plains. The land surface is thinly covered by Pleistocene and Recent gravels, with extensive Pliocene lavas capping the buttes and mesas. Few gemstones, but an enormous variety of fossil vertebrate bones weather from the cut banks and washes.

About 1,750,000 years ago northern Kansas was invaded by the Kansan glacier, second of the four Pleistocene ice advances, as far south as the Kaw Valley and the Little Blue river. In this region's gravel pits, quarries, and morainal deposits can be found a variety of glacial drift gemstones. By contrast, southeastern Kansas constitutes an extension of the Ozark Plateau into what is termed the *Tri-State District*, where Kansas, Missouri and Oklahoma join boundaries. This district is interesting to the mineral collector because of its many highly productive Zinc and Lead mines. Dumps rising 100' high are known as chat mountains and produce abundance of desirable mineral specimens of **Barite**, **Calcite**, **Chalcopryite**, **Cerussite**, **Dolomite** crystals, **Galena**, **Pyrite** and **Sphalerite**.

To be noted on geologic maps is the widespread Ogallala formation (Tertiary), embracing the counties of Clack, Ellis, Logan, Ness, Rawlins and Wallace. In this formation are found **dendritic opal**, white translucent **opal** as irregular masses or nodules, **opalized bones**, and much **petrified wood**. From the western Cretaceous chalk beds exposed in the counties of Cherokee, Logan, Norton and Phillips, one can gather colorful gemmy **chert** and **jasper**. Anderson, Brown, Chase and Franklin counties yield fine crystals of **Barite**. In general, the surfaces of draws, washes, and sandhills of all the western half of Kansas produce **agate**, **chalcedony**, **chert**, **jasper** and **petrified wood**, although very little is good quality material, especially along the Smoky Hill River in Gove, Logan, Trego, and Wallace counties. Regional outcrops of shale disgorge **Selenite** crystals.

### ANDERSON COUNTY

GARNETT, N 3 mi. on US 59, a RR quarry—**crystals**, **fossils**.

### BARBER COUNTY

AETNA: ① area draws, washes, etc.—**agate**, **agatized wood**; ② along the Medicine Lodge R. and on adjoining buttes and terraces—agate, jasper, agatized wood. (gemstone collecting is good over all regional surfaces all the way to Kiowa in the SE corner of the Co. and also includes chert, chalcedony and petrified wood.)

KIOWA, along Medicine Lodge R to Aetna—**agate**, **agatized wood**; **jasper**.

MEDICINE LODGE, 10 mi. S—**petrified wood**.

SUN CITY, area Gypsum quarries and mines, widespread—**Gypsum** and **Calcite** crystals.



## Kansas

### BARBER-COMANCHE COUNTIES

area, all regional Gypsum quarries and mines, widespread—**Gypsum** and **Calcite** crystals.

### BOURBON COUNTY

FORT SCOTT, on Marais des Cygnes, in Pennsylvanian *Coal Measures* as interstratifications—**Siderite**.

### BUTLER COUNTY

DAVID CITY, in breaks and cut banks along the Walnut R. in S section of the Flint Hills—crystal lines **geodes**.

EL DORADO, in large rd. cut near the Butler-Greenwood Co. line—**geodes**.

### CHASE COUNTY

STRONG CITY, area gravel pits—**Chalcopyrite**, **geodes** (Quartz crystal lines).

### CHEROKEE COUNTY

AREA of the Tri-State Dist., Badger, Peacock, Galena and Lawton Dist., very many huge Lead-Zinc mines with towering dumps—**Galena**, **Sphalerite**, **Barite**, **Calcite**, **Cerussite**, **Marcasite**, **Pyrite**, **Smithsonite**.

BAXTER SPRINGS, area mines with ore bodies occurring in Mississippian limestone with outcrops predominantly in the very corner of Kansas—chert with **Galena**, **Sphalerite** and **Pyrite**.

COLUMBUS, all area coal mines—fine crystals of **Pyrite**, **Calcite**, **Dolomite**, **Marcasite** and **Sphalerite**.

GALENA, many area mines and huge dumps—**Calamine**, **Galena**, **Hydrozincite**, **Marcasite**, **Pyrite**, **Sphalerite**.

WEST MINERAL, many area mines—fine crystals of **Pyrite**, **Calcite**, **Dolomite**, **Marcasite** and **Sphalerite**.

### CLARK COUNTY

ASHLAND, N, in steep hills of Bluff Cr. and near Mt. Casino—moss **agate**, moss **opal**, **jasper**.

### CLOUD COUNTY

CONCORDIA: ① N, in area called Old River Bed—**agate** (clear, mossy, banded), **jasper**, **petrified wood**; ② all cut banks, tributaries, and gravels of the Republican R.—**agate**, **jasper**, **petrified wood**.

### COMANCHE COUNTY

AREA, N part of Co., extending E to 12 mi. N of Sun City in Barber Co., all along the valley of Salt Fork Cr., as beds—**Gypsum**.

## A Location Guide for Rock Hounds in the United States

WILMORE, beds extending from 1 mi. N of town to 5 mi. S, commercially exploited—**volcanic ash**.

### COWLEY COUNTY

ROCK, area draws, gullies, cut banks, and regional Cr. and stream beds—crystal lined **geodes**.

### DICKINSON COUNTY

AREA, gravels of the Smoky Hills R.—gem **agatized wood**.

HOPE, area quarries—**Gypsum** and **associated minerals**.

SOLOMON, area quarries—**Gypsum**, **Calcite**, etc.

### ELLIS COUNTY

HAYES, W, in valley of the Smoky Hills R., as massive outcropping beds—*Niobrara* **chalk**.

YOCEMENTO, local cement plant quarry—**rock wool**.

### ELLSWORTH COUNTY

CARNEIRO: ① area know locally as the Mushroom Rocks—**Pyrite** concretions; ② S 5 mi., in Cretaceous outcrops (banks) of the Smoky Hill R., in lignite beds—**Amber**. The old collection area is under waters of the Kanopolis Reservoir, but hunting may successfully be done in lignite beds outcropping back from the impounded waters Also **Barite** roses.

ELLSWORTH, area quarries and mines—**Halite**.

KANOPOLIS, area quarries and mines, especially to the E and SE, and as local deposits—**Halite**, **volcanic ash**.

MORRILL, NW 2 mi., in banks of Pony Cr. in veins in Permian shales—**Celestite**.

### FORD COUNTY

DODGE CITY, NE 7 mi., a quarry—**rock wool**.

### FRANKLIN COUNTY

OTTAWA: ① area Rose Quarry—**fossil plants, crystals**; ② S 4 mi. on US 59 to the Buildex Quarry—**fossil plants, crystals**.

### GEARY COUNTY

JUNCTION CITY: ① countywide area sand and gravel pits—gem **agatized wood**; ② regional rd. and RR cuts—**geodes** (quartz and calcite lines); ③ gravels of Republican R.—**agate, jasper**.

### GOVE COUNTY

QUINTER: ① area surrounding town—**concretions** (calcite cemented); ② SW 10 mi., on E side of a S-flowing tributary of Hackberry Cr., as deposit—**volcanic ash**.

## Kansas

### HARPER COUNTY

ANTHONY, area mines—**Halite**.

HARPER, N, along the Chikaskia R. in gravel bars—**agate, jasper, petrified wood**.

### JEFFERSON COUNTY

McLOUTH, area glacial moraines and gravel drifts—*Lake Superior* **agate, chalcedony, jasper, petrified wood**.

### JEWELL COUNTY

BURR OAK, area deposits—**volcanic ash**.

### KINGMAN COUNTY

KINGMAN, area mines—**Halite**.

### KIOWA COUNTY

GREENSBURG, E on US 54 to the Kimberley Ranch—**meteorites** of the stony iron type called *pallasites*.

### LOGAN COUNTY

ELKADER, up and downstream of the Smoky Hill R., weathered out of chalk bluffs—moss **agate**.

### McPHERSON COUNTY

FREEMOUNT (just S of Rte. 4), area—**septarian nodules**.

ROXBURY, just outside of town at Roxbury Hill—**septarian nodules**.

### MARION COUNTY

FLORENCE, area gravel pits—crystal lined **geodes**.

### MARSHALL COUNTY

BLUE RAPIDS: ① gravel beds of the Big Blue R., extending beyond Co. boundaries, all its tributaries, and on all surrounding hillsides and in washes—**agate, chalcedony, chert, jasper**; ② S, area mines—**Gypsum**.

### MEADE COUNTY

FOWLER, W 7½ mi., largest producing area in Kansas—**volcanic ash**.

## A Location Guide for Rock Hounds in the United States

### MICHELL COUNTY

BELOTT, area of the Blue Hills in W section of Co.—**septarian nodules**.  
GREAT SPIRIT SPRINGS, surrounding area—banded **travertine**, **tufa**.

### MONTGOMERY COUNTY

INDEPENDENCE, local cement plant quarry—**rock wool**.

### NEOSHO COUNTY

CHANUTE, local cement plant quarry—**rock wool**.

### NESS COUNTY

RANSOM, to NE in Seybert sand pit near Smoky Hill R. bridge at Hwy. 283—**agate**, **petrified wood**.

### NORTON COUNTY

DELLVALE, area deposits, mines—**volcanic ash**.

NORTON, E, to vicinity of Calvert: ① area deposits—**volcanic ash**; ② area land surfaces, washes, draws, etc.—**concretions** (calcite cemented).

### OSBORNE COUNTY

HOBBIE LAKE, S 1 mi., area—gemmy **septarian nodules** (filled with yellow calcite veining).

OSBORNE, S 2 mi., area—**septarian nodules** (filled with yellow calcite veining).

### OTTAWA COUNTY

ADA, area to N and NW—**petrified wood**.

MINNEAPOLIS, SW 2½ mi., largest in state—**giant concretions**.

### RENO COUNTY

ARLINGTON, area of central part of Co., largest salt producing companies mines—**Halite**.

### RICE COUNTY

LYONS, area mines—**Halite**.

STERLING, area mines—**Halite**.

### RILEY COUNTY

BALA, area volcanic plug—**Magnetite**.

STOCKDALE, area igneous rock exposures, as granules—**Pyrope** garnet.

## Kansas

### SALINE COUNTY

SALINA, W about 7 mi., in old Saline Quarry (2 mi. W of Bavaria) —**Barite** roses.

### SHAWNEE COUTNY

TOPEKA, in glacial moraines near city—*Lake Superior* **agates**.

### SHERIDAN COUNTY

QUINTER, in limestone at Saline R. and S fork of the Solomon R. and in outcrops on US 24 from Hoxie to Hill City—**moss agate**.

### TREGO & WALLACE COUNTIES

AREA, valley sand and gravel beds, pits, etc.—**geodes** (chalcedony, calcite, quartz).

### WALLACE COUNTY

SHARON SPRINGS, in sand pit to N—**agate, petrified wood**.

WALLACE, S 5 mi., in rd. cut—moss **opal** (milky with manganese dendrites; scenic).

### WASHINGTON COUNTY

WASHINGTON, NE, along Mill Cr., in Permian outcrops—**Celestite**.

### WILSON COUNTY

BUFFALO, along the Verdigris R.—**agate, jasper, chalcedony, petrified wood**.

### WOODSON COUNTY

YATES CENTER, S 8 mi., area—**Amethyst, Quartz** crystals.

### WYANDOTTE COUNTY

BONNER SPRINGS, in the Lone Star Quarry—Quartz crystal **geodes**.

## KENTUCKY

Minerals are the major contribution to the Blue Grass State's economy. These consist mainly of coal, limestone, fluorspar, rock asphalt, gravel and sand—all products of sedimentation. The state is part of a very old land surface, lying within the eastern uplifted Appalachian Plateau and the westerly Interior Low Plateaus. During most of the Paleozoic and Mesozoic eras, Kentucky lay beneath the sea, and thus its rock formations are predominantly sedimentary shales, sandstones, limestone, etc., with almost no igneous or metamorphic intrusions.

The rugged hardwood timbered Cumberland Plateau that comprises part of eastern Kentucky rises to 4,100' in Big Black Mt., highest of numerous peaks that straddle the Virginia border in the range of the same name along the boundaries of Bell and Harlan counties. This plateau breaks toward the *Bluegrass* heartland in the Pottsville Escarpment, marked by a belt of rounded shale hills known as the *Knobs*. To the west in the low Mississippian Plateau, a region of rocky hillsides denotes an extensive area of underground streams which have carved such great caverns as the famed Mammoth Caves in the limestone sub-strata.

The region lying east of the Tennessee River emerged from the Paleozoic seas toward the close of the Mississippian period some 340 million years ago. Outcropping rocks in this region range from middle Ordovician to the Pennsylvanian, containing few collectable minerals and gemstones but great amounts of fossils. Nevertheless, wherever the Fort Payne and Warsaw formations of the Mississippian Period outcrop, gemmy geodes appear abundantly. These interesting nodules are found in many sizes from walnut to beach ball. Some contain beautifully banded chalcedony, while others have interiors lined with crystals of Calcite, Celestite, Fluorite, Goethite, Pyrite, and Quartz. The most productive area for geodes surrounds the *Bluegrass*, southward into Tennessee. Throughout this considerable region, investigation of creek and stream beds & banks, runs & rills, rd. and RR cut banks, excavations, almost always reveals an abundant supply of geodes.

The lands lying west of the Tennessee R., known as the Purchase Region, did not emerge from the sea until Tertiary times only 40 to 50 million years ago. This region remained for long ages as the head of a great embayment extending north from the ancient Gulf of Mexico, thus receiving largely estuarine deposits. Cretaceous and Tertiary formation are developed principally in the Jackson Purchase area, while Pleistocene alluvium occurs plentifully in the valleys of western Kentucky and along the Ohio R. and its tributaries.

### ADAIR COUNTY

AREA, countywide creeks, rivers, beds and banks, rd. cuts exposing the Warsaw formation—**Quartz** and other **geodes**.

COLUMBIA, the Shamrock Stone Co. limestone quarry—**geodes**.

### ALLEN COUNTY

SCOTTSVILLE, area quarries in the Warsaw formation—**Quartz geodes**.

### BALLARD COUNTY

WICKCLIFF: ① E, in a ravine as a deposit—**yellow ocher**; ② in gravel pit—**jasper**.

## Kentucky

### BARREN COUNTY

CAVE CITY, area commercial quarries, as pink and yellow gemmy varieties—**marble**.

GLASGOW, in steam to E.—**geodes**.

### BATH COUNTY

OWINGSVILLE, area iron mines—**Hematite**.

### BOURBON COUNTY

MILLERSBURG, area mines—**Barite, Galena**.

### BOYD, CARTER, GREENUP COUNTIES

ASHLAND (Boyd Co.): These counties in the extreme NE corner of Kentucky comprise a considerable mining district for iron ores, mines and dumps producing as the original material—**Siderite**.

### BOYLE COUNTY

DANVILLE: ① many area mine dumps—**Barite**; ② the Caldwell Quarry—**Fluorite** (fluorescent).

### CALDWELL COUNTY

AREA, many mines throughout W part of Co.—**Barite, Calcite, Fluorite**, etc.

CRIDER, N, in fault exposures—**Fluorite**, etc.

FREDONIA, area mines—**Barite**.

PRINCETON, area quarries—**Calcite, Fluorite**.

### CALDWELL-CRITTENDEN COUNTIES

AREA, many well-known old mines such as Ashbridge, Glendale, Tabor, and other regional mines back of the Ohio R.—**Galena, Fluorite**.

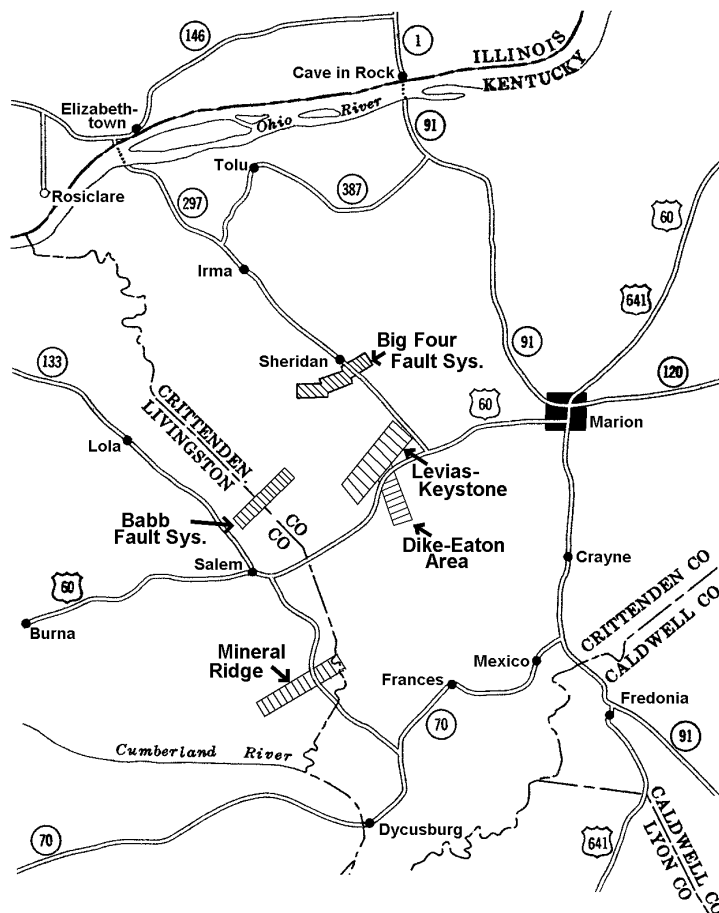
### CARLISLE COUNTY

LAKETON, in bluffs of a nearby Cr., a deposit—**yellow ocher**.

### CRITTENDEN COUNTY

AREA along the Ohio R. (KY side similarly famed Fluorite region of IL), many Fluorite mines, such as the Old Jim Brown, Hodge, Columbia, etc.—**Barite, Calcite, Dolomite** crystals, **Fluorite** (every color), **Galena, Marcasite, Pyrite, Smithsonite, Sphalerite**.

## A Location Guide for Rock Hounds in the United States



MARION: ① N 3 mi. from jct. of US 60 and Rte. 1668, on E side of rd., the Crittenden Springs fault—**Barite**, **Calcite**, **Dolomite** crystals, **Fluorite** (every color), **Galena**, **Marcasite**, **Pyrite**, **Smithsonite**, **Sphalerite**; ② NW, off Rte. 387 at Hickory Cane Mine dump (W of rd. and up Caney Cr. from the Glendale Baptist Church on Glendale Church rd.)—**mica**, **Fluorite**, **peridotite**; ③ from jct. of US 60 and Rte. 855, go 1 mi. left to old Kirk Mine—**Barite**, **Calcite**, **Dolomite** crystals, **Fluorite** (every color), **Galena**, **Marcasite**, **Pyrite**, **Smithsonite**, **Sphalerite**; ④ SW 5 mi., as scattered deposits—**ocher**.

MEXICO, SW on US 70, turn left at the Crider Fluorspar Co. sign 0.8 mi. from town, then left at 0.3 mi. (1.1 from town) across RR to the Pigmy Fluorspar Mine (open pit)—**Barite**, **Calcite**, **Dolomite** crystals, **Fluorite** (every color), **Galena**, **Marcasite**, **Pyrite**, **Smithsonite**, **Sphalerite**.

SHERIDAN, the Big Four Fault, NE to SW of Rte. 297 (the La Rue, Cartwright, Macer, etc. Lead mines)—**Anglesite**, **Cerussite**, **Fluorite**, **Galena**, **Pyromorphite**, **Smithsonite**, **Smoky Quartz** crystals.

### ELLIOTT COUNTY

AREA, igneous outcrops in the Little Sandy R. area—**Apatite**, **Almandite** garnets, **Chromite**, **Diopside**, **Enstatite**, **Feldspar**, **Quartz**.

ISONVILLE, in peridotite outcrops along the banks of Ison Cr., especially just W of confluence with Johnson Cr. and across from the Ison Johnson school—**Enstatite**, **Ilmenite**, **Magnetite**, **mica**, **Olivine**, **peridotite**, **Pyrope** garnet, **serpentine**.



## Kentucky

### FAYETTE COUNTY

LEXINGTON: ① area mines—**Barite**; ② vicinity of Morton's Mill, mine—**Fluorite**; ③ area of Elk Lick Falls (Petrified Falls), a large deposit—cave **onyx** (banded in brown and yellows).

### FRANKLIN COUNTY

FRANKFORT, area of Kissinger, as gangue mineral in the Clerk vein—**Barite**, with **Galena** as main ore.

### GARRARD COUNTY

LANCASTER: ① N on Rte. 52 on Boone Cr., in Barite prospect—crystal **Barite**, **Calcite**, **Fluorite**, **Sphalerite**; ② W 4 mi., a deposit—**Barite**.

### GRAVES COUNTY

FARMINGTON, HICKORY, SEDALIA, VIOLA, regional gravel and clay pits, as pebbles—**agate**, **chalcedony**, **chert**, **jasper**, **Quartz**, **silicified wood**.

HARD MONEY, S 2½ mi., small quantities in gravel beds—**Hematite**.

MAYFIELD, SW 5 mi. on US 45 (and just N of Pryorsburg), area clay pits, as pebbles—**agate**, **chalcedony**, **chert**, **jasper**, **Quartz**, **silicified wood**.

### HARDIN COUNTY

ELIZABETHTOWN, area quarries in the Warsaw formation—**Quartz geodes**, etc.

VINE GROVE, area excavations, pits, quarries, cut banks exposing the Warsaw formation—**Quartz geodes**.

### HARRISON COUNTY

CYTHIANA, SE 3 mi., in Ordovician limestone as a deposit—**Barite**.

LAIR, area mines and pits—**Barite**, **Galena**.

### HART COUNTY

ROWLETTS, area rd. cuts, banks, stream gravels—banded **Calcite onyx**, **petrified wood**.

### JEFFERSON COUNTY

LOUISVILLE: ① area beds and banks of the Ohio R.—**fossil coral**, **petrified wood**; ② N end of Louisville-Jeffersonville bridge—**fossil coral**, **petrified wood**; ③ E via US 60: (a) By-pass 60 to Grinstead Ave., turn right to quarries N of the by-pass near jct.; (b) first left turn of Grinstead Ave., a quarry; (c) across the by-pass at E end of park—**silicified fossils**, **oolites**; ④: (a) rd. cuts along US 42; (b) the County Quarry (reached from Grinstead Ave. N from By-pass 60 to Stilz, then left to Frankfort St., and Hillcrest to US 42), quarry is 2½ mi. from jct. —**silicified fossils**; (c) rd. cuts N of the quarry—**silicified fossils**; ⑤ Coral Turnpike, an exposure—**silicified corals**.

## A Location Guide for Rock Hounds in the United States

VALLEY STATION, S to Muldraugh's Hill (on or near Co. line.; reached also from West Point in Bullitt Co.), numerous roadside exposures of the Warsaw formation—**Quartz geodes**.

### LINCOLN COUNTY

AREA, countywide exposures of the Fort Payne and Warsaw formations—**geodes** (containing **Calcite Celestite, Goethite, Fluorite, Quartz** and **Pyrite**; some with botryoidal and banded **chalcedony**), clear **Quartz** crystals.

ROWLAND, N, on rural rds. to just S of Rte. 52, on Boone Cr. near confluence of Hanging Rock Cr. and Dix R., numerous pits and prospects—**Barite, Calcite, Fluorite, Sphalerite**.

STANFORD: ① S 6 mi. via Rte. 78 to near hall's Gap, bed and banks of the Green R.; ② along the S and E banks and in the Green R. bed from Green River Church SW to New Bethel Church—**geodes** (some having pink Calcite well terminated crystals or Quartz crystals).

### LIVINGSTON COUNTY

BIRDSVILLE, nearby on Rte. 137, two abandoned quarries—**Calcite, Dolomite** crystals, **Fluorite, Quartz**.

BURNA, area sandstone quarries—**Calcite, Fluorite, Quartz** crystals.

CARRSVILLE: ① area fluorspar mines—**Barite, Calcite, Dolomite** crystals, **Fluorite** (various colors), **Galena, Marcasite, Pyrite, Smithsonite, Sphalerite**, with some **Lead-Silver minerals** in Fluorspar; ② E 1 mi. and S of Rte. 387, the Ellis Mine—**Calcite, Fluorite, Quartz** crystals, etc.; ③ E, on N side of Rte. 3872, a fault near the Ohio R. exposing brecciated sandstone—**Fluorite** cubes.

JOY, area fluorspar mines—**Calcite, Fluorite, Galena, Quartz**.

SMITHLAND, N at Dyer Hill fluorspar mine, in cavities in a massive fluorspar vein in the Dyer Hill fault—**Calcite, Fluorite, Galena, Quartz** crystals, **Sphalerite**.

### LYON COUNTY

AREA: ① along the E shoreline of Kentucky lake, and ② all area rd. cuts and quarries—**Calcite geodes, jasper, Quartz**.

EDDYVILLE, area gravel pits, rd. cuts, excavations—**agate, chalcedony, jasper**.

KENTUCKY DAM, 6 mi. above at milepost 30, on the Tennessee R., in the State Quarry revealing an unusual exposure of the Warsaw formation—**Calcite, jasper, Quartz geodes**.

KENTUCKY DAM VILLAGE STATE PARK, area rd. cuts at entrance show Warsaw exposures—*Fort Payne* **chert**.

### MADISON COUNTY

BEREA, SE on US 25, area rd. cuts and banks—oolitic limestone, **Quartz geodes**.

### McGRACKEN COUNTY

PADUCAH, E 3 mi., mines and pits—**ocher**.

## Kentucky

### MARSHALL COUNTY

CALVERT CITY, are of Highland Landing on the Tennessee R., a deposit on the banks—**ocher**.

### MERCER COUNTY

AREA: ① area of the Kentucky R. bend (NE of Harrodsburg), and ② the Two Chimneys and Fantail mines—**Barite, Calcite, Fluorite**.

HARRODSBURG, area mines—**Barite, Calcite, Fluorite, Galena, Sphalerite**.

### MONROE COUNTY

TOMPKINSVILLE, regional quarries, excavations, and other exposures of the Warsaw formation—Warsaw type **geodes**.

### OWEN COUNTY

GRATZ, N on N bank of Kentucky R. immediately W of Rte. 355, dumps of the Gratz Mine—**Barite, Calcite, Fluorite, Galena, Sphalerite**.

### ROCKCASTLE COUNTY

BOONE: ① area rd. cuts; ② S toward Mt. Vernon in all rd. cuts and banks—**chert, jasper, geodes, oolites**; ③ in area limestone quarry—**Calcite, oolitic limestone, Quartz**.

MOUNT VERNON: ① N on US 25, 1 mi. from city limits, in a rd. cut—gemmy black **chert, jasper**; ② W, in a limestone quarry—**chert, jasper, geodes**.

### ROWAN COUNTY

ELLIOTTVILLE, FARMER, HAYS, MOREHEAD, SUMMIT, all regional quarries and excavations, cut banks, stream beds, etc.—**fossils, crystals, minerals**.

SALT LICK, W 5 mi. and 3 mi. N of Rte. 60, the old Rose River strip iron mine—**Hematite** nodules, **jasper**.

### SCOTT COUNTY

GEORGETOWN, area of Duval Sta., 1½ mi. distant at the Johnson vein—**Galena** with **Barite** as the gangue mineral.

### WHITLEY COUNTY

CUMBERLAND FALLS, area quarries and stream banks, rd. cuts, etc.—*Rockcastle conglomerate* (a sandstone matrix filled with well cemented pebbles of flint, jasper quartz, etc.)

### WOODFORD COUNTY

TROY, SW 2 mi. on Mundy's landing rd., dead-ending at mines and prospect pits—crystals of **Barite, Calcite, Fluorite, Galena, Sphalerite**.

## LOUISIANA

Louisiana, lying in the lower Mississippi River Valley has only in recent times been elevated above the surface of the ancient Gulf of Mexico. The land has a maximum elevation above sea level of 500', sloping gently southward from the Arkansas line with an average elevation of 400'. A very low dividing ridge runs along centrally through Louisiana, separating the Ouachita and Red river drainage systems east and west. Along these two rivers the flood plains and secondary bottoms (or hammocks as they are locally called), form a very minor topographic feature in the generally monotonous landscape.

The state lacks gemstones and minerals generally, Brown Hematite and Limonite occur in Tertiary sands in numerous deposits in the northwestern parishes of Bienville, Bossier, Caddo, Claiborne, Lincoln and Union. The northern counties also reveal various exposures of hard limestone, Gypsum, Salt and marl in separated exposures of Cretaceous strata. Tertiary formations (Eocene and Oligocene) outcrop in nearly every parish to yield petrified wood (mostly of hickory, oak, poplar and palm). large silicified logs have been found in De Sota Parish. The whole history of the Tertiary laminated sands and lignitic shales is that of gradually receding sea, too recent to allow formation of the type of minerals and gemstones most sought after by collectors.

### HARRISON PARISH

GULFPORT, in creek beds to the NW—**petrified wood, jasper**.

### LIVINGSTON & TANGIPAHOA PARISHES

Regional stream gravels, occasional—**carnelian**.

### OUACHITA PARISH

WEST MONROE, S 12 mi., in gravels of the Ouachita R.—banded **agate, petrified** and **opalized wood**.

### RAPIDES PARISH

ALEXANDRIA, in gravel pits and stream bars to N, such as in the Ouachita R. valley near Monroe, Pollack and Farmerville—**agate**, with some **petrified wood**.

### RAPIDES & VERNON PARISHES

Regional stream gravels—**silicified palm** (*Palmoxylon*).

### TANGIPAHOA PARISH

AMITE, on the banks of Amite R. and to E in river gravel pits of the Tangipahoa, Bogue Chitto and pearl rivers—**agate**.

## Louisiana

### VERNON PARISH

LEESVILLE, E as far as the Red R., W as far as the Sabine R., and N as far as Shreveport—**petrified wood**.

## MAINE

The topography of Maine was sculptured by Pleistocene glaciers two miles thick in places, eroding the original Tertiary land surfaces right down to bedrock. Thus, the state rests on its ancient foundation of limestone, sandstone, and shale. The generally mountainous, heavily forested western region slopes northward to the St. John River Basin and eastward toward the Penobscot River. Receding glaciers dammed the valleys with long drift ridges to form some 2,200 lakes. In the more than 5,000 rivers and streams, gravel beds yield up many interesting gem and mineral specimens.

Where deep-seated earth forces caused molten granite to intrude the basal sedimentary rocks and recrystallize them, many valuable mineral and gemstone deposits were formed. Indeed, the mineral wealth of Maine is notable, especially for the wide variety of gemstone minerals which occur in the state's extraordinary pegmatites. These dikes are essentially coarse grained concentrations of feldspar and quartz, developed during the closing stages of widespread granitic intrusions through the foundation rocks. The great glaciers exposed most of the dikes; easily traceable as pod-shaped or sheetlike bodies ranging from a few inches to more than 4,000 feet in length.

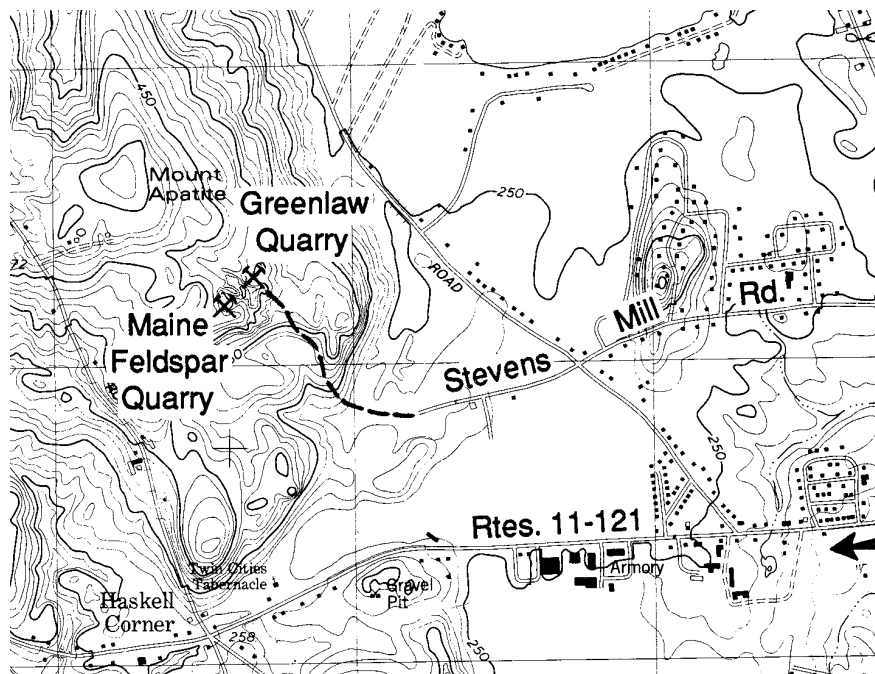
The Maine pegmatites have been mined for more than a century for potash feldspar, along with occasional production of Quartz, sheet Mica, Beryl, Spodumene, and other industrial minerals. Substantial quantities of semi-precious gem crystals have made the Maine pegmatites world famous, because of the high gem quality of their **Aquamarine, Beryl, Garnet, rose Quartz, Spodumene, Topaz, Tourmaline**, and many other gemstones. Perhaps nowhere in the world is there an area of comparable size productive of such an array of quality gems as Oxford County. Here, in particular, the Newry mines near Rumford and the Mica mines near Paris are a collector's Mecca.

A good field reference with maps, *A Collector's Guide to Maine Mineral Localities* is available at the Maine Geological Survey.

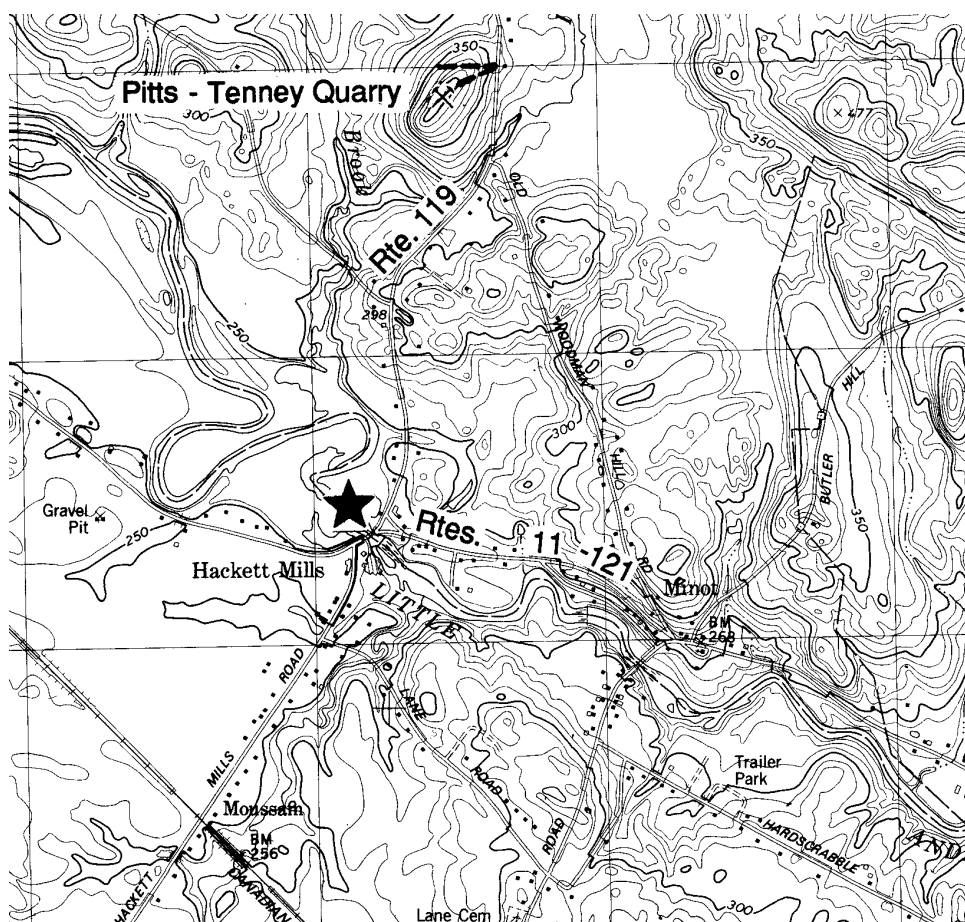
### ANDROSCOGGIN COUNTY

AUBURN: ① Kennedy Mine—**Aquamarine, Beryl** and **Topaz**; ② W 4 mi. (1¼ mi. ENE of Minot), many area mines such as the Androscoggin Tourmaline, Fisher, Hatch Farm, Greenlaw, Keith (Towne), Maine Feldspar, Pulsifer, etc. —**Amblygonite, Apatite** (purple), **Beryl, Feldspar, Garnet, Lepidolite, Spodumene, Tourmaline** and **Morganite**; ③ Greenlaw and Maine Feldspar mines, from jct. of Rtes 4-100-202 and 11-121 in Auburn, go W on Rtes. 11-121 for 1.9 mi., turn right onto Garfield rd. and drive NW for 0.5 mi., turn left onto Stevens Mill rd., go 0.2 mi. and park outside military compound on left, follow dirt rd. W across open field, then uphill through woods for about 0.75 mi. to quarries, Greenlaw on right; larger water filled Maine Feldspar on left (dumps scattered through woods) —**Almandite** garnet, **Amblygonite, Autunite, Bertrandite, Beryl, Biotite, Cassiterite, Columbite, Cookeite, Cyrtolite** zircon, **Elbaite** tourmaline (green, pink, blue), **Feldspars, Fluorapatite** (purple), **Gahnite, Hydroxyl-Herderite, Lepidolite, Montebbrasite, Muscovite, Pollucite, Pyrite, Rhodochrosite, Schorl** tourmaline, **Spodumene, Torbernite, Uraninite** and large parallel-growth clustered of **Smoky Quartz**.

# Maine



LEWISTON, area of Mt. Robinson, pegmatite outcrops—**Vesuvianite** (Idocrase).



## A Location Guide for Rock Hounds in the United States

MINOT: ① Bell (Giddings) prospect—**Feldspar, Muscovite Mica, black Tourmaline**; ② La Flamme Mine—**Feldspar, Muscovite Mica, Pollucite, black Tourmaline**; ③ Phillips Mine—**Autunite, Feldspar, Amethyst, black Tourmaline**; ④ Pitts Mine—**Feldspar, Muscovite Mica, Quartz**; ⑤ Pitts-Tenney Mine, from jct. of Rtes. 11-121 with Rte. 119, drive N on Rte. 119 for 1.1 mi. to woods rd on left, park at rd. entrance and follow rd. uphill (keep left at fork) for about 600' to prospect pits—**Actinolite, Beryl, Calcite, Clinocllore, Clinozoisite, Diopside, Feldspar, Grossular garnet (orange), Meionite (scapolite gr.), Quartz, Schorl, Titanite, Vesuvianite**; ⑥ Sturtevant Mine—**Feldspar, black Tourmaline**; ⑦ ENE 1¼ mi., mine on Mt. Apatite—**Tourmaline**; ⑧ E 1½ mi., mine on Mt. Apatite—**Apatite, Beryl (fluorescent), Morganite and Tourmaline**; ⑨ Hwy. 121 E to Haskell's Corner, then Left 2 mi. to Hatch rd. to right to quarries on side of Mt. Apatite: (a) Pulsifer & Wade quarries—**Apatite and Lepidolite**; (b) Maine Feldspar Mine—**Morganite**; (c) Littlefield Quarry—**Smoky Quartz**.

POLAND, the Berry Quarry (1¼ mi., SE of Minot) —**Apatite, Beryl, Cassiterite, Microcline feldspar, Lepidolite, Muscovite and green Tourmaline**.

### AROOSTOOK COUNTY

AREA: ① Castle Hill, at the Dudley Mine—**Bementite, Braunite, Collophane (Mn, Fe), Manganiferous carbonate**; ② Hammond Place, the Carpenter Mine—**Ferro-rhodochrosite**; ③ Hovey Mt. (with Maple Mt. continuous), area mines—**Bementite, Braunite, Hematite, manganian Talc, Neotocite, Penninite, Pyrophanite, Rhodochrosite, Rhodonite, Spessartite garnet and Stilpnomelane**.

LINNEUS, the Adams Mt. Mine, in shale—**manganese minerals**.

LITTLETON, area Molybdenite mine—**Molybdenite**.

NEW LIMERICK, the Drew Hill Sulfide Mine—**Marcasite, Pyrite, Pyrrhotite**

### CUMBERLAND COUNTY

AREA, the Piscataqua Mine—**Copper, Gold, Nickel**.

BALDWIN, the Kelley prospect—**Biotite Mica, Feldspar, Muscovite Mica, Quartz**.

BRUNSWICK: ① Garland Mine—**Beryl, Feldspar, Muscovite Mica, Quartz**; ② Grant Quarry—**Feldspar, Muscovite Mica, Quartz**; ③ LaChance Quarry, from jct. of US Rte. 1 and Highland rd. (approx. 1 mi. into Brunswick from the Freeport town line), drive S on Highland rd. for 1.35 mi. park on right at entrance to woods rd. leading to mine, SW 660' to mine—**Almandite garnet, Aquamarine, Golden Beryl, Biotite, Columbite, Feldspar, Fluorapatite, Muscovite, Quartz, black Tourmaline**; ④ Larrabee quarries (Helie Mine)—**Beryl, Biotite Mica, Feldspar, Quartz**; ⑤ Morse Quarry—**Feldspar**.

CASCO, the Chute prospect, from jct. of Rtes. 302-35 with Rte. 85 in Raymond, drive NW 4.55 mi. on Rtes. 302-35, turn right at Chute Bakery and Restaurant (across from lumber mill), follow rd. behind bakery to Chute residence, continue N (passing to left of house) on woods rd. to garnet locality (approx. 0.85 mi.)—**Calcite, Diopside, cinnamon Grossular garnet, Feldspar, Meionite (scapolite gr.), Pyrite, Quartz (milky, smoky), Titanite, Vesuvianite**.

FALMOUTH, the Falmouth Copper Mine—**copper pyrites, nickel arsenate**.

POWNAL, the Tyon Mt. quarries, from town go 1.3 mi. on Elmwood rd., turn right onto Lawrence rd. and drive NE 1.05 mi. to the Tyron residence (brick house on right), park and get permission, quarry rd. is just before house on same side of rd.—**Almandite garnet, Autunite, Beryl, Columbite, Feldspar, Mica (Biotite, Muscovite), Monazite, Pyrite, Quartz (milky, rose, smoky), Schorl, Uraninite, Zircon**.



## Maine

WINDHAM, area **Staurolite** exposures of Micaceous slates, especially Cook rd., from jct. of US Rtes. 302 and 202 at Fosters Corner (traffic circle), drive S 2.4 mi. on Rte. 202, turn right onto Cook rd. and continue 0.35 mi., park on right side at utility pole #270, follow trail to brook on NE side of Cook rd.—**Almandite** garnet, **Biotite**, **Ilmenite**, **Kyanite**, **Quartz**, **Staurolites**.

### FRANKLIN COUNTY

AREA: ① Township D: (a) the Mountain Brook prospect—**Scheelite**; (b) Bemis Stream Prospect, from Mexico, drive N 17.1 mi. on Rte. 17 to settlement known as Houghton, turn left onto dirt rd., crossing bridge over Swift R., continue NW (up Berdeen Stream Valley) on gravel logging rd. for 6.3 mi. to bridge over Benis Stream, park and walk down along Bemis Stream for about ¼ mi. to steep ledge on right (E side) at small gorge, blast holes in pegmatite expose green tourmaline and other minerals—**Bertrandite**, **Cassiterite**, **Columbite**, **Elbaite**, **Feldspar**, **Fluorapatite** (blue and purple crystals), **Microlite**, **Montebrasite**, **Muscovite**, **Pollucite**, **Quartz**, **Spessartite** garnet, **Sphalerite**, **Spodumene** crystals, **Wodginite**; ② Township E, the Hardin-Keith-Small prospect—**Columbite**, **Microcline**, **Muscovite**, **Quartz**, **Spodumene**, **Tourmaline**.

BYRON, the east branch of the Swift R., area near Tumbledown Mt. via Rte. 17, in low-water gravel bars, abundant placers—**Gold**. (Local residents have been panning or sluicing gold from all area stream gravels for generations. The source of the gold is unknown, and there has never been a gold mine, as such, in Maine. Gravel caught in natural potholes and between upended ledges of rock makes for productive panning.)

FARMINGTON, area mines—**Scheelite**.

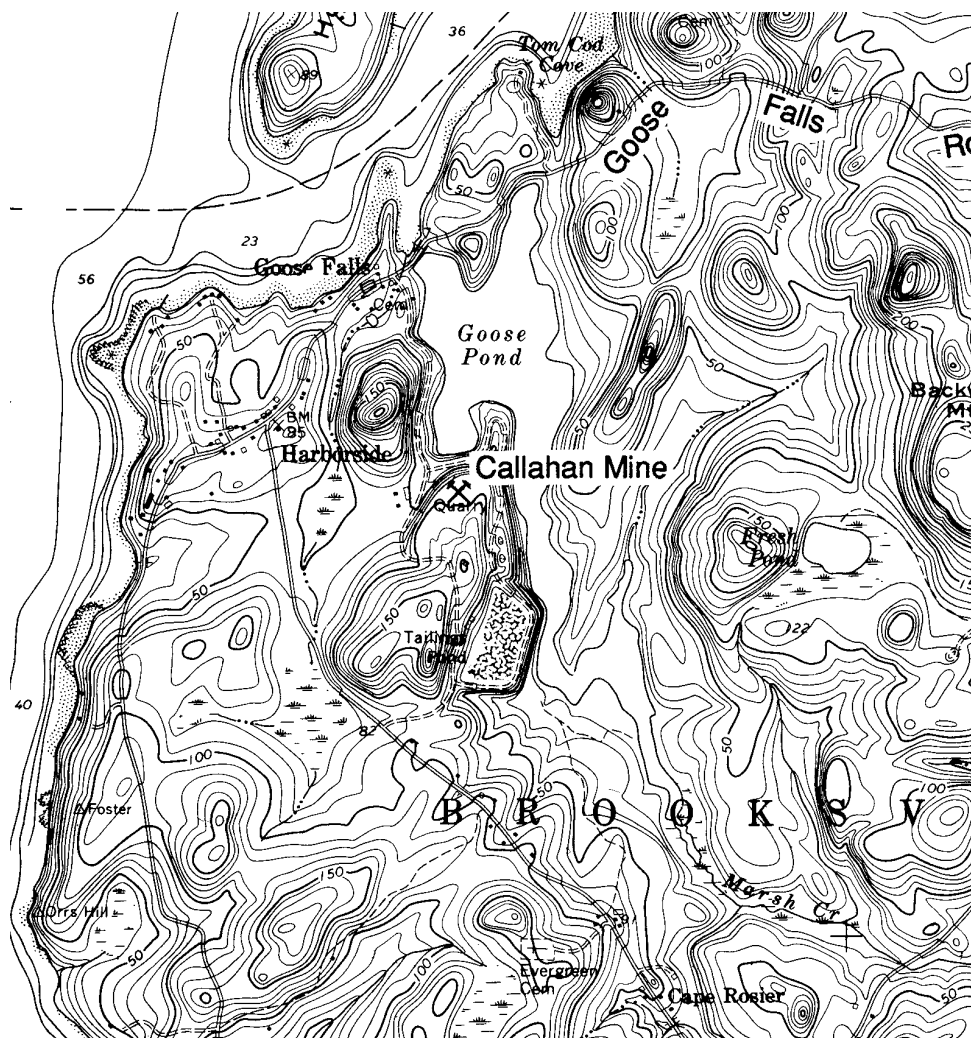
RANGELEY, the Wing Mine—**Calcite**, **Pyrite** and **Pyrrhotite**.

### HANCOCK COUNTY

BLUE HILL: ① Atlantic Mine—**pyrites** (copper, gold, silver); ② Blue Hill Manganese Mine, 1¾ mi. SW on Hwy. 176—**manganese minerals** and **Rhodonite**; ③ Blue Hill Mine—**Chalcopyrite** and **Pyrite**; ④ Douglas Mine—**Arsenopyrite**, **Chalcopyrite**, native **Copper**, **Cuprite**, **Galena**, **Magnetite**, **Molybdenite**, **Pyrite**, **Pyrrhotite**, **Sphalerite**, **Stibnite**, **Tennantite** and **Tetrahedrite**; ⑤ Granger Mine—**Bornite**, **Chalcopyrite**, **Pyrite** and native **Silver**; ⑥ Mammoth Mine—**Chalcopyrite**, **Galena**, **Pyrite**, **Pyrrhotite**, **Specularite** and **Sphalerite**; ⑦ Owen Lead Mine—**Chalcopyrite**, **Galena**, **Magnetite**, **Pyrite**, **Pyrrhotite**; ⑧ Owen Mine—**Chalcopyrite**, native **Copper**, **Pyrite**, **Pyrrhotite**; ⑨ Stewart Mine—**Chalcopyrite**, **Magnetite**, **Pyrite**, **Pyrrhotite**; ⑩ Stover Hill Mine—**Chalcopyrite**, **Pyrite**; ⑪ Twin Lead Mine—**Bornite**, **Chalcopyrite**, **Magnetite**, **Pyrite**, **Pyrrhotite**.

BROOKLIN, the Brooklin Mine—**Gold** and **Silver**.

BROOKSVILLE: ① Abner Gray Mine—**carbonate minerals** and **copper sulfur minerals**; ② Cape Rosier Mine (Callahan, Rosier Consolidated), from jct. of Rtes. 175 and 176 in Brooksville village, go W 4.5 mi. on Rte. 176, turn left onto Cape Rosier rd. and proceed 1.65 mi., turn right onto Goose Falls rd. (gravel) and go 0.9 mi. to where road to bird sanctuary turns right, continue straight ahead for 1 mi., crossing the Goose Falls Bridge, turn left onto mine rd —**Allophane**, **Anglesite**, **Aragonite**, **Arsenopyrite**, **Aurichalcite**, **Azurite**, **Bornite**, **Brochantite**, **Calcite**, **Cerussite**, **Chalcocite**, **Chalcophyllite**, **Chalcopyrite**, **Chrysocolla**, **Copper**, **Covellite**, **Cuprite**, **Galena**, **Garnet**, **Goethite**, **Greenockite**, **Gypsum**, **Halite**, **Hemimorphite**, **Hornblende**, **Hydrozincite**, **Laumontite**, **Limonite**, **Linarite**, **Mackinawite**, **Malachite**, **Marcasite**, **Mica**, **Pyrite**, **Pyrolusite**, **Pyrrhotite**, **Quartz**, **Rosasite**, **Safflorite**, **Siderite**, **Silver**, **Smithsonite**, **Sphalerite** talc, **Tennantite**, **Titanite**, **Tremolite**, and **Valleriite**;



③ Dodge Mine—**argentiferous Galena, copper sulfur minerals and Zinblende**; ④ (a) Jones & Dodge Mine, and (b) Tapley Mine—**Chalcopyrite, Galena, Pyrite, Pyrrhotite and Sphalerite**.

CASTINE: ① Castine (Castine Head) Mine—**Copper, Gold, Lead and Silver ore**; ② Emerson Mine—**Galena, Magnetite, Pyrite, Pyrrhotite and Sphalerite**; ③ North Castine Mine—**Chalcopyrite, Galena, Pyrite**.

DEER ISLE: ① Belle of Deer Isle Mine—**Galena**; ② Deer Isle Mine—**Chalcopyrite, Galena, Magnetite, Pyrite, native Silver, Sphalerite and Tetrahedrite**.

ELLSWORTH: ① Boston Silver Mine—**argentiferous Galena**; ② Brimmer Mine—**Silver**.

FRANKLIN: ① Franklin Extension Mine—**gray Copper, Galena, ruby Silver and native Silver**; ② Frenchman's Bay Mine—**Galena**; ③ Catherine Mt. Molybdenite prospect, E on Rte. 182 for 9.6 mi., passing Fox Pond on right, to highest part of rd. on eastern spur of Catherine Mt., at this point there is an old house on left and field on right, park and follow woods rd. W up onto Catherine Mt. to where it ends in area of recent logging, follow marked trail uphill to prospect holes in ledge—**Biotite, Clinocllore, Ferberite, Ferrimolybdite, Fluorapatite, Fluorite, Hornblende, Magnetite, Microcline, Molybdenite, Muscovite, Pyrite, Quartz, Scheelite, Stilbite**.

## Maine

GOULDSBORO: ① Globe Mine—**Galena**; ② Gouldsboro Mine—**Galena** and **sulfurets**.

HANCOCK: ① Custer Mine (Copperopolis) —**Chalcopryite, Pyrite** and **Rhodochrosite**; ② McFarland Mine—**argentiferous Galena, Chalcopryite**.

LAMOINE, the Little Sue prospect—**Galena**.

LITTLE DEER ISLE, area exposures, gem quality—**serpentine**.

MOUNT DESERT (Somesville), area outcrop—**Amazonite**.

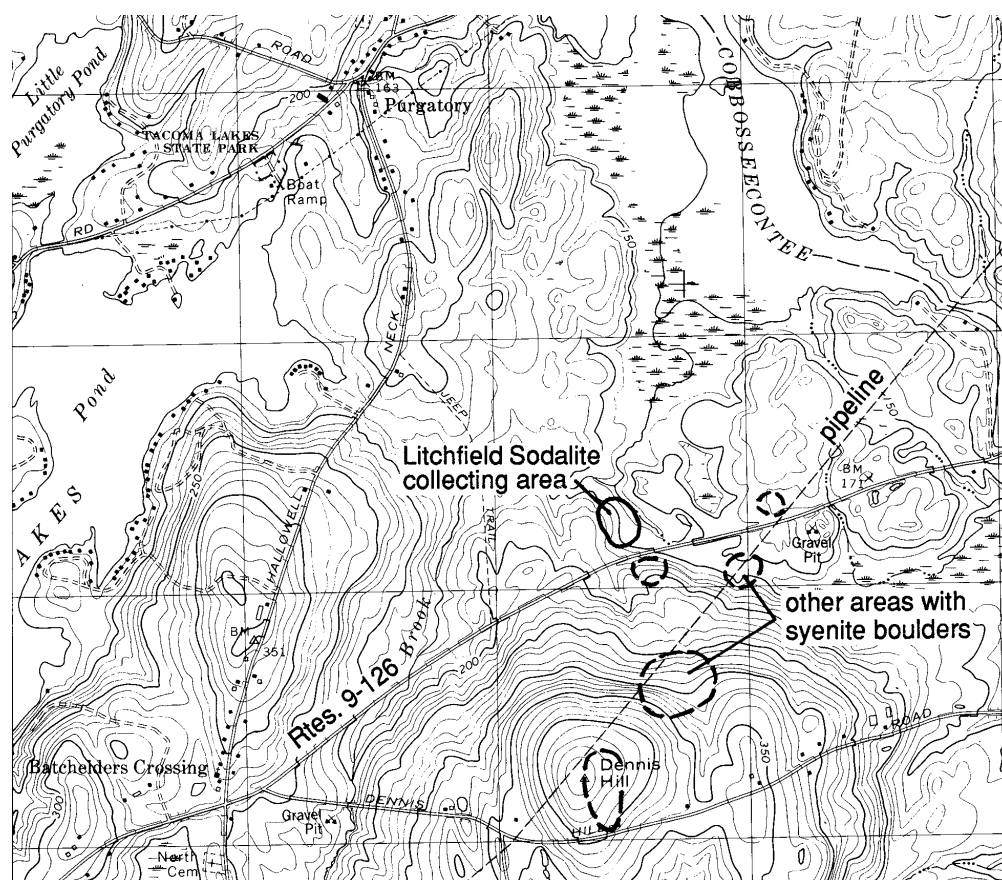
PNOBSCOT: ① Annear Mine—**copper** minerals; ② Hercules (Dunbar) Mine—**Arsenopyrite, Chalcopryite, gray Copper, Copper silicates**, native **Copper, Galena, Pyrite, Pyrrhotite, native Silver, Specularite** and **Sphalerite**.

SEDGEWICK, the Eggemoggin Mine—**Arsenopyrite, Chalcopryite, Galena, Pyrite, Sphalerite** and native **Silver**.

SORRENTO, the Boss o' the Bay Mine—**native Copper** and other **Copper** minerals.

SULLIVAN: ① Beacon Hill Mine—**Galena**, (with lead, copper, silver and zinc) and **Pyrite**; ② Milton Mine—**Chalcopryite, Pyrite** and native **Silver**; ③ Salem and Sullivan mines—**argentiferous Galena, Chalcopryite, Pyrite, Silver**(ruby, native) and **Stephanite**; ④ Sullivan Falls Mine—**argentiferous Galena**.

SURRY: ① Blue Hill Bay Mine—**copper** and **silver**; ② Sunburst Mine—**Bornite, Chalcopryite, Galena, Malachite, Pyrite** and red **Copper oxide**.



## KENNEBEC COUNTY

GARDINER: ① the Iron Hill Mine—**Nickel Pyrrhotite**; ② from overpass where Rtes. 9-126 cross Rte. I 95 in West Gardiner, W 4.95 mi. on Rtes. 9-126 to small stream on right, park and walk N perpendicular to rd. and keeping to left of small stream for 600',

## A Location Guide for Rock Hounds in the United States

syenite boulders are found in this area on side of low hill with pine trees (bring heavy hammer)—**Aegirine, Annite, Cancrinite, Corundum, Magnetite, Nepheline, Sodalite, Zircon.**

LITCHFIELD: ① area pegmatites—**Zircon**; ② 1,000 ft. N of Spears Corner—**Sodalite**; ③ area boulders, glacially transported—**Aegirine, Albite, Annite, Cancrinite, Corundum, Hydronephelite** (mixture of Natrolite, Gibbsite and Diaspore), **Magnetite, Nepheline, Sodalite, Zircon.**

VIENNA: ① Nurse Farm prospect—**Feldspar, Muscovite**; ② Vienna Mt. prospect—**Feldspar.**

WINSLOW, the Winslow Tin Mine—blue **Beryl, Cassiterite, Galena, Fluorite, Margarite, Lepidolite, Quartz** and **Tourmaline.**

### KNOX COUNTY

APPLETON, the Appleton Mine—**Chalcopyrite, Garnet, Pyrrhotite** and **Tourmaline.**

CUSHING, the State Prison Farm prospect—**Albite, Quartz** and **Spodumene.**

ISLE AU HAUT, mine of the same name—**Copper** and **Silver.**

ROCKLAND, the Rockland City Mine—argentiferous **Galena.**

ROCKPORT: ① Porterfield Mine—**Copper, Gold, Nickel** and **Silver**; ② Riverside Mine—**Arsenopyrite.**

SOUTH THOMASTON, the Owl's Head Mine—**Gold** and **Silver.**

UNION: ① the Union Pyrrhotite Mine—**Pentlandite, Pyrrhotite, Chalcopyrite, Magnetite, Sphalerite** and **Labradorite**; ② Harriman prospect, from East Union drive S  $\frac{1}{2}$  mi. on Wattons Mill rd., turn right (W) onto unnamed gravel rd. toward Crawford Pond and proceed  $\frac{3}{4}$  mi., park at entrance to woods rd. on right, walk N on rd. for 360', turn left just before stone wall and continue 120' NW along old woods rd. to small pit, metal sulfides in igneous rock—**Augite, Biotite, Bornite, Bravoite, Calcite, Chalcopyrite, Clinocllore, Dolomite, Enstatite, Forsterite, Graphite, Hematite, Hornblende, Ilmenite, Labradorite, Mackinawite, Magnetite, Molybdenite, Niggliite, Pentlandite, Pyrite, Pyrrhotite, Rutile, Sperrylite, Sphalerite, Spinel, Ulvospinel, Uvarovite** garnet; ③ from Rtes. 17 and 235, drive N 0.9 mi. on East Appleton rd., park on left (W) side of rd. and walk W on dirt rd. for about 0.3 mi. (passing old gravel pits) to bank of St. George R.—Elongated **Andalusite** crystals occur in ledges and loose rocks along river.

VINALHAVEN, the Island City Mine—**Galena.**

WARREN: ① (a) Starret Mine, from Warren drive 0.3 mi. SE on US 1, turn right onto rd. that goes to Warren Sta. and continue 0.65 mi., park and walk 480' on dirt rd. leading SSW from paved rd. (trail crosses field and enters woods) this brings you to quarry on right and dump area—**Almandite** garnet, **Autunite, Beryl, Calcite, Cassiterite, Columbite, Heterosite, Lepidolite, Microcline, Montebasite, Muscovite, Opal, Pyrite, Quartz, Rutile, Schorl, Sillimanite, Sphalerite, Spodumene, Talc, Torbernite, Triphylite, Uraninite, Zircon.** (Very fine Spodumene can be found by digging in the dump). (b) Starret prospect—**Microcline, Muscovite, Quartz** and **Spodumene.** ② Warren Nickel prospect, from jct. of Rtes. 17 and 131S (E of Union), drive S 2.6 mi. on Rte. 131, crossing the Warren town line at 2.3 mi., turn left onto woods rd. (note large boulder to right of rd. entrance, and stone wall to left), park and walk E on woods rd. until reaching the prospect (0.1 mi.), metal sulfides in igneous rock—**Apatite, Augite, Biotite, Bravoite, Calcite, Chalcopyrite, Clinocllore, Cummingtinite, Feldspar, Garnet, Graphite, Hematite, Hornblende, Ilmenite, Mackinawite, Magnetite, Marcasite, Molybdenite, Niggliite, Olivine, Pentlandite, Pyrite, Pyrrhotite, Quartz, Rutile, Sperrylite, Sphalerite, Spinel.**

## Maine

### LINCOLN COUNTY

EDGECOMB: ① the Poole prospect—**Feldspar**, **Muscovite** and **Quartz**; ② Williams Mine—**Feldspar**, **Muscovite** and **Quartz**.

SMALL POINT, on Hermit Island in mica schist outcrops along breach, especially at low tide—**Almandite** Garnets in mica schist.

WALDOBORO, the Benner prospect—**Feldspar**, **Muscovite** and **Quartz**.

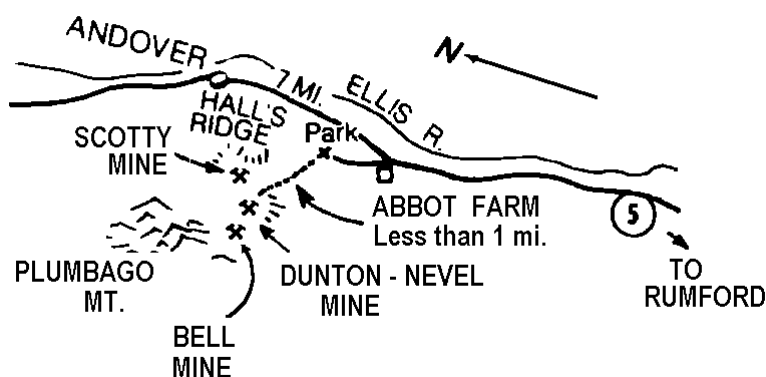
WICASSET, the LaPoutre prospect—**Feldspar**, **Muscovite** and **Quartz**.

### MIDDLESEX COUNTY

WESTFORD, in soil and stream at Small's Falls, Madrid Twp.—**Chiastolite**.

### OXFORD COUNTY

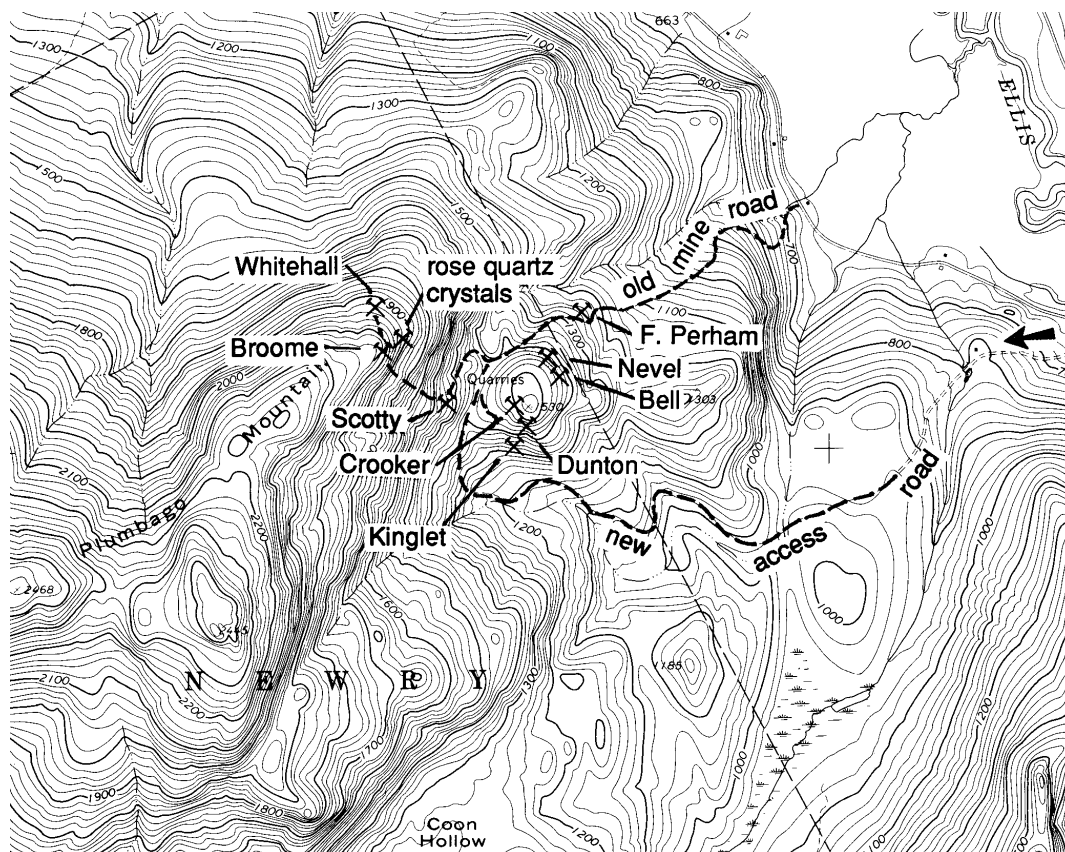
ALBANY (Twp): ① area: (a) Frenchman Mt., along the crest—**Aquamarine** and **Rose Quartz**; (b) Rattlesnake Mt., area pegmatite outcrops—gem **Beryl**; ② regional mines and prospects: (a) the Donahue prospect—**Beryl**, **Feldspar**, **Muscovite**, **Quartz** and black **Tourmaline**; (b) General Electric Glass Quartz prospect—**Beryl**, **Columbite**, **Feldspar**, **Garnet** and **Quartz**; (c) Holt prospect—**Muscovite**; (d) Guy Johnson Mine prospect—**Beryl**, **Feldspar**, **Muscovite**, **Quartz** and black **Tourmaline**; (e) Pingree prospect—**Beryl**, **Columbite**, **Feldspar**; (f) Sterns prospect (Hornet Mine) —**Beryl**, **Feldspar**, **Muscovite**, **Quartz** and black **Tourmaline**; (g) Wardwell Mine—**Beryl**, **Feldspar**, **Mica** (Biotite, Muscovite), rose **Quartz**; (h) Wentworth Mine—**Apatite**, **Beryl**, **Feldspar**, **Muscovite**, **Quartz** and **Pyrite**; ③ Pingree Ledge Quarry, from jct. of Rte. 5 & 35 in Lynchville, N on combined Rte. for 8.05 mi., turn left onto Patte Brook rd. (no sign) and drive generally SW for 2.9 mi., keeping straight at intersections, take sharp left turn onto Crocker Pond campground rd., and drive S 0.2 mi., park at entrance to old woods rd. on right, walk generally WNW for 585' to fork in woods rd. (note pile of bricks and stones to right of fork), keep right at fork and continue 420' WNW into quarry on S face of hill—**Almandite** garnet, **Bertrandite**, **Beryl** (green, yellow), **Biotite**, **Columbite**, **Fluorapatite** (all colorless), **Feldspars**, **Fluorite**, **Muscovite**, **Quartz** and black **Tourmaline**.



ANDOVER: ① W, in area of Baldpate Mt., pegmatite outcrops and float—**Aquamarine**; ② Leach Beryl prospect, as small crystals—gem **Beryl**; ③ Spruce Mt., area pegmatites (inquire locally) —massive **Beryl**; ④ West Surplus, Frye Brook-West Branch (inquire locally) —gem **Beryl**; ⑤ (a) Hwy. 5 S for 7 mi. to abbot farm, drive  $\frac{3}{4}$  NW and park, trail SW goes to Nevel and Dunton pits and further S to Bell pit, W from parking area  $\frac{1}{4}$  mi. is Scotty Pit and  $\frac{3}{4}$  mile farther another pit, all on Halls Ridge of Mt.

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Plumbago—**Tourmaline** and rose **Quartz**. A spectacular find of tourmaline was made in the Dunton-Nevel quarry in 1973, and later the area was closed to amateur collecting.



BATCHELDER'S GRANT, the Peabody Mt. Quarry—**Apatite**, **Feldspar**, **Muscovite** Mica, **Quartz** and **Tourmaline**.

BETHEL, the Bumpus Quarry, from jct. of US 2 & 5 in Bethel, drive S on Rte. 5 for 7.75 mi., park on right, across rd. from mine, quarry dumps are visible on E side of rd., in pegmatite—**Albite**, **Almandite** garnet, **Apatite**, **Autunite**, **Bertrandite**, **Beryl** (Aquamarine, Golden), **Biotite**, **Columbite**, **Cookeite**, **Euclase**, **Feldspar**, **Hydroxyl-Herderite**, **Muscovite**, **Quartz** (rose, smoky), black **Tourmaline**, **Torbernite**, **Uraninite**, **Zircon**.

BUCKFIELD: ① (a) SW 2 mi., the Lewis Mine and (b) the adjoining J.H. Fletcher Mine—cesium **Beryl** and **Tourmaline**; ② SW 2½ mi., the Robinson Dudley Mine—**Aquamarine**, **Cesium Beryl** and **Pollucite** (rare); ③ SW 2½ mi. and ¼ mi. S of Rte. 117, exposure (mine) —**Amblygonite**, **Arsenopyrite**, **Beryl**, **Cassiterite**, **Feldspar**, **Loellingite**, **Mica**, **Pollucite** and **Tourmaline**; ④ W 3 mi. and ½ mi. N of the Bennett farmhouse, the Bennett Quarry (fee) —**Almandite** garnet, **Amblygonite**, **Aquamarine**, **Arsenopyrite**, **Autunite**, **Beryl** (golden, green, blue, pink), **Cassiterite**, **Chrysoberyl**, **Columbite**, **Cookeite**, **Elbaite** tourmaline (green, pink, blue, bicolored, watermelon), **Eosphorite**, **Fairfieldite**, **Feldspar**, **Fluorapatite**, **Goyazite**, **Herderite**, **Hureaulite**, **Landesite**, **Lepidolite**, **Lithiophilite**, **Manganapatite** (fluorescent), **Manganotantalite**, **Montebrasite**, **Morganite**, **Muscovite**, **Pollucite**, **Quartz**, **Reddingite**, **Rhodochrosite**, **Romanechite**, **Roscherite**, **Schorl** tourmaline, **Spodumene**, **Topaz**, **Uraninite** and **Zircon**; ⑤ Regional mines (a) Bessey Mine—**Arsenopyrite**, **Beryl**, **Muscovite**, **Smoky Quartz** (with liquid inclusions) and **Sphalerite**; (b) Cummings Mine—**Quartz**; (c) Dudley prospect (Neville-Owl's Head) —**Amblygonite**, **Beryl** and **Pollucite**; (d) Fletcher

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Mine—**Beryl**; (e) General Electric Co. mine (Dudley Mine) —**Pollucite**; (f) Irish (Westinghouse) Mine, 3 mi. SE—**Beryl**, **Pollucite** and **Tourmaline** (black, green) and other minerals (see ④ Bennett Quarry); (g) Orchard Mine—gem **Apatite**, **Beryl**, **Cassiterite**, **Columbite**, **Feldspar**, rose **Quartz**, **Spodumene**, **Topaz** and gem **Tourmaline**.

BYRON: ① an area mine—**Diopside**, **Pyrite**, **Quartz** and **Scheelite**; ② In Swift R.—placer **Gold** and other heavy minerals associated with placer deposits (**Almandite** garnet, **Magnetite**, **Scheelite**, **Staurolite**, etc.) and red **jasper**.

CANTON: ① N 47° W 2¼ mi. (from bridge in center of town), the Clark Mine—**Chrysoberyl** and **Muscovite** Mica; ② in brook at Ragged Jack Mt.—**Amethyst**.

DENMARK: ① the Lord prospect—**Feldspar**, Mica (**Biotite**, **Muscovite**) and **Quartz**; ② Warren Quarry (Howe Mine), W side of Pleasant Mt. —**Amethyst** and **Smoky Quartz**.

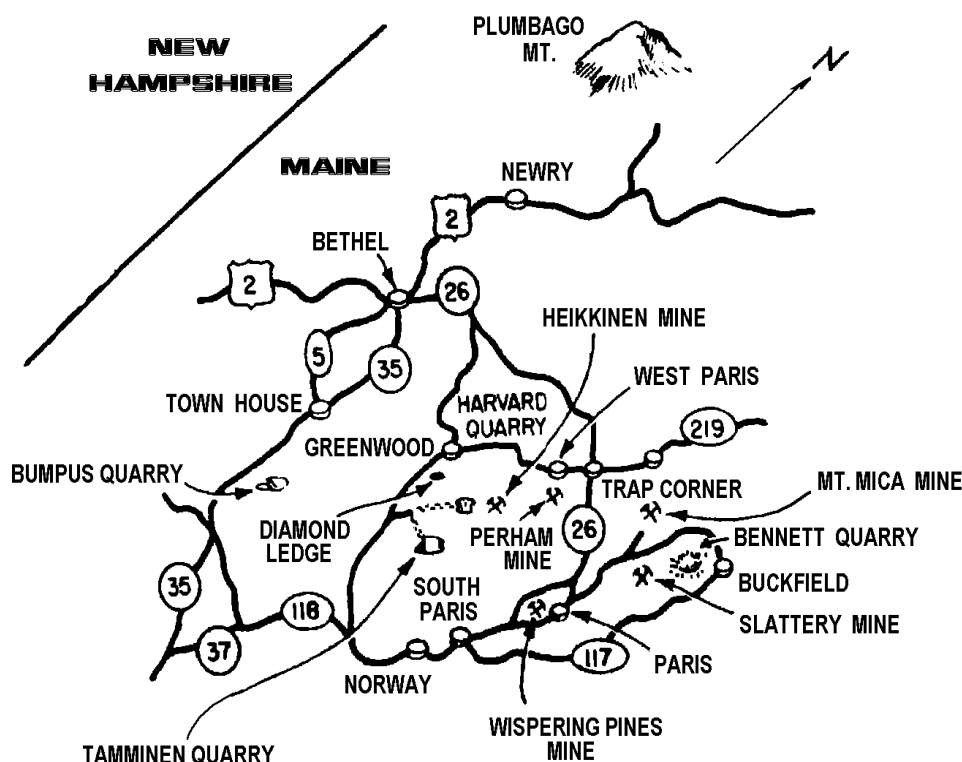
DIXFIELD, on S slope of Hedgehog Hill—**Beryl** and **Garnet**.

FRYEBURG, to S on E side of Stark Mt. at Eagle Granite Quarry—**Garnet** and **Smoky Quartz**.

GILEAD: ① Peaked Hill Mine—**Feldspar**, **Garnet**, **Mica** (**Biotite**, **Muscovite**) and **Quartz**; ② Peaked Hill prospect—gem **Beryl**; ③ Wheeler Mine—**Beryl**, **Cleavelandite** feldspar and **Muscovite** Mica.

GREENWOOD (Twp.): ① Diamond Ledge (Yale or Yates Quarry) —**Quartz** crystals; ② Emmons Quarry (Uncle Tom Mine), from jct. of Rtes. 26 and 219 in West Paris, drive west 5.55 mi. to end of Rte. 219, turn right and drive 2.3 mi. on Twitchell Pond rd. and go 0.1 mi. NW, turn left onto Patch Mt. rd. (paved) continue 0.6 mi., turn right at fork onto unnamed gravel rd (rough) and proceed W 1.05 mi. to where dirt rd. enters to left at Willis Mill, bear right and continue 0.05 mi. to next bend in main rd where a woods rd. turns to the right, park and go N about 0.65 mi. on woods rd. to jct. with quarry rd. on left (about 500' after crossing brook), turn left onto this rd. and walk WNW for about 2,310' to next jct., take rd. to right and walk uphill to W for about 480' to next fork (located in small clearing), go right and proceed uphill on quarry rd. as follows: 600' NNW, bend 150' W, bend 300' NE; this brings you to lower part of quarry dump, the pit just uphill—**Almandite** garnet, **Amblygonite**, **Arsenopyrite**, **Beraunite**, **Beryllonite**, **Beryl** (pale green, pink), **Cassiterite**, **Columbite**, **Elbaite** tourmaline (blue, green), **Eosphorite**, **Fairfieldite**, **Fluorapatite**, **Hureaulite**, **Herderite**, **Jahnsite**, **Landesite**, **Laueite**, **Lepidolite**, **Lithiophyllite**, **Löllingite**, **Ludlamite**, **Mitridatite**, **Montebrasite**, **Moraesite**, **Muscovite**, **Perhamite**, **Phosphosiderite**, **Pollucite**, **Purpurite**, **Reddingite**, **Rhodochrosite**, **Robertsite**, **Rockbridgeite**, **Schorl**, **Scorodite**, **Spodumene**, **Stewartite**, **Strengite**, **Strunzite**, **Switzerite**, **Uraninite**, **Vivianite** and **Zircon**; ③ and Tiger Bill Mine, drive 2.3 mi. on Twitchell Pond rd. to woods rd. entrance on left, park here and walk W on woods rd. for 1.45 mi., turn left at fork and continue 0.25 mi., quarry rd. swings to right at this point, keep right and follow this rd. uphill for about another ½ mi. where it bends to left, go straight ahead a very short distance to the Tiger Bill—**Almandite** garnet, **Autunite**, **Bertrandite**, **Beryl** (Aquamarine, golden), **Feldspar**, **Fluorapatite** (blue, purple), **Herderite**, **Muscovite**, **Pyrite**, **Quartz** and **Schorl** tourmaline; ③ Nobles Corner, NW 2 mi. and ½ mi. E of Mud Pond, a pegmatite—**Tourmaline** ④ Tamminen-Waisanen Mine, from Norway go W on Rte. 118 for 0.95 mi., turn right onto Greenwood rd. and drive NW 5.3 mi., turn right onto Richardson Hollow rd and continue 0.4 mi. to parking area, walk uphill on woods rd. 0.15 mi. to water filled quarry pit on right and nearby dump, Tamminen Quarry is 0.1 mi. farther

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uphill on same rd.—**Almandite** garnet, **Arsenopyrite**, **Bertrandite**, **Biotite**, **Calcite**, **Cassiterite**, **Columbite**, **Cookeite**, **Elbaite** tourmaline, **Feldspar**, **Fluorapatite**, **Graftonite**, **Hydroxyl-Herderite** (fluorescent), **Heterosite**, **Muscovite**, **Pyrite**, **Quartz**, **Schorl**, **Sphalerite**, **Triphylite** and **Spodumene**; ⑤ Tamminen Quarry (at the base of Noyes Mt.) —**Almandite** garnet, **Autunite**, **Bertrandite**, **Beryl** (blue, green, pink), **Bismuth**, **Calcite**, **Cassiterite**, **Cookeite**, **Dickinsonite**, **Elbaite** tourmaline, **Eosphorite**, **Feldspars**, **Fluorapatite**, **Fourmarierite**, **Herderite**, **Lepidolite** mica, **Lithiophyllite**, **Manganotantalite**, **Montebrasite**, **Muscovite**, **Petalite**, **Pollucite** crystals, **Quartz**, **Scheelite**, **Schorl**, **Sphalerite**, **Spodumene**, **Topaz**, **Uraninite**, **Vandendriesscheite**, and **Vesuvianite**; ⑥ Waisanen Mine (the Nubble), from Norway go W on Rte. 118 for 0.95 mi., turn right onto Greenwood rd. and drive NW 5.3 mi., turn right onto Richardson Hollow rd and continue 0.65 mi., park at the entrance to wood rd. on right across from white barn, go 0.3 mi. to fork in wood rd., right hand trail goes to bottom of quarry dump, left hand trail goes to pit—**Almandite** garnet, **Beryl**, **Beryllonite**, **Biotite**, **Chrysoberyl**, **Feldspar**, **Fluorapatite**, **Muscovite**, **Pyrite**, **Quartz** (milky, rose, smoky), **Schorl** and **Zircon**; ⑦ Harvard Quarry (Noyes Mt. Quarry), from Norway go W on Rte. 118 for 0.95 mi., turn right onto Greenwood rd. and drive NW 5.3 mi., turn right onto Richardson Hollow rd and continue 0.4 mi., park on right and take trail to quarry on other side of the rd. (N side) uphill approx. 3,000' to quarry—**Almandite** garnet, **Apatite** (fluorescent), **Arsenopyrite**, **Autunite**, **Bertrandite**, **Beryl**, **Beryllonite**, **Biotite**, **Brazilianite**, **Calcite**, **Cassiterite**, **Columbite**, **Cookeite**, **Diopside**, **Elbaite** tourmaline, **Feldspars**, **Fluorapatite** (purple, blue), **Gahnite**, **Goyazite**, **Herderite**, **Lepidolite**, **Montebrasite**, **Muscovite**, **Phenakite**, **Pollucite**, **Quartz**, **Schorl**, **Sphalerite**, **Spodumene**, **Topaz**,



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**Vesuvianite, Vivianite and Zircon.** Other mines in the Greenwood mining district include: Heath Quarry, Hayes Ledge, Heikken Quarry, Mustonen Ledge, and Ohtonen's Quarry, at which some or all of the following minerals and gemstones occur—**Apatite, Beryl, feldspar (Cleavelandite, Microcline), Garnet, Lepidolite, mica (Biotite, Muscovite), Quartz** crystals, **Spinel, Pyrite** and **Tourmaline** (black, green).

HARTFORD (Twp.): ① Dickvale, SE 2 mi. on S slope of Hedgehog Hill, pegmatite—**Aquamarine** and Golden **Beryl**; ② 2 mi. S of S end of Worthly Pond in area of Ragged Jack Mt., exposure (rugged location)—**Almandite** garnet, **Chrysoberyl, Feldspar, Fluorapatite, Muscovite, Schorl.**

HEBRON (Twp.): ① area of Mt. Rubellite: (a) 1½ mi. NE of Hebron at N end of Greenwood Hill, and (b) 2½ mi. N of Hebron, in pegmatite outcrops and prospects—**Rubellite** (pink tourmaline) and gemmy green **Tourmaline**; ② regional mines: (a) Conant Mine—**Feldspar**; (b) Hibbs Quarries—**Beryl, Feldspar, Garnet, mica (Biotite, Muscovite), Quartz** and black **Tourmaline**; (c) Hill No. 4 Quarry, N 2½ mi.—**Cassiterite, Feldspar** and gem **Tourmaline**; (d) **Rubellite** (Cushman) Mine—**Beryl, Pollucite, Rubellite** and green **Tourmaline**; (e) Streaked Mt. prospect —**Feldspar**; (f) Sturtevant (Sanitarium) Mine, inquire locally—gem **Beryl.**

HIRAM, Cutler Mt. area, the Frenchman's Gold Mine—**Feldspar, Muscovite** mica and **Quartz.**

LOVELL, the Forks Farm—**Beryl, Feldspar, Muscovite** mica.

MASON, the Anderson Mine—**Muscovite** mica.

MEXICO, the Gogan prospect—**Feldspar, Muscovite** mica.

NEWRY (Twp.): ① area mines: (a) Dunton Mine (Newry Gem Mine), and (b) the Newry Mines (False Mine, Lower Mine, Nevel Quarry) —**Almandite** garnet, **Amblygonite, Autunite, Beraunite, Bertrandite, Beryl, Beryllonite, Brazilianite, Cassiterite, chalcidony, Columbite, Cookeite, Diadochite, Elbaite** (fluorescent), **Eosphorite, Fairfieldite, Feldspar, Fluorapatite, Francolite, Galena, Goethite, Goyazite, Hatchettolite, Hematite, Herderite, Heterosite, Hydroxylapatite, Jahnsite, Laueite, Lepidolite, Ludlamite, Microlite, Mitridatite, Montebrasite, Moraesite, Muscovite, Opal, Perhamite, Petalite, Phosphophyllite, Pollucite** (fluorescent), **Purpurite, Pyrite, Quartz, Reddingite, Rhodochrosite, Rockbridgeite, Roscherite, Rutherfordine** (fluorescent), **Siderite, Sphalerite, Spodumene, Strunzite, Switzerite, Tantalite, Torbernite, black Tourmaline, Triphylite, Uralolite** (fluorescent), **Uraninite, Vivianite, Wadeite and Zircon**; (c) the Scotty Mine—**Beryl, Feldspar, Muscovite, Quartz** and **Spodumene**; ② Plumbago Mt.: (a) area pegmatites and prospects—**Beryl, Spodumene**; (b) E knoll, area mines—**Albite, Amblygonite, Beryllonite, Eosphorite, Herderite** and **Tourmaline**; (c) E spur 3.9 mi. N 40° W of Rumford Point—**Aquamarine** and gem **Tourmaline**; (e) NE side, the Lower Nevel Quarry—**Spodumene**; ③ Puzzle Mt. area (inquire locally), in pegmatite exposures, prospects and mines—gem **Beryl.**

NORTH WATERFORD, the Scribner Ledge Quarry (1 mi. N of the pumping Sta.) —**Albite, Almandite** garnet, **Autunite, Beryl** (green, yellow), **Biotite, Columbite, Feldspar, Fluorapatite, Muscovite, Quartz** (rose, milky, smoky), **Schorl, Uraninite, Uranophane.**

NORWAY: ① BB No. 1 Quarry—**Garnet, Muscovite, Pollucite, Spodumene**; ② the Dunn Mine—**Beryl, Feldspar, Muscovite** and **Quartz**; ③ Tubbs Ledge— **Cassiterite, Lepidolite, rose Quartz** and green **Tourmaline**; ④ BB No. 7 Mine at Nobles Corner 8 mi. NW—**Tourmaline**; ⑤ Scribner Ledge Quarry, 7.5 mi. on Rte. 118, turn right onto Hunts Corner rd., N for 4.2 mi. then turn Left onto gravel rd. and go 0.35 mi. uphill to the Steams residence (get permission and park), walk 1,800' SSE on farm rd. leading through orchard to quarry—fine **Beryl** crystals (green, yellow), asteriated **Rose Quartz, Feldspars, Micas, Almandite** garnet, **Autunite, Columbite, Fluorapatite, black Tourmaline, Uraninite, Uranophane**; ⑥ Witt Hill, on Rte. 117 E 0.8 mi., turn left onto Crockett Ridge rd. and drive

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N 3.1 mi. to where rd. forks, keep right and follow another rd. 3.1 mi. to point where it becomes impassable, park and continue N along old rd. for 300' to where rd. forks, keep left and proceed on woods rd. 2,200', until reaching point where stone wall on left side of rd. bends sharply to left, there is a large tree next to wall at this point, follow stone wall to left, keeping on left side of wall to a swampy area (350' from rd.), continue through swamp to low ridge (650' from rd.), Schorl occurs in ledge 50' left (S of wall), walk S along ridge for 400' to Chrysoberyl site—**Almandite** garnet, **Autunite**, **Chrysoberyl**, **Feldspar**, **Gahnite**, **Muscovite**, **Quartz**, **Schorl**, **Sillimanite**, **Torbernite** and **Zircon**.

OXFORD, the Jordan prospect—**Feldspar**, **Muscovite** and **Quartz**.

PARIS: (see location map) ① area: (a) E 1½ mi., mines on Mt. Mica, from jct. of Rtes. 26 and 117-119 in South Paris, go N on Rte. 26 for 0.35 mi., turn right at sign for Paris Hill and proceed 1.2 mi., go right at fork and continue 1.2 mi., turn right (by golf course) and drive E 1.5 mi. to quarry road on left, park and walk up quarry rd 1,500'—**Almandite** garnet, **Amazonite**, **Autunite**, **Bertrandite**, **Beryl** (Aquamarine, green, pink, white, Lithia), **Biotite**, **Brazilianite**, **Brookite**, **Cassiterite**, **Cesium**, **Columbite**, **Cookeite**, **Elbaite** (green, pink, blue, multi-colored, white), **Eosphorite**, **Evansite**, **Feldspars** (Cleavelandite, Microcline), **Fluorapatite**, **Gainesite**, **Glucine**, **Graphite**, **Herderite**, **Hisingerite**, **Hureaulite**, **Hydroxylapatite**, **Jahnsite**, **Laueite**, **Lepidolite**, **Löllingite**, **Microlite**, **Mitridatite**, **Montebrasite**, **Moraesite**, **Muscovite**, **Palermoite**, **Pollucite** (fluorescent), **Pyrite**, **Quartz** crystals (citrine, rose and smoky), **Romanechite**, **Roscherite**, **Sagenite**, **Siderite**, **Sphalerite**, **Spodumene**, **Stewartite**, **Strunzite**, **Tourmalines** (black, blue, green and pink), **Tantalite**, **Tapiolite**, **Torbernite**, **Triphylite**, **Uraninite** and **Zircon**; (b) Little Singpole Group (of mines), such as the Foster Mine, Haveringen Mine, and the Mills Quarry—**Apatite**, **Beryl**, **Columbite**, **Feldspar**, **Garnet**, **Muscovite**, **Pollucite**, **Quartz** and **Tourmaline**. ② Regional mines, such as: (a) Bowker Mine—rose **Quartz**; (b) Hoopers Ledge (Twitchell Mine), from South Paris go E on Rtes. 117-119 for 0.35 mi., turn left, stay on Rte. 117 and continue 1.05 mi., turn left onto Hooper ledge rd. and drive ¾ mi., park on right at entrance to old quarry rd, the prospect dumps are located a short distance from the paved rd, on lower SW slope of hill—**Almandite** garnet, **Beryl**, **Chrysoberyl**, **Columbite**, **Feldspar**, **Fluorapatite**, **Muscovite**, black **Tourmaline** and **Quartz** (rose, smoky, milky); (c) Immonen Ledge No. 1 —**Beryl**, **Feldspar**, **Garnet**, **Muscovite** and rose **Quartz**; (d) Immonen Ledge No. 2 —**Fibrolite**; (e) Mt. Marie Mine—**Apatite**, **Beryl**, **Columbite**, **Feldspar**, **Garnet**, **Muscovite**, **Pollucite**, **Quartz** and **Tourmaline**; (f) Perham Mine—**Apatite**, **Aquamarine**, **Feldspar**, **Garnet**, **Pyrite**, mica (**Biotite**, **Muscovite**), **Quartz** and **Tourmaline**; (g) Ryerson Hill Mine—, **Beryl**, **Columbite**, **Feldspar**; (h) Scott Colby Mine—**Feldspar** and rose **Quartz**; (i) Slattery Mine— **Bertrandite**, **Feldspar**, **Beryl** and rose **Quartz**; (j) Stearns Farm Mine—rose **Quartz**; (k) Stony Brook Mine—**Feldspars**, **Lepidolite**, **Muscovite**, **Quartz** and **Damourite** tourmaline; (l) Whispering Pines Mine—**Feldspar** and rose **Quartz**.

PERU (Twp.): ① Hedgehog Hill Mine, from 4 way intersection on Rte. 108 in West Peru (east of Rumford), drive 3.05 mi. S on Dickvale rd., turn left onto Mineral Springs rd. and continue for 0.95 mi. to intersection, turn right onto Paradise rd. (gravel) and drive 1.05 mi. to abandoned cabin on left, park and continue on main rd. about 150' to quarry rd. on right, follow this woods rd. 270' to fork, keep left at fork, continue 675' to next fork, keep right another 390' to stone wall, follow rd. through wall and go another 150' to end of obvious rd, continue straight ahead on steep downgrade, follow trail for 360' to quarry—**Almandite** garnet, gem **Beryl** (golden, Pink), **Biotite**, **Chrysoberyl**, **Fluorapatite**, **Muscovite**, **Quartz** and **Schorl**; ② Lobikis Mine, from 4 way intersection on Rte. 108 in West Peru (east of Rumford), drive 3.05 mi. S on Dickvale rd., turn right (W) at Dickvale and drive uphill ½ mi. to owner's house at end of paved rd, continue W on dirt rd. 0.1 mi. to where mine rd. branches left, park and walk 1,650' to where old house ruins are seen in bushes on right side of rd., continue about 900' west to dumps and quarry pit, located on hillside to right of rd.—**Almandite** garnet, **Beryl**, **Biotite**, **Fluorapatite**, **Heterosite**, **Muscovite**,

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**Pyrrhotite, Quartz, Torbernite, Triphylite and Vivianite;** ③ Perry prospect—**Autunite, Spodumene and Triphylite.**

ROXBURY: ① Binford prospect—**Muscovite** mica; ② Partridge Peak Mine—**Scheelite.**

RUMFORD (Twp.): ① area: (a) Black Mt., N on Hwy. 120 10 mi. to Roxbury Notch, turn Left on dirt rd. 2 mi. to mine rd. to Left., area quarries—**Almandite** garnet, **Autunite, Beryl, Beryllonite, Cassiterite, Columbite, Cookeite, Dickinsonite, Elbaite, Eosphorite, Fairfieldite, Feldspar, Fluorapatite, Goyazite, Gummite, Herderite, Heterosite, Hornblende, Hurlbutite, Laueite, Lepidolite, Magnetite, Microlite, Mitridatite, Montebasite, Muscovite, Pollucite, Purpurite, Pyrite, Quartz** crystals, **Rhodochrosite, Rockbridgeite, Roscherite, Schorl, Siderite, Sphalerite, Sphene, Spodumene, Strunzite, Tantalite, Torbernite, Triphylite, Uraninite, Uranophane, Vivianite, Whitlockite and Zircon;** (b) Whitecap Mt., area mines and prospects—**Apatite, Feldspar, Garnet, Muscovite, Quartz** crystals and **Tourmaline;** ② Regional mines and prospects: (a) Beliveau prospect—**Feldspar, Muscovite, Quartz** crystals; (b) Black Mt. Mica Mine—**Spodumene;** (c) Brown-Thurston prospect—**Beryl, Muscovite, Feldspar** and rose **Quartz;** (d) Carver prospect—**Beryl, Feldspar** and **Purpurite;** (e) Elliot Mine—**Tourmaline;** (f) Leach Quartz prospect—**Quartz** crystals; (g) Red Hill Mine, W on US 2 to the village of Rumford Center, N onto Andover rd. and go 1.95 mi., turn right onto Kimball rd. for 0.6 mi. till pavement ends, take gravel rd. to right at Kimball farm and proceed  $\frac{3}{4}$  mi. to house on left, park and get permission, continue on woods rd., keeping to right just past the house uphill (NE) to old house on left, turn right onto quarry rd., follow generally uphill to S, keeping to right until reaching the N most quarry—**Almandite** garnet, **Beryl** (white, pale green), **Columbite, Elbaite, Eosphorite, Fairfieldite, Feldspar, Fluorapatite, Heterosite, Ludlamite, Muscovite, Pyrite, Quartz** (including rose crystals), **Schorl, Siderite, Sphalerite, Strunzite, Triphylite, Uraninite, Vivianite;** (h) Goddard Ledge (Roy Ledge, Ford Hill, Paint Mine Ledge, Penley Ledge, Roy Quarry, Silver Ledge), from jct. of US 2 and Rte. 5 (near Rumford point) drive N on Rte. 5 for 2.9 mi., turn right crossing Ellis R., and drive 0.35 mi. to jct. with another rd., go straight (SW) on Andover rd. for  $\frac{1}{4}$  mi. and park, walk from NE side of rd. uphill to the NE, following the ridge crest for about 2,500' (no trail) until reaching the SW summit of the hill, the northern quarry is located in the rock knob on top of the hill, other quarries S about 400' to pit on top of a cliff—**Beryl** (golden, S quarry also greenish-white), **Columbite, Corundum, Feldspar, Fluorapatite, Goyazite, Montebasite, Muscovite, Pyrite, Pyrrhotite, Quartz** (milky, smoky), **Schorl, Siderite, Sphalerite, Triphylite, Zircon;** (i) Whitehall prospect—**Beryl.**

STONEHAM (Twp.): ① area of Butters Mt., mines and prospects—**Golden Beryl** and **Garnet;** ② area mines and prospects: (a) Aldrich prospect—**Beryl, Feldspar, Muscovite, Pyrite** and **serpentine;** (b) Andres Ledge—**Beryl, Muscovite;** (c) Foster Hill prospect—**Feldspar, Muscovite;** (d) Lord's Hill mine (on Lord's Hill  $\frac{1}{2}$  mi. SE of Harndon Hill), Hwy. 5 N to Kezar Lake, then W through Narrows and N 1.6 mi., take Left fork and go 2 mi.—**Almandite** garnet, **Autunite, Beraunite, Beryllonite, Bertrandite, Beryl, Cassiterite, Chalcopyrite, Columbite, Eosphorite, Feldspar, Fluorapatite, Fluorite, Gahnite, Goethite, Goyazite, Herderite, Heterosite, Hureaulite, Microlite, Mitridatite, Montebasite, Muscovite, Ollenite-Elbaite, Phenakite, Purpurite, Pyrite, Pyrrhotite, Quartz** crystals, **Siderite, Strunzite, Topaz, Torbernite, Triphylite, Uraninite, Uranophane, Vivianite, Zircon;** (e) Melsore prospect—**Bertrandite, Aquamarine, Beryllonite;** (f) Styles Mt. prospect—**Beryl;** (g) Willis Warren Quarry—**Apatite, Beryl, Feldspar, Garnet, Muscovite** and **Tourmaline;** ③ WSW in area of North Lovell: (a) Chapman Hill, 3 mi. N, mine—gem blue **Beryl;** (b) Durgin My. (inquire locally), 4 mi. N 30° W, on E side, mines—gem **Beryl** (various colors); (c) WNW  $2\frac{3}{4}$  mi., at base of McKean Mts., mines—**Apatite, Beryl, Beryllonite, Cassiterite, Feldspar, Muscovite, Quartz** (smoky) and **Triphylite;** (d) N 5 mi., mine on Speckled Mt.—**Golden Beryl;** (e) Sugar Hill prospects—**Aquamarine, Beryl** and **Beryllonite;** (f)

## A Location Guide for Rock Hounds in the United States

Cole Quarry, from North Lovell go NW on Stoneham rd. which leads to Evergreen Valley recreational area, drive 1.9 mi. then turn right onto Adams rd. and continue approx. 2 mi. to ski lift area on W side of Evergreen Valley, park and walk steeply uphill along the path of the main ski lift and proceed 5,000' to end of lift on summit of Adams Mt., from the end of lift walk SSE across open ledges for about 22' to edge of low cliff, pit located in cliff face with dump on steep hillside below—**Almandine** garnet, **Beryl**, **Biotite**, **Columbite**, **Eosphorite**, **Fairfieldite**, **Feldspar**, **Fluorapatite**, **Heterosite**, **Ludlamite**, **Muscovite**, **Pyrite**, **Quartz** (milky, smoky), **Sphalerite**, **Stewartite**, **Strunzite**, **Triphylite**, **Uraninite** (sharp crystals), **Uranophane**, **Vivianite**, **Zircon**.

STOW (Twp.): ① Cotton Hill, area prospect—**Feldspar** and **Quartz**; ② Deer Hill area (Big Deer Hill, 4½ mi. N of Stow or 1¾ mi. ESE of North Chatham, NH), mine—**Amethyst**, **Feldspar**, **Garnet**, **Muscovite**, **Pyrite** and **Quartz** crystals; ③ Hwy. 113 N for 5 mi., then E on dirt rd, take trail N up valley ½ mi. to CTA trail, take it E when it heads up mt. Jeep trail leads to Eastman Ledge and Deer Hill Amethyst prospect on top of Deer Hill—**Almandite** garnet, **Amethyst**, **Beryl**, **Columbite**, **Fluorapatite**, **Muscovite**, **Pyrite**, and other **Quartz** crystals (milky, smoky).

WATERFORD: ① Beech Hill (Waterford Mica) Mine—**Microcline** feldspar, **Garnet**, mica (**Biotite**, **Muscovite**) and **Quartz** crystals; ② Knight (Coye or Foye) Mine—**Beryl**, **Columbite** and **Muscovite**; ③ Saunders Mine—**Chalcopyrite**, **Feldspar**, **Garnet**, **Muscovite**, **Magnetite**, **Pyrrhotite**, **Quartz** crystals and black **Tourmaline**; ④ South Waterford prospect (Bear Mt.)—**Muscovite**; ⑤ Stearns Hill Mine—**Feldspar**.

WEST PARIS, S 70° W 8.8 mi. and ½ mi. NE of Flints Mt., the Scribner Mine—**Apatite**, **Golden Beryl**, **Feldspar**, **Garnet**, mica (**Biotite**, **Muscovite**), rose **Quartz** and black **Tourmaline**.

WOODSTOCK, area mine—**Copper**, **Lead**, **Gold** and **Silver**.

### PENOBSCOT COUNTY

CARMEL, the Carmel Antimony Mine—**Stibnite**.

CORINNA, the Dearborn Mine—argentiferous **Galena**.

EXETER, area mine—**Galena** and some **Gold**.

GARLAND, area mine—**Chalcopyrite** and **Galena**.

GREENFIELD, the Cemetery Hill Mine—**Iron** and **Manganese**.

HAMPDEN: ① the Hampden Consolidated Mine—**Lead**, **Copper** and **Silver**; ② Latrence Mine—**Galena**; ③ Silver Drift Mine—auriferous **Pyrite** and **Galena**; ④ Queen City Mine (near Bangor)—**Gold**, **Lead** and **Silver**.

LAKEVILLE, the Getchell Mt. prospect—**Feldspar**, **Magnetite**, **Biotite** and rose **Quartz**.

LOWELL: ① the Shorey Mine—sulfurets of **Antimony**, **Gold** and **Silver**; ② Vinegar Hill Mine—**Arsenopyrite**, **Chalcopyrite** and **Pyrite**.

### SAGadahoc COUNTY

BOWDOIN: ① the Combs Quarry—**Beryl**, **Feldspar**, **Garnet**, mica (**Biotite**, **Muscovite**), **Pyrite**, **Quartz** crystals and black **Tourmaline**; ② the Ordway mines—**Beryl**, **Feldspar**, **Garnet**, mica (**Biotite**, **Muscovite**), **Pyrite**, **Quartz** crystals and black **Tourmaline**; ③ Trufant prospect (inquire locally at the US Gypsum Co. in Lisbon Falls)—**Beryl**, **Feldspar**, **Garnet**, mica (**Biotite**, **Muscovite**), **Quartz** crystals.

BOWDIONHAM: ① the Booker prospect—**Feldspar**; ② Consolidated Quarry—**Feldspar**, mica (**Biotite**, **Muscovite**), **Quartz**; ③ Dunn prospect—**Feldspar**; ④ Harriman Mine—**Feldspar** and **Quartz**; ⑤ Lang Mine—**Feldspar**; ⑥ McFee Mine—**Feldspar**.

## Maine

GEORGETOWN: ① Consolidated Quarries, S on Bay Point rd. 1.85 mi., turn right onto dirt rd. (gate just after first house), drive downhill to quarry, passing rd. to left (owner's business) and rd. to right (owner's house, 0.45 mi. from Bay Point rd.)—**Almandite** garnet, **Autunite**, **Bertrandite**, **Beryl** (green, golden, white), **Biotite**, **Cassiterite**, **Columbite**, **Cookeite**, **Cyrtolite** zircon, **Elbaite** tourmaline (pink, green, blue), **Eosphorite**, **Feldspar**, **Gummite**, **Lepidolite**, **Muscovite**, **Pyrite**, **Quartz**, **Schorl** Tourmaline, **Spodumene** (pale green, to pale blue), **Uraninite**; ② Cunningham Mine—**Feldspar**; ③ Moffatt mines—**Feldspar** and **Tourmaline**; ④ Thorne prospect—**Feldspar**, **Bertrandite**, mica (**Biotite**, **Muscovite**), **Herderite** and **Spodumene**; ⑤ Todd Mine—**Beryl** and **Feldspar**.

LISBON FALLS, E on Hwy. 125 past Hwy. 201 to Stoddard's Pond, then N on road past marsh to Coomb's Mine—**Beryl**, green **Feldspar** and **Quartz**.

PHIPPSBURG (Twp.): ① McKay Farm prospect—**Beryl**, **Feldspar**, **Garnet**, mica (**Biotite**, **Muscovite**), **Quartz** crystals and black **Tourmaline**; ② 1.3 mi. S 17° W of tide mill, the Thoman Feldspar Quarry, from jct. of Rtes. 209 and 216, drive 1.75 mi. E on Rte. 209 to jct. where Rte. 209 bends sharply to right, bear left onto rd. leading N to Parker Head, drive ¾ mi. on Parker Head rd. to old dirt rd. on left, drive or walk about 0.3 mi. NW to the quarry—**Almandite** garnet, **Aquamarine** and **Beryl** (green, golden), **Biotite**, **Feldspar**, **Fluorapatite** (blue-green, green), **Muscovite**, **Quartz** (smoky, milky), **Schorl**, **Torbernite**, **Uranophane**; ③ Perry Mine—**Feldspar**; ④ Robbins Mine—**Beryl**, **Feldspar** and **Magnetite**; ⑤ Rogers Mine—gem **Beryl**, **Feldspar** and black **Tourmaline**; ⑥ Thomas Quarry—**Apatite**, **Beryl**, **Feldspar**, **Muscovite** and **Tourmaline**; ⑦ Haven Prospect, from jct. of US Rte. 1 and Rte. 209 in Bath, drive 2.4 mi. S on Rte. 209, turn right onto Meadowbrook rd. (after store, but before bridge) locally called *High St.* or *Campbell Pond rd.*, 5.5 mi. SW to Hutchinson residence on left, park along rd. and walk back along main rd. 200' to small grown rd. on left which leads to field next to ocean shore, continue across field to small prospect pit on knoll, or seawall to right and uphill from first pit—**Calcite**, **Clinzoisite**, deep reddish-orange crystals of **Grossular** garnet, **Meionite** (scapolite gr.), **Pargasite**, **Quartz**, **Scheelite** and **Titanite**.

TOPSHAM (Twp.): ① N, overlooking the Cathance R., feldspar quarries at Brunswick—**Aquamarine**, **Smoky Quartz** crystals, **Topaz** and **Tourmaline**; ② 2 mi. NW of Cathance Sta., the Willes Feldspar Quarry—**Beryl** and **Tourmaline**; ③ N 2½ mi., a pegmatite dike outcrops on a low hill just N of the Cathance R. and Fisher Quarry—**Apatite**, **Beryl**, **Cassiterite**, **Columbite**, feldspar (**Albite**, **Cleavelandite**), **Gahnite**, **Herderite**, **Lepidolite**, **Muscovite**, **Topaz**, **Torbernite** and **Tourmaline**; ④ area mines: (a) Chapman, Given, Graves, Mallett,—**Feldspar**, **Muscovite** mica and **Quartz**; (b) Drenzo (Cormier Farm) prospect—**Feldspar**, **Muscovite** mica and **Quartz**; ⑤ Numerous area quarries: (a) Great Divide (Undivided), Ingalls, Purington, Alice Staples, Rumrill, William Willes, some or all of the following minerals—**Beryl**, **Cassiterite**, **Columbite**, **Albite**, **Gahnite**, **Garnet**, **Herderite**, **Lepidolite**, mica (**Biotite**, **Muscovite**), **Quartz** crystals, **Topaz**, **Torbernite** and **Tourmaline**; (b) Porcupine Hill Quarry, from overpass where Rte. 196 crosses I-95, drive W 0.8 mi. on Rte. 196, turn right on Adrea St., drive 0.15 mi. continuing past end of Andrea St., park in small dirt lot and follow faint trail SE along powerlines, trail shortly enters woods on left, becoming a broad distinct path, at about 350 paces from lot there is a trail intersection, continue straight ahead for about 300 paces to another intersection, quarry straight ahead 100' more—**Almandite** garnet, **Beryl**, **Biotite**, **Chrysoberyl**, **Columbite**, **Elbaite** (green), **Fluorapatite**, **Muscovite**, **Quartz** and **Schorl**; (c) Standpipe Hill, drive W on Winter St. 0.45 mi. to Bridge St., turn left onto Bridge St. and proceed 0.4 mi., turn right on Oak St. and drive 0.1 mi. to end of st., park and walk to rear of standpipe, trail leads 75' to site—**Bertrandite**, **Beryl** (green, yellow), **Biotite**, **Bismuthinite**, **Bismutite**, **Columbite**, **Ilmenite**, **Magnetite**, **Microcline**, **Muscovite**, **Pyrite**, **Quartz**, **Samarskite**; ⑥ Trenton Quarry (G.D. Willes Quarry, Consolidated No. 4 Quarry), E then NE on Rte. 24 for 2.6 mi., turn left onto Cathance rd. and proceed N 2.55 mi., turn left onto School Crossing rd., park walk 0.3 mi. to woods rd. on left

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(opposite old quarry dump on right), SW on woods rd. for 3,300' keeping to left along way until reaching major jct. with another quarry rd., take sharp right turn onto this rd. and walk W 480' to another jct., turn right (N) and walk across clearing a short distance to quarry—**Almandite** garnet, **Beryl**, **Biotite**, **Elbaite** (green), **Feldspar**, **Quartz** crystals; ⑦ Square Pit Quarry, from Trenton Quarry, follow woods rd. to jct. SE of Trenton Quarry, continue SE crossing powerline for about 2,010' to next major rd., take sharp right turn onto this rd. and walk SW about 2,800' to quarry with dump on right—**Almandite** garnet, **Beryl** (aquamarine, and excellent golden), **Biotite**, **Elbaite**, **Fluorapatite**, **Molybdenite**, **Muscovite**, **Quartz** (milky, smoky) and **Schorl**; ⑧ Fisher Quarry—**Beryl**, **Columbite**, **Feldspar**, **Muscovite**, **Quartz** crystals, **Topaz** and **Tourmaline**;

WEST BATH, the Davis Mine—**Apatite**, **Beryl**, **Microcline** feldspar, **Garnet**, **Muscovite**, **Quartz** crystals and black **Tourmaline**.

WOOLWICH: ① Trott Cove Mine—green **Apatite**, **Beryl**, **Feldspar**, **Garnet**, **Muscovite**, **Quartz** crystals and black **Tourmaline**; ② Woolwich Mine—**Azurite**, **Bornite** and **Malachite**.

### SOMERSET COUNTY

CONCORD, the Robinson Mine—**Arsenopyrite**, **Bornite**, **Chalcopyrite**, **Galena**, **Pyrite** and **Pyrrhotite**.

ST. ALBANS: ① the Gould prospect—**Copper**, **Lead** and **Silver**; ② Indian Lead Mine—**Galena**; ③ St. Albans Mine—**Galena**, traces of **Gold**.

### WALDO COUNTY

KNOX, the Stone Mine—**Gold** and **Silver**.

PROSPECT, the Fort Knox Mine—**Copper**, **Lead**, **Gold** and **Silver**.

### WASHINGTON COUNTY

CHERRYFIELD: ① the Britton Mine—**Galena**; ② Cherryfield Mine—**Chalcopyrite**, **Galena**, **Gold quartz**, **Pyrrhotite**, **Silver** sulfurets and **Sphalerite**.

COOPER, Cooper (American Molybdenum) Mine—native **Bismuth**, **Iron Molybdate**, **Molybdenite**.

JONESPORT, area mines—argentiferous **Galena**.

MACHIASPORT, at Jasper Beach, from jct. of US 1 and Rte. 92 in Machias village drive SE 9.65 mi. on Rte. 92 (Machias rd.) passing through Machiasport and Bucks Harbor, turn left on gravel rd. and proceed 0.2 mi. and park, a short walk brings you to beach—**jasper** pebbles.

MARSHFIELD, the Crocker prospect—**Lead** and **Silver**.

PEMBROKE: ① the Big Hill Mine—**Chalcopyrite**, **Galena**, **Pyrite**, **Pyrrhotite** and **Sphalerite**; ② Pembroke Mine—**Azurite**, **Bornite**, **Chalcopyrite**, **Galena** and **Sphalerite**; ③ Young's Point Mine—argentiferous **Galena**; ④ at Gleason Cove—**jasper**.

PERRY, at Loring Cove to N off US 1—**agate**.

TRESCOTT-LUBEC: ① the Trescott Mine—**Galena**; ② Lubec Lead Mine, from jct. of Rtes. 189 and 191 in West Lubec, go W 0.1 mi. on Rte. 189, turn right (N) on Crow Neck rd. for 0.45 mi., turn right onto Lead Mine rd. and proceed 1.65 mi., park on left side of rd. and follow gravel road that turns right (to ocean shore) for 800' to clearing on left where obscure mine rd. starts, collecting is best in dumps along shoreline below mine—**Acanthite**, **Anglesite**, **Aurichalcite**, **Bismuth**, **Bornite**, **Calcite**, **Cerussite**, **Chalcopyrite**, **Dolomite**, **Epidote**, **Galena**, **Hematite**, **Hemimorphite**, **Limonite**, **Pyrite**,

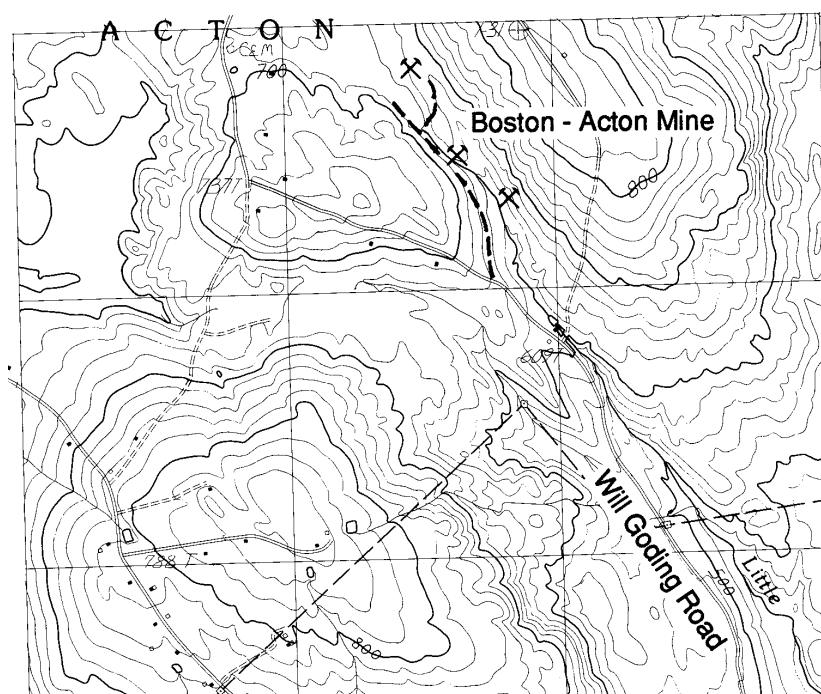
## Maine

**Pyromorphite, Pyrrhotite, Romanechite, Quartz, Smithsonite, Sphalerite, Titanite, Wulfenite.**

WESLEY: ① the Bacon & Snow Mine—**Chalcopyrite, Pyrite and Sphalerite**; ② Rollins Mine—**Bornite, Cuprite, Galena, Pyrite, Pyrrhotite and Sphalerite.**

### YORK COUNTY

ACTON: ① the Acton Mine, from Sanford, take US 202 S to blinking light in East Lebanon, turn right and go N 2.55 mi. (keeping to right and then to left as you pass through North Lebanon), turn right onto Will Goding rd. and continue N 2.5 mi. (pavement ends at 1.1 mi.), park at head of trail on right side of rd., follow trail N 1,400' to fork, take right and continue about 100' to old bridge with beaver dam and pond on left. This is the head of Little R., proceed on faint trail N trending 900' to old mine and shaft on left—**Acanthite, Arsenopyrite, Bornite, Chalcopyrite, Galena, Pyrite, Pyrrhotite, Quartz, Silver and Sphalerite**; ② Action Consolidated Mine—**Arsenopyrite, Chalcopyrite, Galena, Pyrite, Pyrrhotite and Sphalerite**; ③ Action-Lebanon Mine—**Galena, Pyrite and native Silver.**



CORNISH, the Berry Mine—**Calcite, Diopside, Grossularite, Idocrase, Pectolite, Scapolite and Scheelite.**

LIMERICK, 4 mi. distant at Straw Hill, in seams and boulders—**Sodalite.**

LYMAN, the Brock prospect—**Beryl, Feldspar and Muscovite mica.**

HEWFIELD (Twp.): ① Bergendahl Mine—**Chalcopyrite, Molybdenite, Pentlandite, Pyrite, Pyrrhotite and Sphalerite**; ② Davis Mine—**Arsenopyrite, Pyrite and Scheelite**; ③ Pease Mt. Mine—**Diopside, Grossularite, Idocrase and Scheelite**; ④ Piper Hill Mine—**Grossularite garnet and Scheelite**; ⑤ Tin (Newfield) Mine—**Cassiterite.**

NORTH LOVELL, in boulders in game preserve—**Vesuvianite.**

## A Location Guide for Rock Hounds in the United States

SANFORD: ① the South Sanford Mine—**Molybdenite**, **Molybdite**, **Powellite**, **Scheelite** (fluorescent) and **Vesuvianite**; ② in pit and dump 1½ mi. E on School Street at Goodhall farm—**Actinolite**, **Calcite**, **Clinozoisite**, **Diopside**, **Fluorite**, **Greenockite**, **Grossular** garnet, **Meionite** (scapolite gr.), **Molybdenite**, **Powellite**, **Pyrite**, **Quartz**, **Scheelite**, **Sphalerite**, **Titanite** (fluorescent), and excellent brown **Vesuvianite**.

WATERBORO, the Caton prospect—**Feldspar** and **Quartz**.



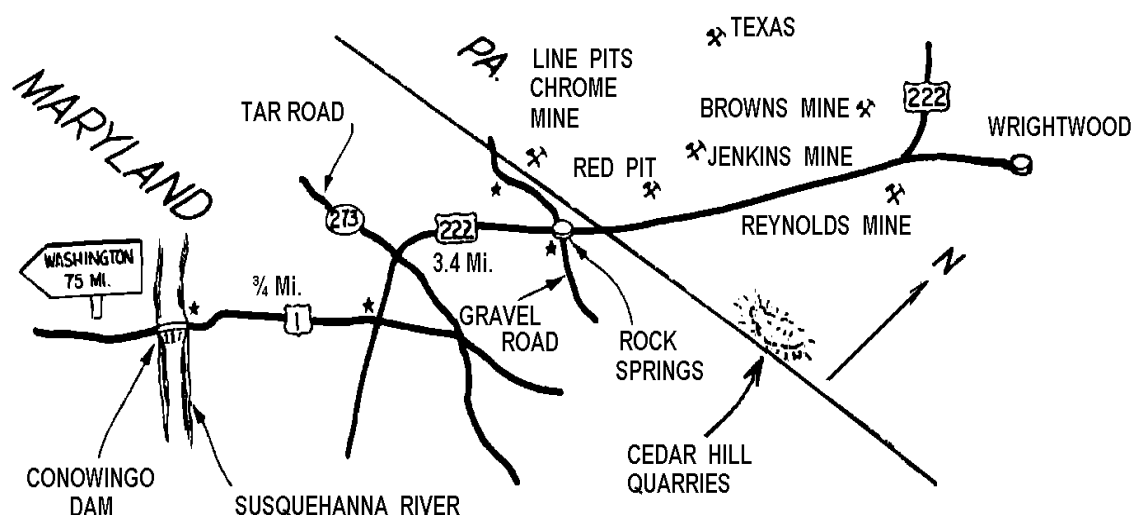
## MARYLAND

Divided by the drowned canyon of the Chesapeake Bay, Maryland is characterized by three strikingly different geological provinces. The Coastal Plain extends westward from the present margin of the continental shelf to the Fall Line, passing through the cities of Baltimore and Washington DC—a flat, almost featureless sea level plain underlain by unconsolidated clays, sands, and gravels of the Mesozoic and Cenozoic age dipping at a low angle toward the southeast.

The Piedmont Plateau forms the central part of Maryland, extending westward from the plains, or Fall Line, to the east side of South Mountain. This region is an undulating upland with a maximum elevation of 1,000 ft., formed of ancient, intricately folded and gently faulted strata thoroughly metamorphosed by intense crushing and extensive igneous intrusions. In the west and north the Piedmont rises to the Blue Ridge and the hills of Pennsylvania.

The Appalachian Province spans the region between South Mountain and the West Virginia border, divided into three main districts: the Blue Ridge, the Greater Appalachian Valley and the Allegheny Plateau. Here, in the extreme southwestern corner of Garrett Co. almost on the West Virginia line, rises the highest point in Maryland, Backbone Mt., 3,360 ft. above sea level. This province provides the gem and mineral collector with some excellent materials, derived from a series of metamorphosed volcanic flows and tuffs. Replacement mineralization yields some relatively rare mineral species, while vugs and cavities often contain interesting secondary minerals.

From the gem collector's point of view, the most rewarding gemstones occur in the **serpentine** and **Chromite** deposits that are widely distributed through five northern counties (Cecil, Hartford, Baltimore, Carroll and Frederick) in a region locally known as the *Barrens* because of the stunted nature of its vegetation. Here a gemmy serpentine called **Greenstone** has long been quarried for building stone and railroad ballast. The associated **Verde Antique**, laced with twisting white veinlets (the *serpents* that originally gave serpentine its name), is greatly valued for its decorative nature. Another metamorphic type, locally called **Baltimorite**, is valued by collectors a cutting material because of its pale blue green color and compact fibrous texture.



## A Location Guide for Rock Hounds in the United States

Associated with these deposits are **Picrolite**, a rare form of foliated blue green serpentine closely resembling asbestos, and **Brucite**, a silvery mineral with green and red inclusions in a fibrous matrix. Here also occurs a gemmy, jadelike serpentine called **Williamsite**, much valued by collectors. Indeed, because of its apple green color and translucency, Williamsite ranks among the most sought after gemstone in Maryland. All these gemstones occur in the famed State Line Pits that straddle both sides of the Maryland-Pennsylvania border, especially in Cecil Co., MD, from the Susquehanna River eastward to the Delaware line. Other associated gemstones and minerals include clear and smoky **Quartz** crystals, **jasper**, **Olivine** crystals, **Enstatite**, **Tourmaline**, **Rutile** (in the form of red lustrous, prismatic crystals), **Vesuvianite**, light green massive **Talc** useful for carving, pink to purple **Kämmererite**, **Magnetite**, **Hydromagnesite**, and **Deweylite** (a hydrous magnesian silicate), with apple green **Genthite** representing a nickel replacement of magnesium.

Following the Civil War, Maryland was extensively prospected for gold. Gold Quartz ores were found in the Piedmont, and although mining did not prove profitable, one can still pan for colors in the regional stream gravels. For years Maryland was a leading producer of copper, lead, iron, manganese, molybdenum, titanium and zinc, while pegmatites outcropping in the eastern Piedmont have been abundantly mined for Mica and feldspar. Much asbestos has also contributed to the mineral economy of the state.

Visiting gem collectors to the State Line Pits must necessarily include both the Maryland and Pennsylvania mines. At least a hundred mines and prospects surround the crossroads towns of Cecil Co., MD, west to east from the Susquehanna River, of Pilot, Oakwood, Rock Springs, Goat Hill, Sylmar and Calvert, while almost as many other workings on the Pennsylvania side of the boundary surrounding the communities of Pleasant Grove, Wakefield, Lyles, Wrightsdale, Nottingham, Chrome and White Barrens. Since all collecting areas are privately owned, permission to collect is important.

### ALLEGANY COUNTY

CUMBERLAND: ① area deposits, prospects, etc.—**Fluorite**; ② old mining town of Roberts and on W side of Wills Mt., area of abandoned strip mines—**Hematite**.

FROSTBURG, area coal mine dumps (park car at Dan's Mt. State Park) —**Barite** crystals and **Siderite**.

### ANNE ARUNDEL COUNTY

AREA, the Fort Dorsey and Loper Hall iron mines—**jet**.

RIVIERA BEACH (S of Baltimore and NW of Annapolis): ① Magothy R.: (a) area exposures of the Magothy fm.—**Pyrite**. (Deposits of this pyrite were mined and the mineral roasted for the manufacture of H<sub>2</sub>SO<sub>4</sub>.) (b) Area of North Ferry Point, in river bank lignite seams—**Amber** and **fossil** material; ② Lignite seams along the Severn R., especially at Sullivan Cove—**Amber**.

### ANNE ARUNDEL and PRINCE GEORGES COUNTIES

AREA, regional exposures of the Patapsco and Arundel formations, as deposits—**ocher**.

### BALTIMORE COUNTY

ALBERTON, area quarries or mines in pegmatites—**Copper** minerals, massive **Quartz**, **Garnet** and **Tourmaline**.

## Maryland

BALTIMORE: ① area: (a) in metropolitan district, the Bare Hills (1 mi. Sq. mining district since 1839) —**Actinolite**, **Copper** minerals (like Malachite), **Epidote**, **Feldspar**, **Garnet**, **moss agate**, **Pyrite**, **Quartz**, **serpentine**, **Tremolite** and **Zoisite**; ② SE of city, in gravels, and ③ NE, in Germantown gravel exposures—**silicified cycad wood**; ④ quarries along the Gunpowder R., especially the Arundel Gneiss Quarry—**Aquamarine** and **Beryl**.

BUTLER, area mines, prospects—**serpentine** and **Williamsite**.

CATONSVILLE, area old prospects, in quartz veins—**Gold**.

COCKEYSVILLE: ① area quarries—very fine grained white **marble**; ② H. T. Campbell Quarry, take Padonia exit of I-83 N of I-695—**Marble**, **Quartz** and **Tourmaline**. (Collecting only on Sat. with advanced permission.)

DELIGHT, old chrome mines in Soldier's Delight area—**Feldspar**, **metamorphic** minerals, **Quartz**, **Chromite**, **Magnesite**, etc.

GRANITE: ① area pegmatite quarries—**Copper** minerals, massive **Quartz**, **Garnet** and **Tourmaline**; ② loose in area soil—**Quartz**.

GREAT FALLS: (on Liberty Lake), area mines—**Copper** minerals.

HOLLOFIELD: ① area pegmatite quarries—**Copper** minerals, massive **Quartz**, **Garnet** and **Tourmaline**; ② S ½ mi. on old Frederick rd., quarry—**serpentine**.

JONES FALLS, area quarries, as traces—**Galena**.

MARRIOTTSVILLE, area quarries—**Quartz** crystals.

REISTERSTOWN: ① area quarries —**serpentine**; ② area chrome mines—**Chromite**, **Feldspar**, **metamorphic** minerals, and **Quartz**.

TEXAS: ① area quarries—very fine grained white **marble**; ② the Campbell Quarry—**Tourmaline**.

WHITE HALL, SE 1 mi. and 2½ mi. NE, area mines—**Magnetite**.

WHITE MARSH, area exposures of pegmatite—**Amethyst**.

## BALTIMORE, CARROLL, FREDERICK & HOWARD COUNTIES

AREA, the Blue Ridge district, regional exposures of crystalline rocks, as veinlets, stringers, discolorations, etc.—**Malachite**.

## BALTIMORE and HARFORD COUNTIES

AREA, quarries in inferior deposits of fibrous serpentine—**Chrysotile** asbestos.

## CALVERT COUNTY

PRINCE FREDERICK, both N and S along the shores of Chesapeake Bay: ① Breezy Point to Cove Point, in cliffs and strata and weathered out onto beaches, great variety of gemstone hard, colorful, and lapidary quality—**fossils**; ② Calvert Cliffs State Park (no collecting in park)—**fossils** and **shark teeth**.

## CARROLL COUNTY

AREA, W part of Co. and E part of Frederick Co., in limestone exposures—**Galena**.

ELDERSBURG, N 1½ mi.: ① at the Monroe prospect dumps—**Azurite** and **Malachite**; ② 1 mi. E of Monroe prospect, on both sides of Rte. 32, the Beasman prospect, abundant—**Pyrite**.

FINKSBURG: ① E 1 mi., on both sides of US 140 and Rte. 526: (a) the Patapsco Mines—**Cobalt** and **Nickel** minerals; (b) 200 yds. S of Rte. 526, the Wildesen Mine—

## A Location Guide for Rock Hounds in the United States

**Cobalt** and **Nickel** minerals; (c) between US 140 and Rte. 526, the Orchard Mine—**Cobalt** and **Nickel**; ② Union Bridge, a quarry—**marble** (pink and green, swirling cloudlike patterns); ③ SW 7 mi., at Mineral Hill, area mines—**Bornite**, **Chalcocite**, **Gold** and **Specularite**.

MIDDLEBURG, between town and Big Pipe Cr., sparingly in outcrops of a red sandstone—**Chrysocolla**.

NEW WINDSOR, area mines, prospects—**Azurite**, **Bornite**, **Calamine**, **Malachite**, **Smithsonite** and **Sphalerite**.

SYKESVILLE: ① area, as the center of a once important mining district, many old mine dumps and pits—**Actinolite**, some native **Copper** and **Gold**, **Epidote**, **Garnet**, some **Malachite**, **Lead-Zinc** minerals, gemmy **marble**, **Quartz**, **soapstone**, specular **Hematite** (on dumps of iron mines), **Tremolite** and **Zoisite**; ② NW ½ mi.: (a) the Springfield Mine—**Copper** and **Iron** minerals; (b) across Piney Run to the NE, the Carroll Mine—some **Copper**, **Epidote**, **Garnet**, **Specularite** and **Iron** minerals.

UNION BRIDGE, SW 3 mi. in Mountain View Lead Mine ¼ mi. W of Beaver Dam Church on Beaver Dam rd.—**Quartz** crystals.

WESTMINSTER, N of new Windsor rd. ¼ mi. at Hyde Limestone Quarry—**Quartz** crystals.

### CECIL COUNTY

AREA: (see introduction paragraph for State Line Pits) Recommended collecting methods are to avoid the old pits and dig around in general brushy areas between or adjacent to the excavations, particularly in areas where the chrome miners dumped their gangue rock—**Kämmererite**, gemmy **serpentine**, **soapstone**, **Williamsite**, etc., **Chromite**, **Zaratite**, **Brucite**, **Magnesite**.

BALD FRIAR, CONOWINGO CREEK, FLINTVILLE & PILOT, area mines and feldspar quarries—**Feldspar** crystals, **Garnets**, **Mica** and **Quartz** crystals.

CONOWINGO: ① N on US 222 to within ½ mi. of PA line, then E on dimly marked Connelly Rd. to State Line Pits (long abandoned chrome mines), on dumps and brush covered surfaces—some **Kämmererite**, **soapstone**, **serpentine** and **Williamsite**; ② other area mines (some periodically operating), Red Pit, Wood Chrome, Wet Pit, Hillside, North Rock Springs (Jenkins Mine), Cedar Hill (a noted operating mine, the Stolfus Quarry), and Newbold—gemmy **serpentine** and **Williamsite**.

ELK MILLS, for US 40 go N on Hwy. 280 to Cheery Hill, then E on Hwy. 277 to quarry on E bank of Elk Cr.—**Beryl** and **Garnet**.

ROCK SPRINGS CROSSROADS, N ¾ mi., area pits—**Brucite**, purple **Kämmererite**, **Magnesite**, **serpentine** and **Williamsite**.

WEST NOTTINGHAM, area quarry, forming wall rock—**serpentine**.

### FREDERICK COUNTY

CATOCTIN FURNACE: ① area iron slag dumps—**gemmy slag** (fluorescent, brightly colored, can be cut and polished); ② SW, mine on hill—**Magnesite** and **Silver**.

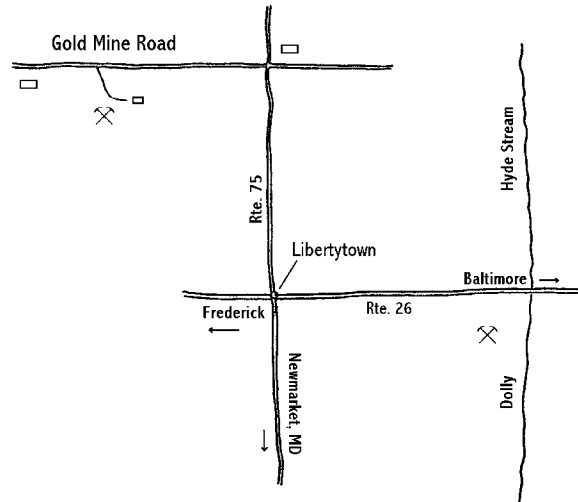
FREDERICK, in area crushed stone quarry—pink **Fluorite**.

JOHNSVILLE: ① area mines, the Liberty, Bare Hill, etc.—**Bornite**, **Chalcocite** and **Malachite**; ② SE 1 mi. and ½ mi. N of the Coppermine Rd., at the Repp Mine—**Copper** minerals (abundant in dumps), brecciated **marble** (pink and purple), milky **Quartz**; ③ SE 1½ mi., on E side of Beaverdam Cr.—**Barite** crystals and **marble**; ④ NE 1¼ mi., near an old stone church, the Cox Mine dumps (brush covered)—**Copper-Lead-Zinc** minerals.

LANTZ, Catoctin Mt., area outcrops, as specimen material only—native **Copper**.

## Maryland

**LIBERTYTOWN:** ① area mine dumps—**Copper, Gold, Silver** and **Zinc** minerals (This is the heart of the old Linganore mining district. The mine dumps carry also **Azurite, Chrysocolla, Covellite, Malachite, Tenorite, Cerussite, Anglesite** and **Smithsonite**.) ② E  $\frac{3}{4}$  mi. and  $\frac{1}{4}$  mi. S of Rte. 26 on both sides of Dollyhyde Cr., the Dolly Hyde Mine—**Copper** minerals and some **marble**; ③ SW  $\frac{3}{4}$  mi., on dumps of the Hammond prospects—**Bornite**, pink **Calcite, Covellite, Malachite** and rock **crystal**; ④ N 2 mi., the Liberty Mine, and ⑤  $\frac{3}{4}$  mi. W of Rte. 75 on S side of Gold Mine rd., many open cut mines and pits—**Azurite, Barite, Bornite, Calcite, Chalcocite, Chrysocolla, Epidote, Feldspar, Galena, Gold, Hematite, Malachite, Pyrite, Quartz** and **Sphalerite**; ⑥ regional land surfaces, especially hillsides around town—**Barite** crystals and gemmy **conglomerate** (jasper, rhyolite).



Liberty & Dolly Hyde Copper Mines

**MIDDLETOWN**, valley occurrences, mines, pits, etc.—**Stibnite**.

**NEW LONDON**, in SW corner of town, the new London Mine—**Barite** and **Copper** bearing **marble**.

**POINT OF ROCK:** ① on state highway land, gemmy—**puddingstone** (a colorful conglomerate); ② an area deposit—**Pyrolusite**; ③ a quarry between town and Washington jct.—**Calcite, jasper, marble** and **Quartz**. (The marble is locally called Calico or Potomac marble, a breccia of calcite and not true marble.)

**UNIONVILLE**, NW  $\frac{3}{4}$  mi. at the Young place on S side of an old mine rd., a producing mine—**Lead-Zinc** minerals, **Pyrite** and **Quartz**.

## HARFORD COUNTY

**CAMBRIA, BROAD CHEEK**, area quarries—**serpentine**.

**CARDIFF**, area quarries—**Garnet, Pyrite, serpentine** and **Staurolites**.

**CASTLETON**, N 1 mi., extending W along the Susquehanna R.—**Quartz** crystals and **Tourmaline**.

**CHERRY HILL:** ① SE, and just E of Chrome Hill, mine pits—**Chromite** and **serpentine**; ② E  $\frac{1}{2}$  mi., area surfaces—**Smoky Quartz** crystals (singles, groups); ③ Chrome Hill, mine dumps—**Actinolite, Bronzite** and **Garnet**.

**COOPSTOWN**, NW 2 mi., the Walkens Mine (and the Reed Mine) —**Chromite**, gem **serpentine, soapstone**, etc.

**DEER CREEK**, area quarries—**serpentine**.

**DUBLIN**, area mines—**serpentine** and **soapstone**.

**FLINTVILLE**, area hills, draws, etc.—**moss agate** and **jasper**.

**MINEFIELD**, SE 1 mi., a small mine—**Magnetite**.

**PYLESVILLE**, W  $2\frac{1}{2}$  mi., in serpentine mine—**Magnetite** and **Rutile**.

**WHITEFORD** (on Rte. 136 just S of the PA line), E on foot of a hill, the Green Marble Quarry and mill—gemmy **Verde Antique, Chrysotile** asbestos.

## A Location Guide for Rock Hounds in the United States

### HOWARD COUNTY

CLARKSVILLE, area quarries—**marble**.

DAVIS: ① S 1 mi., the Frost Feldspar Quarry—**Garnet, Smoky Quartz** crystals, **Sphene** and **Vesuvianite**; ② SE ½ mi., quarry—**marble**.

HIGHLAND: ① S, at Browns Bridge Rd. near Lime Kiln Rd. 1 mi. NE of Alpha, a quarry—**marble**; ② Brown Bridge N 0.3 mi. a schist outcrop—**Garnets** and **Staurolites**; ③ below Snell Bridge and 0.7 mi. S of Henrytown on the Tunnel Rd.—**Garnets** and **Staurolites**; ④ Bear Island (in the Potomac R.), exposures—**Apatite, Epidote, Amphibolite, Sphene** and **Zircon**.

ILCHESTER, area and regional feldspar quarries, especially at the Day Mine operating in pegmatite—**pegmatite minerals** and **gems**.

MARRIONTTSVILLE: ① W 1 mi., at Carroll's Mill, and ② N 2 mi., at Nicols, quarries—**marble**.

SCAGGSVILLE: ① SW 1 mi., the Ben Murphy Mica Mine—gem **Beryl** (green, yellow), **Autunite, Gahnite** and **Mica**; ② NW, the old Maryland Mica Mine—**Amethyst, black Tourmaline** and other various **minerals**.

SIMPSONVILLE, the Maryland Mine (once the richest gold mine in the state) on Arrington farm—**Amethyst, Beryl, Galena, Gold** (in quartz dikes), **Pyrite** and **Silver**.

WOODBINE, some old area mines (make local inquiry) —**Gold**.

### MONTGOMRY COUNTY

ASHTON: ① E 2 mi., ② Woodfield, and ③ Cedar lane, area quarries—**serpentine** and **Steatite**.

BROOKFIELD, area abandoned mines—**Pyrolusite**.

BURNT MILLS, the Kensington Mica Mine—**Golden Beryl** and **Mica**.

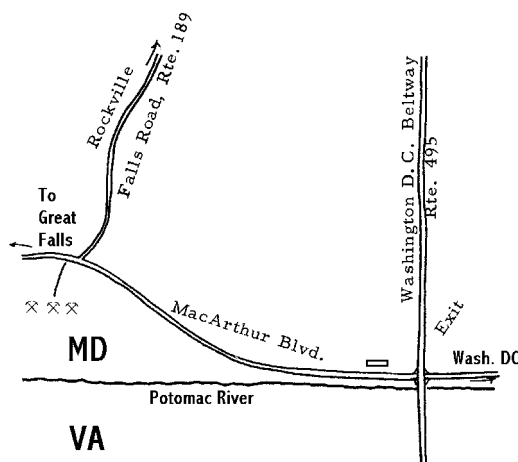
ETCHISON, area mines—chrome **Tourmaline**.

GAITHERSBURG, N, along the 6 mi. to Seneca Cr., as float—**serpentine** and **Steatite**.

GREAT FALLS, the Great Falls Mine—**Gold** and **Tetradymite**.

ROCKVILLE (a suburb of Washington DC), NW on US 70: ① W a short distance on Rte. 28, a large quarry—**Diopside**; ② NW, in a concrete aggregate quarry near Hunting Hill—**Calcite, Chlorite, Deweylite** (fluorescent), **Diopside, Grossularite** garnet (massive), **Hydromagnesite** (fluorescent), **Idocrase, Opal** and **serpentine**; ③ Hunting Hill (massive serpentine body over 4 mi. long), are quarries—**Calcite, gem Diopside, Garnet, common opal** and **serpentine**; ④ 6 mi. out along the Darnestown Rd.—**Talc**.

SPRINGFIELD, take first rd. on Left from school marked Vaughn Summit to concrete bridge, in stream—**jasper**.



The Great Falls Mine

### PRINCE GEORGES COUNTY

AREA, exposures of the Potomac fm.—**petrified wood**.

## Maryland

BELTSVILLE, (a) old area mine dumps; and (b) in stream beds to N—**Hyalite** opal, **Quartz** crystals and **silicified wood**.

OXEN HILL, area old mines—**Pyrite**.

### WASHINGTON COUNTY

CAVETOWN, Cavetown Quarry, N on Rte. 66 to RR crossing, park and walk W along tracks to trail NW to Quarry—**Calcite**, **Onyx**.

HANCOCK: ① area quarries—**fossils** and **Quartz** crystals; ② S on Hwy. 522 to Pennsylvania Sand Corp. pit—**Quartz**.

HARPERS FERRY (Jefferson Co.), N 3 mi. on N shore of the Potomac R.—**Pyrolusite**.

### WORCESTER COUNTY

OCEAN CITY, in beach at Point Lookout—*Cape May Diamonds* (**Quartz**).

## MASSACHUSETTS

The Connecticut River Valley divides Massachusetts, with its mean elevation of 500 ft. above sea level, into an eastern coastal plain, marked by short, swift rivers, and a western region of minor uplands that rise toward the Berkshire Hills in north central Berkshire Co. These hills, which climax in Mt. Greylock at 3,491 ft., are but the glaciated remnants of an Ordovician mountain building *overthrust* of such magnitude that the whole of New England was narrowed by several hundred miles. The crumpling of Cambrian and Ordovician sedimentary strata raised up the Taconic Mountain range, which borders the western part of the state.

The Connecticut River Valley is characterized by sill type exposures of vast basalt flows. Gas cavities in the basalts often contain such collectable items as agate, chalcedony, and geodes which are sometimes lined with excellent amethysts. Although extensive limonite iron ore beds of considerable economic value occur in the West Stockbridge area of Berkshire Co., and coal is found in Norfolk Co., the mineral industry of Massachusetts is definitely secondary in importance to industrialization.

### BARNSTABLE COUNTY

CAPE COD, pebbles on beach between Sandwich and the Plymouth Co. boundary—**jasper** (with Epidote).

### BERKSHIRE COUNTY

DALTON, area mines, quarries—**asbestos** and **talc**.

HOOSAC TUNNEL, area mines—**talc**.

WILLIAMSTOWN, area deposits, once mined—**ocher** and **sienna**.

WINDSOR, area quarries—**soapstone**.

### DUKES COUNTY (Martha's Vineyard Island)

AREA, various exposures and deposits scattered over the island—**alum**.

GRAY HEAD: (a) in area exposures of lignite clays, and (b) on shore eroded from green-sand deposit—**alum** and **Amber**.

### ESSEX COUNTY

GLOUCESTER, in Pomroy Quarry—**Smoky Quartz** and **Amazonite**.

NEWBURYPORT: ① area lead mines (make inquiry) —**Chalcopyrite**, **Galena**, **Pyrite**, **Sphalerite**, **Siderite** and **Tetrahedrite**; ② S, in area quarries (first rd. Left for 2 mi., park walk to Devil's Den, in mine dump)—noble **serpentine** and **Verde Antique**.

PITTSFIELD, in SE part of town—green **Quartz**.

ROCKPORT: ① (a) area pegmatite exposures; and (b) in Cape Ann Granite Quarry—**Amazonite**.

ROWLEY, area fields, cuts and excavations—**jasper**.

STOCKBRIDGE, on Monument Mt. 3 mi. S via US 7—**Smoky Quartz**.

### FRANKLIN COUNTY

BERNARDSTON, area mines—**Hematite**.



## Massachusetts

CONWAY: ① area gravel pits—**agate**; ② area exposures of quartz veins (once mined) —**Psilomelane** and **Pyrolusite**; ③ area quarries—**Fluorite**; ④ (a) in Deerfield R., and (b) in breccia in SE part of town—**jasper**.

DEERFIELD: ① area basalt sills—agate **nodules**; ② area quarries—**Fluorite**; ③ gravel beds of the Deerfield R.—**agate** and **chalcedony**.

EAST DEERFIELD, the Cheapside Quarry—**Amethyst**, chalcedony **geodes** and **Prehnite**.

GREENFIELD, area mines—**Chalcopyrite**.

LEVERETT, area mines—**Chalcopyrite**.

MONTAGUE, area mines—**Chalcopyrite**, **Hematite**.

NORTHFIELD: ① area quarries—**Fluorite**; ② area pegmatite exposures (mines, prospects, pits) —**Garnet** and **Golden Beryl**; Northfield Mt., area deposits, material suitable for cutting—**Garnet**.

ROWE: ① area mines and mills—**Talc**; ② the Davis Mine—**Chalcopyrite** and cupriferous **Pyrite**.

WARWICK, area mines—**Hematite**.

ZOAR, area mines and mills—**Talc**.

## HAMPDEN COUNTY

BLANDFORD, area pegmatites and quarries—**Beryl** and **Feldspar**.

CHESTER: ① area deposits—**Garnets** (fine crystals); ② area old emery mines—**Diaspore**, **emery** (impure corundum), **jasper** and **Pyrrhotite**; ③ three area outcrops of serpentine—**Chromite**; ④ in W branch of Westfield R.—**jasper**.

MONTGOMERY, area mines—**Galena**.

NORWICH, area pegmatite outcrops (quarries, prospects) —gem **Beryl**.

RUSSELL, area deposits—**Garnets** (as fine crystals).

SPRINGFIELD, W on US 20, between town of Westfield, the Lane Quarry—**Amethyst**, **Datolite** and **Prehnite**.

WESTFIELD, Atwater Quarry—**serpentine**

## HAMPSHIRE COUNTY

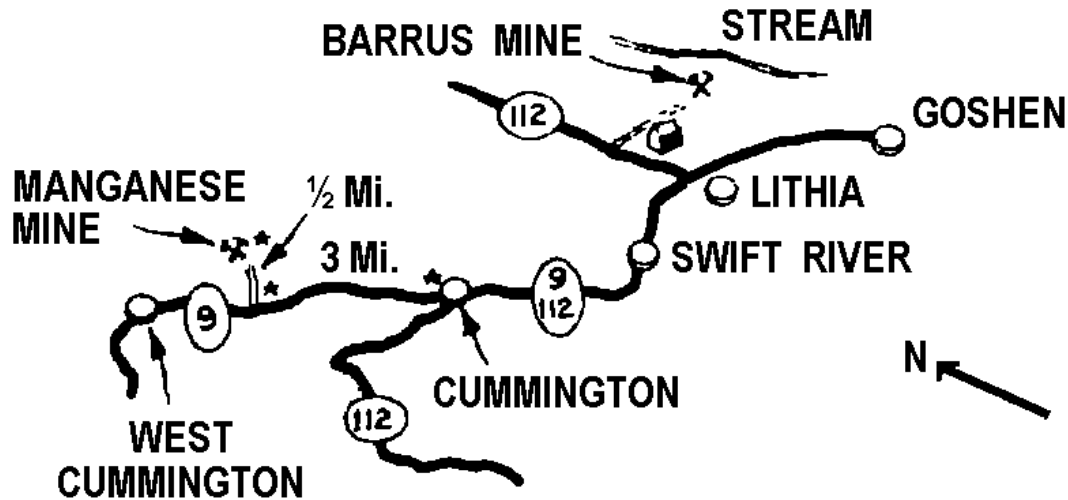
AMHERST: ① area gravel pits—**agate**; ② Lane Trap Rock Quarry on Hwy. 116—**Amethyst**, **Prehnite** and **Datolite**.

CHESTERFIELD: ① area deposits, pegmatites and quarries—gem **Beryl**, **Kyanite** and **Staurolite**; ② N of meetinghouse 1 mi. on old Searle farm—**Rhodonite** and **Kyanite**.

CUMMINGTON: ① area mine in Silurian schist exposure, as fine gemstone material long mined for ornaments—**Rhodonite**; ② Forge Hill, S 6 mi., area—**Ankerite**, **Garnet**, **Quartz** crystals, **Rhodochrosite** and **Rhodonite**.

GOSHEN: ① area pegmatite outcrops—gem **Beryl**; ② N 80° W 1½ mi., a pegmatite dike 300 yds. N of the N end of Lily Pond—**Emerald**, **Goshenite** (colorless beryl), **Smoky Quartz** crystals and **Tourmaline**.

## A Location Guide for Rock Hounds in the United States



LITHIA, the Barrus Farm, first farm N of Lithia is the Barrus mine, pegmatite outcrop—**Tourmaline**, **Lepidolite** and **Spodumene**.

LOUDVILLE: ① area mines—**Chalcopryite** and **Wulfenite**; ② the Manhan Lead mine—**Cerussite** (fluorescent), **Lead** minerals.

MIDDLEFIELD, N section, fine bed associated with exposure of serpentine—**soapstone**.

NORTHAMPTON, area mines—**Fluorite**, **Galena**, **Wulfenite** and some **Chalcopryite**.

NORWICH BRIDGE, area pegmatite outcrops—gem **Beryl**.

PELHAM, area mines (4 mi. SW)—**asbestos**, **Apatite** and **emery**.

PLAINFIELD, in Betts manganese mine and other mines 1 mi. W—**Rhodonite**.

SOUTHAMPTON, area mines—**Fluorite**, **Galena**, **Wulfenite** and some **Chalcopryite**.

WEST CHESTERFIELD, W ¼ mi. in road cut on Hwy. 143—**Smoky Quartz**.

WEST CUMMINGTON; West Cummingtion manganese mine ½ mi. N of Hwy. 9 on a mine rd. that leaves Hwy. 9 roughly 3 mi. from fork of Hwy. 9 and 112 just NW of Cummingtion, on dump or in ore—**Rhodonite**.

WEST SPRINGFIELD, area mines—**Fluorite**, **Galena**, **Wulfenite** and some **Chalcopryite**.

### MIDDLESEX COUNTY

FRAMINGHAM, area deposits of minor extent—**Jade** (possibly only **Williamsite**).

MALDEN, area beds of argillaceous slates—**novaculite**.

SOMERVILLE, area quarries—**Prehnite**.

WESTFORD, exposures of metamorphic rocks—**Chiastolite** crystals (exposures are argillaceous slates.)

### NORTHFOLK COUNTY

COHASSET, on shores of Massachusetts Bay—**jasper** (with **Epidote**).

## Massachusetts

### PLYMOUTH COUNTY

MARSHFIELD, on beach—**jasper** pebbles.

MIDDLEBORO, in vein running N from Rochester to Middleboro and SW to Fairhaven—**agate** and **chalcedony**.

### WORCESTER COUNTY

BOLTON: ① E 2 mi., a limestone quarry—**Scapolite** (crystals, massive, pink); ② E 2¼ mi. in dump of Bolton Lime Quarry (fee) —**Scapolite**.

FITCHBURG, in pegmatite in W side of Rollstone Hill—**Beryl**.

HUBBARDSTON, area mines (for copperas) —**Pyrite**.

ROYALSTON, N 68° E 2½ mi., at Beryl Hill, the Reynolds Mine (most productive locality in state for blue and yellow gem quality material) —**Beryl**, **Smoky Quartz** crystals and **Muscovite** mica.

STERLING, area exposures of micaceous slates—**Chalcopyrite** and **Siderite**.

STURBRIDGE, area mines in gneiss—**graphite**.

## MICHIGAN

Michigan is separated into two distinct parts by the Ice Age waters of Lake Michigan. In the far northwest the Upper Peninsula extends from the Wisconsin boundary to front onto southwestern Lake Superior, where a long arm, the Keweenaw Peninsula, curves into the great body of fresh water. This remote region is the northern woods country, known facetiously as a land with *ten months winters and two months sledding*. Here, enormous Copper deposits were early stripped of great masses of native metal, as well as unbelievably rich ores, with active mining continuing right up to the present.

Mined primitively by prehistoric Indians for nuggets of Native Copper that could be hammered into ornaments, the deposits also produced many such huge unworkable masses as one single nugget that weighed more than 420 tons, when eventually broken up and excavated by the miners. The most productive mines and gem rich dumps occur in the Copper Range, about 25 miles long, extending from Painedale in Houghton Co. to Mohawk in Keweenaw Co. However, virtually every community shown on maps of the Upper Peninsula is a mining center and consequently of interest.

Also occurring in the Upper Peninsula are almost equally important and extensive bodies of high grade Iron ore. Where the copper mine dumps yield up very many gemstone materials and colorful ore minerals, the iron dumps are more gemologically noted for a rather extraordinarily attractive gemstone known as the Kona Dolomite. This impure dolomite is really a breccia of silicified algae of Huronian age, 2½ to 3 billion years old. The fossil algae grade into chert and quartzite in various shades of pink, orange, brown and red intricately laced with steel-black Hematite.

The gem and mineral collector will find that there are two different types of collecting to be considered in Michigan: Hunting along the State's lake beaches for gemstones (especially Lake Superior type agates) and working over almost countless iron and copper mine dumps. The Keweenaw Peninsula, especially in Houghton and Keweenaw counties, contains the richest copper mines. At the same time, the Lake Superior beaches surrounding the peninsula are rich in agates, with **Thomsonite** and **Chlorastrolite** occasionally encountered.

The **agates** are generally small but richly banded and quite colorful. An occasional large nodule may be found, as witness the 17 lbs. prize reported from Keweenaw Point. They represent a subvariety of the *Lake Superior* type, differing in their primary color, are brown with generally tone-on-tone bands and a tendency toward greater opaqueness. The associated **Thomsonite** is a pastel pink and green cutting material (perhaps a pink **Prehnite**) occurring in radiating sunburst patterns. The **Chlorastrolite**, locally termed *greenstone*, is a rare **Zeolite** gemstone. Along with these sought after materials, the collector is also likely to find waterworn samples of **chalcedony**, **jasper**, gemmy **chert** and **Adularia** orthoclase.

The copper dist. mine dumps are especially interesting to the collector. The dumps contain abundantly the unusual assortment of blue-green-purple ore minerals plus frequent nuggets of **native Copper & Silver** and a naturally occurring combination locally named *half-breeds*. In addition occur such other gemmy materials as **Ankerite**, **Calcite** crystals (many with raw copper inclusions), **Domeykite**, **Epidote**, **Laumontite**, **Prehnite** and **Tenorite** with **Chrysocolla**. Indeed, the Keweenaw Peninsula mines and beaches, including Isle Royale, afford at least 60 desirable gemstone and minerals.

The Lower Peninsula, constituting most of Michigan, also contains a considerable mineral wealth, but mainly in such less spectacular products as **Gypsum**, sandstone, limestone and **salt**. One exception to the general paucity of gemmy materials is the locally abundant occurrences of the famed calcified Hexagonaria coral know as *Petoskey* stones. These gemmy fossils are most abundant along the beaches of Traverse Bay from Petoskey in

## Michigan

Emmet Co. to Charlevoix in Charlevoix Co., a stretch of 14 miles, as well as in the regional gravel pits and quarries back from the beaches. Elsewhere in the lower Michigan, quarries and gravel pits yield up crystals of **Calcite**, **Celestite**, **Dolomite**, **Pyrite**, **Sphalerite** and various kinds of quartz family gemstones.

### ALPENA COUNTY

ALPENA: ① area quarries and gravel pits—**fossils**, **Petoskey stones**; ② N 9 mi. on US 23, then E 1½ mi. to the Rockport Quarry—**fossils**, **Petoskey stones**, **Pyrite**.

### BARAGA COUNTY

L'ANSE, area pits, quarries—**Graphite**.

### CHARLEVOIX COUNTY

NORWOOD: ① area exposures of the Traverse limestone—gemmy **chert** (colorful); ② N, along Lake Michigan beaches—**Petoskey stones**; ③ all regional quarries, gravel pits, etc.—**fossils**, **Petoskey stones**.

### CHEBOYGAN COUNTY

AFTON, area quarries—**fossils**, **Petoskey stones**.

BURT LAKE, area beach gravels—**fossils**, **Petoskey stones**.

### CHIPPEWA COUNTY

RABER, area quarries—**silicified coral** (gemmy).

TROUT LAKE, E, in Scott's Quarry—**agatized coral**, **chert**, **flint**.

### DICKINSON COUNTY

FELCH, at Rian's Quarry—**Actinolite**, **asbestos**, **Dolomite** crystals, **Biotite**, **Wollastonite**.

IRON MOUNTAIN, LORETTO, NORWAY, QUINNESEC, RANDVILLE, VULCAN, WAUCEDAH, all regional iron mines, richest iron ore in Michigan—**Hematite**.

RANDVILLE: ① area quarries—**Beryl**, **Quartz** crystals, **Tourmaline**; ② the Metro-Nite Quarry—**Fluorite**, **Phlogopite**, **Pyrite**, **Pyroxene** and various **ore minerals**.

### EATON COUNTY

BELLEVUE, the Cheney Quarry—**Calcite**, brilliant **Marcasite**, **Pyrite**.

GRAND LEDGE, W 1 mi., a quarry—**Calcite**, **Sphalerite**.

### EMMET COUNTY

AREA, widespread exposures and outcrops of the Traverse limestone—**Petoskey stones**.

## A Location Guide for Rock Hounds in the United States

PETOSKEY: ① W, to Charlevoix in Charlevoix Co., in lake beach gravels, abundant—**Petoskey stones**; ② all regional quarries (extending E clear across MI)—**Petoskey stones**.

### GOGEBIC COUNTY

BESSEMER, IRONWOOD, WAKEFIELD, all regional iron mine dumps—**Hematite, Specularite**.

### HOUGHTON COUNTY

CALUMET, W about 6 mi. to the F. J. McClain State Park (on beach), beach gravels all the way to Five Mile Point—**Adularia, chalcedony, chert, jasper, Keweenaw agates, Thomsonite**.

HANCOCK, area dumps of the Arcadian and Quincy mines—**Copper, Iron** and other associated minerals found in the Keweenaw Peninsula.

HOUGHTON: ① area mine dumps of the Clack, Delaware and Iroquois mines; ② Quincy Mine (across Portage Lake) —high quality **Datolite, Prehnite**; ③ Old Huron Mine—**Quartz** crystals; ④ Sheldon-Columbia Mine (on Portage Lake)—**Algodonite, Domeykite**.

KEARSARGE, dumps of the Wolverine Mine—*Keweenaw agate*, **Chrysocolla, Epidote**.

LAKE LINDEN, S, in beach gravels around shores of Torch Lake—**fossils, Petoskey stones**.

SOUTH RANGE, the Baltic Shaft No. 2—**Bornite, Chalcocite, Chalcopyrite, Calcite**.

### HOUGHTON & KEWEENAW COUNTIES

AREA, the Copper Range (extending 25 mi. from Painsdale in Houghton Co. to Mohawk in Keweenaw Co.), many mines and prospects—**Copper** minerals, **native Copper**. Famous mines include, in order from SW to NE: Champion, Trimountain, Baltic, Atlantic, Superior, Houghton, Isle Royale, Hancock, Quincy, Franklin, Osceola, LaSalle, Calumet & Hecla, Tamarack, Centennial, South Kearsarge, Wolverine, North Kearsarge, Allouez, Ahmeek, Mohawk and Objibway. **Copper** minerals occur abundantly on all mine dumps along with **Datolite, Algodonite, chalcedony, Chrysocolla, Domeykite, Prehnite, Quartz** crystals, etc.

### HURON COUNTY

BAY POINT, area limestone quarries—gemmy **chert** nodules.

POINTE AUX BARQUES, in shale exposures around the lighthouse, abundant—**Marcasite**.

SEBEWAING, area coal mines—**Marcasite**.

### IOSCO COUNTY

ALABASTER, area quarries—**alabaster, Gypsum**.

NATIONAL CITY, area quarries—**alabaster**.

TAWA CITY, N, in gravel pits, finest in state—**Quartz** crystals.

## Michigan

### IRON COUNTY

AMASA, CRYSTAL FALLS, IRON RIVER, MANSFIELD, STAMBAUGH, all regional iron mines and dumps—**Hematite**, **Specularite**.

### ISLE ROYALE COUNTY

AREA (off tip of the Keweenaw Peninsula, a National park with collecting prohibited, but scuba diving off shore is prolific) —massive **Chlorastrolite**, specular **Thomsonite**: ① Black Cr. Beach, where cr. enters Lake Superior—**onyx** (black and white); ② old workings at the Epidote Mining Claim and at Thomsonite Beach—**Chlorastrolite** (greenstone), **Datolite** nodules, **Thomsonite**; ③ Seven Mile Point Beach—**agate** (purple banded); ④ head of Siskowit Bay and on N shore of Tobin Harbor, toward Blake Point, and on adjoining island beaches as well as inland on prehistoric lake beaches from McCargo Cove—**agate** nodules, **carnelian**, **Quartz** crystals; ⑤ S shore of Siskowit Lake, in gravels —**Chlorastrolite**.

### KENT COUNTY

GRAND RAPIDS, extreme W suburb of Grandville, area Gypsum quarries—**alabaster**, **Gypsum**.

### KEWEENAW COUNTY

AHMEEK: ① area beaches, quarries, gravel pits—*Keweenaw* **agate**, **Thomsonite**; ② area Copper mines—**Azurite**, **Algodonite**, **Bornite**, **Chrysocolla**, **Domeykite**, native **Copper**, **Malachite**.

ALLOUEZ, dumps of the Allouez Mine—**chalcedony**, **Chrysocolla**, native **Copper**.

CENTRAL, CLARK, CLIFF, DELAWARE, MANDAN, PHOENIX, all regional mines (most named after communities) —**Azurite**, **Algodonite**, **Bornite**, **Chrysocolla**, **Domeykite**, native **Copper**, **Malachite**.

COPPER FALLS: ① Copper Falls Mine Dumps—**Zeolite** crystals, plus area **Copper** minerals; ② N, area—**Amethyst**.

COPPER HARBOR, Clark Mine dump—**Datolite**, green **Epidote** (shot through with **Copper**), **Thomsonite**.

EAGLE HARBOR: ① local beach gravels, quarries, pits—*Keweenaw* **agate**, **Thomsonite**; ② S, to area of Ahmeek, beach gravels—**agates**, **Adularia**, **chalcedony**, **chert**, **jasper**, **Thomsonite** (variety of pink **Prehnite**).

KEWEENAW POINT, area beach gravels—*Keweenaw* **agate**, **Adularia**, **chalcedony**, **chert**, **jasper**, **Thomsonite**.

MOHAWK, area Copper mines—**Azurite**, **Algodonite**, **Bornite**, **Chlorastrolite**, **Chrysocolla**, **Domeykite**, native **Copper**, **Malachite**.

### KEWEENAW, HOUGHTON & ONTONAGON COUNTIES

KEWEENAW PENINSULA AREA, all regional Copper mine dumps (very many) —**Ankerite**, **Calcite**, **Chlorastrolite**, native **Copper**, **Silver** and **Copper-Silver**, **Datolite**, **Domeykite**, **Epidote**, **Laumontite**, **Prehnite**, **Quartz** crystals, **Tenorite** with **Chrysocolla**.

## A Location Guide for Rock Hounds in the United States

### MACKINAC COUNTY

ST. IGNACE, NW 10 mi., at Pointe Aux Chenes, area quarries—**Gypsum**.

### MANITOU ISLAND

AREA (off E tip of Keweenaw Peninsula): ① all beaches surrounding island, ② N shore of bays especially productive—*Lake Superior agates*.

### MARQUETTE COUNTY

AREA, all communities shown on maps surround great mines of the same name; Champion, Gwinn, Humboldt, Palmer, Princeton, Republic, etc.; mines plus many other regional mines with productive dumps—**Hematite, Specularite, jasper, jaspilite**, etc.

CHAMPION, the Champion Mine (in pegmatite) —**Hematite, Sapphire, Sericite, Specularite**.

GWINN, the Archibald Mine—**Gypsum** (crystals on Hematite), **Hematite** (specular), **Magnetite**.

ISHPEMING: ① area prospects in T. 48 N, R. 27 W—**Gold**; ② near town, the Ropes Mine—free **Gold**, auriferous **Pyrite, Chalcopyrite**; ③ all regional occurrences of glacial drift gravels, by panning—**Gold** colors; ④ Lindberg Quarry—gemmy *Kona Dolomite* (brown, orange, pink, red); ⑤ Jasper Hill—**jasper, jaspilite**; ⑥ All area iron mine dumps—**Iron minerals**: (a) the Lake Shaft—**Hematite, greenstone, jasper, Quartz**; (b) Section Sixteen Mine—**Hematite, Limonite, jasper, Calcite** (on Hematite), **Quartz** crystals, **Pyrite** crystals, **talc**; (c) the Holmes Mine—**Hematite, jasper, Limonite, Calcite** (fillings in Hematite), **mica, Magnetite** crystals, **specular Hematite**; (d) the Cliffs Shaft Mine—**chert, jasper, Pyrite**, specular **Hematite**; (e) the Morris-Lloyd Mine—**Hematite** (with blue jasper), **Iron** minerals.

MICHIGAMME: ① area outcrops, prospects, etc.—**jaspilite**; ② Mt. Shasta, outcrops—**Garnets**; ③ Michigamme Mine—**chalcedony, Hematite, jaspilite**; ④ in rd. cut S of Lake Michigamme—**Staurolite**.

NEGAUNEE: ① the Cambria Mine—massive **Hematite**, specular **Hematite** (schist), **Talc**; ② Lucy Mine—**Barite**; ③ the Baltic Mine dumps, massive—**Rhodochrosite**.

REPUBLIC: ① area outcrops, abundant—**jaspilite**; ② area pegmatite outcrops, prospects, pits—**Beryl, Quartz** crystals, **Tourmaline**; ③ the Republic Mine—**Hematite, Specularite, jasper, jaspilite**.

### MONROE COUNTY

MONROE, the France Stone Quarry, as crystals—golden **Calcite, Dolomite**.

### OCEANA COUNTY

HART, S about 3½ mi., Crystal Lake beach gravels—**fossils, Petoskey stones**.

### ONTONAGON COUNTY

AREA, S and SW part of Co. adjoining Houghton Co., as a southward extending mineral belt, such mines as the Lake, Mass, Adventure, Michigan and Victoria—**Copper minerals**, native **Copper & Silver**: ① Lake and Algoma mines—**Copper** minerals,



## Michigan

**Chrysocolla**; ② Indiana Mine and adjoining properties—**Chrysocolla**, **Malachite**, native **Copper** (in masses of felsite), native **Silver**.

MASS: ① area mine dumps (many) —**Ankerite**, **Calcite**, **Chlorastrolite**, native **Copper**, **Silver** and **Copper-Silver**, **Datolite**, **Domeykite**, **Epidote**, **Laumontite**, **Prehnite**, **Quartz** crystals, **Tenorite** with **Chrysocolla**; ② the Mass Mine (on Hwy. 26) —**Chrysocolla**, **Datolite**, **Malachite**, etc.

ONTONAGON, area Lake Superior beach gravels—**Adularia**, *Keweenaw* **agates**, **chalcedony**, **chert**, **jasper**, **Thomsonite** (pink and green).

ROCKLAND, area mine dumps—**Ankerite**, **Calcite**, **Chlorastrolite**, native **Copper**, **Silver** and **Copper-Silver**, **Datolite**, **Domeykite**, **Epidote**, **Laumontite**, **Prehnite**, **Quartz** crystals, **Tenorite** with **Chrysocolla**.

SILVER CITY: ① area around Gull Point in beach gravels—*Keweenaw* **agates**; ② W about 8 mi., area of the Porcupine Mts. (outside the State Park): (a) area mines—**Hematite**, **chalcedony**, **jasper**, **jaspilite**, **Specularite**; (b) area exposures of abundant gemmy masses—**jaspilite** (a jasper laced attractively with steely specularite).

### PRESQUE ISLE COUNTY

ONAWAY, area quarries, gravel pits, etc.—**fossils**, **Petoskey stones**.

PRESQUE ISLE, area beach gravels of Lake Huron—**agate**, **chalcedony geodes**, gemmy brown **sandstone** (veined with **Calcite**).

### SCHOOLCRAFT COUNTY

WHITEDALE, area quarries, pits—**silicified corals**.

### WAYNE COUNTY

DETROIT, S to Rockwood, the Sylvania Quarry—**geodes** (containing yellow **Calcite** or **Celestite**).

## MINNESOTA

This nearly level and most northern state of the continental United States is a broad glaciated plain with an elevation of 1,000' to 1,500' above sea level. More than 11,000 Pleistocene ice-scoured basins are filled with sparkling lake waters, remnants of the great Pleistocene lake Agassiz, 700 mi. long by 250 mi. wide, that covered much of northwestern Minnesota some 10,000 years ago, and lesser lakes elsewhere that impounded the glacial melt waters as the ice retreated northward. Only the extreme southeastern corner of the state, in the eastern parts of Winona and Houston counties escaped the Ice Age glaciers. Thus immense deposits of glacial drift, consisting of till, gravels and stratified sands and clays dominate the state's surface topography.

The only section that might be termed at all mountainous lies in the northeastern triangle. Here the Lake Superior hill ranges (Sawteeth, Mesabi, Cuyuna, Gunflint, Giant's Range, Vermillion) rear a few worn and rounded peaks to the elevation near 2,000' above sea level, or 500' above the surrounding countryside. Even these ranges from which much of the world's richest Iron ores have come are heavily drift covered.

By far the most widely distributed and popular gemstone, for which Minnesota is especially noted, is Lake Superior agate, distinguished by its translucency, rich glowing colors, and fine parallel banding. Lake Superior agate are usually found in sizes from ½" to 2" in dia. (with an occasional nodule weighting several pounds) and containing high grade gem quality throughout. Three forms are recognized: eye agates, an onyx-like banded agate, and fortification agate that resembles the famed Fairburn agates of South Dakota. Practically every glacial moraine of drift deposit, every gravel bank and stream bar, every lake beach, quarry, excavation, and gravel pit in the entire state yields up a surprising abundance of these eagerly sought after gemstone.

### BLUE EARTH COUNTY

MANKATO, all regional quarries, gravel pits, stream gravels, etc.—*Lake Superior agates*.

### CARLTON COUNTY

CARLTON, all area mine dumps—*Lake Superior agates*, **Garnets**, **Greenalite**, **Magnetite**, **Marcasite**, **Minnesotaite**, **Pyrite**.

CLOQUET: ① area gravel pits, stream gravels, excavations—*Lake Superior agates*; ② area mine dumps—*Lake Superior agates*, **Garnets**, **Greenalite**, **Magnetite**, **Marcasite**, **Minnesotaite**, **Pyrite**.

### CHIPPEWA COUNTY

MONTEVIDEO, area gravel pits, excavations, stream gravels—*Lake Superior agates*.

### COOK COUNTY

GRAND MARAIS: ① both E and W, all along the N shore of Lake Superior from US 61 (wherever one can get through private property), all regional beach gravels—**Lintonite** (var., Thomsonite lacking fibrous structure and olive green transparency throughout), **Thomsonite**; ② SW 5½ mi., Thomsonite Beach (a 1 sq. mi. area of basalt outcrops

## Minnesota

extending a mi. inland and 1 mi. from Terrace Point) —**Chlorastrolite**, **Lintonite**, **Thomsonite** nodules (pink, green, red); ③ E 14 mi., basalt outcrops along Lake Superior shoreline—*Lake Superior agates*.

GRAND PORTAGE, E to Pigeon Point, area mines—argentiferous **Chalcocite**, **Chalcopyrite**, **Pyrite**.

### CROW WING COUNTY

BRAINARD, area and regional gravel pits, excavations, stream beds, lake shores—*Lake Superior agates*.

CROSBY, IRONTON: ① area Iron mine dumps of the Cuyuna Range; ② the Arco and Portsmouth mines—**agates**, **chalcedony**, **jasper**, gem **binghamite** (silkstone, a crystalline quartz replacement of fibrous goethite stained red with hematite or yellow with limonite), **Iron** and **Manganese minerals**.

### FARIBAULT COUNTY

BLUE EARTH, area and regional quarries, gravel pits, stream beds, etc.—*Lake Superior agates*.

### FILLMORE COUNTY

SPRING VALLEY, area glacial drift deposits, by panning—**Gold**.

### GOODHUE COUNTY

RED WING, area and regional quarries, gravel pits, stream gravels, etc. —*Lake Superior agates*.

### HENNEPIN COUNTY

OSSEO (NW suburb of Minneapolis), S ¼ mi. on Rte. 110, then W on rd. dead ending in a series of gravel pits—*Lake Superior agates*; **chalcedony**, **jasper**.

### HOUSTON COUNTY

CALEDONIA, area sand quarry—**Calcite** crystals.

### LAKE COUNTY

BEAVER BAY, E and W, area Lake Superior beach gravels—*Lake Superior agates*, **Thomsonite**, etc.

### LAKE OF THE WOODS COUNTY

AREA, Sec. 6, T. 167 N, R. 33 W, a mine—**Feldspar**.

## A Location Guide for Rock Hounds in the United States

### LE SUEUR COUNTY

KASOTA (just S of St. Peter via Rte. 22 and W of this rte.), area quarries along the Minnesota R.—gemmy **fossil corals**.

### MORRISON COUNTY

LITTLE FALLS: ① area gravel pits, stream gravels, excavations, etc.—*Lake Superior* **agates**; ② in sands of Elk Cr.—**Garnets, Staurolites**; ③ Blanchard Dam area (S of Town via US 10 for 6.3 mi. from St. Gabriel Hospital, turn W 1.2 mi. on township rd., then N 1.6 mi. to a dirt rd. and ½ mi. to the dam parking area), best under RR bridge in schist outcrops—**Garnets, Staurolites**; ④ Charles Lindbergh State Park, in area stream sands—**Staurolites**.

ROYALTON: ① W 3 mi., along both sides of the Mississippi R. (W side reached from Bowlus and Royalton)—**Staurolites**.

### OLMSTED COUNTY

AREA, all Co. stream gravels, by panning—**Gold** colors.

ROCHESTER: ① area and regional rd. cuts, banks, etc. —*Lake Superior* **agates, chalcedony, fossils**; ② E 5 mi., a quarry—**agate, fossils**; ③ along the Zumbro R. in a series of prospects on the E bank of the river at the W edge of Sec. 25, T. 107 N., R. 14 W.—**Galena, Lead** carbonates and sulfates.

### PINE COUNTY

PINE CITY, area deposits or showings along banks of the Snake R.—**Chalcocite**.

### PIPESTONE COUNTY

PIPESTONE, N 1 mi., Pipestone national Monument Indian Reservation (no collecting)—**catlinite** (red pipestone).

### REDWOOD COUNTY

REDWOOD FALLS, area deposits and pits, as kaolinized gneiss and granite—**ocher**.

### ST. LOUIS COUNTY

BIWABIK: ① W 1 mi., the Mary Ellen Mine; ② W 2 mi., the Corsica Mine; ③ all in-between stream gravels, rd. cuts and cut banks, and all abandoned mine waste dumps—*Lake Superior* **agates, Iron minerals, Mary Ellen jasper** and other **jaspers**. These minerals are found in all regional outcrops of the Mesabi Range Sudan formation.

ELY, SW, Vermillion Range regional creeks, washes, breaks, etc.—gem **jasper, Quartz** crystals, **chalcedony**.

EVELETH, entire region WSW for 50 mi. to Grand Rapids in Itasca Co., mainly along US 169 but including side rds. all mine dumps—*Lake Superior* **agates, Iron minerals, jasper**.

FLOODWOOD, area mine dumps—*Lake Superior* **agates, Garnets, Greenalite, Magnetite, Marcasite, Minnesotaite, Pyrite**.

## Minnesota

HIBBING: ① area gravel pits, excavations, stream beds—*Lake Superior agates*; ② regional mine dumps—**Iron minerals, agate, jasper, Marcasite, Pyrite**, etc. The original town site was moved 1 mi. S to make way for the open pit Iron mine. ③ Chisholm area dumps—gem **Goethite** (botryoidal, stalactitic).

WINTON, area gravel deposits, glacial drifts, etc.—*Lake Superior agates, Evergreen jasper*.

### ST. LOUIS, LAKE & COOK COUNTIES

DULUTH, starting at Lake Ave. and US 61, follow Hwy. NE along shore of Lake Superior: ① mi. 12.2, French R. beach gravels—*Lake Superior agates*; ② mi. 18, Knife R. beaches—**agates**; ③ telephone pole No. 1385, beach—**agates**; ④ mi. 28.2; beach—**agates**; ⑤ mi. 34.6, beach and stream gravels—**agates**; ⑥ pole No. 1915, beach gravels—**agates**; ⑦ pole No. 2120, Gull Rock beach gravels—**agates**; ⑧ mi. 62.5, beach gravels—**Thomsonite**; ⑨ mi. 64.5, mouth of Little Marais R.—**Thomsonite, Zeolites**; ⑩ mi. 103.2, Thomsonite Beach—**Lintonite, Thomsonite**.

### SCOTT COUNTY

JORDAN, area glacial drift deposits, panned from gravels—**Gold** colors.

### SWIFT COUNTY

APPLETON, area gravel pits, stream gravels, excavations—*Lake Superior agates*.

### WABASHA COUNTY

WABASHA: ① N side of RR sta., an adjoining gravel pit—*Lake Superior agates*; ② (a) the Half Breed Track, an old lead vein occurrence along the N bank of the Zumbro R. in Sec. 17, T. 110 N., R. 10 W., and (b) further W on the W bank in Sec. 21, T. 109 N., R. 13 W.—**Galena, Lead** carbonates and sulfates.

### WASHINGTON COUNTY

STILLWATER, area between bluffs of Browns Cr., a deposit—**tripoli**.

### WINONA COUNTY

WINONA: ① area quarries, gravel pits, stream gravels, etc.—*Lake Superior agates*; ② beach gravels around shores of Lake Winona—*Lake Superior agates*; ③ Goodview (suburb of Winona), in gravel pit beside US 61—**agates**; ④ all along right of way of US 61, especially in roadway gravel beds—**agates**; ⑤ gravelly shores of a boat harbor (on Mississippi R.) just behind the Northwestern shops—**agates**; ⑥ the Bronk quarry, from Hwy. 14 & 61, 2 mi. W on Hwy. 14—dog-tooth **Calcite, Dolomite, Goethite, Hematite, Marcasite, Pyrite**.

## MISSISSIPPI

Although its surface is everywhere characterized by Cretaceous to Tertiary sediments less than 100 million years old, Mississippi lends its name to a 25 million year long depositional epoch in American geology that began 355 million years ago during the Lower Carboniferous period. Like other adjoining states that also anciently lay beneath the extended Gulf of Mexico, all of the state's formations were laid down under salt water as the gulf slowly receded southward from its northern-most Paleozoic reaches below the present Ohio River Valley. Such sedimentation is still actively going on, wherever rivers discharge their burdens of mud, silt and sand into the modern Gulf of Mexico.

The sixteen counties that embrace most of north-central Mississippi are part of a very low North Central plateau, underlain by Eocene formations of 60 million years ago. In the two most northeastern counties of Alcorn and Tishomingo, the Tennessee River Hills achieve maximum elevation of 700', while the general statewide surface is at or near sea level.

Few gemstone localities exist in Mississippi. However, the state yields a great abundance of fossils of many geologic ages. Petrifications occur in the northeastern and central counties, where the preservations occur in unattractive Iron oxide. In some area the state's fossil trees contain lovely, small water-clear **Quartz** crystals, as well as drusy quartz linings of cracks and fissures. Considerable quantities of this fossil wood weather out of exposures of the widespread Lafayette formation, with smaller quantities occurring in the Wilcox and other Tertiary sediments. A considerable petrified forest area, once noted for its abundance of fossil logs that reached six feet in diameter, occur in Madison Co. near Flora, 18 miles northwest of the state capital of Jackson.

### BENTON, LAFAYETTE, MARSHALL, TIPPAAH COUNTIES

AREA, these northeastern counties contain notable deposits, many mined—**Siderite**.

### COPIAH COUNTY

WESSON, E 4 mi., in a gravel pit—**agates** (banded), **chalcedony**, **petrified wood**.

### HARRISON COUNTY

GULFPORT, NW 18 mi., gravel beds of Bell Cr.—**agates**.

### TALLAHATCHIE COUNTY

CHARLESTON, area exposures—**Amber**, in the Tuscaloosa formation.

### TISHOMINGO COUNTY

IUKA, extensive area deposits, formerly mined—**ocher** (red, yellow).

PADEN, area exposures of the Tuscaloosa formation—**Amber**.

## Mississippi

### WAYNE COUNTY

WAYNESBORO, NW 7 mi., area excavations, cut banks, etc.—**fossils, petrified palm.**

## MISSOURI

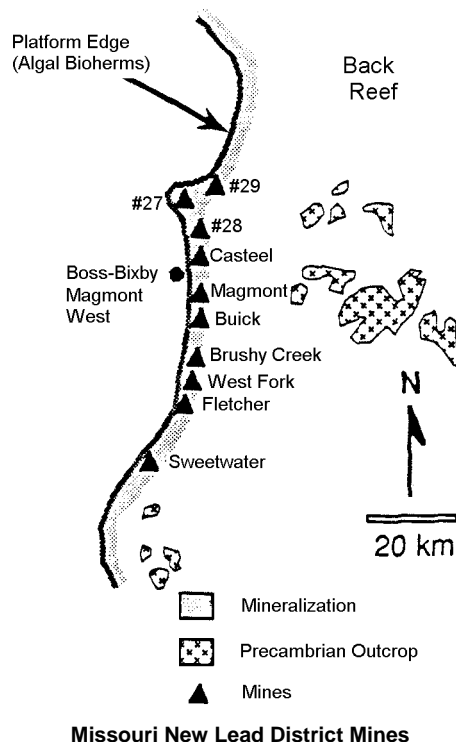
Missouri lies in the greater Mississippi Basin and provides excellent exposures of a wide range of Paleozoic formations from the Cambrian period through Permian. Cretaceous marshes and swamp forests left many coal deposits throughout the state, while epicontinental seas laid down thick beds of sand and limestone. The youngest of the stratified rocks are the Cretaceous Coal measures which comprise the northwestern two-fifths of the state, while the south-central one-third is occupied by the oldest rocks, those of the great Magnesian Limestone series. However, from the north extending as far south as the Missouri River, approximately, a thick mantle of Pleistocene detritus derived from the glaciation of more northern regions overlies the more ancient structures.

The state's chief topographical feature is the Ozark Uplift, a broad plateau with gentle slopes rising to 1,500' above sea level and extending entirely across the southern part of Missouri, bordered on all sides by deep grooves and narrow gorges. This Ozark region, containing rock formations of several different geological ages, is one of the most heavily mineralized areas in the world. Many great mines and pits enrich the state's economy with their production of Barite, clay, Hematite and Lead & Zinc with Silver as a by-product.

Missouri's mineral wealth is found three main regions: Coal in the west and north-ventral counties, Lead in the *Tri State district* (in the corner of Missouri, Kansas and Oklahoma) and the *New Lead district* in the Viburnum Trend of southeastern counties centered at Viburnum, MO.

A considerable variety of gemstones also occur in Missouri. Typical *Lake Superior agates* are abundant in the glacial drift deposits of Gentry, Davies, Grundy and Livingston counties, along with **agatized coral** and **bone, chalcedony, jasper** and **petrified wood**. All along the Mississippi River, which is the eastern boundary of the state, gravel operations yield an endless supply of fine, high quality agates and other quartz family gemstones. In Clark Co., around Kahoka, exposures of the Warsaw formation disgorge great quantities of geodes which differ from the Iowa type in that more of them are hollow and lined with brilliant crystals of pink **Calcite**, **Fluorite**, **Goethite**, **Millerite** and **Pyrite**. The regional stream beds contain many such geodes, which are constantly being weathered out of surrounding ledges. Elsewhere, an interesting and colorful gemmy chert, locally called *Mozarkite*, makes rock hunting productive in such central Missouri counties as Benton and Hickory, while another variety of cutting-quality chert is well known from McDonald Co.

Gemmy crystals of Crested **Barite** are much sought after in St. François and Washington counties in eastern Missouri, while directly across the state in Jasper Co., gorgeous crystals of **Lead** and **Zinc minerals** make dramatic cabinet specimens. These crystals occur abundantly deep in the Joplin and Tri-State area mines: brilliant cubes of **Galena**, a distinctive bronzy cockscomb **Marcasite**, delicately curved flesh-pink colored **Dolomite**, honey-colored **Calcite**, and the ever-popular deep ruby-red massed crystals of





## Missouri

**Sphalerite.** Because of their high mineral value, such crystallizations, including iridescent **Chalcopyrite**, are not thrown out on the many extensive mine dumps but must be purchased locally as cabinet specimens.

### ADAIR COUNTY

AREA, in the Chariton River, 2 mi. N of the Macon Co. line—**Calcite** crystals, **Goethite**, Quartz, **septarian nodules**.

### ADAIR & MACON COUNTIES

AREA, in dark colored streams materials near Elmer and other areas—fine grained **Gold**, **Garnets**.

### AUDRAIN COUNTY

MEXICO, in fire clay pits and spoil piles—**Pyrite**.

### BARTON COUNTY

LIBERAL, 2.5 mi. NE and other area coal deposits—**Pickeringite**, **Pyrite**, **Siderite**.

### BATES COUNTY

FOSTER, HUME & RICH HILL, area coal strip mines—**Alunogen**, **Gypsum** (fluorescent and phosphorescent), **Melanterite**.

ROCKVILLE, in coal deposits—brown and white **Calcite** crystals.

### BENTON COUNTY

LINCOLN, ① area quarries, rd. cuts, gravel pits, etc.—**chalcedony**, gemmy **chert** (*Mozarkite*), **jasper**; ② 4 mi. E—**Galena**.

WARSAW: ① all area of low hills along the W edge of the Ozark Uplift, and ② throughout the SE (Bootheel) part of Co.—**agate**, gemmy **chert**.

### BENTON, HICKORY, POLK & DADE COUNTIES

AREA, all rd. cuts, banks, breaks, excavations, etc., along the W slopes of the Ozark Mts., gemmy and colorful—**chert**.

### BOLLINGER COUNTY

LUTESVILLE, all Co. gravel pits, rd. cuts, excavations, etc., extending E through Cape Girardeau Co. to the Mississippi R.—**agates**, **petrified wood**.

## A Location Guide for Rock Hounds in the United States

### BOONE COUNTY

AREA: ① in the Cheltenham formation, in scattered outcrops scattered over northern Boone Co.—**Gypsum** crystals, **Marcasite**, **Pyrite**; ② in the Tebo formation in the northern half of the county—**Gypsum** crystal, **Melanterite**.

ASHLAND, Adrian's quarry, between Ashland and Jefferson City on Hwy. 63—**Calcite** (scalenohedral), **Chalcopyrite**, **Marcasite**, **Millerite** and **Pyrite**.

COLUMBIA: ① area, (a) in quartz-chalcedony geodes—**Dickite**; (b) in Pennsylvanian age fossil wood—**Quartz** as colorless crystals with brown inclusions and skeletal faces; ② Columbia Brickyard Pit (old clay pit), below a coal seam—**Copiapite**, **Gypsum**, **Melanterite**, **Pyrite**; ③ N at Finger Lake State Park (a former strip mine) **Aragonite**, **Copiapite**, **Gypsum**, **Halotrichite**, **Marcasite**, **Melanterite**, **Pyrite**.

RUCKER, in a greenish-gray clay in a roadcut 0.2 mi. west—**Alunogen**, **Gypsum**.

### BUCHANAN COUNTY

RUSHVILLE, in Sugar Cr. E of town, in septarian nodules in Pennsylvanian shales along creek—**Aragonite**, **Calcite**, **Celestite**, **Pyrite**, **Sphalerite**.

### BUTLER COUNTY

POPLAR BLUFF, the Williamsville quarry NW of town—yellow **Calcite**, **Dolomite**, **Limonite**, **Quartz**.

### CALLAWAY COUNTY

FULTON: ① at the Knight Bank Iron mine, 5 mi. SW, along the Aux Vasse Cr.—**Hematite** (specular & earthy), **Siderite**; ② in SE Fulton, as an efflorescence on the Cherokee Conglomerate—**Mendozite**, **Tamarugite**.

MARTINSBURG, on the Robert Bailey farm, 4.5 mi. S and 14 mi. E of Aux Vasse, as rosettes and scales on joints in the Cheltenham fm. Flint fire clay—**Torbernite**.

### CAMDEN COUNTY

AREA, Decaturville crypto-explosive structure, just W of Hwy. 5 on the Camden-Laclede Co. line. The disturbed area  $\approx$  1 mi. dia., contains a small granite pegmatite accompanied by a tourmaline-mica schist. Small lead-zinc and marcasite-pyrite deposits occur in the associated limestone—**Albite**, **Cristobalite**, **Galena**, **Glaucanite**, **Limonite**, **Marcasite**, **Microcline**, **Muscovite**, **Opal**, **Plagioclase**, **Pyrite**, **Sphalerite**, **Tourmaline**, **Tridymite**.

### CAPE GIRARDEAU COUNTY

CAPE GIRARDEAU, all Co., area excavations, rd. cuts, gravel operations, etc.—**agates**, **petrified wood**.

### CARROL COUNTY

AREA, in numerous coal deposit exposures—**Gypsum** crystals, **Siderite** in lenticular masses.

## Missouri

### CASS COUNTY

PLEASANT HILL, in soil in creek valley—**Calcite** (brown & white assoc. with coal), **Vivianite** (as small nodules and crystals).

### CHARITON COUNTY

DALTON, extensive area quarries—**tripoli**.

SALISBURY, in numerous exposures of coal measures—**Gypsum**.

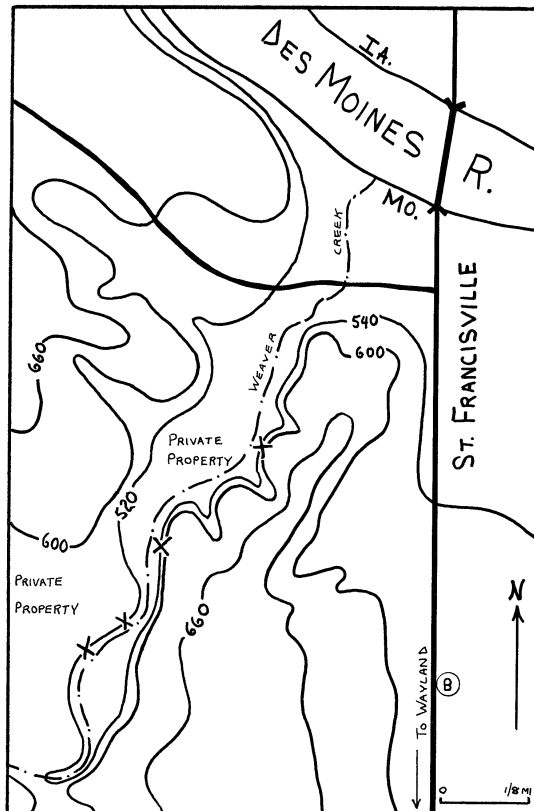
### CLARK COUNTY

ALEXANDRIA, WAYLAND, regional Cr. and river banks—*St. Francisville* **geodes**.

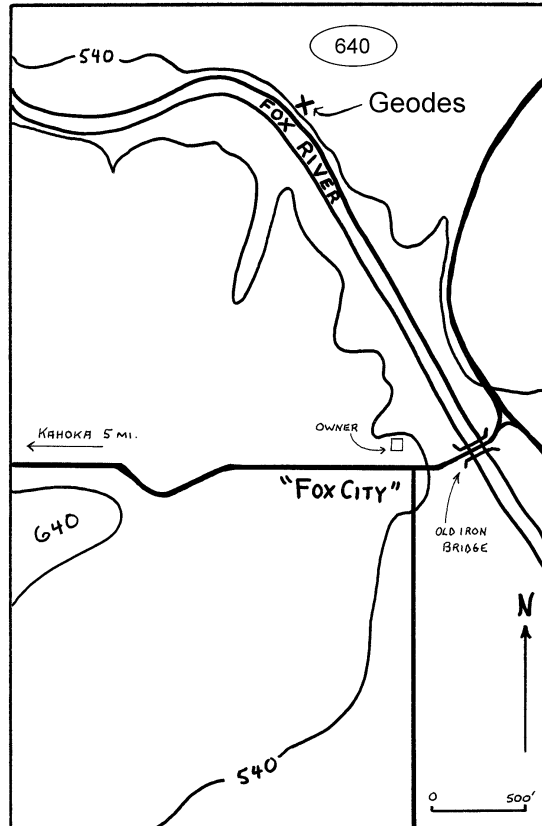
FOX CITY: ½ mi. N of the Old Iron Bridge on the NE bluff of the river—large **Quartz geodes**, pink and black dog tooth **Calcite geodes** (see map next page).

KAHOKA: ① area shale outcrops along Fox R., abundant—**geodes**; ② in banks of all tributary streams—**geodes**.

ST. FRANCISVILLE: ① base of all bluffs along the Fox R.—gemmy **chert**, **Quartz crystal geodes**; ② in banks of Weaver's Branch, abundant—**geodes** (and lined with brilliant crystals of **Aragonite**, **Barite**, pink **Calcite**, **Chalcopryite**, **Dolomite**, **Fluorite**, **Goethite**, **Honessite**, **Malachite**, **Marcasite**, **Millerite**, **Pyrite**, **Pyrolusite**, **Quartz**, **Smithsonite**, **Siderite** and **Sphalerite**) see map next page.



Geode Mine - St. Francisville



Fox City Geode Site

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### COLE COUNTY

EUGENE, HENLEY, HICKORY HILL, regional mines, especially the Boaz, Old Circle and Eureka mines—**Barite**, **Calcite**, **Cerussite**, **Chalcopryite**, **Dolomite**, **Hematite**, **Galena**, **Malachite**, **Pyrite**, **Quartz**, **Sphalerite** and **Smithsonite**.

### COOPER COUNTY

BLACKWATER, 3 mi. E NE, the Collins mine—**Barite**, **Chalcopryite**, **Goethite**, **Malachite**, **Smithsonite**, and **Sphalerite**.

### CRAWFORD COUNTY

BOURBON: ① 10 mi. SE, the Bleeding Hill mine (1.4 mi. NW of the Hinch mine)—**Copper**, **Cuprite**, **Goethite**, **Pyrite**; ② the Hinch mine, a filled sink iron mine 10 mi. SE—**Copper**, **Cuprite**, **Limonite**, **Hematite**, **Malachite**, **Marcasite**; ③ the Hobo mine, a filled sink iron mine 5.5 mi. SE—**Asbolane**, **Chalcanthite**, **Chalcopryite**, **Hematite**, **Malachite**, **Marcasite**, **Melanterite**, **Pyrite**..

CUBA, the Iron Ridge mine, a filled sink iron deposit 4.5 mi. NW—earthy and specular **Hematite** and clean **Quartz** lining cavities.

LEASBURG, ① 12 mi. SE, the Christy mine, a fill sink iron mine—**Goethite**, specular **Hematite**; ② the Mullen mine, a filled sink iron deposit 3 mi. S—**Cuprite**, **Goethite**, **Malachite**, **Pyrite**.

SAINT JAMES, the Powell prospect, a filled sink iron deposit 8 mi. SE (or 1 mi. SE of the Meramec Iron Furnace)—**Brochantite**, **Calcite**, **Chalcopryite**, **Hematite**, **Malachite** (in calcite), **Pyrite**, and **Quartz** cavity linings.

SCOTIA, area mines, Scotia #1, 1.5 mi. NE—**Azurite**, **Goethite**, **Hematite**, **Malachite**, **Pyrite** and **Quartz**.

STEELVILLE: ① area mines, and ② E, along Hwy. 8 to Huzzah Wildlife Area, on mine dumps—**Allophane**, **Amethysts**, **Azurite**, **Cacoxenite**, **Copiapite**, **Dolomite**, **Dufrenite** (on Hematite), **Galena**, **Goethite**, **Hematite**, **Malachite**, **Marcasite**, **Quartz** crystals, **Pyrite**, **Rutile**, **Sphalerite**, **Szomolnokite**.

SULLIVAN, in a filled sink iron mine, the Copper Hill mine, 3.5 mi. SE—**Azurite**, **Barite**, (as grayish or bluish crystals) **Chalcopryite**, (in balls up to 15 cm.), **Gypsum**, **Hematite**, **Malachite**, **Marcasite**, **Pyrite** and **Quartz**.

WESCO, the Crooked Creek crypto-explosive structure, 2 mi. SE, a circular are of disturbance  $\approx$  3 mi. dia. The Metcalf and Jonas mines—**Barite**, **Galena**, **Marcasite**, **Pyrite**, **Sphalerite**.

### DADE COUNTY

DADEVILLE, an outlying deposit related to the Tri-State district SW of Dadesville—**Galena**, **Hemimorphite**, **Smithsonite**, **Sphalerite**.

GREENFIELD, all Co. area excavations, quarries, cut banks, gravel pits—**agate**, **chert**, **petrified wood**.

### DAVIES COUNTY

GALLATIN, all regional gravels along the Grand R.—**fossils**, **agate**, **chalcedony**, **jasper**, **petrified wood**, etc.

## Missouri

### DEKALB COUNTY

Cameron, NW in the Grindstone Cr. Area in coal measures—**Calcite** (white and brown crystals).

### DENT COUNTY

SALEM: ① the Hawkins mine, an oxidized filled sink iron deposit 8 mi. N—**Goethite**, **Hematite**; ② Simmons Mountain, a filled sink deposit just SW—**Hematite**, drusy **Quartz** crystals.

### FRANKLIN COUNTY

GERALD, a fire clay pit 2 mi. SE—**Barite**, **Calcite**, **Chalcopyrite**, **Goethite**, **Metatorbernite** (as thin plates on joint surfaces in the fire clay).

LESLIE, area mines, the Leslie mine, 2.5 mi. SW—**Ankerite**, **Calcite**, **Chalcanthite**, **Goethite**, **Hematite**, **Marcasite**, **Pyrite**, **Quartz** (colorless & Amethyst).

MORRELTON, ST. CLAIR, area mines—**Barite**.

SAINT CLAIR: ① the Franklin Co. Lead Dist., several small area mines, the Cove, Darby's, Evans, Golconda, Mount Hope, Short Lode, Virginia—**Anglesite**, (as fine crystals on Galena), **Barite** (some blue), **Calcite**, **Cerussite**, **Galena**, **Minium**, **Pyrite**, **Smithsonite**, **Sphalerite**; ② the Duckworth mine, a filled sink iron deposit 2 mi. W—**Hematite**, **Malachite**, **Marcasite**, **Pyrite**; ③ St. Clair mine, a filled sink iron mine 2 mi. W, adjacent to Duckworth mine—**Chalcanthite**, **Copiapite**, **Hematite**, **Marcasite**, **Melanterite**, **Pyrite**; ④ the Thurmond mine, 6.5 mi. SW (and ≈ 1 mi. W of the Kelsey)—**Azurite**, **Goethite**, **Malachite**.

STANTON: ① the Ruepple Iron Mine, 2 mi. NW—**Amethyst**, **Copiapite**, **Goethite**, **Hematite**, **Marcasite**, **Melanterite**, **Pyrite**, **Quartz** crystals and **Siderite**; ② the Ruepple Copper Mine, 1 mi. W—**Azurite**, **Barite**, **Brochantite**, **Copiapite**, native **Copper**, **Cuprite**, **Chalcotrichite**, **Gypsum**, **Halloysite**, specular **Hematite**, **Malachite**, **Melanterite**, **Pisanite**, **Pyrite** and **Quartz**; ③ the Kelsey mine (Anaconda, Beulah and Pickles shafts), an iron filled sink mine 2 mi. NE—**Barite**, **Goethite**, **Marcasite**, **Pyrite**.

SULLIVAN: ① area mines, (a) Copper Hollow mine, 3 mi. NE—**Azurite**, **Chalcocite**, **Chalcopyrite**, **Chalcotrichite**, native **Copper**, **Cuprite**, **Hematite**, **Malachite**, **Pyrite**; (b) the Silver Hollow mine, 4.5 mi. E—**Hematite**, **Malachite**, **Quartz**; ② especially Pea Ridge Iron Ore Mine, in several ore zones—*Most common* **Actinolite**, **Apatite**, **Bornite**, **Chalcopyrite**, **Chlorite**, **Hematite**, **Magnetite**, **Monzonite**, **Pyrite**, **Quartz**; *Less common* massive **Barite**, **Biotite**, **Calcite**, **Epidote**, **Fluorite**, **Muscovite**, **Orthoclase**, **Sanidine**, **Xenotime**; and *Rare* **Anhydrite**, **Bastnaesite**, **Britholite**, **Grunerite**, **Lanthanite**, **Rutile**, **Talc**, **Tourmaline**.

### GASCONADE COUNTY

OWENSVILLE, W and H 8 mi., scattered over area hillsides and in an abandoned clay pit—blue-gray **quartzite** boulders (containing brachiopods casts).

### GENTRY, DAVIES, GRUNDY, LIVINGSTON COUNTIES

AREA, all regional glacial drift gravels, excavations, pits, etc.—*Lake Superior* **agates**, **jasper**, **fossils**, **petrified wood**.

## A Location Guide for Rock Hounds in the United States

### GREENE COUNTY

SPRINGFIELD, area old mines E and W of town (Allhamus farm, Ash Grove mines, Beaver Mine, Pearson Creek mines N & S, Turner Mines)—**Barite**, **Calcite**, **Cerussite**, **Dickite**, **Dolomite**, **Galena**, **Hemimorphite**, **Limonite**, **Litharge**, **Marcasite**, **Pyrolusite**, **Pyromorphite**, **Smithsonite**, **Sphalerite**.

### HENRY COUNTY

GILKERSON FORD, in clay iron-ore concretions in coal measures—**Alunogen**, **Sphalerite**, **Siderite**.

TIGHTWAD, in shale at coal mines—cubic **Pyrite** in clusters to 5 cm.

WARSAW, at the Warsaw quarry—**Calcite**, **Dolomite**, **Marcasite**, **Pyrite**.

### HICKORY COUNTY

HERMITAGE: ① area rd. cuts, banks, excavations—**chalcedony**, gemmy **chert**; ② the Peterson mine, between Hermitage and Preston—**Galena**, **Sphalerite**.

PITTSBURG, the Dist. 2 mi. S, includes Big Ten and Little Bachelor mines—**Sphalerite**.

### HOWELL COUNTY

WEST PLAINS, Laswell mine, near Summit Ave. and Canterbury Ave.—**Marcasite**, **Pyrite**, **Smithsonite**, **Sphalerite**.

### IRON COUNTY

ANNAPOLIS: ① the Annapolis mine, 1.4 mi. E—**Galena**; ② Annapolis Roofing Granule Plant, 0.7 mi. S, in rhyolite porphyry—**Feldspar**, **Quartz**, **Piemontite** (as radiating sprays of needles in joints).

BELLVIEW, 5 mi. SW—asbestiform **Actinolite**.

BIXBY, Mines of the new Lead dist.: ① Magmont Mine, just S on KK, and ② Buick Mine farther S on KK—**Bornite**, **Bravoite**, **Chalcocite**, **Chalcopyrite**, **Covellite**, **Enargite**, **Galena**, **Malachite**, **Marcasite**, **Millerite**, **Polydymite**, **Pyrite**, **Pyrrhotite**, **Siegenite**, **Sphalerite**, **Tennantite**, **Vaesite**, **Wurtzite**.

GRANITEVILLE: ① Sheahan Quarry, 0.5 mi. W—**Actinolite**, **Apatite**, **Beryl** (common blue), **Fluorite**, **Galena**, **Hematite**, **Magnetite**, **Molybdenite**, **Orthoclase**, **Pyrite**, smoky **Quartz**, **Rutile**, **Topaz**, **Zircon**; ② Schnieder' granite quarry, 1 mi. NE, in granite pegmatite—**Anglesite**, **Barite**, **Chlorite**, **Fluorite**, **Hematite**, **Galena**, **Gypsum**, **Goethite**, **Melanterite**, **Pyrite**, **Saponite**.

IRONTON: ① Cuthbertson Mt.: (a) regional mines—**Hematite** and other **Iron minerals**, **Pyrolusite**, **Psilomelane**; (b) small abandoned mines and prospects—**Braunite**, **Hematite**, **Psilomelane**; ② S near Ketcherside Gap and Copper Garnet prospect—**Chalcopyrite**, **Copper**, **Epidote**, **Andradite Garnet**, **Malachite**; ③ Crane Mountain South, along SW face in cliffs in Precambrian trachyte porphyry as vein fillings—**Chlorite**, **Clinozoisite**, **Epidote**, **Hematite**, **Quartz** and **Sericite**.

PILOT KNOB: ① surface mine 1 mi. E on top of Pilot Knob Mt.—**Actinolite**, **Barite**, **Calcite** (fluorescent), **Epidote**, **Feldspar**, **Fluorite**, specular **Hematite**, **Lazulite** (as microscopic crystals in serpentine), **Molybdenite**, **Titanite**, **Zoisite**; ② the Pilot Knob mine, just west of the surface outcrop, at the foot of Pilot Knob Mt. (an underground mine closed in 1980) —**Baddeleyite** (fluorescent - green), **Barite**, **Calcite** (fluorescent - red),

## Missouri

**Chalcopyrite, Chondrodite** (fluorescent - yellow), **Dolomite, Fluorite, Galena, Goethite, Hematite, Lazulite, Magnetite, Pyrite, Quartz, serpentine, Talc**; ③ Shephard Mountain, just W— **Fluorite**, crystals, **Hematite, Magnetite, Quartz** in cavities.

VIBURNUM, Mines of the New Lead dist. (St. Joe No. 27, No. 28, No. 29), off of Hwy. 49—**Bornite, Bravoite, Calcite, Chalcocite, Chalcopyrite, Covellite, Enargite**, ferroan **Dolomite, Galena, Malachite, Marcasite, Pyrite, Siegenite, Sphalerite**.

## JACKSON COUNTY

KANSAS CITY AREA: ① McClain quarry, at 63<sup>rd</sup> St. and Hwy. 350 in the Westerville Ls.; ② in numerous exposures, especially in the SW part of the county and in underground quarries—**Aragonite, Barite** (tan tabular), **Calcite, Dolomite, Kutnahorite, Marcasite, Opal** (common), **Sphalerite, Thenardite**.

## JASPER COUNTY

JOPLIN DISTRICT (Tri-State Dist. MO mining towns of Alba, Carterville, Carthage, Duenweg, Joplin, Neck, Reeds, Sarcoxie, Thoms Station, Webb City), all great regional mines—**Allophane, Aluminite, Anglesite, Apatite, Aragonite, Aurichalcite, Azurite, Barite, Bornite, Calcite, Caledonite, Cerussite, Chalcanthite, Chalcopyrite, Chrysocolla, Copiapite, Covellite, Cuprite, Diadochite, Dolomite, Enargite, Epsomite, Galena, Glauconite, Goslarite garnet, Greenockite, Gypsum, Hematite, Hemimorphite, Hydrozincite, Jarosite, Lanarkite, Leadhillite** (fluorescent), **Linarite, Luzonite, Malachite, Marcasite, Melanterite, Millerite, Picroparmacolite, Plumbojarosite, Pyrite, Pyrolusite, Pyromorphite, Quartz, Smithsonite** (some fluorescent), **Sphalerite**, **Starkeyite, Sulfur, Szomolnokite, Vivianite, Wavellite, Wurtzite** in underground working; and as fine tabular crystals in the ores and on mine dumps—**Anglesite, Calamine, Calcite** (museum type crystals), **Cerussite, Greenockite, Marcasite, Pyrite**. Some dumps also have **Barite, Chalcopyrite, Dolomite** crystals (some fluorescent) and **Galena**.

## JEFFERSON COUNTY

AREA, jct. of Hwys. 21 and 141, in rd. cuts and along highway, in upper part of gray shale—**Calcite** nodules, some **Sphalerite**.

ARNOLD, 1 mi. S on Richardson Rd., on W side of I-55, in geodes—**Calcite, Dolomite, Marcasite, Pyrite, Sphalerite**.

BLACKWELL, the Southwest Jefferson Co. Barite & Lead Dist., 2 mi. S—**Barite, Galena, Goethite, Pyrite, Quartz**.

DE SOTO, 4 mi. S of Rte. 110 on Rte. 67—**Calcite** (multicolored fluorescent).

FRUMET, the Mammoth-Frumet mines—**Barite, Calcite** (green), **Chalcopyrite, Dolomite, Galena, Gypsum, Pyrite, Sphalerite**.

PALMER, Palmer mines, E of town—**Anglesite, Calcite, Cerussite, Dolomite, Galena, Goethite, Hemimorphite, Plumbogummite, Pyrite, Quartz, Sphalerite**.

VALLES MINES, area Zinc mines—**Anglesite, Barite, Calcite, Cerussite** (as fine crystals in Galena), **Galena, Hemimorphite, Hydrozincite, Pyrite**, drusy **Quartz, Smithsonite**.

## A Location Guide for Rock Hounds in the United States

### JOHNSON COUNTY

HOLDEN: ① associated with a gray clay in a coal seam—native **Iron**; ② along Walnut Cr. in ironstone concretions of shale overlying coal—**Sphalerite**.

Knob Noster, (a) in coal measures shale, and (b) again, 6 mi. N—**Gypsum, Pyrite, Siderite**.

### KNOX COUNTY

NEWARK, Kelly Lime-Rock quarry, 1 mi. SW in Burlington Ls.—**Calcite, Chalcopyrite, Goethite, Malachite, Pyrite, Quartz**.

### LAFAYETTE COUNTY

LEXINGTON, area coal mines and in joints in limestone—**Aragonite** crystals, **Gypsum, Pyrite, Sphalerite**.

### LAWRENCE COUNTY

AURORA, Aurora Mining Dist. area deposits and mines (Red Wasp, Arrow)—**Calamine, Calcite, Galena, Hemimorphite, Marcasite, Pyrite, Smithsonite, Sphalerite**.

STOTTS CITY, just W, a small district very similar to Granby deposits—**Galena, Hemimorphite**.

### LEWIS COUNTY

DURHAM, 3 mi. E, in geodes in Keokuk Shale. along North Fabius R. and nearby streams—**Aragonite, Calcite, Chalcopyrite, Honessite, Malachite, Millerite, Pyrite, Quartz, Sphalerite, Szomolnokite**.

LA BELLE, NE 1.5 mi., the Evans Coal mine—**Chalcopyrite, Gypsum, Pyrite, Sphalerite**.

LA GRANGE: ① N and S, in all regional gravel deposits along the Mississippi R. (a favorite collecting area) and local gravel pits—gem **agate, chalcedony, jasper**; ② in roadcut 1 mi. N on Route C, exit onto Hwy. 61, vugs similar to Keokuk geodes, nearly without shells—**Aragonite, Calcite, Chalcopyrite, Dolomite, Galena, Malachite, Quartz, Sphalerite, Smithsonite**; ③ La Grange quarry, at the S edge of town—**Calcite, Fluorite** (purple cubes), **Pyrite**.

### LINCLON COUNTY

OLD MONROE, area glacial sand and gravel operations—*Lake Superior* **agates, Garnets, Staurolites**

TROY: ① just S on Hwy. 61, the Magruder Quarry—**Calcite, Marcasite, Pyrite**; ② Watson quarry, N of town—**Calcite, Chalcopyrite, Malachite, Millerite, Pyrite, Quartz, Sphalerite**.

### MACON COUNTY

BEVIER, the Bee-Vee mine, SE and other area coal deposits—**Copiapite, Gypsum, Halotrichite, Melanterite, Quartz and Pyrite**.



## Missouri

### MADISON COUNTY

FREDERICKTOWN: ① area mines, Mine Lamotte, Park City, Consolidated Mines, Frederick Lead, Catherine, Madison, Ozark Lead, Hickory Nut and others within 5 mi. of town—**Anglesite**, **Annabergite**, **Aragonite**, **Asbolane**, **Azurite**, **Bieberite**, **Brochantite**, **Calcite**, **Carrollite**, **Cerussite**, **Chalcanthite**, **Chalcocite**, **Chalcopyrite**, **Copiapite**, **Dickite**, **Dolomite**, **Galena**, **Glaucosite**, **Greigite**, **Malachite**, **Marcasite**, **Millerite**, **Pyrite**, **Quartz**, **Siegenite**, **Smithsonite**, **Sphalerite**, **Skutterudite**, **Tetrahedrite**; ② the Silver Mines Dist., 1 mi. W on the St. François R., the Einstein, Apex, Gabriel, Henson, Ozark, Martin and Killian prospect—**Alamandine**, **Antimonpearceite**, **Apatite**, **Arsenopyrite**, **Augite**, **Berryite**, **Cassiterite**, **Chalcopyrite**, **Chlorite**, **Covellite**, **Epidote**, **Ferritungstite**, **Fluorite**, **Galena**, **Gorceixite**, **Hausmannite**, **Hematite**, **Huebnerite**, **Ilmenite**, **Magnetite**, **Malachite**, **Marcasite**, **Muscovite**, **Psilomelane**, **Pyrite**, **Pyrrhotite**, **Quartz**, **Rutile**, **Scheelite**, **serpentine**, **Sphalerite**, **Stibnite**, **Stolzite**, **Tennantite**, **Topaz**, **Wolframite**, **Zinnwaldite**; ③ S of Rte. 72, on dumps of the Einstein Silver Mine—**argentiferous Galena**, **Arsenopyrite**, **Cassiterite**, **Covellite**, **Fluorapatite**, **Fluorite**, **Pyrite**, **Quartz** crystals, **Sphalerite**., **Scheelite**, **Topaz**, **Wolframite**, **Zinnwaldite**.

FRENCH MILLS, 4.5 mi. E on N side of Rock Pile Mountain, in diabase on the Captain Cr.—**Actinolite**, **Epidote** (in seams and loose in soil).

MARQUAND, the Starkey mine, 3 mi. N—**Goethite**, **Marcasite**, **Pyrite**, **Starkeyite** (as a white efflorescent on decomposing pyrite on the dump).

MINE LA MOTTE, area lead mines (numerous) —**Bravoite**, **Calcite**, **Chalcopyrite**, **Galena**, **Malachite** (encrustations), **Pyrite**, **Siegenite**, **Sphalerite**.

ZION, all regional cut banks, excavations, etc., in the hill country extending E into Bollinger Co. and on surfaces—**jasper**.

### MARIES COUNTY

VIENNA, 4 mi. NE, a filled sink iron deposit—**Chalcopyrite**, **Hematite**, **Marcasite**, **Pyrite**.

### MCDONALD COUNTY

POWELL, area of Bee Bluff along the Elk R.—gemmy blue **chert** (containing pockets of drusy quartz crystals).

### MILLER COUNTY

BAGNELL, ELDON, ETTERVILLE, regional mines—**Barite**, **Calcite**, **Chalcopyrite**, **Cerussite**, **Dolomite**, **Galena**, **Gypsum**, **Malachite**, **Marcasite**, **Pyrite**, **Smithsonite**, **Sphalerite**.

CAPPS, the Sample mine, a filled sink iron mine 3 mi. S—**Azurite**, **Goethite**, **Malachite**, **Marcasite**, **Pyrite**.

IBERIA: ① The Abbot Bank mine, 3 mi. NE—**Malachite** in drusy cavities; ② Bolin Creek mine, a filled sink iron mine on S side of Bolin Cr. and 3.5 mi. NE of town—**Calcite**, **Hematite**, **Pyrite**, **Quartz**; ③ the Pioneer No. 2 mine, 6 mi. NE—**Barite**, **Calcite**, **Galena**, **Hematite**, **Quartz**.

### MONITEAU COUNTY

CALIFORNIA, countrywide gravel pits—**Barite** crystals, **Chalcopyrite**, **Galena**.

## A Location Guide for Rock Hounds in the United States

### MONROE COUNTY

PARIS, along N side of Hwy. 154, 5 mi. E, in a roadcut—**Copiapite, Gypsum, Halotrichite, Marcasite**.

### MONTGOMERY COUNTY

DANVILLE, McClain quarry, S of I-70 at the Danville Exit—**Calcite, Dolomite, Millerite, Pyrite**.

### MORGAN COUNTY

FLORENCE: ① the Bluff Springs Zinc mine, 6 mi. E—**Calcite, Sphalerite**; ② the Carver mine, 4 mi. S—**Barite, Galena, Sphalerite, Pyrite**.

GRAVOIS MILLS: ① The Buckshot Barite mine, 4 mi. NW—**Barite** (as colorless crystal), **Calcite, Chalcopyrite, Galena** (on Barite), **Malachite**; ② the Charles Hibdon mines, 2 mi. SW—clear to milky **Barite**; ③ the Drybone mine, 3 mi. SW—**Barite, Goethite, Marcasite, Pyrite**; ④ the Hoard mine, 5 mi. NW—**Barite** (as clear crystals), **Galena, Goethite, Malachite**; ⑤ the Lamb mine, 2 mi. SW—**Barite** (as clear crystals), **Calcite, Galena**; ⑥ the Newell mine, 3 mi. NW—**Barite** crystals; ⑦ the Proctor Creek mines—**Barite** (as clear to milky crystals with bluish interior and white tips that may represent partial replacement by Mascagnite), **Calcite**; ⑧ the Reavis (Hubbard) mine, 2 mi. NW—**Barite, Galena**.

STOVER, area, in small deposits—blue **Barite** crystals.

VERSAILLES: ① countrywide gravel pits—**Barite** crystals; ② Whorten mines and area old prospects—**Barite, Galena, Sphalerite**.

### NEWTON COUNTY

BOULDER CITY, 1 mi. SE along Indian Cr.—drusy and smoky **Quartz** crystals.

GRANBY (8 mi. NE of Neosho): ① area mines—**Anglesite, Aurichalcite, Calcite, Cerussite, chert, Covellite, Dolomite** crystals, **Calamine, Enargite, Galena, Goslarite** garnet, **Greenockite, Hematite, Hemimorphite** (as the principal ore), **Hydrozincite, Leadhillite, Malachite, Marcasite, Mimetite, Pyrite, Pyrolusite, Pyromorphite, Quartz** crystals, **Siderite, Smithsonite** (as a principal ore, some fluorescent), **Sphalerite**; ② the Beer Cellar Mine, in cavities in Galena—also **Leadhillite** (fluorescent).

RACINE, SENECA, extensive area quarries—**tripoli**.

WENTWORTH, area mine dumps—**Lead-Zinc minerals, Pyrite, Sphalerite**.

### NODAWAY COUNTY

AREA, along the Dog Creek in Calcite veins in limestone—**Calcite** and **Sphalerite** enclosed in Calcite.

### OSAGE COUNTY

AREA, in diaspore clay deposits—**Diaspore, Gibbsite**, native **Copper**.

META, in a filled sink iron deposit 1 mi. SW—**Calcite, Hematite, Quartz** (Amethyst and colorless), **Sphalerite**.

## Missouri

### OZARK COUNTY

ELIJAH, the Alice Zinc mine, 5 mi. N of Bakersfield and 2 mi. SE of Elijah—**Dolomite, Greenockite, Pyrite, Quartz, Smithsonite, Sphalerite.**

GAINESVILLE, N on Rte. 5 to Timbered Knob, area—gemmy **chert** (white with yellow bands).

### PERRY COUNTY

HIGDON, Higdon mine, at the Madison-Perry Co. line, 1.5 mi. NE, a partially developed outlying deposit of the Old Lead Belt (a Doe Run mine)—**Chalcoppyrite, Dolomite, Galena, Siegenite, Sphalerite.**

### PETTIS COUNTY

SEDALIA, Lafarge Pettis Quarry on Hwy. 50 just W. of town—good sized **Pyrite** crystals in the Chouteau formation.

SMITHTON, between Smithton and Sedalia—**Barite** (blue crystals banded with white Mascagnite).

### PHELPS COUNTY

NEWBURG, in bluffs S of Town—**Calcite** crystals.

ROLLA: the Buckland mine, a filled sink iron mine 4 mi. SW—**Amethyst, Ankerite, Calcite, Chalcanthite, Copiapite, Dolomite, Marcasite, Pyrite.**

SAINT JAMES: ① the Crisp mine, a filled sink iron mine 2 mi. SE—**Azurite, Hematite, Limonite, Malachite;** ② the DeCamp mine, a filled sink iron mine 8 mi. S—**Azurite, Hematite, Limonite, Malachite, Marcasite, Quartz;** ③ the Flat Rock mine, a filled sink iron mine 3.5 mi. S—**Azurite, Hematite, Malachite, Pyrite;** ④ the Meramec mine, a filled sink iron mine 7 mi. SE and 0.5 mi. W of the Meramec Iron Furnace—**Hematite, Quartz, Siderite;** ⑤ the Stimson mine, a filled sink iron mine 9 mi. SE—**Hematite, Malachite.**

VIDA, W to the Moselle Iron Mines (No. 9 & 10), or 9 mi. SW of Rolla—**Amethyst, Arsenopyrite, Azurite, Chalcanthite, Chalcoppyrite, Halloysite, Hematite, Malachite, Marcasite, Melanterite, Pyrite, Smoky Quartz.**

### PLATTE COUNTY

PLATTE CITY, in several limestone quarries—**Barite, Calcite.**

### PUTNAM COUNTY

AREA, coal measures shale in coal mines and exposures throughout the Co.—**Pyrite, Gypsum** crystals.

### RALLS COUNTY

HANNIBAL, Atlas cement quarry, S of town—**Marcasite, Pyrite.**

NEW LONDON, N on US 61, in rd. cut near the Salt R. bridge—**silicified conodonts.**

SAVERTON, along Hwy. 79 ≈ 1 mi. N of Saverton turnoff—**Pyrite.**

## A Location Guide for Rock Hounds in the United States

### RANDOLPH COUNTY

AREA, coal deposits in the W half of the Co.—**Copiapite**, **Gypsum**, **Halotrichite**, **Melanterite**, **Pyrite**, **Quartz**.

DARKSVILLE, in the Excello shale 2 mi. N in a roadcut, E of Rte. C—**Gypsum**.

### RAY COUNTY

STANWYCK, in limestones and shales associated with coal deposits—**Barite** crystals.

### RENOLDS COUNTY

AREA, mines of the new Lead dist.: ① S on KK from Bixby, Iron Co. Brushy Creek Mine and farther S Fletcher Mine; ② from jct. of Hwy. 72 and B, S on B, Sweetwater Mine (see p. 222)—**Bornite**, **Bravoite**, **Chalcocite**, **Chalcopyrite**, **Covellite**, **Enargite**, **Galena**, **Malachite**, **Marcasite**, **Millerite**, **Polydymite**, **Pyrite**, **Siegenite**, **Sphalerite**, **Wurtzite**.

### RIPLEY COUNTY

DONIPHAN: ① E along US 160 toward Butler Co. line, area farms, hillsides, etc.—gemmy **flint**; ② along banks and in gravels of the Current R., sometimes to giant size, gemmy—**chert** nodules.

### SHANNON COUNTY

EMINENCE: ① the nearby Casey (2 mi. N near Hwy. 19), Slater (2 mi. E), Sutton (5 mi. SE), Tyrell and Jerktail (6 mi. NW) mines—**Calcite**, **Chalcocite**, **Chalcopyrite**, **Cuprite**, **Dolomite**, **Malachite**; ② SE, the Elliot (9 mi. SE), Thorny Mt. mines (9 mi. SE)—**Braunite**, **Fluorite**, **Psilomelane**, **Pyrolusite**, **Tremolite**.

### ST. CHARLES COUNTY

DEFIANCE, N to jct. of Hwy. 94 and Rte. DD, the Defiance Quarry, in limestone—**Calcite** (yellow, white), **Goethite**, cupriferous **Marcasite**, **Pyrite**, some **Sphalerite**, **fossils**.

ST. CHARLES, on South River rd., the St. Charles Quarry, in limestone—**Calcite** (white, green), large **chert** nodules, pink **Dolomite**, **Fluorite**, large plant **fossils**.

### ST. CLAIR COUNTY

VISTA, the Crystal (Harmon) deposit, 0.5 mi. W, in veins and fractures in sandstone—**Barite** (colorless crystals).

### ST. FRANCOIS COUNTY

AREA, many large deposits and pits throughout Co.—crested **Barite**.

## Missouri

BONNE TERRE, Northwest County Barite Dist., NW of town—**Barite, Goethite, Pyrite, Quartz.**

BONNE TERRE, FLAT RIVER, DELOGE, area mines, the St. Joe No. 1 -9( Doe Run) Flat River, Des Loge, Esther, Elvins and West Elvins (River mines) Federal mines, Leadington, and National—**Bravoite, Barite, Calcite, Cerussite, Chalcopyrite, Galena, Malachite, Pyrite, Pyrrhotite, Siegenite, Sphalerite, Smithsonite.**

FARMINGTON, Knob Lick, in alteration zones of granite—**Actinolite, Epidote.**

IRON MT., area mines and pits—**Actinolite**, yellow **Andradite** garnet, **Apatite, Barite, Bornite, Calcite, Chalcopyrite, Chlorite, Diopside**, pink **Dolomite, Epidote, Fluorite, Galena, Garnet, Hematite, Magnetite, Pyrite, Quartz.**

LEADWOOD: ① the Leadwood Dist., within 2 to 3 mi. around town, St. Joe mines No. 11, 12, & 14, Des Loge mines No. 5 & 6, Doe Run No. 8, the Baker shaft—**Dolomite, Galena, Sphalerite;** ② on bypass Hwy. 8 just W—**Chalcopyrite, Dolomite, Galena, Millerite, Sphalerite.**

MINERAL CITY, the Greasy mine, 4 mi. S in granite—**Hematite.**

## ST. LOUIS COUNTY

AREA: ① jct. of Hwys. 141 and I-44, on SE side in bluff behind McDonalds and Taco Bell—**Calcite** crystals, **Millerite, Quartz;** ② jct. of Hwys. 141 and 30, in pockets in rd. cuts—**Barite, Calcite, Goethite, Pyrite, Quartz;** ③ N, at Hwy. 67 near the Missouri R., in the St. Genevieve formation—**Pyrite** crystals and **Goethite** replacements, ④ South county: (a) in the old Alpha Portland Quarry on Green Park rd. just north of I-55; and (b) Weber South quarry—**geodes** containing **Calcite, Fluorite** and **Millerite**, (c) area roadcuts, washes—*Union Road* **agates**, (d) Antire quarry off I-44 on Antire rd.—**Calcite, Honessite, Linnaeite, Millerite, Pecoraite, Violarite, Quartz.**

CHESTERFIELD, in river gravels at area sand and gravel operations—some **Garnets, Staurolites.**

FLORISSANT: ① off New Halls Ferry rd., in the Coldwater Cr., banks—**Vivianite** replacing fossils in glacial deposits; ② Quarries at Hwy. 67 on the river—**Calcite, Celestite.**

LEMAY, Ruprecht quarry, on Mt. Olive—**Barite, Calcite, chalcedony, Dolomite, Fluorite, Millerite, Pyrite, Sphalerite.**

## STE. GENEVIEVE COUNTY

AVON: ① Avon mines, about 0.5 mi. NE—**Barite, Calcite, Galena, Goethite;** ② the Avon diatreme (and other area diatremes), about 80 ultramafic diatreme within a 75 sq. mi. area in the SW part of the Co., type location is on Hwy. 32, 1.2 mi. E of Rte. AA—**Apatite, Augite, Biotite, Calcite, Chalcopyrite, Chlorite, Chromite, Epidote, Galena, Garnet, Hornblende, Magnetite, Marcasite, Melilite, Olivine, Perovskite, Phlogopite, Pyrite, smoky Quartz, Siderite, Sphalerite, Xonotlite.**

CORNWALL, area mines—**Azurite, Bornite, Calcite, Chalcocite, Cuprite, Malachite.**

MILLER: ① the Dobschuetz deposit (1.5 mi. SE), and ② the Pratte deposit 1 mi. E of the Dobschuetz—**Orthoclase.**

STE. GENEVIEVE, area Cornwall copper mines—**Bornite, Calcite, Cerussite, Chalcanthite, Chalcocite, Chalcopyrite, Chrysocolla, Cuprite** (as red massive tile ore), **Dolomite, Enargite, Fluorite, Galena, Goethite, Gypsum, Malachite, Marcasite, Quartz, Pyrite, Smithsonite, Sphalerite, Tenorite.**

## A Location Guide for Rock Hounds in the United States

### STODDARD & DUNKLIN COUNTIES

DEXTER, S along both sides of Rte. 25 to Malden in Dunklin Co., and in all regional gravel pits and stream beds—**chert**, fortification **agate** (blue, gray, pink, white).

### SULLIVAN COUNTY

MILAN, in limestone—**Barite** crystals.

### TEXAS COUNTY

HOUSTON, the Murphy barite mine, W of town—**Barite** crystals (white, blue), **Calcite**, **Limonite**.

### WASHINGTON COUNTY

COUTOIS, the Palmer mines, also to the E and NW—**Anglesite**, **Barite**, **Calcite**, **Cerussite**, **Dolomite**, **Galena**, **Hemimorphite**, **Pyrite**, **Quartz** and **Sphalerite**.

OLD MINES (village 7 mi. N of Potosi on Rte. 21), area mine dumps—**Barite**, **Calcite**, **Galena**, **Goethite**, **Malachite**, **Marcasite**, **Pyrite**, **chert** and drusy **Quartz** crystals.

POTOSI, the Potosi Barite dist., area deposits, pits, mines—**agate**, **Barite** crystals (there are numerous old Barite mines around such unmapped centers as Barytes, Cadet, Fertile, etc. in this Co.), **Cerussite**, **Galena**, **Goethite**, **Pyrite**, **Quartz**, **Smithsonite**, **Sphalerite**.

RICHWOODS, area old mines—**Barite**, **Galena**, **Goethite**, drusy **Quartz**.

### WAYNE COUNTY

AREA, at Granite Knob—abundant **Pyrite** (in granite), **Copiapite**, **Hyalite** opal, **Voltaite**.

PIEDMONT, at Iron Knob, 4.7 mi. NE—**Hematite**.

SHOOK, the Shook Stone quarry (SE of Greenville) —**Calcite**, **Dolomite**, **Limonite**, **Quartz**.

### WRIGHT COUNTY

AREA, the Mansfield (Lead Hill) Dist., half way between Mansfield and Norwood—**Galena**, **Hemimorphite**, **Smithsonite**, **Sphalerite**.

## MONTANA

Montana was named from its mountains. Dominated by the complex Rocky Mt. system that originated with the Laramide revolution to close the Mesozoic era and initiate the Cenozoic, western and southwestern Montana carries the Continental Divide on the rugged granite shoulders of the Bitterroot Range that is the state's western boundary. Every few years, earthquakes smashing across the mountain regions remind us that the mountain-building forces are still dramatically active.

Early prospectors, who followed trails pioneered by Lewis and Clark in 1805 and the fur *voyageurs* of subsequent decades, came as losers from the California gold fields. They discovered enormous new sources of mineral wealth in **Gold, Silver, Lead, Copper, Manganese, and Zinc**, causing Montana to become known primarily as a mining state. Montana also has another kind of mineral wealth in Montana **moss agate** and **Sapphires**, contributed to the state's high placement in every gem and mineral collector's *places to visit* list.

Montana is seventh in the list of America's gold producing states. Many placers were discovered in Powell, and Beaverhead counties. Many other rich placers were also found in Alder Gulch where Virginia City (1864) now slumbers as the county seat of Madison Co. Such placers, which produced nearly half of the state's total gold, were most active prior to 1870 but continued pouring out the yellow metal until W.W.II. Today, panning for gold is a major summer hobby.

Inauspicious showings of colors in an iron gossan covering a major butte in Silver Bow Co. in 1864 created a modest Gold and Silver camp known as Butte. But when the underlying **Copper** ores were penetrated in 1880, Butte erupted into the greatest Copper center on earth, adding more than \$2 Billion to the states economy. The Copper brought the railroads to Montana and greatly aided the settlement of the state.

Although for nearly a century Montana made exciting economic and political news with its metal mines, late comers began making Montana world famous for *Montana moss Agate*. This gray chalcedony nodules shaped like Idaho potatoes occur in the gravel bars and adjoining benches along the Yellowstone R. for some 250 mi. eastward from Billings to Miles City, with numerous side streams out of Wyoming contributing a minor supply. This extraordinary gemstone consists of unusually translucent **chalcedony** laced with Manganese Dioxide against a background often of brilliant red **carnelian**. When sliced, the nodules reveal delicate landscape scenes of mountains, forests, trees, bushes, ferns, lakes, clouds, and figures.

Two other highly desired gems, purple **Amethyst** and cornflower blue **Sapphires**, are notable from Montana. The Gold mines of Jefferson Co., E of Butte, produce high quality **Amethyst** as a by-product, along with lovely water clear Quartz. The **Sapphires** come mostly from the stream gravels of Lewis and Clark Co., out of Helena, although other western counties also produce the blue gem **Corundum**.

### BEAVERHEAD COUNTY

ARGENTA: ①, area mines—**Lead-Silver minerals**; ② NE ½ mi., mine—**Pyrophyllite**.

ARMSTEAD, SW, the Anderson deposit—**Chrysotile** asbestos.

BANNACK, area placer mine—**Gold**.

DILLON: ① area NW: (a) Frying Pan Basin, and (b) Camp Cr., regional gravel surfaces, etc.—**Corundum, opalized and silicified wood**; ② NW 27 mi., the Rothschild Mine—**Vanadinite**; ③ SE 11 mi., on Axes Cr., an exceptionally pure deposit—**Talc**: (a) 2 mi. S of Axes Cr., the Timber Gulch Deposit, and (b) 8 mi. NE of Axes Cr., the Keystone

## A Location Guide for Rock Hounds in the United States

Mine—**Talc**; ④ E 14 mi., in Sec. 3 & 4, T. 7 S, R. 6 W, area outcrops—**Dumortierite**; ⑤ 18 mi. SW in Sweatwater Cr. on Rebish ranch—star **Corundum**; ⑥ E 13 mi. at Christenson ranch—**Sillimanite**.

GLEN, NW 6 mi., at Brown's Lake, abundant mine ores—**Scheelite**.

HECIA (Bryant), area placers and lode deposits—**Gold, Lead, Silver**.

POLARIS, S toward Bannack, in gravels of Grasshopper Cr., rare—**Diamond**.

### BIG HORN COUNTY

HARDIN, SW about 50 mi. via dirt rds. to Dryhead (cattle ranch above the Big Horn Canyon on slopes of the Pryor Mts.), a considerable area of exposures of the Jurassic Chugwater Red Beds (sandstone): ① many regional prospects—**Uranium** minerals; ② all area surfaces, especially along the canyon rim—**agate, chalcedony, jasper, sandstone concretions, silicified coral, fossils**.

### BROADWATER COUNTY

AREA (old ghost mining camps): ① Confederate Gulch, placer and lode mines—**Gold**; ② Park (Hassel, Indian Cr.), area mines—**Gold**; ③ White Creek, area mines—**Copper** minerals.

RADERSBURG: ① area mines— **Gold** (veins in andesite flow), **Silver** (in sediments); ② the Keating Mine—**Gold, Silver, Tetradymite**.

WINSTON (Beaver Creek), area mines—**Lead, Silver, Zinc**.

### CARBON COUNTY

FROMBERG, W 1 mi., coal mine—**coal, Pyrite**.

RED LODGE, two area mined deposits, podiform—**Chromite**.

WARREN, N and E in the Pryor Mts. toward Big Horn Canyon, very many scattered prospects, claims, and mines—**Uranium** minerals, **fossils**, Quartz family **gemstones**.

### CARTER COUNTY

ALZADA, area of the Black hills, 9 good deposits—**Bentonite**.

### CASCADE COUNTY

AREA, Narrow Gauge Gulch, a mine—**Pyromorphite**.

MONARCH, area pegmatite outcrops—**Beryl**.

NEIHART: ① area dist. mines—**Galena, Polybasite**, native **Silver, Sphalerite**; ② Big Bend deposit—**Molybdenite**; ③ the Hartley Mine, gemmy—green **Sphalerite**; ④ area S in Little Belt Mts., placers and lode veins in gneiss and diorite—**Gold, Silver**.

VAUGHN, area surfaces—black **silicified wood**, *Teredo* wood (filled with chalcedony).

### CHOUTEAU COUNTY

WARRICK, area of the Bearpaw Mts., the Black Diamond prospect—**Apatite, Augite, Magnetite**.



## Montana

### CUSTER COUNTY

MILES CITY, Montana moss agate are found all the way from the Big Horn R. upstream on the Yellowstone R. to beyond Sidney near the ND line.: ① S of Pompey's Pillar on I-94, where there are gravel banks; ② and farther E on I-94 at Hysham, where site is S on Sarpy rd. in the hills—**moss agate**.

### DAWSON COUNTY

GLENDIVE, all regional surfaces, draws, washes, etc.—**agate, jasper, moss opal**.

### DEER LODGE COUNTY

ANACONDA, area: ① French Cr., placers—**Gold**; ② Rable Mine—**Argentite, Arsenopyrite, Azurite, Bornite, Chalcocite, Chalcopyrite**, (with Gold), **Chrysocolla, Hematite, Marcasite, Pyrrhotite**; ③ N 3 mi. at falls of Lost cr., in pegmatite—**Amazonite**; ④ 2 mi. E of French Gulch sign—**petrified wood**.

CHAMPION, E 5 mi., in gravels—**Gold, Sapphires**.

GEORGETOWN: ① area placers—**Gold**; ② Cable Mine—**Gold, Chrysocolla**; ③ Southern Cross Mine—**Gold**.

### FERGUS COUNTY

GILT EDGE, MAIDEN: ① area placer mines—**Gold**; ② area lode mines, veins as replacements in limestone—**Gold**; ③ in the Judith Mts., the Spotted Horse Mine—**Gold Telluride**.

NORTH MOCCASIN (Kendall), area mines, ore mostly in bituminous and argillaceous sediments near top of Madison limestone—**Gold**.

### GALLATIN COUNTY

BOZEMAN, area: ① Salesville, and headwaters of Elk Cr.—**emery, Corundum**; ② Horseshoe Hills, area—dendritic shale, **Trilobites**; ③ S, on summit of Mt. Blackmore, Elev. 10,196'—**agate, chalcedony, Hyalite opal, Opal, petrified wood**.

MANHATTAN, NW 5 mi.—**onyx**.

### GLACIER COUNTY

BLACKFOOT, Nelson Hill area, rare—**Diamond**.

### GRANITE COUNTY

PHILLIPSBURG: ① SW 2½ mi., the Granite Mine, as important ore mineral—**Cerargyrite** (this important mining dist. contains numerous mines, on the dumps of which are found **Chrysocolla** and **Rhodochrosite** in addition to various metallic ore minerals); ② First Chance (Garnet) Mine, veins in granodiorite—**Pyritic Gold-Copper** minerals; ③ Granite-Bimetallic Mine—**Argentite, Arsenopyrite, Azurite, Bornite, Chrysocolla, Malachite, Tennantite**; ④ Boulder Cr., area mines, veins in granite, especially the Royal Mine as chief producer—**Gold, Silver**; ⑤ Flint Cr., area mines, replacements in limestone—**Gold, Manganese, Silver**; ⑥ Henderson Cr., lode mines—**Gold, Scheelite**; ⑦ W several mi., Rock Cr., area gravels, particularly in Anaconda and

## A Location Guide for Rock Hounds in the United States

Sapphire gulches and along all tributary draws—**Quartz** crystals, **Sapphires**; ③ from jct. of Hwy. 26A and Hwy. 28, right 17 mi. on Hwy. 28 to Chaussee Sapphire mine (fee)—**Sapphire**; Black Pine Mine—**Pyromorphite**, **Scheelite**, **Stolzite** (all fluorescent).

### HILL COUNTY

ROCK BOY, Bearpaw Mts., in exposures of carbonate rocks—**Columbite**.

### JEFFERSON COUNTY

BASIN, the Boulder Basin Dist.: ① regional placer and lode mines along (a) Basin, Cataract, and Lowland creeks, and (b) the upper Boulder R.—**Silver**, **Gold** (as by-product); ② N 7 mi., on Jack Cr. in Sec. 7, T. 7 N, R. 6 W—**Dumortierite**; ③ Mill Canyon, pegmatite outcrops—**Tourmaline**.

CORBIN, area mines—**Arsenopyrite**, **Cerussite**.

ELKHORN (Dist.): ① area contact metamorphic deposits—auriferous **Silver-Lead** replacements, **Gold sulfides**, **Arsenopyrite**, **Cerussite**; ② Elkhorn Peak, area mines—**Hematite**, **Magnetite**.

PIPESTONE: ① N to I-90 then W 7 mi. (to milepost 19 out of Butte), turn N for 5 mi. to (a) Homestake mining dist., area mine dumps; (b) W side of Rider Cr.—**Amethyst**, **Quartz** crystals; ② the Pohndorf Amethyst Mine (2 mi. NE of Toll Mt. picnic grounds and 2 mi. N of US 10)—**Amethyst**, **Feldspar**, **Muscovite**, **Smoky Quartz** crystals, **Schorl**.

WHITEHALL (Cardwell): ① area mines in Quartz veins—**Galena**, **Gold**, **Pyrite**, **Sphalerite**; ② 18 mi. NW in Hay Canyon at the Gem Queen claim—**Sphene**, **Smoky Quartz**.

WICKES, CLANCY, COLORADO (including Warm Springs and Clancy creeks and Lump Gulch): ① area placers and mines—**Arsenopyrite**, **Cerussite**, **Gold**; the Wilson Mine—**Meta-uranocircite**, **Meta-zeunerite** (fluorescent).

### JUDITH BASIN COUNTY

UTICA, SW 15 mi., in Yogo Gulch (at foot of Little Belt Mts.), occurring in area igneous dikes intruded into limestone outcroppings on hills above the gulch—**Gold**, **Ruby**, **Sapphire**.

### LEWIS and CLARK COUNTY

CANYON FERRY DAM, at Magpie Gulch, 1 mi. above Missouri R.—green **Sapphire**.

GARDINER, area mines—**Arsenopyrite** (with Gold).

HELENA (Last Chance Mining Dist.): ① area mines along the N contact of the Boulder batholith—**Gold**; ② Golden Messenger Mine (on W side of Big Belt Mts.), operated until 1942—**Gold**; ③ McClellan Cr., area placers—**Gold**; ④ Missouri R. - York (Trout Cr.) Dist., area Quartz mines, in replacements—**Gold**; ⑤ Sevenmile-Scratchgravel Dist., early placers with some renewed activity in the 1930's, panning for colors a seasonal hobby—**Gold**; ⑥ Stemple (Gould) - Virginia Cr. Dist., area mines with veins in sediments—**Gold**; ⑦ American Bar (long noted occurrence of gem Sapphire)—**Cassiterite**, **chalcedony**, **Garnet**, **Gold**, **Kyanite**, **Limonite**, **Sapphires**, **Topaz**; ⑧ N and SE, all gravel bars along Missouri R.—**Cassiterite**, **chalcedony**, **Garnet**, **Gold**, **Kyanite**, **Limonite**, **Sapphires**, **Topaz**; ⑨ Prickly pear Cr. in lower end of magpie Gulch: (a) Emerald Bar—**Cassiterite**, **chalcedony**, **Garnet**, **Gold**, **Kyanite**, **Limonite**, **Sapphires**,

## Montana

**Topaz**; (b) the Metropolitan Bar, and (c) Spokane Bar—**Gold**, **Sapphires**; ⑩ NE 12 mi., the Eldorado Bar: (a) area gravels; (b) SE 6 mi., at French Bar—**Cassiterite**, **chalcedony**, **Garnet**, **Gold**, **Kyanite**, **Limonite**, **Sapphires**, **Topaz**; ⑪ very many other gravel bars, benchlands, and tributary draws and streams—**Cassiterite**, **chalcedony**, **Garnet**, **Gold**, **Kyanite**, **Limonite**, **Sapphires**, **Topaz**.

LINCOLN, area placers and some lode mines—**Gold**.

MARYSVILLE (Ottawa) - Silver Cr. (includes Bald Butte S of the main part of the dist., the Drumlummom Mine as main producers)—**Gold**, **Silver**.

RIMINI-TENMILE Dist., area mines—**Lead**, **Silver**, **Zinc**.

### LINCOLN COUNTY

LIBBY (Snowshoe): ① SW 4 mi., the Rainy Cr. Dist., mines in Quartz veins associated with Iron and Copper sulfides—**Aegirite**, **Tremolite**, **asbestos**, **Vermiculite**; ② S 20 mi., a small area containing mines and prospects in veins—**Gold**; ③ SE 35 mi., mines in massive vein cutting Belt argillites—**Barite**. (All mines and prospects around Libby yield **Gold**, **Lead** and **Silver** also).

SYLVANITE-YAAK, area mines and prospects along the Yaak R. and surrounding tributaries—**Gold**, **Pyrite**, etc.

### MADISON COUNTY

AREA: ① Cow Camp, Elk Mt., Finnegan Ridge, regional surfaces, draws, etc.—gemmy **chert**, **jasper**; ② Greenhorn Gulch, area gravels—rare **Diamond**, **Quartz** crystals; ③ N part of Co., in the Sappington pegmatites—**Fergusonite**, **Muscovite**, etc. ④ Pole Cr., area gravels—**Garnets**, **Gold**, **Quartz** crystals, **Rubies**, **Sapphires**; ⑤ South Boulder Cr., area gravels—**Quartz** crystals; ⑥ South Meadows, between there and Moore Cr., pegmatite outcrops—**Spinel**, etc.

ALDER: ① Alder Gulch, many great mines—**Gold**; ② Bismark Mine—**Molybdenite** **Pyrite**, **Chalcopyrite**; ③ California gulch, head of placers—**Fergusonite**, **Gold**; ④ S, upstream along the Ruby R.: (a) area gravels, (b) gravel beds near Ruby Dam, and (c) all regional tributary Cr. beds—**Almandite** garnets.

ENNIS: ① SW 13 mi., area pegmatite outcrops—**Andalusite**, **Kyanite**, **Sillimanite**; ② S 15 mi., deposit in pegmatites—**Muscovite**; ③ S 20 mi., in Johnny Gulch, deposit—**Talc**.

HUTCHINS RANCH (community on US 287 about 38 mi. S of Ennis), S of Cliff Lake (extreme SE part of Co.), area deposits—**Chrysotile** asbestos, **serpentine**.

SILVER STAR (Rochester Dist.): ① gravels of the Jefferson R., and ② surfaces of all area hills—**agate**, **chalcedony**, **jasper**, **petrified wood**; ③ near S end of the Boulder batholith, mines in quartz veins—**Gold**.

TWIN BRIDGES (Tidal Wave): ① W, at Crystal Butte area—**Quartz** crystal; ② mines in contact veins on W side of Tobacco Root batholith—**Gold**.

VIRGINIA CITY, area great mines—**Gold**, **Garnets**.

### MINERAL COUNTY

SUPERIOR: ① Cedar and Trout creeks, area placers—**Gold**; ② Snowbird property (in SW part of Co.)—**Fluorite**, **Calcite**, **Quartz**.

## A Location Guide for Rock Hounds in the United States

### MISSOULA COUNTY

GREENOUGH: placers and lode mines (Quartz-Pyrite veins) on Elk Cr. in the Elk Cr.-Coloma Dist.—**Gold**; ② 2 mi. S of Elk Cr., deposits—**Barite**.

LOLO, area surfaces in the Lolo Cr. Dist.—**Quartz** crystals (smoky, clear).

MINERAL POINT, area mines—**Arsenopyrite** (containing Silver).

NINEMILE CREEK, placers in glacial moraines—**Gold**.

### PARK COUNTY

CARBELLA, area draws, Cr. beds, hillsides, etc.—**agate, jasper, petrified wood, Quartz** crystals.

CLYDE PARK, area rock exposures—**Calcite** (*Iceland spar*).

COOKE CITY (New World), negligible area placers (panning for colors) and numerous contact metamorphic vein mines—**Gold, Gold sulfides**.

EMIGRANT, small scale placers along Emigrant Cr., some lode veins—**Gold**.

GARDINER, area land surfaces, gravels, stream beds, etc.—**agatized wood, travertine**.

JARDINE (Sheepeater), small placers and replacement vein mines—**Arsenic, Gold, Tungsten**.

LIVINGSTON: ① area hillsides, ranchland, etc.—**agatized wood**; ② all regional gravels of the Yellowstone R.: (a) S toward Yellowstone National Park; (b) E toward Springdale, and; (c) all regional tributary stream gravels—**agate** (some Montana moss), Natrolite, **silicified wood**.

MINER, area land surfaces—**agate, chalcedony, jasper, petrified wood**,

### PHILLIPS COUNTY

LANDUSKY, area old mines—**Gold, Malachite, Pyrolusite**.

ZORTMAN, some placers, some veins in a porphyritic laccolith—**Gold**.

### POWELL COUNTY

AVON (Ophir), area placers, veins in Paleozoic limestone—**Gold**.

DEER LODGE, to Se in Dry Cottonwood Cr.—**Sapphire**.

DINN DIST. (includes Washington, Jefferson, and Buffalo gulches), numerous placer and lode mines—**Gold**.

GOLDCREEK, area placers—**Gold**.

PIONEER, area placers where the first actual gold was discovered in Montana Territory, veins in granite—**Calcite, Chalcopyrite, Gold, Quartz** crystals, **Pyrite**.

ZOSELL (Emery), area placers and Quartz-Sulfide veins in igneous rock—**Gold**.

### PRAIRIE COUNTY

FALLON, to E and N of the Yellowstone R., in side tributaries of Craker-box, Hatchet, Sand, and Whoop-up creeks, finest gem grade—Montana **moss agate, chalcedony, chert, jasper**.

TERRY: ① area land surfaces, draws, washes, etc.—petrified wood, chalcedony, jasper, etc.; ② area gravel bars of the Yellowstone R. across entire Co.—Montana **moss agate**.

## Montana

### RAVALLI COUNTY

AREA: ① Crystal Mt., mine that is Montana's largest producer—**Fluorite** (crystals range from white or pale green to deep purple); ② Eightmile Cr., near the White Cloud Mine, pegmatite outcrop—*Parasite* **Beryl**; ③ Highes Cr., area placers small and sporadic, but panning for colors good—**Gold**.

CONNER, on Sheep Cr. (tributary of the West Fork of the Bitterroot R.), a large, mined deposit—**Allanite**, **Ancylite**, **Fergusonite** (with **Euxenite** and **Fersmite**), **Monazite**.

HAMILTON, W in pegmatite outcrops of the Bitterroot Mts.—**Fergusonite**.

SULA: ① area pegmatite outcrops; and ② N 2 mi., pegmatites—**Beryl** (green, prisms to 3" long).

### SILVER BOW COUNTY

AREA: ① Brown's Gulch, alluvial gravels—**Sapphires**; ② Highland Dist. (ghost town of old placers, Veins, chimneys, and contact metamorphic deposits) —**Gold**.

BUTTE: ① dumps and underground workings that are open to visitors of the Alice, Allie Brown, Lexington, Rainbow, and other city mines—**Bornite**, **Pisanite**, **Rhodochrosite**, **Rhodonite**. The city mines, many reaching the 4,000' level, are interlaced with more than 3,000 miles of tunnels on +100' levels so that visitors and miners may travel from one part of the city to another entirely underground, entering and exiting via scores of shafts. The products produced were primarily Copper, with by-products of Lead, Gold, Silver and Zinc. ② the Emma Mine, massive—**Rhodochrosite**; ③ E, along the foothills of East Ridge, numerous mines—**Chrysocolla** and other **Copper** minerals; ④ S, in the Gravelly Range, deposits—silicified **rhyolite** (*onyx*); ⑤ Summit Valley, area placers and complex veins in Quartz monzonite—**Gold**.

MELROSE-GREGSON, extreme SW corner of Co., area mines—**Bentonite**.

WALKERVILLE, upper 4 mi. of Dry Cottonwood Cr. starting 12 mi. NW of Butte, area stream gravels—**Gold**, **Sapphires**.

### STILLWATER COUNTY

COLUMBUS, SW 42 mi., the Mouat Mine—**Lead**, **Silver**.

### YELLOWSTONE COUNTY

BILLINGS to CUSTER, all gravel bars of the Yellowstone R. (including to W boundary of Co. W of Laurel) —Montana **moss agate**, **chalcedony**, **chert**, **jasper**.

## NEBRASKA

This rectangular Great Plains state rises 4,460' east to west, from 840' to 5,300', yet so imperceptibly. The highest elevation, 5,424', almost straddles the extreme southwestern corner of Kimball Co. where it overlooks both Colorado and Wyoming. The subsurface rock strata of the entire state are all undisturbed sedimentaries: sandstone, limestone, shale and clay, with the oldest formation lying in the southeastern corner where Pennsylvanian rocks crop out. These formations resulted from Tertiary erosional debris spreading out from the Rocky Mountains as they rose during the Larimide revolution of 100 million years ago that closed the Mesozoic era. Thus, as one travels westward across Nebraska they find successively younger formations appearing in cut banks, in draws and breaks along regional rivers, and outcroppings through the Quaternary gravel surfaces.

Greatly eroded sandhills fan out across the west and northwest counties, while the farthest west reaches rise to the high, arid sagebrush plains of eastern Wyoming, disclosing spectacular bedrock formations. Northwestern Nebraska contains most of the gem fields in the state, insomuch as both the Black Hills of South Dakota and the scenic Badlands thrust long spurs into this part of the state. In this rough, uncurried region are found the famed *Fairburn* **agates**, brilliantly fluorescent **chalcedonies** and **jaspers** that rival the color of the rainbow.

The western Nebraska-South Dakota borderland from Sheridan Co. to the Wyoming line is good rock hunting country, especially along the southern slopes and ridges of the Pine Ridge Escarpment and along Whiteclay Creek near the Sioux Indian community of the same name in Sheridan Co. The extreme northwestern counties of Sioux and Dawes have many localities for fascinating things to hunt for such as: **concretions**, **Barite** and **Celestite** crystals, **chalcedony** rosettes, **agates**, **jasper**, **fossil plants** and **vertebrate remains**. The breaks of the White River north of Crawford in Dawes Co. and the rather extensive rock beds east of the Orella railroad sta. ranks among the finest collecting grounds in the Midwest for gemstone materials.

An extensive collecting region of agatized and opalized wood for high gem quality is the Sandhills country around Valentine in Cherry Co., extending along the Niobrara River eastward into Brown Co. The Sandhills Museum in town is well worth the rock hunter's visit. Draws, cuts and breaks in the hills along the Minnechaduza Creek and the Niobrara, as well as all tributary canyons, creeks, and washes, reveal an abundance of gem quality **petrified wood**, often occurring as huge stone logs lying on the surface of the ground. A great deal of **agatized** and **opalized mastodon ivory** in pastel colors weathers from the same regional formations.

Eastern Nebraska has few gemstone localities, but quarries, gravel pits and other excavations throughout the more settled counties will pay to investigate for **geodes**, **chert nodules**, **fossils**, **Calcite** crystals, **Marcasite** and **Pyrite** cubes. The area around the confluence of the Loup River with the Platte River in Platte Co. is well known for its **agates**, **chalcedony**, **jasper** and gem **petrified wood**.

### BUFFALO COUNTY

KEARNEY, area gravel bars and pits along the Platte R., especially to the W of town—**agate**, **chalcedony**, **jasper**, **petrified wood**.

### CASS COUNTY

WEeping WATER, SE, on rd. to Nehawka, in the Snyderville Quarry—**chalcedony**, **jasper**, **fossils**.

## Nebraska

### CHERRY COUNTY

VALENTINE, in the Sandhills county along the Niobrara R. and Minnechaduza Cr.: ① regional cuts, draws, hillside surfaces—**agatized** and **opalized wood, agate, jasper**; ② in draws and washes and gravel beds of Spring Cr. and the Keya Paha R. —**agatized** and **opalized wood, silicified mastodon tusks, arrowheads, flaked points** (of gem agatized wood).

### CHEYENNE, DEUEL, GARDEN & KEITH COUNTIES

AREA, between North and South Platte rivers and in all tributary branches and creeks: ① especially along Lodgepole Cr., ② all region S of Sidney to Ogalla, ③ along banks of the South Platte R., ④ south banks of the North Platte R., in regional sand pits, breaks, rd. cuts, etc. gem quality—**agatized** and **opalized wood**.

### DAWES COUNTY

CHADRON, in N part of Co. and as far W as Crawford and Harrison—**chalcedony** (some blue).

CRAWFORD: ① N, in breaks of the White R. reached by numerous ranch rds., choice—*Fairburn agates*; ② all regional Federal grazing lands—*Fairburn agates, jasper, petrified wood*, etc.; ③ NW on Rte. 2 to the Orella RR Sta.: (a) N 1 mi., turn E on ranch rd. and NW 2 mi. to a lone butte, one of the best collecting area in the Midwest states—*Fairburn agates, jasper, carnelian, chalcedony nodules* (many fluorescent), **opalized** and **agatized wood, silicified fern fossil** etc.; (b) S from Orella ½ mi., turn W across RR tracks on ranch rd. for 3 mi. into steep breaks—*Fairburn agates, jasper, petrified wood*, etc.; ④ N 20 mi., all area of the Little Bad lands—**vertebrate fossil** remains; ⑤ Pine Ridge, area—**Quartz** concretions, **agates, petrified wood, fossils**, etc.

### DAWES & SIOUX COUNTIES

AREA, the entire region embraced by these two adjoining NW Cos., in gravel cuts, cut banks, breaks, draws and washes, gullies, hill slopes, etc.—**chalcedony roses, Celestite** crystals, **fossils** (plant & animal), **concretions, agatized** and **opalized woods**, etc.

### DAWSON COUNTY

GOTHENBURG, in sand pits—**petrified palm wood**.

### DEUEL COUNTY

CHAPPELL, all regional surfaces, breaks, etc.—*Fairburn agates, jasper, chalcedony, opalized* and **agatized wood**.

### DOUGLAS COUNTY

AREA, Platte R. gravels and all regional gravel pits—**agate** (banded, moss), **chalcedony, chert, flint, moss opal, agatized** and **opalized wood**.

## A Location Guide for Rock Hounds in the United States

OMAHA, W to the Platte R., then S and E to Plattsmouth in Cass Co., both sides of the Platte R. for about 75 mi., very many locations with abundant specimen in gravel pits and bars along the river—**agates** (banded, moss), gemmy **chert**, **jasper**, **petrified wood**.

WATERLOO, in Lyman-Ritchie gravel pit to SW—**agate**.

### FURNAS COUNTY

BEAVER CITY, red and green material in the Niobrara chalk deposit—**chert**.

### GAGE COUNTY

WYMORE (and Blue Springs): ① all regional gravel pits and quarries—**Calcite**, **Quartz** crystals; ② SE 3 mi., quarry on E bank of the Blue R.—**geodes** (lined with Quartz or rare blue Celestite); SW of Holmesville, quarry on the Blue R.—**geodes**, **flint**, **fossils**.

### JEFFERSON COUNTY

FAIRBURY, regional gravel pits and stream gravels—**agate**, **chalcedony**, **jasper**, **petrified wood**.

STEELE CITY, area gravel pits, quarries, and stream gravels—**agate**, **chalcedony**, **jasper**, **petrified wood**.

### MORRIL COUNTY

ANGORA, 2 mi. E of Angora Hill on ranch rd., abandoned mine dump—fluorescent **moss opal** nodules (in limestone coated with white Calcite), **opal arrowheads**.

BAYARD: ① area gravel pits, sandhills, stream gravels, etc.—**agate**, **chalcedony**, **chert**, **flint**, **fossils**; ② in gravel beds along the N side of the Platte R. all the way to lake Guernsey, WY—**agate**, **petrified wood**.

### NANCE COUNTY

FULLERTON, in local gravel pits—**agate**, **petrified wood**.

### NEMAHA COUNTY

AUBURN, gravel beds of the Little Nemaha R.—**agate** (common, moss), **chalcedony**, **jasper**, **petrified wood** (cycads).

### OTOE COUNTY

PALMYRA, in gravel pits here and at Dunbar—**moss agate**.

### PLATTE COUNTY

PLATTE CENTER, in gravels and pits surrounding the confluence of the Loup and Platte rivers—**agate**, **chalcedony**, **jasper**, **silicified wood**.



## Nebraska

### RED WILLOW COUNTY

McCOOK, in Republican R. basin as far E as Franklin—pastel **jasper**.

### RICHARDSON COUNTY

HUMBOLDT, along Nemaha R.—**agate**.

### SAUNDERS COUNTY

ASHLAND, in sand pits along Platte R. and downstream to Louisville and Laplatte—**agate, petrified wood**.

### SCOTTS BLUFF COUNTY

SCOTTSBLUFF: ① N 8 mi., in rd. cut on Hwy. 87, gemmy—**petrified wood** (opal replacement, fluorescent); ② S, in Scottsbluff Badlands—**concretions, fossils**.

### SHERIDAN COUNTY

HAT SPRINGS, area gravels, cut banks, breaks, etc.—**agate, chalcedony, jasper, petrified wood**.

WHITECLAY: ① area gravel bars, along Whiteclay Cr.—*Fairburn* **agates, petrified wood**; ② entire region W to the WY line (on both sides of the NB-SD border), all breaks, badlands, cut banks, erosional features—*Fairburn* **agates, jasper, chalcedony, opalized and agatized wood., fossils**.

### SIOUX COUNTY

AREA, NE corner of Co., take W trending rd. 3 mi. S of Ardmore, SD, turn S and W for 9 mi. to area of Montrose on Hat Cr., area gravel beds, cut banks, etc.—**agates, jasper, fossils**, etc.

AGATE (20 mi. S of Harrison, the Agate Fossil Beds National Monument, area outside—**agates, jasper, chalcedony, opalized and agatized wood., fossils**, etc.

HARRISON, E about 18 mi. toward Crawford on US 20 (about halfway to the Dawes Co. line), in extensive sandy rd. cut—**sand spikes**.

ORELLA, N 5 mi. in Waldron Hills—**agate**.

## NEVADA

This large semi-triangular state, lying entirely within the Great Basin of interior drainage, is cut off from the moisture of the Pacific Coast by California's Sierra Nevada Range. Nevada's watercourses are few and dust-dry. The state itself is extremely arid. It is characterized by scores of short high, greatly eroded Paleozoic mountain ranges that mostly trend north-south. Precambrian and Cambrian crystalline rocks dominate the state's formations and contain extraordinary concentrations of most of the commercially salable metallic and nonmetallic ore minerals.

The mining of ore minerals and gemstones in Nevada began during pre-American times, when primitive Uto-Aztec Indians first dug for **Turquoise**, later followed by Mexican Indians and early Spaniards seeking **Gold**. Ever since the first California bound pioneers struggled across the state's barren wastes and threaded their way through arid valleys, alkali sinks and around the ragged ranges, Nevada has been dominated by its ores: **Antimony, Arsenic, Copper, Gold, Iron, Lead, Magnesium, Mercury, Molybdenum, Silver, Tungsten** and many others. Nevada's fame was guaranteed by such great strikes as Virginia City's *Big Bonanza* that enriched the *Silver Kings*; the 1900 discovery of the rich Silver veins at Tonopah; the lucky find of Gold at Goldfield in 1902 that made the city the richest gold camp on earth; and the enormous open-pit concentrations of **Copper** excavated from Ely and Ruby in White Pine Co. after 1868.

The enormously rich **Silver** mines of Virginia City and later Aurora (in present day Mineral Co. - originally part of Esmeralda Co.) not only added hundreds of millions of dollars in raw wealth to the American economy of the 19<sup>th</sup> century but paid for much of the Union's expenses for the Civil War, as well as resurrecting San Francisco after the earthquake and fire of 1906. Goldfield's tremendous outpouring of **Gold** between 1902 and 1912 caused the world's financiers to fear for the *Gold Standard*, because the yellow metal was seemingly to become as common as Iron.

Although Nevada's focus is still basically on commercial ore minerals, there are almost numberless tapped and untapped sources for gems and gemstones: quartz family minerals, pegmatite crystals, Turquoise, agatized and opalized wood, and some of the world's most valued opal. In the following list of gem and mineral localities, commercial ore minerals are not generally named, only the metals constituents. Few unusual, rare, or exotic ores are found; the collector who is at all familiar with metallic ores, especially of the base metals, will have little difficulty in recognizing the individual mineral species on the old mine dumps from the names of their principal metals. Thus when **Copper** is listed, one would expect to find such minerals as **Azurite, Bornite, Chrysocolla, Malachite**, and so on along with interesting gangue minerals, **Marcasite, Pyrite, Quartz** and the usual assortment of associated minerals.

*As a personal note of interest, this is the state where my wife and I were married.*

### CHURCHILL COUNTY

AREA: ① far E part of Co.: (a) Dry Lake area, on slopes of the Clan Alpine Mts., old camp of Alpine (Clan Alpine ≈ 79 mi. E of Fallon), veins and shear zones in Tertiary volcanics—**Gold, Molybdenum** and **Silver** minerals; (b) old camp of Bernice, veins in sedimentaries—**Gold** and **Silver** minerals; ② extreme N central part of Co., at Mineral Basin (≈ 25 mi. SE of Lovelock in Pershing Co.), area mines—**Iron** and **Mercury** minerals; ③ far NW part of Co., reached N from Fernley in Lyon Co.: (a) NE 15 mi., old camp of Leete, veins in rhyolite, dacite and andesite—**Gold, Lead** and **Silver** minerals; (b) NE 23 mi., old camp of Fireball—**Gold**.

DIXIE VALLEY (≈ 37 air mi. NE of Fallon reached via dirt rds. from Frenchman on US 50): ① NW to old camp of Buena Vista, mines in Triassic sedimentaries cut by granite

## Nevada

intrusives—**Iron** minerals; ② old camp of White Cloud (Coppereid), replacement and contact metamorphic veins in Triassic sedimentaries cut by granite and diorite—**Copper, Iron, Silver** and **Zinc** minerals.

EASTGATE (on Rte. 2, 5 mi. E of US 50 and about 60 mi. E of Fallon): ① area mines with veins in broken Quartz and Talc—**Gold, Lead** and **Silver** minerals; ② NE, in Desatoya Mts., old camp of I.X.L. (Silver Hill), veins in granite and slate—**Copper, Gold, Lead** and **Silver** minerals; ③ SSW 18 mi. (via Rte. 23), the Gold Basin Dist., area mines with veins in Tertiary volcanics (quartz-latite predominating)—**Gold**.

FALLON: ① quarry 14 mi. out—**wonderstone**; ② E about 25 mi. on W slope of the Stillwater Range in Grimes Canyon, old camp of Copper Kettle with veins in diorite overlain by altered porphyry—**Copper** minerals; ③ E 30 mi., Mountain Wells (La Plata), area mines—**Silver**; ④ N 26 mi. on US 95, turn E on dirt rd. for 23 mi., then N to area of Pershing Co. line, mining dist. E of Humboldt Lake on W flank of Humboldt Lake Range (extending into Pershing Co.), lodes in Jurassic shales—**Antimony, Lead** and **Silver** minerals.

FRENCHMAN (on US 50 about 34 mi. SE of Fallon; a considerable mining region 20 to 30 mi. S via Rte. 31 adjoining Mineral Co. and SE via Rte. 23 in Mineral and Nye counties): ① E 11 mi. and S on Rte. 33: (a) old camp of Fairview, veins in Mesozoic sediments—**Copper, Gold, Lead** and **Silver** minerals; (b) 7 mi. S of Fairview to old camp of South Fairview, veins in Tertiary volcanics—**Gold, Silver**; ② E, to Chalk Mt., area mines with vein replacements in Triassic limestones—**Lead** and **Silver** minerals; ③ E 6 mi. to N trending dirt rd. (to Dixie Valley): (a) NE 3 mi. to 5-way crossroads, take NE trending dirt rd. 11 mi. to old camp of Wonder (Hercules), veins in Tertiary volcanics and lake sediments—**Copper, Gold, Silver** and **Zinc** minerals; (b) NE 3 mi. to Crossroads, then N on improved dirt rd. for 12 to 20 mi., area of old mining camps around Table Mt. (Boyer, Cottonwood, Canyon, Bolivia), veins in Triassic sediment cut by diorite—**Antimony, Cobalt, Copper, Gold, Lead** and **Silver** minerals; ④ S about 20 mi. on Rte. 31 to Shad Run, veins in quartzite—**Gold, Silver, Lead**.

JESSUP (on US 95 Alt., 10 mi. NW Huxley RR Sta. (White Plains) and about 35 SW of Lovelock in Pershing Co.), area mines—**Gold**.

LAHONTAN: ① W end of Lahontan Dam, and ② along NE shore of the Lahontan Reservoir, area surfaces—**agate, chalcedony, jasper, petrified wood**.

SALT WELLS (15 mi. SE of Fallon), area deposits—**Halite**.

SAND SPRINGS (23 mi. SE of Fallon on US 50), area mines in Tertiary volcanics intruding Triassic and Jurassic sediments—**Gold, Silver**.

TOY (Browns), 2 mi. S of RR section house, mine with veins in contact metamorphic zone of sediments cut by granite—**Tungsten**.

WHITE PLAINS (Huxley Sta.), SW 8 mi., Desert (White Plains) Mine, rich ore—**Gold** in **Hematite** gangue.

## CLARK COUNTY

AREA (old mining camps not shown on contemporary maps, but on Co. topo. map: ① Bullion dist., area mines—**Azurite, Chrysocolla, Malachite**; ② Dike, N 1 mi., veins in Paleozoic limestones—**Lead** minerals; ③ Sutor, W 2 mi., mines with veins in sandstones underlying Permian limestone and on fractures and joints as patches—**Carnotite, Radium** oxide; ④ White Basin, area deposit, fibrous—**Ulexite**.

ALUNITE (Railroad Pass, Vincent; about 19 mi. SE of Las Vegas via US 93): ① area mines with veins and stringers in igneous rocks—**Gold**; ② SW to Black Mt., area mines—**Iron** and **Manganese** minerals.

BUNKERVILLE (5 mi. SW of Mesquite on side rd. S of US 91): ① the Copper King Dist. (Bunkerville, Great Eastern, key West mines), veins in Precambrian gneiss intruded by basic dikes—**Cobalt, Copper, Gold, Nickel, Platinum, Silver** and **Tungsten** minerals; ②

S about 15 mi., mining dist. of St. Thomas, area mines—**Copper, Silver**; ③ S about 30 mi. on dirt rds., Gold Butte, area mines with replacement veins in Precambrian complex—**Copper, Gold, Silver** and **Zinc** minerals.

HENDERSON: ① S 1¼ mi. then 4½ mi. W to range of low hills, area surfaces—**chalcedony, jasper, onyx**; ② E past manganese plant a scant ¼ mi., then NE 6 mi., park and walk to hill on N—green **jasper**.

JEAN : ① NW 8 mi. on Rte. 53, the Yellow Pine Dist. (Goodsprings, Potosi), area mines with veins as replacements in Paleozoic sediments cut by dikes—**Hydrozincite** (fluorescent), **Antimony, Cobalt, Copper, Gold, Lead, Nickel, Palladium, Platinum, Radium, Silver** and **Zinc** minerals; ② SE 15 mi. to Sunset (Lyons), veins in granite—**Gold**.

LAS VEGAS: ① area gravels in Las Vegas Wash—**Amethyst**; ② SE 16 mi. via US 93 to Las Vegas Mining Dist., area mines with replacement veins in Tertiary volcanics—**Manganese** minerals; ③ NW 35 mi., old mining camp of Charleston, area mines—**Lead, Silver** and **Zinc** minerals.

NELSON (≈ 20 mi. NNE of Searchlight or 22 mi. S of Boulder City via US 95 and Rte. 60): ① E 7 mi. on Rte. 60 to Eldorado Canyon Camp, area gravel beds of the Black Canyon of the Colorado R.—**Almandite** garnet; ② the Eldorado and Colorado mines (in the Opal Hills), veins in Precambrian granite and gneiss cut by acidic intrusives—**Copper, Gold, Lead** and **Silver** minerals.

NORTH LAS VEGAS, N 18 mi. to Gas Peak (elev. 6,943'), area mines with veins in Paleozoic limestones—**Gold, Silver** and **Zinc** minerals.

SEARCHLIGHT: ① area mines, with veins in Precambrian complex cut by quartz monazite—**Copper, Gold, Lead** and **Silver** minerals; ② W about 10 mi. on Rte. 68 to Crescent (about 6 mi. E of Nipton, CA), then 3 mi. ESE and just S of Crescent Peak, mines and prospects—**Turquoise, Copper, Gold, Lead, Molybdenum, Silver** and **Vanadium** minerals.

SLOAN (17 mi. S of Las Vegas and 2 mi. W of I-15), S 2 mi., a Tertiary rhyolite flow, coating the walls of joints—**Radium** oxides.

## DOUGLAS COUNTY

AREA: ① extreme E side of Co.: (a) Buckskin (adjoins the W side of the Yerington mining dist. of Lyon Co. and extends SW across Pine Nut Mts. to the Mt. Siegel mining dist., best reached N from Wellington in Lyon Co.), area mines with contact metamorphic veins and placers (Triassic sediments cut by granite) —**Copper, Gold, Iron** and **Palladium** minerals; (b) toward S end of the Pine Nut Mts., area pegmatite outcrops —**Thulite** (pink Zoisite), **Topaz**; ② extreme SE corner of Co.: (a) old camp of Silver Glance (W side of the Wellington, Lyon Co. mining dist.), veins in quartz monzonite of probable Cretaceous age—**Copper, Gold, Silver**; (b) Topaz Lake area of S end of Pine Nut Mts., practically on CA boundary, old camp of Mountain Home (Holbrook, Pine Nut), area mines—**Gold, Silver**. A rough dirt rd. runs along the entire E boundary of the county along the east side of the Pine Nut Mts. Best access is from Wellington in Lyon Co.

GARDNERVILLE: ① Eagle mining dist., area mines with veins in diorite, Tertiary volcanics, and lake sediments—**Gold, Copper, Silver**; ② SE 4 mi., in Red Canyon (Silver Lake camp), contact metamorphic veins in Triassic sediments cut by quartz monzonite—**Gold, Lead** and **Silver** minerals; ③ ESE about 18 mi., Mt. Siegel (elev. 9,450'), area placers—**Gold, Platinum**.

GENOA, W, on E slope of Seirra Nevada Range, veins, replacements, placers in Triassic sediments intruded by Cretaceous granite—**Copper, Gold, Silver, Platinum**.

# ELKO COUNTY

CARLIN: ① area pegmatite outcrops in surrounding hills—**Rose Quartz**; ② nearby, at the Carlin Mine (opened in 1965)—**Gold**; ③ NW 10 mi. at Copper King mine in Tuscarora Mts.—**Turquoise** (var. green **Faustite**).

CATLIN STATION, veins and replacements in Paleozoic sediments cut and capped by Tertiary volcanics—**Gold, Silver**.

CHARLESTON (95 mi. NNE of Elko via dirt rds., reached from North Fork on Rte. 51), the Copper Mt. and Cornwall mines, contact metamorphic replacement veins, placers in Paleozoic sediments cut by granite—**Gold, Copper, Lead, Antimony, Platinum, Silver**.

COBRE (NE corner of Co. 4 mi. SW of Loray, off Rte. 30), E, veins in quartzites and limestones (not a mining dist.)—**Copper, Lead, Iron**.

CONTACT (NE corner of Co. on US 93 S of ID line), area mines (Kit Carson, Porter, Salmon River), contact metamorphic replacement veins in sediments cut by granite—**Azurite, Malachite** and other **Copper minerals, Gold** and **Silver**.

CURRIE (SE part of Co. on US 95): ① SE 8 mi., old camp of Kinsley, contact metamorphic veins—**Copper, Lead** and **Silver** minerals; ② NE 25 mi., old camps of Delker and Dolly Varden (Mizpah, Granite mines), contact metamorphic veins—**Copper, Gold, Lead** and **Silver** minerals; ③ WSW 40 mi., Mud (Medicine) Springs, replacement veins in Permian limestones, shales and quartzites—**Barite, Lead, Silver** and **Zinc** minerals.

DEEP CREEK (68 mi. NNW of Elko on Rte. 11): ① old camp of Cornucopia, veins in Tertiary volcanics—**Gold, Silver**; ② area of Bull Run and Centennial Mts., old camp of Aura (Bull Run, Columbia mines), veins and placers in Paleozoic sediments cut by granodiorite—**Gold, Lead, Platinum, Silver** and **Zinc** minerals; ③ area of Lime Mt. (80 mi. N of Elko), contact metamorphic veins—**Copper, Gold, Silver**.

DELANO MINES (Delano, Delno), in extreme NE corner of Co. reached via dirt rds. N 34 mi. from Montello: ① area mines—**Gold, Lead, Platinum, Silver** and **Zinc** minerals; ② Elk Mt. (≈ 90 mi. SSE of Twin Falls, ID), area contact metamorphic veins—**Antimony, Copper, Gold** and **Silver** minerals.

ELKO: ① NW 5 mi., old camp of Good Hope: (a) area veins in Tertiary volcanics—**Gold, Silver**; (b) W 10 mi., old camp of Burner in the Burner Hills, veins in andesite—**Lead** and **Silver** minerals; ② SSW 27 mi. (12 mi. SE of Palisade) via rough dirt rd., replacement contact metamorphic veins in Ordovician limestone—**Copper, Gold, Lead, Silver** and **Zinc** minerals; ③ SE 28 mi., old camp of Lee (on the Te-Moak Indian Res.), area mines—**Copper minerals**; ④ NW 28 mi. via poor dirt rds., old camp of Merrimac (Lone Mt.)—**Copper, Gold, Lead** and **Silver** minerals.

FERGUSON (far E part of Co. 20 mi. SSW of Eastline on US 50 Alt.), ① SW to old camp of White Horse on SW flank of Mt. Pisgah, veins in quartz monzonite—**Copper** and **Lead** minerals; ② W to Ferguson Springs (Alleghany) on W side of the Toana Range, replacement veins in Paleozoic limestones—**Copper** and **Lead** minerals; ③ S about 20 mi. to old camp of Ferber (40 mi. S of Wendover, UT, and in extreme SE Dorner of Co.), contact metamorphic veins—**Copper, Gold, Lead** and **Silver** minerals.

HALLECK (20 mi. NE of Elko on I-80 and just S of Hwy. on Rte. 11), veins in fossiliferous limestone and shale—**Lead** and **Zinc** minerals.

JARBRIDGE (well known ghost town on dirt rd. halfway between Mountain City and Contact, and about 95 mi. S of Twin Falls, ID), area mines—**Gold, Silver**.

JENKINS (on rough rd. about 38 mi. SW of Tuscarora), area Rock Cr. mines—**Lead** and **Silver** minerals.

LORAY (13 mi. SW of Montello on Rte. 30), veins in crystalline limestone—**Copper, Iron, Lead** and **Silver** minerals.

MIDAS (W side of Co. on Rte. 18): ① 10 mi. distant at the Rand Mine—common **opal**; ② SW, the Gold Circle and Summit mines, replacement veins in Tertiary

volcanics—**Gold, Mercury** and **Silver** minerals; ③ SE about 30 mi. by rough rds., old camp of Ivanhoe, veins in rhyolite flow breccia—**Mercury** minerals.

MOUNTAIN CITY (N Central part of Co. on Rte. 51 and just S of the ID line): ① area mines—**Azurite, Malachite**; ② Cope and Van Duzen mines, veins and placers in Paleozoic sediments—**Copper, Gold, Lead, Silver** and **Zinc** minerals; ③ Edgemont (Centennial) mines, veins in Paleozoic sediments—**Gold, Lead** and **Silver** minerals; ④ SE, to Island Mt.: (a) Gold Creek Mine, veins and placers—**Gold, Platinum, Silver**; (b) 8 mi. N of Gold Cr., in the Alder dist., area mines—**Gold**.

ROWLAND (Gold Basin dist. about 20 air mi. NE of Mountain City and 112 air mi. NW of Jarbridge, on dirt rd. 6 mi. S of ID line), area mines—**Copper, Gold**.

RUBY VALLEY (on rough dirt rd. about 55 air mi. SW of Wells on W side of Franklin Lake), the Smith Cr. mines with lenses in Paleozoic limestones—**Lead, Silver** and **Zinc** minerals.

TECOMA: ① S, at old camp of Lucin, replacement veins in Carboniferous sediments—**Copper, Lead** and **Silver** minerals; ② NNE 10 mi., mines with replacement veins in limestone—**Copper, Gold, Lead** and **Silver** minerals.

TUSCARORA (W central part of Co. on Rte. 18 about 42 mi. E of Midas): ① area mines with veins and placers in Tertiary volcanics—**Gold, Lead, Platinum** and **Silver** minerals; ② area gravels, surfaces and outcrops—**Citrine, Rose Quartz, wonderstone**; ③ NW 8 mi., to divide at head of Dry Cr., area mines and prospects—**Gold, Silver**.

WELLS: ① S and SW to Valley View (not a mining dist.), contact metamorphic replacement—**Copper, Gold, Lead, Silver, Tungsten** and **Zinc** minerals; ② SSE 15 mi. on poor dirt rd. to old camp of Tobar, N 4 mi., old camp of Lafayette—**Lead** and **Silver** minerals; ③ SSE about 40 mi. to Spruce Mt. (camp of Sprucemont on S side about 25 mi. S of Tobar), area mines with replacement veins in Paleozoic sediments—**Copper, Gold, Lead, Manganese** and **Silver** minerals.

## ESMERALDA COUNTY

ALKALI SPRINGS (11 mi. NW of Goldfield), area thermal deposits as surface salts—**Calcium** and **Magnesium carbonates, Halite**, etc. (A truly desolate area with graded dirt rd. rounding Silver Peak Marsh en route to mining center of Silver Peak, all land surfaces below Bajadas rising to arid mts. coated with snow white salts.)

BLAIR JUNCTION: ① SW 4 to 8 mi. on dirt rd., Emigrant Peak (Emigrant Pass elev. 6,145'), area surfaces, draws, washes, etc.—**silicified wood**; ② N 8 mi., Castle Rock mines—**Gold, Mercury** and **Silver** minerals; ③ NE 9 to 11 mi., on E flank of Monte Cristo Range, area mines and regional float—**Variscite**; ④ E via rough dirt rds., to Lone Mt. (old camp of West Divide): (a) area replacement veins in Cambrian sediments—**Copper, Gold, Lead, Silver** and **Zinc** minerals; (b) old camp of Alpine, replacement veins in Paleozoic limestone—**Gold**; (c) S 13 mi. from US 95 by rough rd. to S flank of the Lone Mts. (Weepah)—**Gold, Silver**; ⑤ SW 25 mi., Windypah (Fesler), via dirt rd., area mines—**Gold, Platinum, Silver**.

COALDALE: ① NE 3 to 6 mi., in the Monte Cristo Range: (a) area mines—**Variscite**; (b) area draws, washes, surfaces—**agate, chert, Hyalite** opal with **Powellite** (fluorescent), **jasper, Turquoise**; (c) NE 4 mi. at Bonnie Blue Mine on W side of Canyon—**Turquoise, Variscite**; ② SSW 10 mi., on W side of Fish Lake, area land surfaces—**Apache tears**; ③ SW 13 mi. and 1 mi. E of Rte. 3A, the *Sump Hole*, area—**opalized wood**; ④ Rock Hill Siding (along abandoned right of way of the Tonopah and Goldfield RR, area mines—**Variscite**.

COLUMBUS, NW 1½ mi., area prospects and mines—**Variscite**.

DYER (23 mi. S of Coaldale on Rte. 3A): ① area lode mines—**Gold, Lead** and **Silver** minerals; ② S and E about 15 mi. to old camp of Good Hope (7 mi. S of Piper Peak on W

## Nevada

flank of the Silver Peak Range), veins in Ordovician slates—**Silver**; ③ E, in Fish Lake Valley, and, ④ along flank of the White Mts. near the CA line, regional mines and prospects—**Cinnabar, opalite**.

**GOLDFIELD:** ① city mine dumps (very many) replacement veins in Tertiary volcanic underlain by Cambrian sediments—**Alum, Pyrite, Quartz** crystals, **Copper, Gold, Lead, Manganese, Silver** and **Zinc** minerals; ② W 3 mi., past the city dump, an outcrop, massive—**opalite**; ③ W and SW 7 mi. by various jeep mine rds. crossing the *Malapai*, large regional surrounding and embracing Montezuma Mt.: (a) very many old mines and prospects with replacement veins in Cambrian sediments—**Copper, Gold, Lead** and **Silver** minerals; (b) all regional surfaces—**chalcedony, chert, jasper, Quartz** crystals, **obsidian, opalized wood**; ④ E on various dirt rds. (many used by local stockmen) into the Ralston Desert of Nye Co., area land surfaces—**chert**; ⑤ S 14 mi., old vanished camp of Cuprite, replacement veins in Cambrian sediments—**Copper, Gold, Lead, Mercury** and **Silver** minerals; ⑥ SW 25 mi. (via dirt rd. that turns W from US 95 just S of Goldfield Summit 6 mi. S of town): (a) old camp of Hornsilver (Lime Point), veins in Cambrian limestones and shales—**Copper, Gold, Lead, Silver** and **Zinc** minerals; (b) Railroad Springs, lode mines—**Copper, Gold, Silver**.

**GOLD POINT** (14 mi. by dirt rd. SW of Stonewall and US 95), area mines—**Copper, Gold, Silver**.

**LIDA** (19 mi. W of US 95 from Stonewall via Rte. 3), veins and impregnations, placers in Cambrian sediments—**Copper, Gold, Lead, Platinum** and **Silver** minerals.

**MILLERS** (15 mi. W of Tonopah in Nye Co. and 1 mi. S of US 695), NW 11 mi. to Crow Springs: ① area mines with veins in Tertiary volcanics—**Copper, Gold, Lead** and **Silver** minerals; ② W another 2 mi. to old camp of Gilbert (Desert), lode mines—**Copper, Gold, Lead** and **Silver** minerals; ③ : (a) Myers & Bona Mine, 13 mi. NW on W slope of Monte Cristo Mt., (b) at Perry Mine, 11 mi. NW in foothills of Monte Cristo Mt.; and (c) Royal Blue Mine, 12 mi. NW on E edge of Plateau—**Turquoise**.

**NIVLOC** (8 mi. SW of Silver Peak), the Nivloc (Red Mt.) Mine—**Gold, Lead** and **Silver** minerals.

**PALMETTO** (11.7 mi. W of Lida, on Rte. 3, or 13.2 mi. E of jct. of CA Rte. 168 with NV Rte. at Oasis, CA): ① Palmetto Canyon, area surfaces—**Citrine, Quartz** crystals, **agate, chert, jasper**; ② N 5 mi., the Palmetto Mine, veins in Paleozoic sediments intruded by granite producing contact metamorphic replacement deposits—**Gold, Lead, Silver**; ③ Regional placers in Paleozoic sediments—**Gold, Lead, Platinum, Silver**; ④ S on rough rd. to Sylvania (Green Mt.) in the Sylvania Mts. (12 mi. E of Oasis, CA) and near the state line, veins in limestone—**Lead** and **Silver** minerals.

**SILVER PEAK** (Mineral Ridge, Red Mt.; 20 mi. S of Blair Junction): ① major area mines active until the 1950's—**Gold, Lead, Silver**; ② area rock outcrops—**Rose Quartz**. This mining dist. was located with primarily silver ores found on Red Mt. the Silver Peak Marsh to the NE is a large sink encrusted with sodium-magnesium salts; hot saline springs bubble up on the NE fringe.

**TOKOP** (old Gold Mt., Oriental Wash; 15 mi. W of Bonnie Clair in Nye Co.): ① area mines and placers—**Copper, Gold, Lead, Platinum** and **Silver** minerals; ② area slopes of Gold Mt. (elev. 8,139')—**Citrine, Quartz** crystals.

**TONOPAH:** ① S 7 mi., Divide (Gold Mt.), veins in Tertiary volcanic—**Gold, Lead, Silver**; ② SW 12 mi., the Dolly Mine, veins in Tertiary volcanic—**Gold, Lead, Silver**; ③ S 14 mi., Klondyke and South Klondyke (about halfway to Goldfield and W of US 95), lode veins, placers—**Copper, Gold, Platinum** and **Silver** minerals.

**WEEPAH** (see Blair Junction).

## EUREKA COUNTY

AREA: ① old abandoned mining camps not on maps: (a) Alpha, E 5 mi., sheeted zones and replacements in Devonian limestone—**Lead** and **Silver** minerals; (b) Mineral, SE 5 mi., Mineral Hill, replacement veins in Paleozoic sediments—**Copper**, **Lead**, **Silver** and **Zinc** minerals; (c) Mt. Hope Station, W 2 mi., area mines—**Lead**, **Silver** and **Zinc** minerals; ② Extreme N part of Co. (reached via dirt rds. from Carlin in Elko Co.): (a) NW 9 to 15 mi. the Maggie Creek Dist (Schroeder), area mines, especially the Copper King Mine, replacement veins—**Faustite**, **Turquoise**, **Antimony**, **Copper**, **Gold**, **Lead**, **Silver** and **clay minerals**; (b) NW 20 mi., veins and placers in the Tuscarora Mts.—**Gold**, **Platinum**.

BEOVAWE (W side of Co. on Rte. 21 about 6 mi. S of I-80), area mines and prospects—**Cinnabar**.

EUREKA: ① area, including Pinto, Prospect, Ruby Hill, Secret Canyon, Silverado and Spring Valley; replacement veins in Paleozoic sediments, granite, porphyry, rhyolite and basalt (according to the particular dist., and mine)—**Arsenic**, **Copper**, **Gold**, **Lead**, **Silver** and **Zinc** minerals; ② Ruby Hill dist., area mines—**Azurite**, **Malachite**, etc.; ③ NNE about 25 mi. via dirt Rte. 46, old camp of Diamond, veins in limestone—**Lead** and **Silver** minerals; ④ N 27 mi. on Rte. 51, then SW on dirt rd. to old camp of Roberts, veins in syenite and limestone—**Lead**, **Silver** and **Zinc** minerals; ⑤ SW about 25 air mi. to extreme SW corner of Co., old camp of Antelope—**Copper**, **Lead** and **Silver** minerals.

PALISADE (9 mi. SW of Carlin in Elko Co.): ① W 6 mi. old camp of Safford (Barth, Palisade), veins in Tertiary volcanics—**Copper**, **Gold**, **Lead** and **Silver** minerals; ② SSW 35 mi., Buckhorn (Mill Canyon), area mines—**Gold**, **Lead** and **Silver** minerals.

## HUMBOLDT COUNTY

The whole western two-thirds of this county is virtually uninhabited desert, requiring safety precautions for visitors and their vehicles. Roads are generally rough dirt, and few are on standard maps. Nearly all roads end in a mining area or connect old abandoned mining camps in a crosshatch of ancient wagon freight tracks difficult for modern automobiles to traverse. Here the finest **opals** in the world are found, as well as most of the county's supply of other **gemstones**.

AREA, the Virgin Valley, ≈ 37 air mi. SW of Denio, at the end of a rd. that turns S from Rte. 8A a few miles E of the Summit Lake Indian Res. (also reached W via dirt rd. from Quinn River Crossing 26 mi. S of Denio on Rte. 140, or E 60 to 70 mi. from Cedarville, CA). This remote, waterless, arid region provides no supplies, sources for help, or accommodations. Collecting requires several days minimum time, and the collector must be prepared for extremely hot weather in summer, the only months in which travel or camping is feasible.

① W side of valley; with the exception of the Green Fire Mine, below, all **opal** locations are on the W side of the Virgin Valley: (a) many area prospect, pits, etc.; and (b) the Rainbow Ridge Mine—**Opal** (precious, black fire, common), **opalized wood**, **Rhodonite**. ② E side of Valley: (a) regional land surfaces—**agate**, **chalcedony**, **chert**, **flint**, **jasper**, **opal**, **silicified lignite**, **opalized** and **petrified wood**; (b) the Green Fire Mine, as irregular seams and masses—gem **Opal** (black, fire), **common opal** in various colors.

DENIO, W ≈ 25 air mi., the Warm Springs Dist. (Vicksburg, Ashdown, Pueblo mines), ores in a quartz gangue—**Copper**, **Gold**, **Lead** and **Silver** minerals.

GOLCONDA: ① ESE 3 mi., mines with bedded lenses in Tertiary sediments and volcanics—**Copper**, **Gold**, **Iron**, **Lead**, **Manganese**, **Tungsten** and **Zinc** minerals; ② E 5 mi., the Preble (Potosi) Mine—**Gold**, **Silver**; ③ S 15 mi. the Gold Run (Adelaide) Mine, replacement veins, contact metamorphic deposits, placers in Triassic sediments—**Copper**, **Gold**, **Lead**, **Platinum** and **Silver** minerals; ④ S 22 mi., the Black Diablo Mine (just over



## Nevada

Pershing Co. line)—**Copper, Gold, Lead** and **Silver** minerals; ⑤ NE 20 mi. on Rte 18: (a) turn S 6 mi. on dirt rd., the Red House Mine—**Gold, Silver**, etc.; (b) turn N 10 mi. on dirt rd., the Gatchell Mine—**Copper, Gold, Silver**, etc.

McDERMITT (≈ 73 mi. N of Winnemucca on US 95 and just S of the ID line): ① general area; inquire locally: (a) old camp of National, veins in Tertiary volcanics—**Antimony, Gold** and **Silver** minerals; (b) W, old Jackson Creek Dist., contact metamorphic veins—**Copper, Lead** and **Silver** minerals; (c) W, old camp of Disaster, veins and placers—**Gold, Platinum**; ② SW 11 mi., the Cordero Mine—**Copper, Gold, Lead** and **Silver** minerals; ③ 4 mi. W on Cordero mine rd., collect in gravel pit—purple sagenitic **agate**.

OROVADA (on US 95 about 43 mi. N of Winnemucca): ① N 11 mi., the Rebel Creek Dist. (New Goldfields, Willow Creek), veins and placers—**Gold, Platinum, Silver**; ② WNW ≈ 30 mi. and W of the Kings R. Valley by rough dirt rds., Agate Point, area surfaces—**agate, chalcedony, chert, flint, jasper**, etc.

PARADISE VALLEY (44 mi. NNE of Winnemucca via US 95 and Rte. 8B), the Mt. Rose and Spring City mines, veins, placers in Mesozoic metamorphic slates—**Gold, Platinum, Silver**.

SULPHUR (60 mi. W of Winnemucca on Rte. 49), N, in the Black Rock Desert, area surfaces—**opalized** and **petrified wood**; ② NW a short distance, the Red Butte Mine—**Antimony, Copper** and **Mercury** minerals; ③ The Black Rock Mine—**Gold, Lead** and **Silver** minerals; ④ S into Pershing Co. 12 mi., the Rabbithole Mine, veins in Tertiary rhyolite and water-laid tuffs—**Mercury** and **Silver** minerals; ⑤ Scossa Placeritas (10 to 15 mi. SW of Sulphur) and the Poker Brown Mine 25 mi. SE of Rabbithole—**Gold, Lead, Silver** and **Zinc** minerals.

WINNEMUCCA: ① SE 5 mi., the Sonoma Mt. (Harmony) Mine—**Copper, Gold, Silver** and **Zinc** minerals; ② WNW 5 mi., the Winnemucca (Barrett Springs) Mine, veins, placers in metamorphosed slates, diorite—**Copper, Gold, Lead, Platinum** and **Silver** minerals; ③ NW 10 mi., the Ten Mile Mine—**Gold, Silver**; ④ W on Rte. 49: (a) 17 mi. to Pronto, area mines; and (b) another 17 mi. to Jungo, area mines—**Gold, Lead, Silver**, etc.; ⑤ NNE 20 mi., the Willow Point Mine—**Copper** and **Silver** minerals; ⑥ N 23 mi., the Sherman Mine—**Gold**; ⑦ W 25 mi., the New Central Mine—**Gold, Lead** and **Silver** minerals; ⑧ S 26 mi. (into Pershing Co.), old camp of Grandpap—**Gold, Silver**; ⑨ N 28 mi., the Shone Mine, in veins of granite—**Gold, Silver**; ⑩ NW 30 mi., old camp of Amos (Awakening, Slumbering Hills mines), veins, placers—**Gold, Silver, Platinum**.

## LANDER COUNTY

AREA, general prospecting along any Co. rd. in washes, draws, and regional land surfaces in productive of some type of gemstone—**chalcedony, jasper, opal, opalite**, etc. Make local inquiry in regional rock shops along main highway.

AUSTIN (also under Nye Co. for access to localities in that adjacent Co.): ① NW 9 mi., the Skookum Mine, contact metamorphic veins—**Gold, Silver**; ② W 16 mi. on US 50, the NW 11 mi. by dirt rd., the New Pass Dist., veins in limestone—**Gold**; ③ NNW 20 mi. (7 mi. W of the silver Cr. Siding on the N.C. RR), the Ravenswood (Shoshone) Mine, veins in Cambrian shales—**Copper, Gold, Lead** and **Silver** minerals; ④ NE on Rte. 21, old camp of Spencer, veins in Paleozoic sediments—**Antimony, Gold** and **Silver** minerals; ⑤ S 10 mi., Big Creek mines, veins in sedimentaries—**Copper, Gold, Molybdenum** and **Silver** minerals; ⑥ S 24 mi. (via 2 mi. W on US 50, 8 mi. SW on Rte. 2, 5 mi. on dirt Rte. 21, turn S on rough rd.), the Kingston Dist. (Bunker Hill, Santa Fe, Summit, Victorine mines), veins in limestone—**Gold, Silver**; ⑦ SW 36 mi. via Rte. 2 to the Campbell Cr. Ranch, the Gold Basin Dist. (under Eastgate in Churchill Co.), old camp of Carroll on the Co. line, area mines—**Gold, Silver**, with traces of **Copper** and **Lead** minerals.

BATTLE MOUNTAIN: ① area SW, the Reese R. Dist. (Amador, Austin, Yankee Blade mines), veins in Paleozoic sediments—**Arsenic, Copper, Gold, Lead, Silver** and **Zinc** minerals; ② W, in the Galena Range near the Humboldt Co. line, the Buffalo Valley mines (17 mi. S of Valmy in Humboldt Co.), replacement veins in limestone—**Gold**; ③ SW 8 to 20 mi., the Copper Basin Dist.: (a) Bannock, Copper Basin, Copper Canyon, Cottonwood Creek, Rocky Canyon, Galena mines; replacement veins and contact metamorphic—**Antimony, Arsenic, Copper, Gold, Lead, Platinum, Silver** and **Zinc** minerals; (b) the Blue Turquoise Mine—**Turquoise**; ④ SE 14 mi., the Lewis Dist. (Dean, Mud Springs, Pittsburg mines), veins in Paleozoic sediments—**Gold, Silver**; ⑤ SE 18 mi., the Hilltop Dist. (Kimberly, Mayesville mines), veins—**Copper, Gold, Lead** and **Silver** minerals; ⑥ SE 20 to 50 mi. (best reached from Beowawe in Eureka Co. via Rte. 21), the Bullion Dist.: (a) the Campbell, Lander, Cortez, Mt. Tenabo mines, replacement veins and placers in Paleozoic sediments—**Arsenic, Copper, Gold, Lead, Platinum, Silver** and **Zinc** minerals; (b) the Pedro Claim (off of Hwy. 8A); (c) the Fox Turquoise Mine; (d) Smith Mine; and (e) White Horse Mine—**Turquoise**; ⑦ SSW 30 mi., the McCoy and Horse Canyon mines, veins in diorite and limestone—**Gold**; ⑧ S 35 mi., the Hot Springs Dist., area mines and projects, especially at Blue Matrix Mine—**Turquoise**; ⑨ SSE 40 mi., Gold Acres (best reached via paved Rte. 21 SW 29 mi. from Beowawe in Eureka Co.) area mines—**Copper, Gold, Silver** minerals; ⑩ NE 30 mi., the Lynn Dist. area mines and prospects, especially No. 8 mine—**Turquoise**; ⑪ NE 45 mi., the Ivanhoe Dist. (over line in Elko Co.) —**opalite** and other minerals; ⑫ N across Southern Pacific RR tracks, continue 18 mi. to windmill, take E fork to bridge over Rock Cr., in creek beds—**chalcedony, petrified wood**; and ⑬ continue 7 mi. further, take left fork N for Cinnabar in chert in washes and at dumps of Silver Cloud mercury mine—**Cinnabar**.

## LINCOLN COUNTY

AREA: ① Sugar Loaf Peak, area surfaces surrounding base and numerous prospecting pits—**Turquoise**; ② W edge of Co., old camp of Tem Piute in the Timpahute Mts., lode veins—**Copper, Gold, Silver** and **Zinc** minerals.

CALIENTE: ① W 16 mi. on US 93, turn onto SW trending dirt rd. for 6 mi., then branch left for 6 mi. to old camp of Delmar—**Gold, Silver**; ② S 43 mi. on dirt rd., old camp of Carp: (a) SE ¼ mi., the Viola Mine in the Mormon Mts.—**Copper, Lead, Silver** and **Zinc** minerals; (b) S 21 mi. by rough dirt rd., old camp of Rox or Vigo, then 24 mi. E into Mormon Mts., a mine—**Manganese** minerals; ③ NNW 8 mi. in the Chief Range, the Chief (Caliente) Mine, veins in Paleozoic sediments—**Copper, Gold, Lead** and **Silver** minerals; ④ WNW 30 mi., the Ferguson (Delmar) Mine, replacement veins in Paleozoic quartzite —**Gold, Silver**.

HIKO: ① the Pahrnatag Mine, veins in Paleozoic sediments—**Copper, Lead** and **Silver** minerals; ② SW 18 mi. on Rte. 25, turn SW 24 mi. on rough dirt rd. to old camp of Groom, veins in limestones and shales—**Lead** and **Silver** minerals.

PANACA, E 8 mi. on paved Rte. 25: ① SW 10 mi. on dirt rd., old camp of Crestline; and ② 13 mi. farther S, old Acoma Dist., area mines—**Copper, Gold, Lead** and **Silver** minerals; prospecting the general surrounding land surfaces—**chalcedony, chert, flint**, etc.

PIOCHE: ① area mines, replacement veins in Paleozoic sediments—**Copper, Gold, Lead, Manganese, Silver, Tungsten** and **Zinc** minerals; ② NW 3 mi. on US 93, turn W on dirt rds.: (a) 4 mi. to old camp of Mendha, and (b) 11 mi. to Comet (Mill), area mines in replacement veins—**Copper, Gold, Lead, Silver, Tungsten** and **Zinc** minerals; ③ WNW 7 mi., the Highland Mine, replacement veins—**Copper, Gold, Lead** and **Silver** minerals; ④ NW 12 mi. on US 95, turn W on dirt rd. 10 mi.: (a) the Bristol (Jack Rabbit) Silver Mine, replacement veins—**Copper (Azurite, Malachite, Chrysocolla), Gold, Lead, Manganese** and **Silver** minerals; (b) the Silverhorn Mine, replacement veins in limestone—**Nickel** and

## Nevada

**Silver** minerals; ⑤ E 15 mi., old camp of Ursine: (a) area mines—**Gold, Lead, Silver**; (b) S 2 mi. on dirt rd., the Eagle Valley Dist. (Fay, State Line mines), veins in Tertiary volcanics—**Gold, Lead** and **Silver** minerals; ⑥ W 16 mi., the Lone Mountain Mine, replacement veins—**Lead** and **Silver** minerals; ⑦ N 28 mi. on US 93, then NE 21 mi. on dirt rd., the Atlanta Dist.: (a) area land surfaces—chalcedony, chert, flint; (b) area mines (Silver Park, Silver Springs), veins in quartzites and limestones—**Copper, Gold, Lead, Radium** and **Silver** minerals; ⑧ N 52 mi. on US 93, turn W 11 mi. over Patterson pass (elev. 7,400'), the Patterson Dist. (Cave Valley, Geyser mines) at S end of the Shell Cr. Mts., replacement veins—**Gold, Lead** minerals; ⑨ W 75 mi., the Worthington (Freiberg) Mine, best reached via dirt rds. from Rte. 25 near the Nye Co. line, veins in rhyolite—**Gold, Silver**.

### LYON COUNTY

DAYTON: ① S 10 mi., old camp of Como (Palmyra, Indian Springs) —**Gold, Silver**; ② NE 17 mi. (into Storey Co.), Red Mt. area mines, contact metamorphic veins—**Iron** minerals.

FERNLEY: ① S 5½ mi., area on w flank of hills—**agate, chert, jasper**; ② S 14 mi., the Talapoosa Mine, veins in Tertiary volcanics—**Copper, Gold** and **Silver** minerals.

FT. CHURCHILL (old adobe ruins military post, now a state historical monument), N a few mi., in basin on SE slope of Churchill butte, a mine—**Tungsten** minerals.

SILVER CITY (5 mi. S of Virginia City in Storey Co.), the Chinatown, Dayton, Devils Gate, Gold Canyon mines; veins, placers, in Tertiary volcanics—**Gold, Iron, Platinum** and **Silver** minerals.

SILVER SPRINGS (16 mi. S of Fernley), NW a few mi., old camp of Ramsey, veins—native **Gold, Silver**.

WELLINGTON, N along the Pine Nut Mts. (straddling the Co. line, not a mining dist.), lode mines, placers—**Copper, Gold, Iron, Lead, Platinum** and **Silver** minerals.

YERINGTON: ① area, W, in the Singatse Mts., mines—**Chalcanthite (Bluestone)**; ② NNW 1½ mi., area mines and prospects—**Turquoise**; ③ W 2 mi., the Mason and Ludwig mines, contact metamorphic, placers—**Copper, Gold, Lead, Platinum** and **Silver** minerals; ④ the Ludwig Mine—**Thulite**; ⑤ WNW 8 mi., mines and prospects—**Turquoise**; ⑥ S 11 mi. on Rte. 3, turn SSE on dirt rd. for 14 mi.: (a) W 5 mi. on rough rd., the Pine Grove Mine; and (b) S 5 mi., the Rockland Mine—**Gold, Platinum, Silver**; ⑦ S 15.6 mi., Wilson Canyon (noted collecting area) —**agate, chalcedony, chert, jasper, silicified wood, Turquoise**; ⑧ S 30 mi., old camp of Washington—**Copper, Gold, Silver**.

### MINERAL COUNTY

AREA: ① extreme NE wedge of Co. immediately S of the Churchill Co. line and 16 mi. S of US 50 via Rte. 23, Broken Hills (with the Quartz Mt. mining dist. to S just over the Nye Co. line), area old mines—**Gold, Lead, Silver**, etc.; ② old camp of Acme (Fitting), replacement veins in Tertiary volcanics and placers in Triassic sediments—**Copper, Gold, Lead** and **Silver** minerals.

BABBITT: ① NE 5 mi. to Thorne: (a) area mines—**Gold, Lead, Silver**; (b) SE 5 mi., Ryan Canyon, area mines—**Gold, Lead, Silver, Thulite**; ② N on US 95: (a) along the shores of Walker Lake, and (b) area land surfaces back of the lake—**agate, chalcedony, fossils, petrified wood, Turquoise**.

BASALT (extreme SE corner of CO. on US 95): ① SW 5 mi., summit of Montgomery Pass (elev. 7,167'), area of Queen Mt.—**obsidian**; ② SW 10 mi., the Buena Vista Dist. (Basalt, Mt. Montgomery, Oneota mines), veins in Tertiary volcanics—**Copper, Gold, Lead, Silver** and **Zinc** minerals; ③ N 17 mi. on rte. 10 and E 8 mi. on rough rd., old camp of Candelaria (Belleville, Columbus), replacement veins: (a) area mines—**Copper, Gold,**

**Lead, Nickel** and **Silver** minerals; (b) S 1 mi., in E foothills of the Candelaria Mts. and 1 mi. W of the Mt. Diablo Silver Mine, claims, pits, prospects, etc.—**Variscite**; (c) the Mt. Diablo Silver Mine—**Lead** and **Silver** minerals; (d) the Reik Mine—**Turquoise**.

HAWTHORNE: ① Lucky Boy, Palmico mines, veins in Cambrian sediments—**Copper, Gold, Lead, Silver** and **Tungsten** minerals; ② NW 10 to 15 mi.: (a) the Walker Lake Dist. (Buckley, Cat Creek mines), W of Walker Lake on the E slope of the Wassuk (Walker River) Range, veins in granodiorite—**Copper, Gold, Silver**; (b) the West Walker Dist., on W slope of the Wassuk Range, area mines—**Gold, Silver**; ③ SE 16 mi., the Whiskey Flat Mine, veins in granite-limestone contact—**Copper, Gold, Silver**; ④ SE 18 mi., the Sulphide Mine—**Gold, Tungsten** minerals; ⑤ SW 30 mi. via rough rds., old and famed ghost town of Aurora (Cambridge, Esmeralda), usually reached 8 mi. E from Bodie (historic mining camp state monument), CA: (a) area draws, washes, steep hillsides in town—**jasper, Quartz** crystals; (b) many area mines, inside and outside of town, veins in Tertiary volcanic—**Gold, Silver**.

LUNING: ① area mines—**Axinite** (plum colored), **Gold, Silver**; ② E, the Santa Fe Dist. (Luning, Kincaid mines), contact metamorphic veins—**Antimony, Copper, Gold, Lead, Magnesium** and **Silver** minerals; ③ S 13 mi. on US 95, then SE to Sodaville and E 18 mi. to Pilot Mt. mines, contact metamorphic veins and placers—**Gold, Lead, Mercury, Platinum, Silver** and **Tungsten** minerals; ④ Hwy. 23 N almost to bridge, take left fork 34 mi. to Rawhide, then 6 mi. farther to ravine—pink **Thulite, Howardite, opalized wood**.

MINA (10 mi. S of Luning on US 95): ① area contiguous mines, including Gold Range—**Copper, Gold, Lead, Magnesium, Silver** and **Tungsten** minerals; ② SW 8 mi. in E end of the Excelsior Mts., area—**wonderstone, Turquoise, Variscite**; ③ SW 26 mi. by rough rds., the Marietta and Black Mt. mines, contact metamorphic veins—**Copper, Gold, Lead, Magnesium, Silver** and **Tungsten** minerals; ④ NW 15 mi., the Garfield Mine, veins in limestone—**Copper, Gold, Lead** and **Silver** minerals; ⑤ NW 20 mi., old camp of Marble, area mines—**Gold, Lead** and **Silver** minerals; ⑥ NE 23 mi. by rough rds., the Cedar Mt. Dist. (Simon, Bell, Omco mines), veins in Triassic limestones—**Gold, Lead, Silver** and **Zinc** minerals; ⑦ NE 30 mi. (over the Nye Co. line), the Athena Mine, veins in Tertiary eruptives and lake beds—**Gold, Silver**; ⑧ Nevada Turquoise Co. Mine—**Turquoise**; ⑨ 1 mi. S of Candelaria and on E side of hill in Candelaria Mts.—**Variscite**; ⑩ in dumps of Wilson Mine near Candelaria—**Copper** minerals.

RAWHIDE (24 mi. S of Frenchman in Churchill Co. via Rte. 31 and 5 mi. on dirt rd. S and W from Nevada Scheelite Mill): ① area, the Regent Mine—**Copper, Gold, Lead, Platinum, Silver** and **Tungsten** minerals; ② N 6 mi. and 2 mi. W on dirt rd., area close to Churchill Co. line—**opalized wood**; ③ SE 11 mi. on rough rd., Hot Spring, on E side of Alkali Flat (can also be reached via rough rd. 34 mi. N of Luning, or 23 mi. W from Gabbs in Nye Co.), area mines in volcanic tuffs—**Barite, Gold, Silver**; ④ SE, the King Mine, veins in Tertiary volcanics—**Gold, Lead** and **Silver** minerals; ⑤ S 18 mi., the Rand Mine—**Turquoise**; ⑥ SE 14 mi. on rough rd., Hot Springs (Sunnyside Mine), veins in Quartz and diorite—**Gold, Silver**.

SCHURZ: ① W 8 mi., the Granite Mt. Dist. (Mountain View, Reservation mines), veins in granite—**Copper, Gold, Lead** and **Silver** minerals; ② N 9 mi., the Benway Mine, veins in granite—**Gold, Silver**; ③ NE 12 mi., old camp of Holy Cross (Fallon, Terrell mines), veins and replacement in Tertiary volcanics—**Gold, Manganese** and **Silver** minerals; ④ E 28 mi., the Bovard Dist. (Copper Mt., Rand, Rawhide mines), replacement veins in Tertiary volcanics—**Copper, Gold, Lead, Manganese** and **Silver** minerals.

## NYE COUNTY

AREA: ① NW corner of Co.: (a) 28 mi. SSW of Austin in Landers Co., old camp of Washington, veins in Paleozoic sediments—**Lead** and **Silver** minerals; (b) old Westgate

## Nevada

dist. (42 to 54 mi. ESE of Fallon in Churchill Co.), veins in Jurassic limestone—**Gold, Lead** and **Silver** minerals; (c) 45 mi. S of Lander, old dist. of Millett (North Twin River), pockets in limestone and slate—**Copper, Gold, Lead** and **Silver** minerals; (d) 50 mi. S of Lander, the Twin River dist., veins in slate—**Silver**.

BEATTY: ① area mine dumps in and around town—**Cinnabar, opalite**; ② NW 4 mi., ghost town of Rhyolite: (a) area mines—**Copper, Gold, Silver**; (b) nearby old site of Pioneer, veins in Tertiary volcanics—**Copper, Gold, Lead, Mercury** and **Silver** minerals; (c) W 8 mi., old site of Bullfrog, area mines in Tertiary volcanics—**Azurite, Amethyst, Gold, Malachite**; ③ E 6 mi., old site of Fluorine (Bare Mt., Telluride mine) —**Gold, Mercury, Silver**; ④ S 8 mi. on US 95, site of ghost town of Carrara, area old mines—**Gold**; ⑤ NE  $\approx$  15 to 18 mi., Yucca Mts., area surfaces—**geodes**, gemmy **nodules**; ⑥ NE old camp of Johnie (25 mi. NE of Death Valley and 14 mi. SSE of Amargosa in the NW end of the Spring Mts.), lodes, placers—**Gold, Lead, Platinum, Silver**; ⑦ WNW 22 mi., old camp of Grapevine, veins in rhyolite—**Gold**; ⑧ E 30 mi., old Wahmonie Mine—**Gold, Silver**.

BONNIE CLAIR (old camp and mill on Rte. 72 into N end of Death Valley, 6 mi. W of Scotty's Jct. on US 95), area mines—**Copper, Gold, Silver** minerals.

CLARK STATION (33 mi. E of Tonopah on US 6): ① the Clifford Mine, veins in Tertiary volcanics—**Gold, Silver**; ② the old Blake Camp (32 mi. ENE of Tonopah), the Golden Arrow Mine, contact metamorphic—**Gold, Silver**; ③ N 48 mi. on dirt rd. to Crockers Ranch (or old stop of Morey), then W in the Hot Creek Range, area mines with veins in sedimentaries—**Gold, Lead** and **Silver** minerals.

CURRENT (NE part of Co. at jct. of US 6 with Rte. 20): ① E, in the Grant Range, area mines with veins in limestone—**Copper, Gold, Lead**; ② S 30 mi., Troy Peal (elev. 10,280'), old camp of Troy at base (Irwin Canyon, Nyala mines), veins in sedimentary—**Gold, Lead** and **Silver** minerals.

GABBS: ① E 3 mi., the Stokes Iron Mine—**Iron** minerals; ② E 16 mi. to dirt crossrds.: (a) E 4 mi., old camp of Grantsville, area mines—**Copper, Gold, Silver**. (A short distance NE lies the Ichthyosaur Paleontologic State Monument, where the fossil bones of Mesozoic dinosaurs are exposed.); (b) N 4 mi., turn E on old rd. to ghost camp of Berlin (Union Mine), and (c) N 7 mi. to old camp of Ione, veins in Tertiary volcanics and placer in Carboniferous sediments—**Copper, Gold, Lead, Mercury** and **Silver** minerals; (d) old camp of Bruner near Ione, the Phonolite Mine, veins in andesite and rhyolite—**Gold, Silver**; ③ N 3 mi., turn NE on dirt rd. from Rte. 23 to old camp of Downieville, area mines—**Copper, Gold, Silver**; ④ N 12 mi. on Rte. 23, turn right dirt rd. to old camp of Quartz Mt.: (a) area mines; and (b) nearby old camp of Westgate—**Gold, Lead** and **Silver** minerals; (c) NW 3 to 4 mi., old mining dist. of Broken Hills in Mineral Co. and straddling Co. line) —**Gold, Lead** and **Silver** minerals; (d) old camp of Lodi (Ellsworth, Mammoth, marble mines), veins in granite and limestone—**Copper, Gold, Lead, Silver** and **Tungsten** minerals; ⑤ SSE 10 mi., old camp of Golddyke, and ⑥ 8 mi. farther S, the Warrior Mine—**Gold, Lead** and **Silver** minerals; ⑦ SSE 14 mi., the Fairplay and Atwood mines (at or near Golddyke), veins in granite—**Copper, Gold, Lead, Silver** and **Tungsten** minerals.

GOLDFIELD (Esmeralda Co.), access to Ralston Desert to E in Nye Co. (Nearly all the region for 70 to 80 mi. E of US 95 and extending 70 to 80 air mi. S of Tonopah constitutes the highly restricted area of Nellis Air Force bombing range and the Atomic Energy Commission nuclear testing site. No travel is currently allowed on the region's rough dirt access rds., except by regional cattle ranchers.) ① NE  $\approx$  12 mi., Cactus Peak area prospects and pits—**Turquoise**; ② E 24 mi., in NW end of the Cactus Range, old camp of Cactus Springs, replacement veins in Tertiary volcanics—**Gold, Silver**; ③ SE 27 mi., Gold Crater Mine—**Gold, Silver**; ④ E 35 mi., Swab Mt., on S side of the Cactus Range, area surfaces—**jasper, petrified wood**; ⑤ ESE 30 mi., the Antelope Mine—**Gold, Silver**; ⑥ ESE 38 mi., old camp of Wilson, veins in Tertiary volcanics—**Gold, Silver**; ⑦ ESE 40 mi., the Trappmans Mine, veins in granite—**Gold, Silver**; ⑧ SE 46 mi., the Silverbow Mine—

**Gold, Silver;** ⑨ E 54 mi., the Kawich (Gold Reed) dist., veins in monzonite porphyry, rhyolite—**Gold, Mercury** minerals.

LATHROP WELLS, E 26 mi. on US 95 and N on dirt rd., Mercury area mines—**Cinnabar, opalite**.

POTTS (44 mi., SE of Austin in Lander Co. and just S of the Nye Co. line): ① area old camps of Jackson (Gold Park), overlapping into Lander Co., veins in Paleozoic sediments, granite porphyry, and Tertiary volcanics—**Copper, Gold, Lead** and **Silver** minerals; ② SE on rough rd. into the Monitor Range, old camp of Danville, veins in limestone—**Gold, Silver**.

SCOTTY'S JUNCTION (35 mi. S of Goldfield on US 95 and entrances into N end of Death Valley): ① S 6 mi. and ½ mi. E of US 95, area—**arrowheads** and cores of **obsidian**, obsidian float; ② ESE ≈ 10 mi., old camp of Tolicha (20 mi. E of Bonnie Clair) and Monte Cristo Mine, veins in Tertiary rhyolite—**Gold, Silver**.

STONEWALL (16 mi. S of Goldfield on US 95 and 1 mi. E of jct. with Rte. 3): ① area mines, veins in Paleozoic sediments—**Gold, Mercury** (some), **Silver**; ② E 20 mi., old camp of Wellington (O'Briens), veins in Tertiary volcanics—**Gold, Silver**.

SUNNYSIDIE (extreme E edge of Co. on Rte. 28, on E side of the Egan Range), area mines—**Azurite, Malachite**.

TONOPAH: ① area mines in town and on adjoining hills, replacement veins in Tertiary volcanics—**Copper, Gold, Lead, Silver** and **Tungsten** minerals; ② E a few mi., old camp of Ellendale, veins and stringers in Tertiary volcanics—**Copper, Gold, Silver** minerals; ③ E 10 to 12 mi., area—**petrified algae, Jade**; ④ E 20 mi., the Hannapah dist. (Silverzone, Volcano mines), veins in Tertiary volcanics—**Gold, Mercury** and **Silver** minerals; ⑤ N 10 to 15 mi. in the San Antinios Mts., area—**Jade, petrified wood, wonderstone**; ⑥ NW 20 to 25 mi., in the San Antinios Mts., old San Antone dist. (San Antonio, Royston mines), veins in Tertiary volcanics—**Copper, Gold, Lead** and **Silver** minerals; ⑦ N 42 mi. via Rtes. 8A and 82, turn SW on Manhattan-Belmont dirt rd.: (a) old camp of Spanish Belt (Barcelona Mine), veins in granite and shale—**Mercury** and **Silver** minerals; (b) nearby old camp of Arrowhead, replacement veins—**Gold, Silver**; ⑧ NW 42 mi. via Rte. 89: (a) Cloverdale dist. (Republic, Golden mines), lodes and placers—**Copper, Gold, Lead, Platinum** and **Silver** minerals; (b) N 12 to 15 mi. from Cloverdale on rough rd., old camp of Jett, mines in limestone and slate—**Lead, Silver** and **Zinc** minerals; ⑨ N 40 mi. on Rte. 8A, turn E 7 mi. on Rte. 92, old semi-ghost town of Manhattan, replacement veins and placers in Paleozoic sediments—**Arsenic, Gold, Platinum** and **Silver** minerals; ⑩ NNE 46 mi. via Rtes. 8A and 82, old ghost town of Belmont: (a) the Philadelphia, Silver Bend mines, veins in Paleozoic sediments—**Copper, Gold, Lead, Mercury** and **Silver** minerals; (b) N 18 mi. Then W, old Jefferson Canyon dist. (Concordia, Green Isle mines)—**Gold, Silver**; ⑪ N 52 mi. on Rte. 8A, turn E 3 mi. to ghost town of Round Mt., veins and placers—**Gold, Lead, Platinum** and **Tungsten** minerals; ⑫ N ≈ 57 mi. on Rte. 8A, the Jackson (Gold Park) dist., about 44 mi. S of Austin in Lander Co., area mines—**Gold**; ⑬ N 66 mi. via Rtes. 8A and 82 to area of turnoff W to the Northumberland Caves (recreation area), old camp of Northumberland in the Toquima Range, veins in granite porphyry—**Silver**.

WARM SPRINGS (49 mi. E of Tonopah on US 6): ① the Bellehelen Mine—**Gold, Silver**; ② E about 6 mi., the Eden (Gold Belt) mines, veins in Tertiary volcanics—**Gold, Silver**; ③ E about 20 mi., old camp of Beveille—**Copper, Lead** and **Silver** minerals; ④ NE 8 mi. on US 6, turn NW 4 mi. on dirt rd. to crossrds.: (a) W 4 mi., old camp of Tybo, replacement veins in Paleozoic sediments; and (b) N 12 mi., old camp of Hot Creek—**Antimony, Copper, Gold, Lead, Manganese** and **Silver** minerals; ⑤ SE 40 mi. on Rte. 25, the Willow Creek dist. at S end of Railroad Valley, replacement veins in Paleozoic sediments and Tertiary eruptives—**Copper, Gold, Silver**; ⑥ SE on Hwy. 25 for 58½ mi. to rd. to Tempiute, follow it to building by dry lake for a mi., then S on dirt rd. into mining camp in mountains—**Thulite, Zoisite**.

## Nevada

### ORMSBY COUNTY

CARSON CITY: ① W, in foothills of the Sierra Nevada, the Voltaire dist. (Washoe, Eagle Valley mines), veins in Triassic schists—**Gold, Silver, Platinum, Arsenic, Copper** minerals; ② E 9 mi., Carson R., area mines—**Arsenic, Copper, Gold, Mercury** and **Silver** minerals.

DELAWARE, the Sullivan Mine in Brunswick Canyon in E part of Co., veins in andesite—**Copper, Gold, Lead** and **Silver** minerals.

### PERSHING COUNTY

AREA (far E part of Co.): ① the Iron Hat Mine (20 mi. SW by rough rd. from Valmy on US 40 in Lander Co.), veins in limestone—**Copper, Lead** and **Silver** minerals; ② the Jersey Mine (43 mi. SW of Battle Mt. In Lander Co. by rough rd. via Alkali Flat, on flank of the Augusta Mts.), veins in Quartzite and porphyry—**Lead, Mercury** and **Silver** minerals; ③ the Kennedy Mine (55 mi. S of Winnemucca in Humboldt Co. via dirt rd., on E side of Granite Mt.), veins in Triassic sediments—**Gold, Lead** and **Silver** minerals.

BLACK DIABLO MINE (22 mi. S of Golconda in Humboldt Co.) —**Copper, Gold, Lead** and **Silver** minerals.

GOLDBANKS (36 mi. S of Winnemucca in Humboldt Co. via dirt rd.), replacement veins in quartz porphyry—**Gold, Mercury, Silver, Copper** and **Lead** minerals.

IMLAY (4 mi. W of Mill City, on I-80): ① S 6 mi. and 4 mi. E of the Humboldt R., the Prince Royal, Humboldt and Eldorado mines, replacement veins in Jurassic sediments—**Copper, Gold, Lead, Mercury** and **Silver** minerals; ② W 23 mi. on dirt rd to crossrds., then N 6 mi. on rough rd., the Haystack Mine (7 mi. S of Jungo in Humboldt Co.), veins in granite and quartzite—**Gold**; ③ W 29 mi. via dirt rds.: (a) the Rosebud Mine; and (b) another 4 mi., the Rabbithole Mine; with (c) other area mines such as the Scossa and Placeritas to the S and E—**Antimony, Copper, Mercury, Gold, Lead** and **Silver** minerals.

LOVELOCK: ① S a few mi., the Wild Horse Mine on E side of the Humboldt Range —**Antimony, Arsenic, Copper, Lead** and **Silver** minerals; ② S 7 mi. on Rte. 59, turn E on dirt rd., then S to lake—**Antimony, Lead** and **Silver** minerals; ③ SE a few mi., the Sacramento Mine on W flank of the Humboldt Range, placers, veins in Triassic sediments—**Gold, Silver, Platinum**; ④ SE 25 mi., the Mineral Basin (on the Churchill Co. line), area mines—**Iron** and **Mercury** minerals; ⑤ ESE 9 mi., the Muttieberry Mine—**Copper, Lead** and **Silver** minerals; ⑥ NE 10 mi., the Loring dist. (Lovelock, Willard mines) in the Humboldt Range, contact metamorphic veins—**Gold, Iron, Mercury, Silver** and **Tungsten** minerals; ⑦ E 22 mi., Antelope Springs (Relief Mine), veins in Triassic limestone—**Antimony, Gold, Mercury** and **Silver** minerals; ⑧ NE 28 mi., the Spring Valley dist. (American Canyon, Fitting mines) on E flank of the Humboldt Range, veins and placers—**Copper, Gold, Lead, Mercury, Platinum** and **Silver** minerals; ⑨ W 10 mi., the Velvet Mine, veins in Tertiary eruptives—**Gold**; ⑩ NW 12 mi., then 8 mi. W on improved rd., the Eagle Pitcher Mine—**Copper, Gold, Silver** and **Tungsten** minerals; ⑪ SW 20 mi., then NW 20 mi. (from Huxley in Churchill Co.), contact metamorphic veins in the Juniper Range—**Copper, Gold, Silver** and **Tungsten** minerals; ⑫ NW 24 mi.: (a) the Vernon Mine; and (b) 2 mi. farther N, the Seven Troughs Mine, veins in Tertiary volcanics— **Copper, Gold, Lead** and **Silver** minerals; ⑬ N 36 mi. via Rte. 48 and dirt rd. that turns N to Placeritas and large mining dist.—**Antimony, Copper, Gold, Lead, Mercury, Silver, petrified** and **opalized wood**; ⑭ NW 45 mi. (and 10 to 15 mi. E of Gerlach in Washoe Co.), the Farrell (Stone House) Mine, veins and lenses in Tertiary rhyolite—**Gold**.

MILL CITY: ① N 7 mi., on SE slope of the Eugene Mts.: (a) Tungsten (largest tungsten mill in America), contact metamorphic veins—**Copper, Silver** and **Tungsten** minerals; (b) 5 mi. farther N, the Keystone Mine—**Lead** and **Silver** minerals; ② S 10 mi.

on Rte. 50, the Star Creek Ranch dist: (a) Santa Clara Mine, veins, lenses—**Antimony** and **Silver** minerals; (b) SW to Star peak (elev. 9,835'), area on E side—gemmy **geodes** and **nodules**; (c) S 6 mi., then 4 mi. W, the Unionville dist. (Buena Vista Mine) on E slope of the Humboldt Range, replacement veins in Triassic sediments—**Antimony**, **Copper**, **Gold**, **Iron**, **Lead** and **Silver** minerals; (d) 16 to 20 mi. to N end of the Humboldt Range at Black Knob, area mines with veins in Jurassic calcareous shale—**Antimony**; (e) S 30 to 35 mi., the Indian Mine in Indian Canyon on E flank of the Humboldt Range, veins, placers—**Gold**, **Silver**; ③ SE 10 mi., the Sierra dist. (Sunshine, Oro Fino mines), veins in limestone, placers—**Copper**, **Gold**, **Lead**, **Platinum** and **Silver** minerals; ④ E via various rough dirt rds.: (a) 8 mi. NE, the Dun Glen Mine; (b) 11 mi. E, the Straub Mine; and (c) 15 mi. SE, the Rockhill Mine—**Copper**, **Gold**, **Lead** and **Silver** minerals; ⑤ W 20 mi., the Antelope (Cedar) Mine in the Antelope Range, veins—**Antimony**, **Arsenic**, **Copper**, **Gold**, **Lead**, **Mercury**, **Silver** and **Zinc** minerals.

NIGHTINGALE (extreme SW corner of Co., ≈ 40 mi. WSW of Lovelock), on E flank of the Nightingale Range: ① contact metamorphic veins—**Copper**, **Gold**, **Lead** and **Silver** minerals; ② area—**Garnets**.

OREANA (14 mi. NE of Lovelock on I-80): ① W 5 mi., the Trinity dist. (Arabia, Oreana mines), veins in altered granodiorite—**Antimony**, **Copper**, **Gold**, **Lead**, **Mercury**, **Silver** and **Tungsten**; ② N 6 mi., Gypsy Queen Canyon, area—**Dumortierite**, **Quartz**; ③ NE 5 to 6 mi., mines in Wrights Canyon, contact metamorphic veins—**Tungsten** minerals; ④ E 9 mi., the Rochester-Lower Rochester dist.: (a) Nenzel Mine, veins, placers—**Antimony**, **Copper**, **Gold**, **Lead**, **Platinum** minerals; (b) W side of Lincoln Hill, area; and (c) in quartz in Bullion Canyon—**Dumortierite** (blue); (d) Echo (Ryepatch Mine), contact metamorphic veins—**Copper**, **Gold**, **Lead**, **Silver** and **Tungsten**.

ROCHESTER, at Lincoln Hill—**Dumortierite** (pink).

RYE PATCH DAM, W 5 mi.: ① the Poker Brown Mine, and ② W another 4 mi., the San Jacinto Mine, veins in slate and granite—**Arsenic**, **Lead** and **Silver** minerals.

TOULON SIDING (on the Southern Pacific RR), W 10 mi., the Copper Valley (Ragged Top) Mine, contact metamorphic veins in limestone—**Copper**, **Tungsten** minerals.

## STOREY COUNTY

VIRGINIA CITY: ① area, including Comstock, Gold Hill, Silver Star, Flowery, etc., main veins in diorite and Tertiary volcanics—**Copper**, **Gold**, **Lead**, **Mercury** and **Silver** minerals. ② N, the Castle Peak (Red Mt.) Mine—**Mercury**.

## WASHOE COUNTY

AREA: ① W side of Mt. Davidson, the West Comstock (Jumbo) Mine (reached from Virginia City in Storey Co.), veins in diorite—**Gold**, **Silver**; ② Renard, W 15 mi., the Sheephead Mine—**Gold**; ③ Sano, E the Cottonwood (Round Hole) Mine, veins in sedimentary rocks—**Gold**, **Lead** and **Silver** minerals; ④ Steamboat Springs, impregnations in Tertiary volcanics, mines and prospects—**Mercury** minerals; ⑤ far NE part of Co., High Rock Canyon (best reached from Cedarville, CA, 38 air mi. to the W by rough rds., via Vya): (a) around headwaters of the Little High Rock Cr., area and (b) surrounding the canyon crossing of the Lost Creek Canyon rd.—**obsidian** nodules.

GERLACH: ① SW in the Smoke Creek Desert, area of Deep Hole, placers—**Gold**; ② N 38 mi. on Rte. 34, old ghost town of Leadville: (a) area mines, veins in Tertiary volcanics—**Gold**, **Lead**, **Silver** and **Zinc** minerals; (b) N 1 mi., the Donnelly (Gerlach) Mine, veins in sedimentary rocks—**Gold**, **Silver**; (c) N 8 mi., area both sides of Rte. 34—**agate**, **silicified wood**.



## Nevada

RENO: ① NE 4 mi., the Wedekind Mine, replacement veins—**Gold, Lead, Silver** and **Zinc** minerals; ② NW 10 mi. on Hwy. 395, the Peavine dist. (Reno, Crystal Peak mines), (a) replacement veins, placers—**Copper, Gold, Lead, Platinum, Silver** and **Tungsten** minerals; (b) at Cold Springs Valley exit veer E onto tailing paved rd., after stop sign look slightly uphill to S of rd., mine dumps—**Azurite, Brochantite, Chrysocolla** (with scarce **Gold** associated), platy **Hematite** in quartz, **Malachite, Pseudomalachite, Schorl**, rare brownish-green **Sphalerite** and anhedral **Tetrahedrite**; ③ N 34 mi. via Rte. 33 and dirt rd. on W side of Pyramid Lake, (a) Pyramid Mine, veins in Tertiary volcanics; and 3 mi. W of Pyramid lake along Pyramid way, Burrus mine—**Azurite, Barium-pharmacosiderite, Brochantite, Chalcanthite**, green **Chalcophyllite, Conichalcite, Copper** minerals, **Cornwallite**, blue fuzzy balls of **Cyanotrichite, Enargite, Gold, Lead** minerals, **Olivinite, Parnauite**, neon blue **Richelsdorffite, Silver** minerals, **Strashimirite**, and **Tyrolite**.

SPARKS, area draws, washes, fields and land surfaces—**agate, Garnet, Idocrase, obsidian**.

VYA (extreme NW part of Co., best reached 22 mi. E of Cedarville, CA), S 30 mi. on Rte. 34, area W side of rd.—common **opal**.

WADSWORTH, W 9 mi., the White Horse (Olinghouse) Mine, contact veins, placers—**Gold, Platinum, Silver**.

WASHOE CITY (17 mi. S of Reno on US 395), N 1 mi., the Galena Mine, veins in granite—**Arsenic, Copper, Gold, Lead, Silver** and **Zinc** minerals.

## WHITE PINE COUNTY

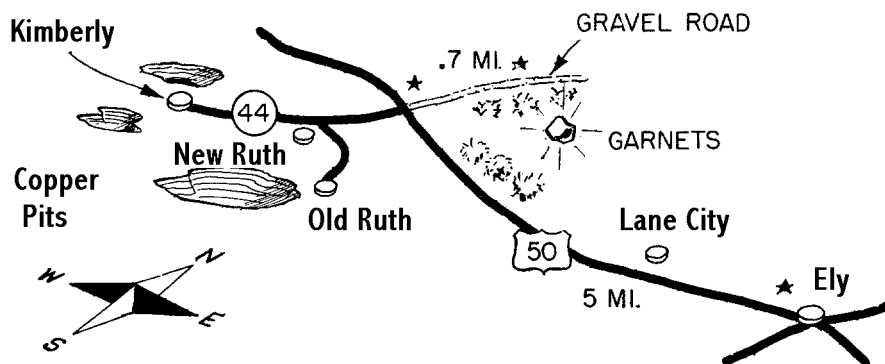
AREA, far W part of Co., Bald Mt. (about 75 mi. S of Elko and N of Pancake Summit on US 50), lode mines, placers—**Copper, Mercury, Platinum, Silver, Tungsten**. This Co. is a very mineral rich county.

BAKER (4 mi. W of the Utah line and 5 mi. S of US 6 / 50): ① area mines—**Copper, Gold, Lead, Silver** minerals; ② SE, on E flank of the Snake Range, practically on the UT border, the Snake (Bonita) Mine, veins in granite—**Silver** and **Tungsten** minerals; ③ the Eagle dist. (Kern, Pleasant Valley, Regan, Tungstonia mines), veins in sedimentary rocks—**Copper, Gold, Lead, Silver, Tungsten** minerals.

CHERRY CREEK (45 mi. N of Ely on US 93, turn W 9 mi. on Rte. 35): ① area mines, veins in secondary enrichments—**Copper, Gold, Lead, Manganese, Silver, Tungsten** minerals; ② the Eagle Canyon Mine in the Egan Range; and ③ W 5 mi., the Gold Canyon Mine—**Copper, Gold, Lead, Manganese, Silver, Tungsten** minerals; ④ SE 18 to 36 mi. (area also reached NW from McGill) and 10 mi. E of old camp of Melvin, many old mines such as the Aurum (Muncy Cr.), Queen Springs, Ruby Hill, Schellbourne, Schell Cr., Siegel, Silver Canyon, Silver Mt.; contact metamorphic veins—**Copper, Gold, Lead, Manganese** and **Silver** minerals.

ELY: ① area mines, contact metamorphic veins—**Copper, Gold, Lead, Manganese** and **Silver** minerals; ② SE 10 mi., replacement veins in limestone—**Manganese** and **Silver** minerals; ③ S 19 mi., the Ward (Taylor) Mine on S side of Ward Peak (elev. 10,936'), contact metamorphic veins—**Copper, Gold, Lead** and **Silver** minerals. This is the site of the Ward Charcoal Ovens Historic State Monument. ④ SE 35 mi., on US 50, turn E 4 mi. on dirt rd.: (a) old camp of Osceola, veins and placers—**Gold, Lead, Platinum, Silver, Tungsten** minerals; (b) the nearby Sacramento (Sacramento Pass) Mine on W flank of the Snake Range, veins in limestone and slate—**Gold, Silver** and **Tungsten** minerals; ⑤ SE 45 mi., on SW flank of the Snake Range and S of the Lehman Caves National Monument, the old Tungsten dist. (Hub, Lincoln mines), veins in quartzite and argillite—**Silver** and **Tungsten** minerals; ⑥ ESE 49 mi., the Black Horse Mine—**Gold, Silver**; ⑦ W 36 mi. on US 50 to Little Antelope Summit (elev. 7,433'), area surfaces—**wonderstone**; ⑧ (a) take Hwy. 50 NW from Ely 5 mi., then right on gravel rd. 0.7 mi.

along power line into canyon, go to summit on foot; and (b) Canyons N from Lane City for a mile in either direction, in garnet-bearing rhyolite—**Garnet**.



HAMILTON ( $\approx$  35 air mi. W of Ely and 10 mi. S from turnoff 9 mi. E of Little Antelope Summit), replacement veins in Paleozoic sediments—**Copper, Gold, Lead, Silver** and **Zinc** minerals.

KIMBERLY (5 mi. NW of Ely on US 50 and 4 mi. W of Rte. 44), NW 1 mi., Robinson Canyon, area surfaces to the S—**Garnets**.

McGILL: ① NW 3 mi., the Duck Creek (Success) Mine, replacement veins in limestone and shale—**Copper, Gold, Lead, Silver** and **Zinc** minerals; ② S 3 mi. on US 93 to W trending dirt rd.: (a) NW 21 mi., old camp of Steptoe (Granite Mine), replacement veins in Paleozoic sediments—**Gold, Lead, Silver** minerals; (b) a SW a short distance, old camp of Hunter, replacement veins in dolomitic limestone—**Copper, Lead, Silver** minerals; (c) NW 28 mi., turn SE toward Magnusons Ranch, the Warm Springs Mine, quartz veins—**Gold, Silver**.

RUTH (8 mi. W of Ely), open pit operations—**Copper**.

SHOSHONE (48 mi. SE of Ely via 28 mi. on US 6 / 50, 3 mi. on US 93, and paved local rds., to the E and S), the Minerva and Lexington mines, veins in limestone—**Silver** and **Tungsten** minerals.

STRAWBERRY (29 mi. NE of Eureka Co. Via Newark Pass), on E slope of the Diamond Mts., the Newark Mine, veins in limestone—**Copper, Gold, Lead** and **Silver** minerals.

## NEW HAMPSHIRE

New Hampshire, in the heart of New England, bears two appropriate names: the Granite State, because of its extensive bedrock exposures, and the Land of Peace and Beauty. During the Pleistocene epoch, the entire state was buried beneath a succession of glaciers estimated to have been more than two miles thick. In their original advances from the north, the great sheets of ice scraped the mountains, peneplained the upland regions, and rerouted water courses. In receding after 100,000 years or so, the last, or Wisconsin glaciation left precipitous streams, innumerable lakes, and the barren Precambrian granite over which only a relatively thin layer of soil has formed in the last 8,000 to 10,000 years.

The residual White Mountains of the northern Appalachian chain stretch across the southern part of Coos Co. Many peaks rise more than 4,000 and 5,000 ft. above sea level, culminating in Mt. Washington. At 6,288 ft., this peak is the highest mountain in the New England states. Immediately to the north, the Presidential Range lifts five other rugged peaks to near 6,000 ft. heights, and cutting through the New Hampshire mountains are many sharp *notches* familiar to all travelers through the northern counties. South of the mountain and lake region, the generally level uplands are noted for isolated minor peaks of resistant rock, called *monadnocks*.

Commercial mining for copper, gold, lead, silver and zinc, as well as feldspar, fluorspar and serpentine, at various times and places has contributed minor amounts to the state's economic wealth. However, New Hampshire primarily interests the gem collector because of its pegmatite mines, quarries, and exposures which yield top quality gem crystals. These include **Amethyst**, **Apatite**, **Aquamarine**, **Beryl**, **Garnet**, **rock crystal** (clear, rutilated and rose), **Staurolite**, **Topaz** and **Tourmaline**, among others. Panning for gold is a regular summer hobby activity in the northern streams, especially around the headwaters of Indian River in the extreme northern part of Coos Co. Gold occurrences in northern New Hampshire from unknown sources seem to reflect similar occurrences in the Chaudière River watershed of southern Quebec, just across the international boundary between Canada and southwestern Maine, said to be the most important placer gold field east of the Rocky Mountains. An excellent reference with a nice location map of old mines and prospect can be acquired from the New Hampshire Department of Resources, titled *The Geology of New Hampshire, Part III Mineral and Mines*.

### BELKNAP COUNTY

ALTON, area mines—**Arsenopyrite** and **Pyrite**.

GILMANTON, area fields, roadcuts, etc.—**jasper**.

NEW HAMPTON, the Storer prospect—**Mica**.

### CARROLL COUNTY

BARTLETT, Iron Mt. prospect—**Iron** ore.

CHATHAM, the Chandler mine—**Feldspar**.

CONWAY: ① NW 2½ mi., the Lovejoy Gravel Pits, Hwy., 16 N ¼ mi., then Left on Passaconaway rd., cross bridge, go 0.3 mi., then Left to gravel road and N ¼ mi.—**Microcline** feldspar, **Smoky Quartz** crystals and **Topaz**; ② White Mountain Granite Quarry, at 700 ft. level on W side of Birch Hill—**Amethyst**; ③ 2 mi. N of North Conway, then E on Hurricane Mt. rd. 3½ mi., take trail from top ¼ mi. W follow old rd. to ledges in Hurricane Mt.—**Amethyst** and **Smoky Quartz**; The Hurricane Mt. prospect—**Crocidolite**, **Adularia**.

EATON CENTER, NE 2 mi., at Randall Lead Mine—**Smoky Quartz**.

## A Location Guide for Rock Hounds in the United States

JACKSON, area mines, especially the Jackson mine—**Arsenopyrite**, **Bornite**, **Cassiterite** and **Wolframite**.

MADISON, area mines (Burke, Banks, Hoyt, Madison) —**Galena**, **Silver** and **Sphalerite**.

NORTH CHATHAM (extreme NE corner of Co., on Rte. 113), W 3½ mi., at 2,900 ft. level on E side of South Baldface Mt., area pegmatites and in pockets where pegmatites meet talus slope—**Mica** (**Biotite**, **Muscovite**), **Microcline** feldspar, **Phenakite**, **Topaz** (brown, blue) and **Smoky Quartz** crystals.

NORTH CONWAY, take rd. W to Echo Lake, then jeep road W to Camp Albite, park and walk ¾ mile W to dig in Moat Mt. There is also collecting at South Moat and the Hogback E of Middle Moat (fee)—**Topaz**, **Amazonite** and **Smoky Quartz**.

OSSIPEE: ① (Co. seat and site of the Ossipee Summer Fish Hatchery), area mines—**Chalcopyrite**, **Lead-Silver** minerals; ② in ledge S of road at Passaconway Quarry near Albany—**Smoky Quartz**; ③ Pocket Mt. Prospect—**Gold**.

REDSTONE (Conway Twp.), the Redstone Red Quarry, between Conway and North Conway E of Hwy. 302—**Amethyst**, **Apatite**, **Quartz** crystals (clear, smoky) and **Topaz**.

SANDWICH, the White Diamond prospect—**Gold**.

WAKEFIELD: ① Weeks Mine ½ mi. W of Province Lake—blue **Beryl**, **Feldspar**; ② Hamm Quarry—**Apatite** (fluorescent).

## CHESHIRE COUNTY

ALSTEAD: ① Area old mines producing Beryl (Colony, Allen, Lyman, Fitzgibbon, Porter, Big, Tripp No. 1, Island, Blister, Burroughs Prospect, French, Beauregard, Osborne, Eames)—**Beryl** with either **Mica**, **Feldspar** or both.

CHESTERFIELD, N 2 to 4 mi. on Rte. 63, on W side of Spofford Lake and just W of the Hwy., area mines (Springer, Pierce)—**Fluorite**.

FITZWILLIAM, at Victoria White and Webb-Fitzwilliam granite quarries—rutilated **Quartz**.

GILSOM: ① area old mines producing Beryl (Nichols, Kirk No. 1 & 2, Isham, H. White, J. White) **Beryl** with either **Mica**, **Feldspar** or both; ② NNW 2¼ mi. on a connecting rd., the Island Mice Mine—**Beryl**, etc.; ③ NNW 3½ mi., Britton Mine, Pegmatite—**Beryl**, etc.; ④ N 5½ mi., the Wenham Mine, in pegmatite—rose **Quartz**.

HARRISVILLE, area old Newell Graphite mine—**Graphite**.

HINSDALE: ① area pegmatites—**Tourmaline**, etc.; ② 1 mi. SE near Ashuelot R.—pink **Rhodonite**.

KEENE: ① E 4½ mi., on S side of Horse Hill, Pegmatite outcrops—**Aquamarine**, **Beryl**, etc.; ② ENE 5 mi., Bassett Hill, area pegmatite outcrops, pits, etc.—**Beryl**; ③ Keene Granite Quarry, 3 mi. SE—**Beryl**, smoky and rose **Quartz**; ④ Will Wise Mine, Hwy. 9 W for 11 mi., pass Sherman Store, turn Right at sign saying “1st Methodist Church in New Hampshire” go ½, then Right on dirt rd. 1½ mi., then Left 3 mile, and a sharp Left onto mine road, park and walk up Bald Hill—**Fluorite**.

MARLBORO, mi. S at Webb Granite Quarry—**Almandite** garnet.

MARLOW, at Turner Mine—green **Tourmaline**.

NELSON, area old mines (Osgood, Lead)—**Graphite**.

RICHMOND, in Richmond Soapstone Quarry—**Cordierite**.

SURRY, the old Surry Dam mine—**Mica**, **Beryl**.

WALPOLE: ① area pegmatites—**Tourmaline**; ② at Howe Lodge on W side of Dery Hill—**Beryl**, rose **Quartz**.

WESTMORELAND: ① area old Fluorite mines (Wise, Stoddard No. 13)—**Fluorite**; ② S 3 to 5 mi.—**Fluorite**; ③ Stoddard Mine—**Amethyst** and **Quartz** crystals; ④ at Park Hill—**Staurolite**; ④ the old Lincoln mine—**Molybdenite**.

## New Hampshire

WINCHESTER: ① area pegmatite exposures, pits, etc.—**Tourmaline**; ② near top of Stony Mt.—**Rhodonite**.

### COOS COUNTY

AREA: ① in the topsoil of the regional mountain ridges surrounding the communities of Berlin, Dummer, Lancaster, Milan, Northumberland and Stratford—**Amethyst** and **Quartz** crystals; ② Indian Stream (extreme NW part of both Co. and State), headwater branches, numerous regional placers—**Gold** (colors, nuggets).

BERLIN: ① (a) at cave W of trail and (b) at 1,200 ft. level on S side of Jasper Mt.—**jasper**; ② the old Howard prospect—**Copper**; ③ the J. Gagne property—**Feldspar**, **Mica**.

DALTON, the old Dalton prospect—**Gold**.

GORHAM: ① area mines—**Chalcopyrite**; the old Mascot Mine—**Lead**.

MILAN: ① all area pegmatite exposures—**Albite**, **Amethyst**, **Beryl**, **Chlorite**, **Feldspar**, **Fluorite**, **Knebelite**, **Limonite**, **Molybdenite**, **Muscovite**, **Pyrite**, **Smoky Quartz** crystals, **Sericite** and **Topaz**; ② area mines—**Bornite**, **Chalcocite** (with Gold and Silver), **Chalcopyrite**, **Galena**, **Pyrite** and **Sphalerite**; ③ (a) Greens Ledge, area pegmatite exposures—**Albite**, **Amethyst**, **Beryl**, **Chlorite**, **Feldspar**, **Fluorite**, **Knebelite**, **Limonite**, **Molybdenite**, **Muscovite**, **Pyrite**, **Smoky Quartz** crystals, **Sericite** and **Topaz**; (b) W and 3 mi. S at 1,700 ft. level of Greens Ledge—**Amethyst** and **Topaz**.

PERCY: ① NNW 1¼ mi., Victors Head area pegmatites—**Albite**, **Amethyst**, **Beryl**, **Chlorite**, **Feldspar**, **Fluorite**, **Knebelite**, **Limonite**, **Molybdenite**, **Muscovite**, **Pyrite**, **Smoky Quartz** crystals, **Sericite** and **Topaz**; ② on W slope of Hutchin Mt.—**Amethyst**.

SHELBURNE: ① area copper and zinc mines—**Bornite** and some **Sphalerite**; ② area lead-silver mines—**Lead-Silver** minerals and **Pyrite**.

STARK: ① all regional pegmatite exposures—**Albite**, **Amethyst**, **Beryl**, **Chlorite**, **Feldspar**, **Fluorite**, **Knebelite**, **Limonite**, **Molybdenite**, **Muscovite**, **Pyrite**, **Smoky Quartz** crystals, **Sericite** and **Topaz**; ② (a) N 5 to 6 mi., Percy Peak, pegmatites exposed on Diamond Ledge, and (b) Hutchins Mt., area pegmatites—**Albite**, **Amethyst**, **Beryl**, **Chlorite**, **Feldspar**, **Fluorite**, **Knebelite**, **Limonite**, **Molybdenite**, **Muscovite**, **Pyrite**, **Smoky Quartz** crystals, **Sericite** and **Topaz**.

STRATFORD, along rd. near Sugarloaf—**Amethyst**.

WEST MILAN, the Milan Mine—**Pyrite** and **Silver** minerals.

### GRAFTON COUNTY

AREA, in soils and gravels around shores of Mink Pond—**Staurolites**.

ALEXANDRIA, in mine dump at 2,000 ft. level on N side of Hutchins Hill—**Beryl**.

BATH, area mines (Lang, Stevens, Forsaith)—**Chalcopyrite**, **Gold**, **Lead** and **Silver**.

ENFIELD, at Shaker Hill Granite Quarry—**Quartz** crystals with **Epidote** inclusions.

FRANCONIA: ① area mines—**Malachite** and **Essonite** garnet; ② area ridges, hillsides and fields, in topsoil—**Andradite** garnets; ③ in Ammonoosuc R.—**jasper**.

GRAFTON CENTER: ① in dumps of mines 3 mi. SW on E side of Melvin Hill—**Beryl** (blue and golden); ② Kilton Mine, via Ruggles Mine Road, crossing Manfeltree Brook, keeping R and then ¾ mi. NE—**Beryl** (blue and golden); ③ NW 1½ mi., the Ruggles Mine (a noted producer), take direct road W from Grafton Center 1½ mi. to crossroads, then across brook and up hill ¾ mi. (fee)—**Amethyst**, **Apatites**, **Autunite** (fluorescent), **Bertrandite**, **Beryl** (blue, golden), **Beta-uranophane**, **Calcite**, **Chrysoberyl**, **Clarkeite**, **Columbite**, **Compotite**, **Cymatolite**, **Kryolite**, **Dendrite**, **Feldspar**, **Garnet**,

## A Location Guide for Rock Hounds in the United States

**Graftonite, Gummite, Kasolite, Lepidolite (yellow), Lepidomelane, Lithiophyllite, Marcasite, Micas, Molybdenite, Parsonite, Phosphyanilite, Pyrite, Psilomelane, Purpurite, Pyrrhotite, Quartz (rose, smoky, white), Reddingite, Soddyite (yellow, fluorescent), Safflorite, Sillimanite, Staurolite, Torbernite, Topaz, black Tourmaline, Uraninite, Uranium, Uranophane, Uranospinite, Vandendriesscheite, Vivianite, Voelerkenite, Zircon;** ④ Sargent Mine, on N end of Horse Hill, by driving to top and taking ridge trail on foot—**Beryl** (blue and golden); ⑤ Alger Mine, take rd. S where Ruggles Mine Road leaves Grafton Road, go on a mi.—blue **Beryl**, rose and smoky **Quartz**.

**HANOVER:** ① area gravels, pits and surface—**jasper**, rutilated **Quartz** crystals; ② area mines—**Malachite**; ③ at Moose Mt.—rutilated **Quartz**.

**HAVERHILL:** ① area mines—**Arsenopyrite**; ② a nearby large deposit, mined—**soapstone**; ③ in Limonite at Black Mt.—**Quartz** crystals.

**HEBRON**, SW 2 mi. at mine dump on E side of Hobart Hill—**Beryl** and **Lepidolite**.

**LANDAFF**, the old Allen prospect—**Gold**.

**LEBANON**, area mines—**Arsenopyrite**.

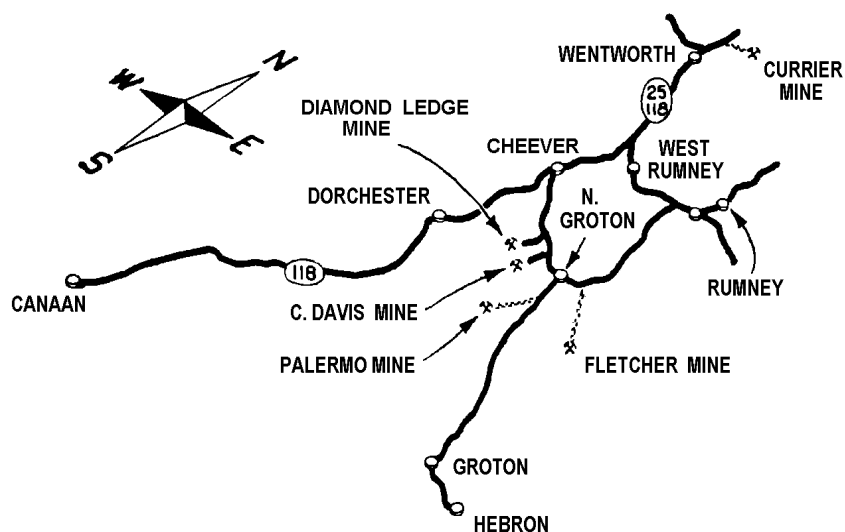
**LINCOLN**, on upper slopes of Mt. Nancy—**Amethyst**.

**LISBON:** ① area mines—**Magnetite, Copper, Gold, Lead, Silver** and **Pyrite**; ② area ridges, hillsides and fields, in topsoil—**Staurolites**.

**LITTLETON:** ① area mines (Gardner Mt., Gregory, Quint) —**Chalcopyrite, Gold, Lead, Silver**; ② the White Mountain Mine—**Bornite, Chalcopyrite** and **Malachite**. A mineralized belt containing many mines and prospects extends SW along Rte. 10 for 12 to 15 mi., including Lyman, Lisbon and Bath, and yielding specimen listed as under *area mines*. ③ on hill  $\frac{3}{4}$  mi. W of Garnet Hill—**Staurolite**.

**LYMAN:** ① many area mines—**Arsenopyrite, Chalcopyrite, Gold, Lead, Silver**; ② the Dodge Mine—native **Gold**. From the Dodge Mine some \$70,000 in gold was taken between 1865 and 1875. A quartz mill was constructed in Lisbon to process the ore. The veins pinched out into unproductive slate at a depth of about 100 ft.

**LYME**, the old Aldrich Prospect—**Scheelite**.



**NORTH GROTON:** ① WSW  $\frac{3}{4}$  mi., the Charles Davis Mine, ( $\frac{3}{4}$  mi. W of North Groton, the dirt rd. S from the Cheever Road leads to mine) —**Aquamarine, Beryl, Brazilianite, Lazulite**; ② SW 2 mi., the Palermo Mine and quarry, (SW 1 mi., then N less than a mi.) —**Apatite, Beryl, green Quartz, Brazilianite, Lazulite** (massive); ③ Rice Mine, mi. farther from North Groton than Palermo No. 1—**Apatite, Beryl, green Quartz**; ④ Diamond Ledge Mine, reached by a road a mi. W of North Groton leading from Cheever rd.—**Apatite, Beryl, green Quartz**; ⑤ the Fletcher Mine, take Rumney Road but turn off

## New Hampshire

on a side road up Fletcher Mt. and go 1¼ mi.—**Apatite**, **Beryl**, green **Quartz**; ⑥ Valencia Mine, located on next hill NW of the Fletcher Mine—**Beryl** and **Apatite**.

ORANGE, at Keyes Mine, N 2½ mi. on dirt rd.—**Beryl**.

ORFORD: ① area mines—**Copper** minerals and **Pyrite**; ② on Strawberry and Blackberry Hills—**Staurolite**.

RUMNEY, at Belden Mine—**Beryl**.

SUGAR HILL: ① S 1½ mi., on S side of Ore Hill, area surfaces, in topsoil—**Amethyst** and rock **crystal**; ② summit of Ore Hill, in topsoil—**Staurolites**; ③ S 1½ mi. at Franconia Iron Mine—green **Quartz**.

TINKERVALE, NW, on Gardner's Mt. (elev. 2,330'), area mines—**Chalcopyrite**, **Gold**, **Lead**, **Pyrite** and **Silver**.

WARREN: ① area mines, especially the Warren Mine—**Chalcopyrite** and **Essonite** garnet; ② SW 1½ mi. on SW side of Beech Hill—golden **Beryl** and **Quartz** crystals.

WENTWORTH, Currier Mine, take Hwy. 25 N past railroad tracks, then first dirt rd. Right ¾ mi., park ask permission at house, take road through fields to mine—**Beryl**.

WOODSTOCK, area mines—**Sphalerite**.

## HILLSBOROUGH COUNTY

FRANCESTOWN, general area land surfaces, gravel pits, etc.—**jasper**.

MILFORD, (a) in Bishop and Carlton Granite quarries 2 mi. NW; (b) Connoli Granite Quarry 3½ mi. SW; and (c) Kittridge Granite Quarry 1½ mi. SW—**rutilated Quartz**.

## MERRIMACK COUNTY

CONCORD, in Crowley Granite Quarry—**Smoky Quartz**.

DANBURY: ① NW, on Co. line area about 3¼ mi. SE of Grafton (in Grafton Co.), on Severance Hill, area pegmatites—**Beryl**, etc.; ② Wild Meadow mine—**Beryl**.

PITTSFIELD, the Silverdale Mine—**Chalcopyrite**, **Pyrite** and **Galena**.

WARNER, near top of Mount Kearsarge—rose **Quartz**.

WILMOT: ① N, a mine long worked for abrasives—**Garnet**; ② in mine dumps at Stuart Hill—**Beryl**.

## ROCKINGHAM COUNTY

NEWMARKET, old Newmarket mine—**Lead-Silver** minerals.

RAYMOND: ① take Old Manchester Road W, then Lane Road a total of 2 mi. to the (a) Chandler Feldspar Mine, (b) Smith Mine, (c) Welch Mine, and (d) Blake Mine—**Feldspar Beryl**, **Garnet**, rose **Quartz** and **Spodumene**; ② in boulders on ridge just N of Raymonf-Nottingham town line and W of rd.—**Quartz** crystals.

## STRAFFORD COUNTY

CENTER STRAFFORD, Foss Mica Mine about mi. NW. Go 2.3 mi. on Hwy. 9, then mine road to Right to Parker Mt. Mine on Blue Hill—**Eucryptite** (fluorescent), blue **Beryl** and **Apatite** (fluorescent).

ROCHESTER, the old Bliven prospect—**Pyrrhotite**.

## A Location Guide for Rock Hounds in the United States

### SULLIVAN COUNTY

ACWORTH, less than 2 mi. S at mine dump on W side of Beryl Mt.—**Beryl** and rose **Quartz**, **Rutherfordine** (fluorescent).

ALSTEAD & GILSUM: ① (N of Gilsum along W side of rd. to Mill Hollow, a group of mines whose dumps have been productive): (a) Beauregard Mine (fee); (b) Blister Mine; (c) Davis Mine,  $\frac{3}{4}$  mi. N of Mica Mine School; (d) Island Mica Mine,  $2\frac{1}{2}$  mi. N of Gilsum, 400 yds. E of Hwy. 10 and W of school on knoll between swamp and pond; (e) Big Mine, N of school; (f) Golding-Keene Mine, NW of big Mine; and (g) S of Gilsum on E side of Hwy. 10 at the J. White mine—**Beryl** (golden, blue); ② Fitagibbon Mine—**Apatite**.

CLAREMONT, area outcrops of Micaceous slates—**Staurolites**.

CROYDON, area mines—**Chalcopyrite** and cupriferous **Pyrites**.

GRANTHAM, area Micaceous slate outcrops—**Staurolites**.

NEWPORT, ① the G.F. Smith Mica Mine at Chandler's Mill—**Augelite**, **Beryl**, **Apatite** and **Lazulite**; ② 3 mi. E at Youngs Hill (fee)—**Apatite** and **Beryl**.

SPRINGFIELD: ① NE to Robinson Corner (straddles Co. line  $2\frac{3}{4}$  mi. SSW of Grafton, and best reached from there), near summit of Pillsbury Ridge, the Columbia and Reynolds mines—**Aquamarine**, **Beryl**, **Amethyst**, **Smoky Quartz** etc.; ② in soil at George Hill—**Amethyst**; ③ at S end of Melvin Hill in ledge on Joe Hill farm—**Beryl** and **Spessartite** garnet; ④ Player Mine at Pillsbury Ridge—green **Beryl**; ⑤ (a) Reynolds Mine near top of NE slope of Robinson Hill; and (b) Davenport Mine just below—blue **Beryl**, **Garnet** and **Quartz** crystals; ⑥ (a) Diamond Ledges on Long Mt., and (b) SE on Hwy. 4A for  $1\frac{1}{2}$  mi., then N to Globe Mine—**Amethyst** and smoky **Quartz**.

SUNAPEE, at Perry Sunapee quarry—rutilated **Quartz**.

UNITY: ① area mines—**Chalcopyrite** and cupriferous **Pyrites**; ② S 6 to 7 mi., various localities around Acworth and Beryl Mt., pegmatite exposures, prospects, etc.—**Beryl**, **Garnet** and **Quartz** crystals.



## NEW JERSEY

Known as the Garden State, New Jersey ranks among the world's three most noted gem and mineral producing regions. More than 200 mineral species have been named and described from a single locality and a great variety from hundreds of other places. Of these minerals, at least 40 were first identified in this state, and many of these have thus far never been found elsewhere.

In this 160 by 60 mile state sandwiched between the Hudson and the Delaware Rivers, the geology of New England merges with the geology of the Appalachian Highlands. The Northern one-third of the state lies within the mountain provinces, culminating in 1,803 ft. High Point on Kittatinny Ridge in High Point Park of northwest Sussex Co. The rock formations of this region are mainly folded and faulted limestones, sandstones, and shales of mid Paleozoic age, although three-fifths of New Jersey constitutes the Atlantic Coastal Plain, separated from the Highlands by the Triassic aged Piedmont.

New Jersey has always ranked high in its production of such industrial minerals as limestone, sandstone, serpentine and commercial clays. Iron mining began around 1710 and continues to this day from Limonite, Magnetite, and bog iron ores. The initial production of Zinc first opened the astonishing gemstone quarries at Franklin in Sussex Co. Although Zinc is no longer mined, the production of gems and gemstones through collector activities continues at a great rate. Here, most of the 200 mineral species are concentrated in a geographically very small area, unmatched anywhere else on earth.

While the Franklin deposit may be considered a gem Mecca for mineral collectors, the state's traprock quarries are of almost equal interest. Not only do the New Jersey quarries lead the world in the production of road ballast, but the gemstones found in cavities in the basalt or diabase lavas are a never-ending source of excitement to the discriminating collectors. The most gem abundant quarries occur in the Palisades of the Hudson River in Bergen Co., the Watchung Mountain basalts of Somerset Co., and the diabase intrusions exposed between the Delaware and Raritan rivers across the center of the state.

Quarries are not the only excavations that uncover traprock. Railroad tunnels, road cuts, and building excavations of every description also produce high quality gems. Perhaps the most famous collecting area is from Bergen Hill in Hudson Co., which is part of the Palisades basalt sill that extends from Bergen Point to Edgewater. Another high, narrow crescent of gem rich diabase parallels the Hudson River from above Haverstraw, NY to below Jersey City, NJ. Cavities in these lavas contain abundant banded agate and opal (common, fire), Amethyst, clear and smoky Quartz crystals, and clear, pastel lime-green **Datolite**. Such cavities may also contain gem **Apatite** and **Malachite**, needlelike **Natrolite** crystals, and such **Zeolites** and associated gemstones as **Analcime**, **Apophyllite**, **Chabazite**, **Gmelinite**, **Heulandite**, **Laumontite**, **Mesolite**, **Pectolite** and **Scolecite**. The railroad tunnels and cuts in Bergen Hill may be reached from the cities of Edgewater, Guttenburg, Weehawhen, Union City, Hoboken, Jersey City and Bayonne.

Nearby in Snake (Laurel) Hill, just east of the Hackensack River off the New Jersey Turnpike two miles west of Jersey City, excavations in both Bergen and Snake Hills have produced some of the most spectacular minerals ever found, when zeolite species occur in the contrasting matrix of Calcite, Dolomite and Quartz, or other base minerals. These two hills continue to yield magnificent specimen of **Albite**, **Epidote**, **Galena**, **Siderite** (both rhombohedral crystals and **Sphaerosiderite**), and fine talc pseudomorphs after Pectolite.

Of all the localities to be found in America, New Jersey produces the most and finest Amber, mainly from counties where exposures of Cretaceous marl sand occur. The best collecting localities are in marl, clay, sand, and gravel pits scattered over the state. In addition, the copper deposits of the Watchung Mountains yield excellent gem **Turquoise**. In several counties Amethyst, agate, and jadelike serpentine occur along with a wide variety of

## A Location Guide for Rock Hounds in the United States

gemstones rare in most of the rest of America and the world. For instance, **Prehnite**, one of the most beautiful and valued of lapidary gemstones, is practically a New Jersey *state stone*.

### BERGEN COUNTY

AREA, every basalt and diabase outcrop exposed in rd. cuts, railroad tunnels, building excavations, or other across the entire state, including adjoining Passaic, Hudson, Morris, Somerset, Union, Essex, Hunterdon and Mercer counties to the Delaware R. and N to Trenton—**agate**, **Amethyst** (druses, geodes, crystals), **carnelian**, **chalcedony**, **Datolite**, **Natrolite**, and **Opal** (common, fire).

PARAMUS, at Green farm—**Garnet**.

### BURLINGTON COUNTY

AREA, extreme NW corner of Co., at Crosswicks Cr. (4 mi. S of Trenton in Mercer Co.), area marl and sand pits—**Amber**.

BURLINGTON, HAINSEPORT, RIVERSIDE, RIVERTON, regional sand and gravel pits—**Amber**. (Amber occurs in the sands and gravels all the way SW through Salem Co. adjoining upper Delaware Bay, in greater quantity and quality than anywhere else in America.)

VINCENTOWN, area sand and gravel pits—**Amber**.

### BURLINGTON, CAMDEN COUNTIES

AREA, all the W part of New Jersey along the Delaware R., especially between Trenton in SW Mercer Co. (30 mi. N of Philadelphia, PA) to Penns Grove (20 mi. S of Philadelphia, PA), in any sand or gravel pit in or near any community—**jasper**, striped clear **agate** and **Amber**.

### CAPE MAY COUNTY

CAPE MAY, area ocean beach sands and gravels—*Cape May Diamonds*, water polished clear and opaque **quartz** crystals and **chalcedony** (pebbles in all colors from colorless to smoky, including apricotine).

### ESSEX COUNTY

BELLEVILLE, BLOOMFIELD, area old mines—**Malachite**.

SUMMIT, in Houdaille Construction Materials Quarry—**agate**, **Prehnite** and **Amethyst**.

### GLOUCESTER COUNTY

AUSTINVILLE, BRIDGEPORT, GIBBSTOWN, regional sand pits—**Amber**.

HARRISONVILLE (E of Rte. 45 and N of US 40), at Oldmans Cr., a marl pit—**Amber** (large sized chunks).

MULLICA HILL, area marl and sand pits—**Amber**, **fossils**.

SEWELL: ① sand and gravels of nearby tributary of Mantua Cr.—**Amber**; ② the Inversand Co. greensand marl pit—**Amber**.

## New Jersey

### HUDSON COUNTY

AREA: ① the Arlington Mine—**Chalcopyrite**; ② Bergen Hill (reached from Edgewater, Guttenberg, Weehawken, Union, Hoboken, Jersey City and Bayonne), all area RR cuts, tunnels, etc., between Edgewater and Bergen Point along the Hudson R., including regional quarries in the diabase substratum, and ③ Snake Hill, just off the New Jersey Turnpike E of the Hackensack R. 2 mi. E of Jersey City—**agate** (banded), **Albite**, **Amethyst**, **Analcime**, **Apatite**, **Apophyllite**, **Calcite** crystals, **Chabazite**, **Datolite** (lime green, gem), **Dolomite** crystals, **Epidote**, **Galena**, **Gmelinite**, **Heulandite**, **Laumontite**, **Malachite**, **Mesolite**, **Natrolite** crystals, **Opal** (common, fire), **Pectolite**, **Quartz** crystals, **Scolecite**, **Siderite**, **Spherosiderite**, **Sphalerite**, **Sphene** and **talc**.

EAST BELLEVILLE, old mine—**Malachite**.

EDGEWATER, GUTTENBERG, BAYONNE, area RR and Rd. cuts—**agate** (banded), **Albite**, **Amethyst**, **Analcime**, **Apatite**, **Apophyllite**, **Calcite** crystals, **Chabazite**, **Datolite** (lime green, gem), **Dolomite** crystals, **Epidote**, **Galena**, **Gmelinite**, **Heulandite**, **Laumontite**, **Malachite**, **Mesolite**, **Natrolite** crystals, **Opal** (common, fire), **Pectolite**, **Quartz** crystals, **Scolecite**, **Siderite**, **Spherosiderite**, **Sphalerite**, **Sphene** and **talc**.

HOBOKEN: ① area basalt exposures, in cavities—**agate**, **Amethyst** and **Opal** (common, fire); ② area serpentine outcrops—**Magnesite**, and **serpentine**; ③ Castle Point, area quarries in serpentine—**Brucite**, **Dolomite** crystals, **Magnesite** and **Hydromagnesite**.

JERSEY CITY: ① W 2 mi. at Snake Hill—**agate** (banded), **Albite**, **Amethyst**, **Analcime**, **Apatite**, **Apophyllite**, **Calcite** crystals, **Chabazite**, **Datolite** (lime-green, gem), **Dolomite** crystals, **Epidote**, **Galena**, **Gmelinite**, **Heulandite**, **Laumontite**, **Malachite**, **Mesolite**, **Natrolite** crystals, **Opal** (common, fire), **Pectolite**, **Quartz** crystals, **Scolecite**, **Siderite**, **Spherosiderite**, **Sphalerite**, **Sphene** and **talc**; ② NW, the Schuyler Mine—**Allanite** (black prismatic crystals), **agate** (banded), **Albite**, **Amethyst**, **Analcime**, **Apatite**, **Apophyllite**, **Calcite** crystals, **Chabazite**, **Chalcocite**, **Datolite** (lime-green, gem), **Dolomite** crystals, **Epidote**, **Galena**, **Gmelinite**, **Heulandite**, **Laumontite**, **Malachite**, **Mesolite**, **Natrolite** crystals, **Opal** (common, fire), **Pectolite**, **Quartz** crystals, **Scolecite**, **Siderite**, **Spherosiderite**, **Sphalerite**, **Sphene** and **Talc**.

MONTVILLE, area scattered deposits in limestone—**serpentine**.

PALISADES (not a town but basalt cliffs fronting the Hudson R. for more than 70 Mi.), in cavities and talus debris—**agate** (banded), **Albite**, **Amethyst**, **Analcime**, **Apatite**, **Apophyllite**, **Calcite** crystals, **Chabazite**, **Datolite** (lime green, gem), **Dolomite** crystals, **Epidote**, **Galena**, **Gmelinite**, **Heulandite**, **Laumontite**, **Malachite**, **Mesolite**, **Natrolite** crystals, **Opal** (common, fire), **Pectolite**, **Quartz** crystals, **Scolecite**, **Siderite**, **Spherosiderite**, **Sphalerite**, **Sphene** and **Talc**.

WEEHAWKEN, in cavities in area basalt exposures—**Allophane** and area minerals.

### HUNTERDON COUNTY

BRYAN, area quarries—**Spinel**.

CLINTON, area old mines—**Braunite**.

FLEMINGTON, the Flemington Mine—**Chalcopyrite**.

LAMBERTVILLE (on the Delaware R. near the state boundary): ① area quarries—**Axinite** crystals (in regional traprock cavities), **Tourmaline**; ② S 1 mi., Goat Hill, in area veins—**Pectolite** and **Stilpnomelane**; ③ Barber and Irelands Quarry—**Byssolite** (locally called mountain leather); ④ the Kingston Quarry—**Actinolite** crystals; ⑤ the Lambertville Quarry—**Prehnite** (as tiny micromount, perfect crystals) and **Datolite**; ⑥ W, in quarries along Delaware R.; ⑦ N 2½ mi., on Mt. Gilboa; ⑧ S 2½ mi., on Belle Mt., at Moore's Sta., all regional quarries—**gem** minerals typical of region.

## A Location Guide for Rock Hounds in the United States

### MERCER COUNTY

HOPEWELL: ① area quarries near the Hunterdon Co. line, and ② at NE end of Pennington Mt.—**gem** minerals.

MOORE: ① the Mercer Co. Workhouse Quarry (a few mi. S of the Hunterdon Co. line), and ② a quarry on Rte. 29 between Moore and Lambertville in Hunterdon Co.—**Analcime**, **Aurichalcite** (in calcite veins as pale rosettes), **Calcite** crystals, **Chalcopyrite**, **Epidote**, **Heulandite**, **Natrolite** (delicate needles), **Scolecite** and **Stibnite**; ③ a quarry on Pennington Mt. just E of Rte. 69, in diabase—**Analcime**, **Aurichalcite** (in calcite veins as pale rosettes), **Calcite** crystals, **Chalcopyrite**, **Epidote**, **Heulandite**, **Natrolite** (delicate needles), **Scolecite** and **Stibnite**.

PRINCETON: ① area quarries, and ② N 4 mi., the Rocky Hill Quarry—**Albite**, **Chalcocite**, **Chrysocolla**, **Galena**, **Goethite**, **Malachite**, **Prehnite**, **Quartz** gemstone (various), **Stilpnomelane** and **Tourmaline**.

TRENTON, N 9 mi. on Hwy. 29 in Delaware R. at Washington Crossing State Park—black **jasper**.

### MIDDLESEX COUNTY

GRIGGTOWN, area mines—**Chalcopyrite**.

MILLTOWN, MATAWAN, PERTH, AMBOY, WOODBRIDGE, area gravel pits—varied assortment of **gem** minerals.

NEW BRUNSWICK: area mines—**Chalcopyrite** and **Chalcocite**; ② East Brunswick, area gravel pits—**gem** minerals.

SAYREVILLE: ① area sand and gravel pits—**Marcasite** (balls and rosettes), **Pyrite** crystals and **petrified wood**; ② pits between town and Middletown—**Marcasite** (nodules) and **Pyrite**.

### MONMOUTH COUNTY

LONG BRANCH. area ocean beach gravels—**Quartz** crystals.

MANASQUAN, S, along the ocean beaches through Ocean, Atlantic, and Cape may counties (approx. 100 mi.), in beach gravels and cliff talus debris—*Cape May Diamonds*, water polished clear and opaque **quartz** crystals, **fossils** and **petrified wood**.

NEPTUNE CITY, in marl along Shark R.—**Amber**.

### MORRIS COUNTY

DOVER: ① area, as vein fillings in Magnetite—**isopyre** opal; ② nearby: (a) at Ferromonte, large deposit—**Apatite** (mixed with Magnetite); (b) Golden Corner Mine, as large crystals—**Apatite** (in Pyrite); ③ the Dell and Fichtor mines—**Menaccanite** (Ilmenite); ④ on Mine Hill, the Alan Wood Iron Mine (near Summit) —aventurescent **Feldspar** (*Sunstone*, bright spangles); ⑤ W 2 mi., the Scrub Oaks Iron Mine (in the Dover magnetite district and the last active iron mine in NJ): (a) on dumps—**Bornite**, **Calcite** (fluorescent), **Chalcopyrite**, **Chlorite**, **Garnet**, **Hematite**, **Magnetite**, **Pyrite** (abundant crystals), **Quartz** crystals (smoky, bluish rutilated), **Spinel**, **sunstone** (with copper-colored inclusions), **rare-earth minerals** (Thorium, Uranium) and **Tremolite**; (b) pegmatite exposures at the mine—**Allanite**, **Apatite**, **Calcite**, **Chevkinite**, **Doverite**, **Hornblende**, **Monazite**, **Muscovite**, **Pumpellyite**, **Rutile**, **Sphene**, **Xenotime** and **Zircon**.

HIBERNIA, area mines—**Apatite**, **Pyrite** and **Pyrrhotite**.

HOPATCONG, area gravels and surfaces at Nolands Point, around lake Hopatcong, and Ironia—**Garnets**.

## New Jersey

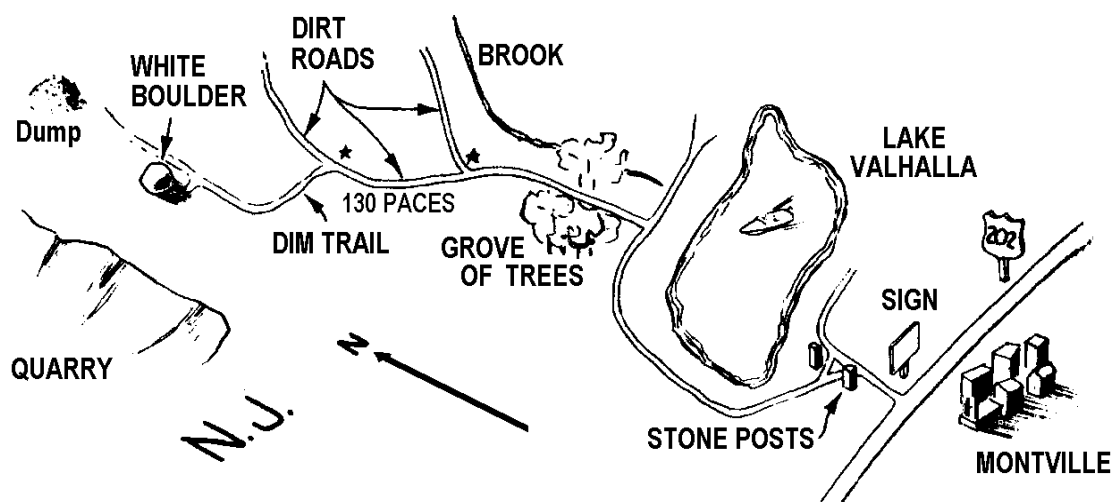
HURDTOWN, old regional mines, Old Copperas, Hibernia, Hurdstown—**Apatite** (as yellow crystals in **Pyrrhotite**, especially at Hurdstown Mine).

JEFFERSON and Mt. Olive twps., area quarries—**gem** crystals.

KENVILLE, PEQUANNOCK, RIVERDALE, STANHOPE, WHIPPANY, all regional quarries and pits—**Prehnite**, etc.

LAKE VALHALLA, W on Turkey Mt., old quarries—**Diopside**, **marble** and **serpentine**.

MILLINGTON, area quarries near the Passaic R. off Rte. 512—**Prehnite**, etc.



MONTVILLE: ① N, on W shore of Lake Valhalla (US 202 W to sign for Valhalla Lake, turn up hill to a Left turn between stone gate posts marked *Valhalla Lake*, continue on hardtop rd. N and around lake for a mi. to a brook, park and walk up a wagon rd. parallel with brook to a fork, take Left-hand trail for 130 paces, faint trail leads to Left ¼ mi. to top of the Mt. and to a large white boulder; the dump is a few feet beyond), an abandoned quarry—gem **serpentine** (yellow and green translucent), **Diopside** (fluorescent); ② other area quarries and pits—various gems and minerals.

MT. FREEDOM, area pits—**Allanite**, **Amphiboles** (green and gray crystals), **Augite**, **Chalcopyrite**, **Chondrodite**, **Coccolite** (pyroxene, as blue, green and white crystals).

MT. HOPE, area quarries—**Apatite**, **Pyrite** and **Pyrrhotite**, etc.

MT. PLEASANT, area quarries—**Apatite**, **Pyrite** and **Pyrrhotite**.

STERLING, in gravels of Sterling Brook—gem **carnelian**. (The nodules are best found by digging 2 ft. under the silt layer overlying bedrock gravels.)

TAYLORVILLE, the Rockaway Valley area mines—**Magnetite**.

WARREN (Twp.), Bedrock gravels of Carnelian Brook—**agate** (banded, moss), **chalcedony** (red, green, red-orange, botryoidal), **jasper**, **petrified wood**, **Quartz** crystals (Amethyst, cat's eye citrine, clear and smoky), **sard** and **sardonyx**.

## OCEAN & ATLANTIC COUNTIES

AREA, entire stretch of the Atlantic Ocean beaches from the NE Co. border to Cape May Co., in beach gravels, and weathering out of the cliffs—**Cape May Diamonds (Quartz)**.

## PASSAIC COUNTY

CLIFTON: ① W 3 mi. on US 46, the Great Notch Quarry; ② the Frascino Bros. Quarry; ③ the two quarries of Houdaille Industries adjoining the Great Notch RR Sta.; and ④ a quarry immediately SW of the Station—**agate**, **Albite**, **Amethyst**, **Apophyllite**, **Calcite** (snowy crystals sprinkled with dark green **Babingtonite**), **Chrysocolla** (some not gemmy), **Datolite**, **Epidote**, **Natrolite**, **Opal** (Cachalong), **Pectolite**, **Prehnite** (green crystals and globular crusts in various quarries), **Quartz** crystals, **Scolecite**, **Selenite**, **Thaumasite** and **Thomsonite**.

HALEDON, NORTH HALEDON, area quarries—**agate**, **Datolite** crystals, dendritic **Pyrolusite** and **Goethite**.

HAWTHORNE, the Braen's Quarry—**agate** (a prime locality for this gemstone), **Datolite** crystals, dendritic **Pyrolusite** and **Goethite**.

LITTLE FALLS, the Great Notch Corp. quarry—**agate**, **Albite**, **Amethyst**, **Apophyllite**, **Calcite** (snowy crystals sprinkled with dark green **Babingtonite**), **Chrysocolla** (some not gemmy), **Datolite**, **Epidote**, **Natrolite**, **Opal** (Cachalong), **Pectolite**, **Prehnite** (green crystals and globular crusts in various quarries), **Quartz** crystals, **Scolecite**, **Selenite**, **Thaumasite** and **Thomsonite**.

MONTCLAIR, the Upper Montclair Quarry (on the Co. line), on Edgecliff Rd.—**agate** (banded), **Amethyst**, **Analcime**, **Babingtonite**, **Chabazite**, **chalcedony**, **Chrysocolla**, **Datolite**, **Goethite**, **Laumontite**, **Opal**, **Prehnite**, **Scolecite**, **Selenite** and **Stibnite**.

PATERSON: ① area quarries, especially the gem renowned Prospect Park Quarry (at the end of Planten Ave.) —**agate** (banded), **Amethyst**, **Anorthite** (fluorescent), **Apophyllite**, **Barite**, **Babingtonite**, **Byssolite**, **Calcite**, **Chabazite** (fluorescent), **chalcedony**, **Covellite**, **Cuprite**, **Datolite** (fluorescent), **Dolomite** crystals, **Galena**, **Goethite**, **Greenockite**, **Hematite**, **Heulandite** (fluorescent), **Leonhardite** (fluorescent), **Mesolite** (on calcite), **Opal** (Cachalong), **Prehnite**, **Quartz** (pseudomorphs after Glauberite, crystals to 3" long; other quartz family gemstones), **Silver** (native wire), **Stevensite** (fluorescent) and **Thaumasite** (tabular crystals, fluorescent); ② W 9 mi. on US 202, quarry at Pompton Lakes—**agate** (banded), **Amethyst**, **Barite**, **Babingtonite**, **Byssolite**, **Calcite**, **Chabazite** (fluorescent), **chalcedony**, **Covellite**, **Cuprite**, **Datolite** (fluorescent), **Dolomite** crystals, **Fluorapophyllite** (fluorescent), **Galena**, **Goethite**, **Greenockite**, **Hematite**, **Leonhardite** (fluorescent), **Mesolite** (on calcite), **Opal** (Cachalong), **Prehnite**, **Quartz** (pseudomorphs after Glauberite, crystals to 3" long; other quartz family gemstones), **Silver** (native wire), **Stevensite** (fluorescent) and **Thaumasite** (tabular crystals, fluorescent); ③ SE, to Bergen Hill extension from Hudson Co., in all RR tunnels and cuts as fine, brilliant crystals—**Analcime** (fluorescent) with **Datolite** (fluorescent), **Natrolite** (fluorescent), and **Stibnite**.

RINGWOOD: ① gravel quarries on Rte. 511 near the Ringwood State park—many gemstones; ② the Ringwood Iron Mine—**Calcite**, **Chalcopryrite**, **Crocidolite**, **Corundum**, **Epidote**, **Garnet**, **Hornblende**, **Limonite**, **Orthoclase**, **Pyrite**, **serpentine** and **Zircon**; ③ the Hope Mine—**Garnet**, **Magnetite**.

WAYNE, area gravel quarries along the Pompton R. (on the Morris Co. line) —wide variety of **gemstones**.

WEST PATERSON, in the New Street quarries: ① area quarries on both sides of New Street: ② the New Street Quarry itself; ③ the Upper New Street Quarry; and ④ Burger's Quarry—**agate** (banded), **Amethyst**, **Apophyllite**, **Barite**, **Babingtonite**, **Byssolite**, **Calcite**, **chalcedony**, **Covellite**, **Cuprite**, **Datolite**, **Dolomite** crystals, **Galena**, **Goethite**, **Greenockite**, **Hematite**, **Mesolite** (on calcite), **Opal** (Cachalong), **Prehnite** (exceptional green), **Quartz** (pseudomorphs after Glauberite, crystals to 3" long; other quartz family gemstones), **Silver** (native wire), **Stevensite**, **Thaumasite** and **Thomsonite**.

## New Jersey

### SALEM COUNTY

AREA, all Co. gravel and sand pits and stream sands—**Amber**.

HARRISONVILLE, regional sand pits and river sands—**Amber**.

### SOMERSET COUNTY

BARNARDSVILLE, the Somerset Crushed Stone Co. Quarry—**agate**, **Quartz** geodes, etc.

BELLE MEAD, the 3M Quarry—**quartz family minerals**.

BOUND BROOK, area quarries—**agate**, **Prehnite** and **quartz gemstones**.

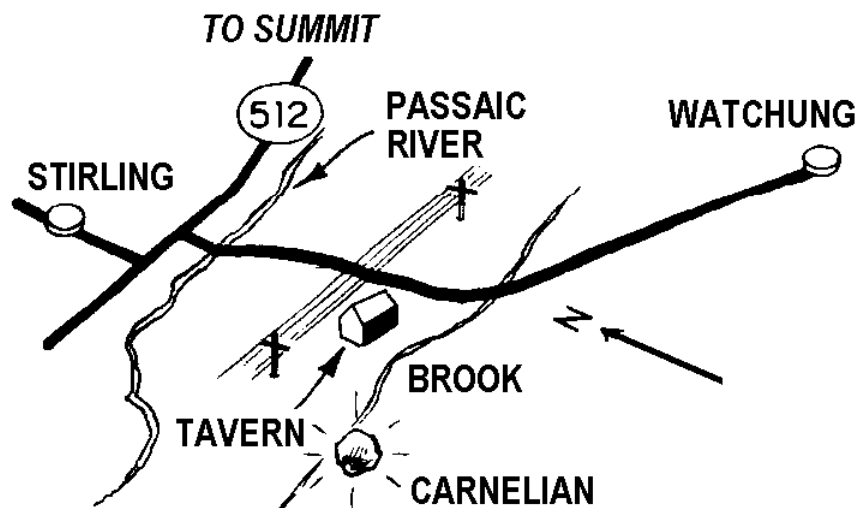
CHIMNEY ROCK, area quarries—**Bornite**, **Calcite** (fluorescent), **Chalcocite**, native **Copper** and **Silver**, **Cuprite**, **Malachite** and **Tourmaline**.

KINGSTON, the Kingston Trap Rock Co. Quarry—**agate**, **Prehnite** and **quartz gemstones**.

MARTINSVILLE, the Dock Watch Quarry Co. quarry **agate**, **Quartz** family gemstones, etc.

PYSON STATION, area pits and quarries—**Quartz** geodes.

SOMERVILLE: ① area quarries—**agate**, **Albite**, **Datolite**, native **Copper** and **Silver**, **Quartz** crystals and **serpentine**; ② N 3 mi., old copper mine on First Watchung Mt.—gem **Turquoise** and **Copper** minerals; ③ the American Copper Mine—**Chalcocite**, **Chalcopyrite**, **Malachite** and native **Copper**.



WATCHUNG, area quarries—**carnelian**, **Citrine**, **jasper** and **sardonyx**.

### SUSSEX COUNTY

ANDOVER: ① area quarries—**amphibole asbestos** (blue) and **Aragonite**; ② the Old Iron Mine—**Garnet**, **Hematite**, **Limonite** and **Magnetite**; ③ the Suphur Hill Mine—**Willemite** (fluorescent).

BEEEMERVILLE, area outcrops of dark nepheline syenite—**Sodalite** (fluorescent).

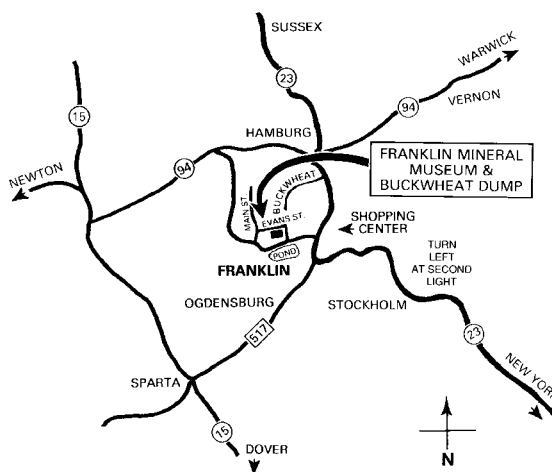
EDISON, the Ogden Mine Group mines—**Bustamite**, **Calcite**, **Cleiothane** (colorless Sphalerite), **Cyprine**, **Franklinite**, **Friedelite** (translucent, dark carnelian

colored, resembles chalcedony, found as stringers in calcite), **Hodgkinsonite**, **Magnetite**, **Molybdenite**, **Rhodonite** (zinc), **Willemite** and **Zincite**.

FRANKLIN: ① area mines (See Franklin-Ogdensburg-Sterling Hill district for mineral listing); ② turn off Rte 23 at corner of Franklin Ave. to the Buckwheat Mine dumps on the Wallkill R. (fee)—approximately 200 gems and minerals (some 30 fluorescent), including **Friedelite**, **Cleiothane**, **Hodgkinsonite**, **Willemite** (rarest of the fine area gems as transparent orange and yellow crystals) and **Zincite**, etc.; ③ the Taylor Mine dumps, as purple octahedral and crystal masses in limestone—**Fluorite**; ④ N, the old Parker Mine dumps (now built over but investigation of area openings, excavations sometimes possible.) many fluorescent minerals—**Axinite**, **Apatite**, **Azurite**, **calcium Larsenite**, **Cerussite**, **Corundum**, **Franklinite**, **Galena**, **Hardystonite**, **Hydrozincite**, **Malachite**, **Margarosanite**, **Pectolite**, **Smithsonite** and **Wollastonite**; ⑤ numerous mine dumps along Cork Hill and Taylor rds., and ⑥ the Noble and Passaic pits (mammoth size, opened in the 1879's) —**Apatite**, **Azurite**, **Cerussite**, **Corundum**, **Franklinite**, **Galena** and **fluorescent minerals**; ⑦ such regional mines as: (a) the Ogden Mine, as rose colored crystals—**Fluorite**; (b) the Franklin and Williams Mine—**Apatite**; (c) Stanhope and Ahles mines—**Magnetite** and **Molybdenite**; (d) the Trotter shaft— **Amazonite**, **Garnets** (**Almandite**, **Spessartite**, **Melanite**); (e) the Williams Mine, abundant—**Zircons** (in **Magnetite**); ⑧ S on Rte. 517 to Ogdensburg: (a) all regional limestone exposures, in contact zone with the enclosing country rock, facet quality —**Corundum**; (b) various mines and dumps of the new Jersey Zinc Co. —**Bustamite**, **Calcite**, **Cleiothane** (colorless **Sphalerite**), **Cyprine**, **Franklinite**, **Friedelite** (translucent, dark carnelian colored, resembles chalcedony, found as stringers in calcite), **Hodgkinsonite**, **Magnetite**, **Molybdenite**, **Rhodonite** (zinc), **Willemite** and **Zincite**.

THE FRANKLIN-OGDENSBURG-STERLING HILL district produces both gem quality minerals and material not useful to the lapidary. ① area mines :

(a) primary ore minerals—**Franklinite**, **Tephroite**, **Willemite** (bright green fluorescent), **Zincite** (fluorescent); (b) Skarn minerals—yellow **Andradite** garnet, **Biotite**, **Bustamite** (pink fluorescent), **Calcite** (red fluorescent), **Cumingtonite**, **Diopside** (shy blue fluorescent), **Franklinite**, **Fowlerite**, **Gahnite**, **Glaucocroite**, **Esperite** (bright yellow fluorescent), **Hardystonite** (purple fluorescent), **Hastingsite**, **Hyalophane**, **Jeffersonite**, **Magnetite**, **Manganosite**, **Pargasite** (weak yellow fluorescent), **Roepperite**, **Schefferite**, **Tephroite**, **Vesuvianite**, **Willemite** (bright green fluorescent), **Wollastonite** (orange fluorescent), **Xonotlite** (weak white fluorescent), **Zinc Schefferite**, **Zincite**; (c) pegmatite contact minerals—**Apatite**, **Arsenopyrite**, **Barite** (yellow fluorescent), **Barylite** (violet-blue fluorescent), **Barysilite**, **Beryl**, **Beryllium Vesuvianite**, **Bornite**, **Cahnite** (weak white fluorescent), **Calcium Larsenite**, **Chalcocite**, **Chalcopyrite**, **Chloanthite**, **Clinohedrite** (orange fluorescent), **Copper**, **Corundum Cuspidine**, **Datolite**, **Fluorite** (blue fluorescent), **Franklinite**, **Galena**, **Glaucocroite**, **Guerinite** (weak white fluorescent), **Hancockite**, **Hedyphane** (weak yellow fluorescent), **Hodgkinsonite** (weak red fluorescent), **Johnbaumite** (dark orange fluorescent), **Kentrolite**, **Larsenite**, **Lead**, **Loellingite**, **Leucophoenicite**, **Manganaxinite** (red fluorescent), **Margarite** (weak blue-white fluorescent), **Margarosanite** (bright sky blue fluorescent), **Meta-ankoleite** (green fluorescent), **Metaldevite** (green fluorescent), **Minehillite** (violet-blue fluorescent), **Nasonite** (weak





## New Jersey

yellow fluorescent), **Niccolite**, **Pectolite** (orange fluorescent), **Phlogopite** (yellow fluorescent), **Picropharmacolite** (weak white fluorescent), **Prehnite**, **Pyrite**, **Roebbingite** (red-orange fluorescent), **Silver**, **Sphalerite** (fluorescent), **Sussexite**, **Svabite** (peach fluorescent), **Tephroite**, **Tilasite** (pale yellow fluorescent), **Turneaureite** (orange fluorescent), **Uvite** (yellow fluorescent), **Willemite** (bright green fluorescent), **Zircon** (bright orange-yellow fluorescent); (d) Hydrothermal vein minerals—**Aragonite** (yellowish white fluorescent), **Albite**, **Allactite**, **Anhydrite**, **Apophyllite**, **Arsenopyrite**, **Arseniosiderite**, **Barite** (yellow fluorescent), **Bementite**, **Calciiothomsonite**, **Calcite** (red fluorescent), **Celestite** (white fluorescent), **Chalcophanite**, **Charlesite** (weak blue fluorescent), **Chlorite**, **Chlorophoenicite**, **Crocidolite**, **Dolomite**, **Dypingite** (lt. blue fluorescent), **Fluoborite**, **Fowlerite**, **Friedelite**, **Gageite**, **Galena**, **Ganophyllite**, **Goethite**, **Greenockite**, **Hedyphane** (weak yellow fluorescent), **Hematite**, **Hetaerolite**, **Heulandite**, **Hodgkinsonite** (weak red fluorescent), **Holdenite**, **Leucophoenicite**, **Loseyite**, **Manganbrucite**, **Manganite**, **Marcasite**, **Mcgovernite**, **Millerite**, **Mooreite**, **Powellite** (yellow fluorescent), **Pyrite**, **Pyrochlore**, **Quartz**, **Rhodochrosite**, **Schallerite**, **Scheelite** (yellow fluorescent), **Siderite**, **Smithsonite** (white fluorescent), **Sphalerite** (fluorescent), **Stilbite**, **Sussexite**, **Talc**, **Tennantite**, **Tremolite** (bluish or yellowish white fluorescent), **Willemite** (bright green fluorescent), **Zincite**; (e) Surface oxidation minerals—**Anglesite**, **Aurichalcite**, **Azurite**, **Calamine**, **Cerussite** (yellow fluorescent), **Chalcophanite**, **Cuprite**, **Desaulesite**, **Descloizite**, **Gypsum**, **Halloysite**, **Hematite**, **Hemimorphite** (uneven green fluorescent), **Hydrohetaerolite**, **Hydrozincite** (sky blue fluorescent), **Limonite**, **Malachite**, **Neotocite**, **Psilomelane**, **Quartz**, **Smithsonite** (white fluorescent), **Uranospinite**, **Znucalite** (green fluorescent).

FRANKLIN FURNACE, area zinc mines—many minerals of which **Fluorite**, **Franklinite**, **Magnetite**, **Tephroite**, **Willemite** and **Zincite** are the most abundant.

McAFEE, SIMPSON, CEDAR HILL, area mines—**Hematite**.

MINE HILL, area quarries, mines—**Axinite**.

NEWTON: ① area limestone quarries—**Corundum** (blue, pink) and **Ruby**; ② S 4 mi., the Andover Group mines—**Magnetite**.

OGDENSBURG, across from Wallkill River Valley at Sterling Hill—approximately 200 gems and minerals (some 30 fluorescent), including **Amphibole**, **Apatite**, **Augite** (pyroxene), **Calamine**, (Hemimorphite), **Chalcophanite**, **Chalcopyrite**, **Cleiophane**, **Fowlerite** (Rhodonite), **Franklinite** (crystals to 8" on a side), **Friedelite**, **Gahnite**, **Hodgkinsonite**, **Tephroite**, **Willemite** (as transparent orange and yellow crystals) and **Zincite**, etc.

ROSEVILLE, area mines—blue **amphibole asbestos**.

SPARTA: ① area quarries (in limestone) —**Chondrodite**, **Corundum** (blue, pink) and **Ruby**, **Diopside**, **Edenite**, **Magnesian-hornblende**, **Meionite**, **Microcline**, **Norbergite**, **Pargasite**, **Phlogopite**, **Tremolite** (all fluorescent); ② SE 3½ mi., the Ford Mine—**Magnetite**; ③ Limecrest Quarry—**Albite**, **Corundum** (both fluorescent).

SPARTA JUNCTION, area limestone quarries—**Actinolite**, **Barite**, **Biotite**, **Fluorite**, **Pyrite**, **Quartz** crystals, **Rhodonite**, **Rutile**, **Sphene**, **Spinel** and **Tourmaline**.

## UNION COUNTY

MOUNTAINSIDE, area quarries in the Watchung Mt. traprock the underlies the region E and NE of the First and Second Watchung Mts.—**agate** (banded, neutral, pastel), **Albite**, **Apophyllite** (green crystals), **Bornite**, **chalcedony** (vari-colored), **Chrysocolla** (only specimen material), **Datolite**, **Galena**, **Hematite**, **Opal** (common, fire), **Orthoclase** (pink crystals), **Pumpylite** (dark green crusts).

PLAINFIELD: ① area quarries—**agate**, **Albite**, **Apophyllite**, **Bornite**, **chalcedony**, **Chrysocolla**, **Datolite**, **Galena**, **Hematite**, **Opal**, **Orthoclase**, **Pumpylite**;

## A Location Guide for Rock Hounds in the United States

② the Wilson's Quarry—**Albite** (pink), **Datolite**, **Malachite**, native **Silver** and **Zeolites** (**Analcime**, **Gmelinite**, **Natrolite**).

SCOTCH PLAINS, area quarries—**agate**, **Albite**, **Apophyllite**, **Bornite**, **chalcedony**, **Chrysocolla**, **Datolite**, **Galena**, **Hematite**, **Opal**, **Orthoclase**, **Pumpylite**.

SUMMIT, area traprock quarries—**agate**, **Albite**, **Apophyllite**, **Bornite**, **chalcedony**, **Chrysocolla**, **Datolite**, **Galena**, **Hematite**, **Opal**, **Orthoclase**, **Pectolite** and **Pumpylite**.

### WARREN COUNTY

AREA: ① the Cummings Iron Mine—**Garnet**, **Hematite** and **Magnetite**; ② the Taylor Mine—**Algerite** (altered scapolite).

HARMONY: ① the Franklin and Marble Hill Quarry—**Actinolite**; ② the Marble Mt. Mine—**Hematite**.

OXFORD, the Oxford Furnace Mine—**Magnetite**.

PHILLIPSBURG, area quarries—**serpentine** and **soapstone**.

## NEW MEXICO

Often called the land of Enchantment, New Mexico straddles the Continental Divide and has a mean elevation of 5,500' above sea level. The state, which is roughly bisected by the Rio Grande, exposes an array of Paleozoic rock formations in its usually isolated and remote semiarid mountains and plateaus. Topographically, New Mexico is noted for its spacious grasslands, wide sweeping deserts, broken mesas, volcanic necks, and densely pine forested mountains marked by high, barren peaks.

Not only does New Mexico contain a very considerable wealth in **Copper, Gold, Iron, Lead, Manganese, Molybdenum** (one of the largest Molybdenum mines in America) and **Zinc**, but empty reaches are especially enchanting to the gem and mineral collector because vast areas are public domain and therefore open to collecting. Much of the grazing land is leased to ranchers and farmers, and there are many mining claims. Courtesy requires permission to collect, almost always hospitably given.

The US Geological Survey reports that from 1848 through 1965 New Mexico produced 2,267,000 ounces of **Gold**. Also, many rich **Silver** and **Lead-Silver** discoveries were made in rapid succession in the 1870's. The major Gold districts are Elizabethtown-Baldy, Mogollon and Lordsburg.

Both native **Silver** and **Turquoise** were mined rather extensively by pre-historic Indians, and many Turquoise deposits are active today. Potash is mined from one of the world's largest deposits, but the enormous coal beds remain almost untouched because of the long hauling distance to any substantial manufacturing center. Few roads penetrate the back-country, and those that do are mostly rough dirt roads used by stock ranchers, miners and Indians. Therefore caution is urged for all adventurous rock collectors bent on exploring the hinterlands. They are blistering hot in summer and bitterly cold in winter and always deficient in water.

### BERNALILLO COUNTY

AREA, W SIDE OF Co. but E of the Continental Divide, the Rio Puerco Valley, all area gravels, surfaces, draws, washes, etc.—**agate, chalcedony, jasper, opalized and agatized wood**.

ALBUQUERQUE: ① WNW, on N side of the new freeway, in area sand dunes—**agatized wood**; ② W 11 mi. on US 66 to Teepee Service Sta., turn S ½ mi. on dirt rd. (making only right turns for ¼ mi.): (a) in banks of arroyos leading toward the river and on all adjacent ridges—**agatized wood, agate, jasper**; (b) along E side of range of low hills all the way to the Isleta Indian Res., in sandy arroyos and erosional breaks in the grazing lands—**agatized wood**.

ISLETA PUEBLO (on E side of the Rio Grande across from Isleta), E into the Isleta Indian Res., all area surfaces, draws, washes, etc.—**opal, opalized and agatized wood**.

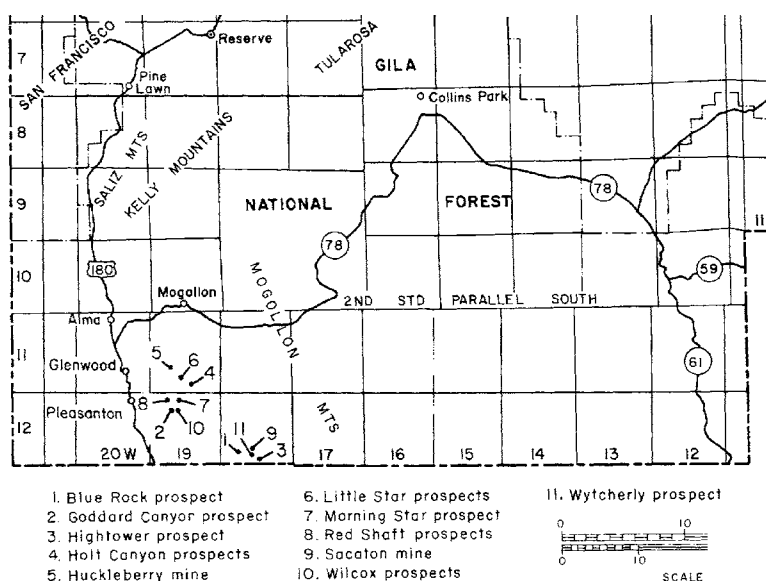
TIJERAS, the Tijeras Canyon in the Sandia Mts., area mines—**Fluorite**.

### CATRON COUNTY

AREA, SE corner of Co., the Taylor Cr. Dist. (extending into Sierra Co.), area mines and deposits—**Fluorite**, colorless **Topaz**. (see following page)

APACHE CREEK, NW 5 mi. on Rte. 32 to national Forest boundary, park on N side, on left across Apache Cr., N to S the Lee Russell and Kerr canyons, hike 4 mi. up Lee Russell (take drinking water): ① along way, area surfaces—**agate**; ② into Turkey Flat and Elk Horn Park—gem **agate**.

## A Location Guide for Rock Hounds in the United States



### Area Fluorite Mines

HORSE SPRINGS, S, in the widespread Plains of San Augustine, in exposures of volcanic tuffs—**moss agate, jasper**.

LUNA: ① W 2 mi. on US 180, surface of ridge N of hwy.—Amethyst crystal **geodes**;  
 ② W 4.3 mi. on US 180 to the San Francisco R. bridge, area N side of hwy.—gem banded **agate**;  
 ③ S on US 180 to W trending logging rd. into the San Francisco Mts., area along both sides of rd.—**agate**;  
 ④ SE 10 mi. on US 180, on N side of hwy.—**agate, Amethyst, Quartz** crystal (clusters);  
 ⑤ many other regional localities—**agate, chalcedony, jasper, Quartz** crystals, etc.

MOGOLLON (Dist.), area mines and surfaces—**agate, chalcedony, jasper, Fluorite**.

QUEMADO: ① area (many localities) —**agate, chalcedony, jasper, agatized wood**;  
 ② N about 12 mi. on Rte. 117 to E trending dirt side rd., then E on this rd. ¼ mi., broad area of diggings—**agatized wood**;  
 ③ N to end of pavement, turn NE on old rd. to Horse Camp, area draws, washes, surfaces, etc.—**agatized wood**.

## CHAVES COUNTY

LAKEARTHUR, E 16 mi., along Eddy Co. line, area—**Aragonite** crystals.

ROSWELL, E to the Pecos R., entire area on both sides of the river: ① 80 mi. N to Fort Sumner in De Baca Co., and ② S 70 mi. to Carlsbad in Eddy Co., in river bed gravels and regional benchland gravels—**Quartz** crystals (clear black, clear red, red, white, etc.)

## COLFAX COUNTY

AREA, Moreno and Ute creeks—**Chalcopyrite, Gold, Pyrite, Pyrrhotite**, etc.

EAGLE NEST, take US 64 to Mexican Gulch, which is first side canyon from Palisades and on right side of Cimarron Canyon—**Agate, Apatite**.

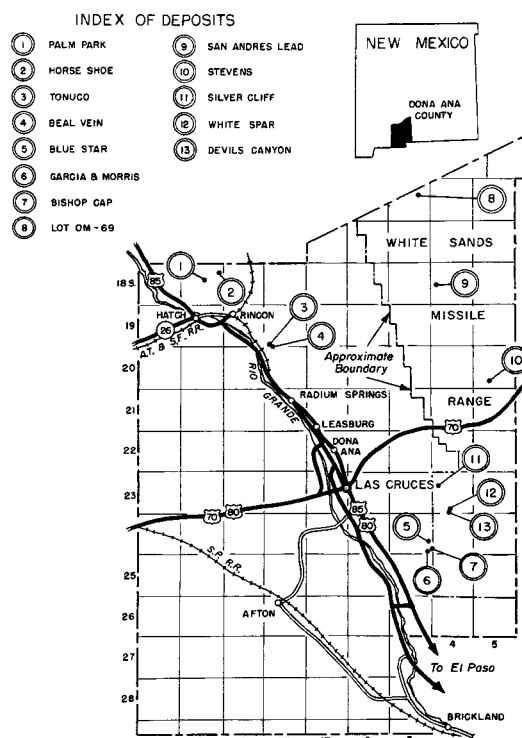
POINT OF ROCKS, a number of rare minerals—**Searlesite, Villiaumite** (both fluorescent).

RATON, the Sugarite Mine in the area coal fields—**Amber**.

## New Mexico

### DE BACA COUNTY

FORT SUMNER: ① S, along both sides of the Pecos R. all the way to Carlsbad in Eddy Co. (about 150 mi.), in river gravels and benchland surfaces—*Pecos diamonds* (**Quartz** crystals - clear, rose, red, smoky); ② W about 28 mi. along US 60 (about halfway to Vaughn in Guadalupe Co.), in bench terrace, and gravel beds of all tributaries to the Pecos R. —*Pecos diamonds*.



Dona Ana Co. Area Barite Prospects

### DONA ANA COUNTY

AREA: ① many Co. deposits and Fluorspar mines (check topographic maps) —**Fluorite**; ② Black Mt., placer sands of Texas Cr.—**Gold**.

HATCH, NE on dirt rd. into the Caballo Mts.: ① regional mt. Breaks, draws, washes, etc., especially along the Sierra Co. line—**agate**, **chalcedony**, **jasp-agate**, **jasper**, **Quartz** crystals; ② many area old mines (dumps good collecting localities) —**Goethite**, **Fluorite**, **Quartz** crystals; ③ S of cattle pens (passed en route to mining area), area washes, loose in soil—**Quartz** crystals.

KILBOURNE HOLE (extinct volcano), best reached W on Rte. 273 out of El Paso, TX, WNW on turnoff from Rte. 273 (1 mi. N of jct. With Rte. 260), cross RR after 5 mi. to Strauss, then NW 5 mi. to Vevay, turn W about 13 mi. to N - S crossrd., then N to Hunts Hole and the volcano (about 5 mi., all very sandy desert, so be prepared): ① in sands around rim of volcano, and ② in crater bottom, weathered out of basalts—**Augite**, **Peridot** crystals (gemmy, to 1" dia.).

LAS CRUCES: ① S, along both sides of US 80, and ② W 5 mi. on side rd. to Mesilla, all area—**obsidian**.

## A Location Guide for Rock Hounds in the United States

ORGAN (Dist.): ① area mines—**Brochantite**, **Cerargyrite**, **Cerussite**, **Chalcopyrite**, **Molybdenite**; ② the Quicksilver Mine, on dumps—**Chrysocolla**, **onyx**, **rock crystal** (with Chlorite inclusions).

### EDDY COUNTY

ARTESIA, E on US 82, cross Pecos R., then E ½ mi., turn S on ranch rd. to range of low hills near the river, all area draws, washes, surfaces, etc.—**Pecos diamonds**.

WHITE CITY (entrance to Carlsbad Caverns National Park), area limestones—**onyx** (outside park boundaries).

### GRANT COUNTY

AREA: ① Bullards Peak dist., area mines—**Pyrargyrite**; ② many regional mines (Black Hawk, Chloride Flat, Kimball, Lone Mt., Steeplerock, Pyramid, etc.—**Argentite**.

CENTRAL (Dist.) 40% of all fluorspar mined in the state comes from this county: ① Burro Mt.: (a) area mines—**Azurite**, **Chalcocite**, **Chalcopyrite**, **Cerargyrite**, **Chrysocolla**, **Fluorite**, **Galena**, **Malachite**, **Pyrite**, **onyx**; (b) Cap Rock Mt., and (c) Mimbres Mt., W slopes—**agate**, **chalcedony**, **chert**, **Chrysocolla**, **jasp-agate**, **jasper**, **Fluorite**, **rock crystal**; ② Sylvanite Dist., the Wood Mine—**Pyrolusite** (with Hematite and Limonite) coatings on **Quartz**.

Cliff, THE Gila R., both sides in Sec. 19, 20, 29 & 30, T. 13 S, R. 13 W, in area mines, outcrops, etc.—**Alunogen**, **Halotrichite**.

FIERRO-HANOVER, JUNIPER, MEERSCHAUM dists., area surfaces—**chert** (various colors).

FORT BAYARD, area surfaces—**opal** (common, fire).

GEORGETOWN, the Commercial Mine—**Argentite**, **Descloizite**.

GRANITE GAP, the Hanover Mines—**Argentite**, **Cerussite**, **Cuprite**, **Sphalerite**, etc.

HACHITA (Dist.): ① area mines—**Cerussite**, **Silver**, **Stilbite**, **Wolframite**; ② the American Mine—**Cerussite**, **Silver**, **Stilbite**, **Wolframite**; ③ W 2 blocks, then S on ranch rd. 1.6 mi., passing cemetery to an E trending dirt rd. (dim, very rough), then S about 4½ mi. to the old Apache Mine, dump No. 2—**Calcite** (stained green), **Chrysocolla**, **Malachite**, **Turquoise**; ④ SW on Rte. 81 into Hidalgo Co., the Little Hachita Mts., many area mines and dumps—**moonstone**.

MULE CREEK (far NW corner of Co.): ① area surfaces along the AR state boundary fence, high gem quality—**Apache tears**; ② S, in the old Carlisle mining dist. —**Amethyst**.

PINOS ALTOS, E, into the Black Mts.: ① the Great Republic Mine, and ② all W side slopes, draws, etc.—**Albite**, **Amethyst**, **Biotite**, **Sanidine**, **Sphene**; ③ N 28 mi. on Rte. 15: (a) Sapillo Cr., area gravels, and (b) Alum Peak, area surfaces—banded **agate** geodes, **carnelian**.

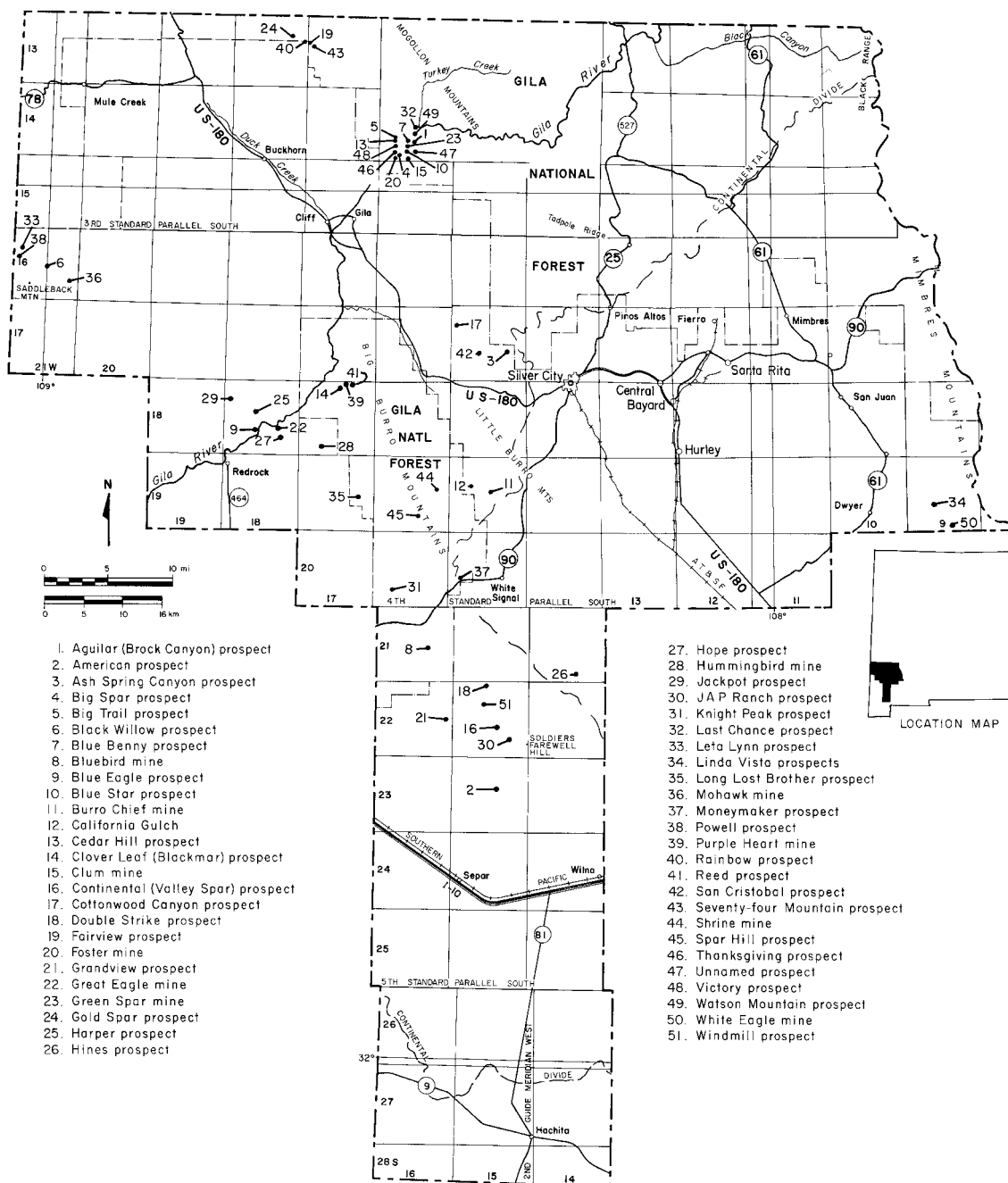
REDROCK, NE 6 mi., in Ricolite Gulch, area—**ricolite** (gemmy banded serpentine).

SANTA RITE (Dist.), area mine dumps—**Copper** minerals, **Cuprite**, **Molybdenite**.

SILVER CITY: ① Gold Hill, large mine dumps—**Argentite**, **Pyrargyrite**, native **Silver**, **Sphalerite**; ② SW 10 mi. (1½ mi. N of Tyrone): (a) the Azure Mine (especially the Elizabeth Pocket); (b) in all regional pre-historic Indian excavations; (c) SE ½ mi., the Parker Mine; and (d) many other area mine dumps—**Halloysite**, **Quartz** crystals, **Turquoise**; ③ W 12 mi., and 24 mi. N, area pits and prospects—**meerschaum**; ④ N 15 mi., on both sides of the Gila R., large deposit—**alum**.

SYLVANIA (Dist.), the Golden Eagle and Handcar mines—**Tetradymite** (containing Gold).

# New Mexico



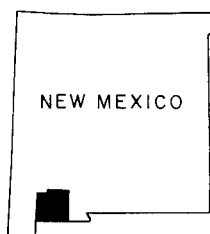
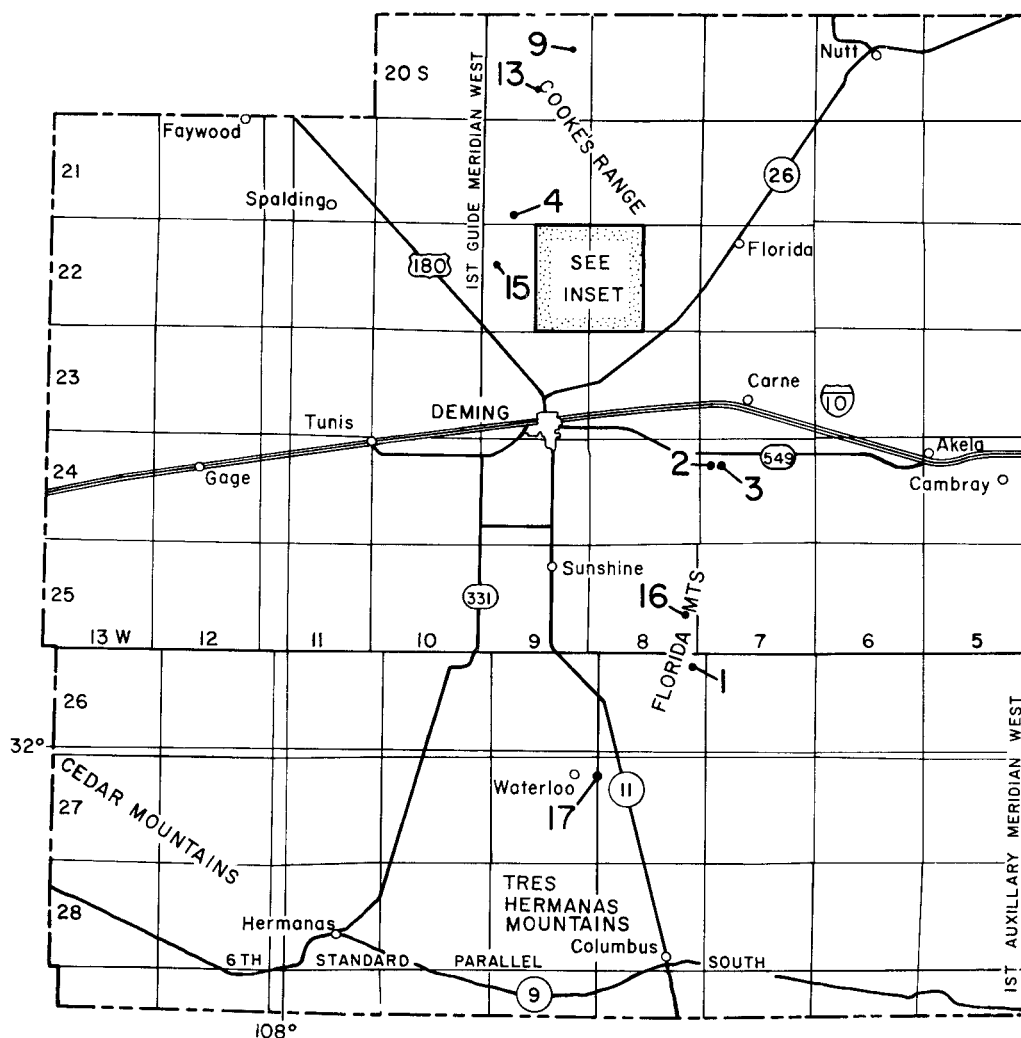
Fluspar mines in Grant County



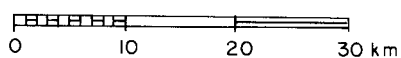
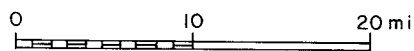


# New Mexico

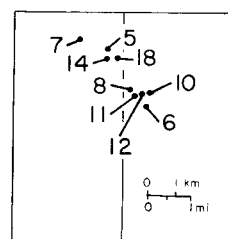
DEMING: ① area: (a) all draws, washes, surfaces for miles around—agate, chalcedony, chert, jasper, etc.; (b) regional fluorspar mines—Calcite (fluorescent),



LOCATION MAP



- 5 Grattan mine
- 6 Greenleaf mine
- 7 Greenspar mine
- 8 Hilltop prospect
- 9 Lookout prospect
- 10 Lucky mine
- 11 Sadler mine
- 12 San Juan prospect
- 13 Section 27 prospect
- 14 Tiptop prospect



INSET MAP

- 15 Valley mine
- 16 Waddell Atir prospect
- 17 White Bluff prospect
- 18 Whitehill prospect

FLUORSPAR DEPOSITS IN LUNA COUNTY

## A Location Guide for Rock Hounds in the United States

**Fluorite**; ② NE 5.1 mi. on Rte 26 to N trending ranch rd., then 5 to 6 mi. on dirt rd. toward Masacre Peak (elev. 5,600'), center of rich rock hunting area about 15 by 25 mi., scattered over entire area but excluding some hills—**carnelian**, deep red **jasper**; ③ S 8 mi. on Rte. 11, then W and S by turns for 16 mi. to famed *Big Diggins*, the Westmoreland claims (open to gemstone collectors on a fee basis, as deposits are bulldozed out commercially): (a) the *Big Diggins*—**agate** (high grade, vein type, bordered with sagenite, clear with red and black banding, to 50 lbs. Chunks); (b) several other nearby claims—**agate**; ④ E 7 mi. on I-10, the S 5 mi. to noted Spanish Stirrup Guest Ranch: (a) all surrounding ranch lands—agate, geodes crystal lines; (b) low saddle of the Little Florida Mts.—**agate** (sagenitic), blue **chalcedony**, **jasper**. The nearby Rockhound State Park is equipped with picnic and camping facilities geared to the gem and mineral collector. ⑤ SW 27 mi., area ranch lands open for a fee—**agate**; ⑥ SW 38 mi., toward Hermanas (20 mi. S from *Big Diggins*), the W via fence gate and crooked rough rd., several well known area nodule beds—**agate nodules**, agate **geodes** (containing brown to clear Quartz crystals), **Amethyst**, **opal**.

FREMONT, area mines—**Azurite**, **Bismuth**, **Chalcopryite**, **Galena**, **Malchite**.

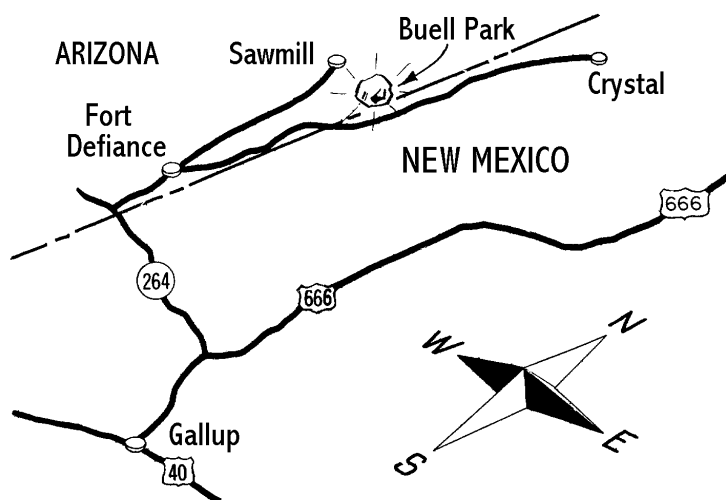
NUTT, SW to Cooks peak (elev. 8,408'): ① area mines—**Anglesite**, **Cerussite**, **Galena**, **Plumbojarosite**; ② area on and surrounding the peak embracing  $\approx 20$  sq. mi., mostly flats and low hills covered with gemstone float—**agate**, **carnelian**, **chalcedony**, **jasp-agate**, **jasper**, **Fluorite**, etc.

VICTORIA (Dist.), area mines—**Anglesite**, **Cerussite**, **Galena**, **Plumbojarosite**.

### McKINLEY COUNTY

AREA, E slopes of Furry Mt.—**Garnets**.

BUELL PARK, (garnet area extending into three states, Garnet Ridge lies close to the UT border and a few mi. W of Mexican Water, Apache Co., AZ), 10 mi. W of Mexican Water, in San Juan Co., UT, the Moses Rock field—**Pyrope** garnet, **Peridot**.



McGAFFEY, E, in the Zuni Mts. (extending SE into Valencia Co.), area surfaces—**agate**, **chalcedony**, **jasper**, **petrified wood**.

SAN MATEO, NE, at Willow Springs, area—**agate**, **jasper**, **petrified wood**.

THOREAU, SE 12 mi.: ① area coal mines—**Amber** (Wheelerite); ② in coal seams S of Devil's Pass and regional outcrops—**Amber**.

## New Mexico

### OTERO COUNTY

OROGRANDE, N ½ mi. on US 54, turn W on ranch rd. around the Jarila Mts.: ① low range of hills immediately W of the turn-off from US 54 (SW of the Jarila Mts.), area—**Garnets**; ② N to the Jarila mining dist., park car at old mine dumps and prospect to W and S: (a) area mines—**Chalcocite**, **Chalcopyrite**, **Chrysocolla**, **Galena**, **Gypsum**, **Jarosite**, **Limonite**, **Malachite**, **Turquoise**; (b) contact zone between exposed area beds of limestone and Quartz monzonite—**Orthoclase** feldspar crystals (often rose colored, to 2" long, twinning).

TULAROSA, S 1½ mi. to Bent, area—*Mexican onyx*.

### RIO ARriba COUNTY

AREA, outcrops of the Globe pegmatite—**Fluorite** (fluorescent).

ABIQUIU (Dist.): ① area mines—**Copper** minerals; ② area basalt outcrops—**Labradorite**; ③ E on US 84 to jct. With Rte. 96, turn N 3.8 mi. to Carson national Forest marker, turn W opposite the marker to gate in fence with arroyo on S and steep climb to ancient pueblo ruins on mesa top, many mines in the arroyo—**Fluorite**.

COYOTE, area mines—**Azurite**, **Malachite**.

DIXON, E 6½ mi. (into Taos Co.): ① N to old Calcite Mine—**Calcite**; ② S 0.6 mi. to rd. jct., then W and S to the Harding Mine—blue **Apatite** (fluorescent), **Bityite** (fluorescent), **Eucryptite** (fluorescent), purple **Lepidolite**, rose **Muscovite**, **Quartz** crystals, **Spodumene** (fluorescent), green **Tourmaline**.

GHOST RANCH MUSEUM (and recreation park, on US 84 on N side of a lake): ① area—**agate**; ② W 2.1 mi. on Rte. 96 (S side of lake), area of a low saddle in the hills, abundant—**agate**; ③ W 6 mi. from US 84 toward Youngsville on Rte. 96, to schoolhouse ruins, then S about 3 mi., all area benchlands to Pedernal Peak—**agate**, **chalcedony**, **chert**, **jasper**.

HERMOSA, area prospects—**Chalcocite**.

HOPEWELL, area mines—**Chalcopyrite** (minor ore), **Gold**.

LA MADERA, E 1½ mi. (across a bridge) on Rte. 519 to an abandoned mine between survey posts 7500 and 7600: ① on mine dumps—book **Mica**; ② area hillsides above mine—**Calcite** crystals, **Limonite** crystals on Calcite, crystal lined **geodes**; ③ N another 0.9 mi., canyon area—**geodes** lined with crystal; ④ N another 13 mi., turn E toward a dry wash, area on both sides—**Calcite** crystals, crystal lined **geodes**.

LAS TABLAS, SW 1½ mi. and ¾ mi. SE of Persimmon Peak, the Canary Bird Mine—**Tourmaline**.

PETACA (13 mi. N of Ojo Caliente on Rte. 519): ① area prospect—**Amazonite**, **Fluorite**, **Mica**; ② 3½ mi. SW of South Petaca, above Alamos Canyon, the Sunnyside Mine (W of the Globe rd.), in pegmatite—**Aquamarine**, **Beryl**; ③ W on mt. Rd. toward Vallecitos: (a) W 1 mi. on S side of rough rd., a mine dump—pink **Feldspar**, pink book **Mica**, **Quartz**; (b) W another 3 mi., all area along route—pink **Feldspar**, **Mica**; (c) all area mine dumps (easily reached) —**Feldspar**, **Mica**, black **Columbite**, green **Beryl**, green **Amazonite**, **Pitchblende**; ④ from Cerro Pedernal to W side of San Pedro Mt., especially ½ mi. SE of La Madera—**Dumortierite**, **Specularite**, *Pedernal chert* (gem quality).

YOUNGSVILLE, area around store, abundant—gem **agate**.

### SANDOVAL COUNTY

AREA: ① SE part of Co., the Jemex Mts. (from Rte. 44 on W to US 85 on E, 60 mi. across), along Rte. 22 SW of Los Alamos (beginning with San Ysidro on Rte. 4 NE, around mts. To Santo Domingo Pueblo): (a) very many collecting localities, so prospect anywhere—**agate** nodules, *Apache tears*, **jasper**, **obsidian**; (b) La Jara Canyon, in first small tributary

## A Location Guide for Rock Hounds in the United States

canyon to left of entrance, area surfaces—gem **jasper**; ② Nacimieto Mts., regional draws, washes, etc.—**agate, Azurite, chalcedony, Chrysocolla, Malachite**.

CABEZON, the regional Rio Puerco coal fields, area mine dumps—**Wheelerite**.

COCHITI: ① area mines—**Gold**; ② area of Upper Percha Cr.—common **opal**.

COOPER MINERAL HILL, TECOLOTE, area mines—**Copper** minerals.

CUBA: ① area mines—**Copper** minerals; ② SE about 10 mi. to cattle guard (logging area), turn N ½ into old mining dist. (Blue Bird, Eureka, etc., mines), on all old dumps—**Copper** minerals, gemmy **Chrysocolla** conglomerate.

JEMEZ (Dist.): ① area lava outcrops, in cavities—**moonstone**; ② area small scale mines—**Sulfur**; ③ the Sulfur Dist., at Battleship Rock, area surfaces—**obsidian, opalized wood** (in volcanic tuffs); ④ the Rio Puerco Valley, area both sides—**agate, chalcedony, jasper, quartzite, silicified wood**.

NACIMENTO (Dist.), area mines—**Chalcocite** (principal ore of the red beds), **Chrysocolla**.

PLACITAS (Dist.): ① area mines—**Copper** minerals; ② area limestone outcrops, in caves—cave **onyx**.

### SAN JAUN COUNTY

AREA: ① regional coal mines (Durango, CO, to Gallup in McKinley Co.), on dumps—**jet**; ② W part of Co., region bounded by the San Jaun R. and its Chaco R. tributary, numerous exposures of the Ojo Alamo Formation (as shown on area geological maps)—**chert, Garnet, jasper, quartzite, petrified wood**.

BLANCO TRADING PORT (on Rte. 44, 28 mi. S of Bloomfield), S on Rte. 57 to the Chaco Canyon National Monument, along both sides of rd. entire distance—**chalcedony**.

FARMINGTON, S 27 mi. to the Bisti Trading Port, broad area of strange geological formations—**agatized Dinosaur bones**, gemmy carbonized wood, silicified mudballs.

### SAN JAUN-McKINLEY COUNTIES

NAVAJO INDIAN RESERVATION, numerous locations (inquire at trading port)—**Pyrope** garnet (*Arizona rubies*).

### SAN MIGUL COUNTY

LAS VEGAS, N, general area—**petrified wood**.

PECOS, N along the Pecos R. canyon on old rd. 14 mi. to the Terrero Store, turn E around store (1 mi. uphill), long mine dump extending to Willow Cr. (campground)—**Actinolite, Garnets, Lepidolite, Mica, Bornite, Pyrite, Tourmaline**.

ROCIADA, TECOLOTE, area mines—**Chalcocite, Copper** minerals, and **Molybdenite**.

### SANTA FE COUNTY

AREA: ① regional Copper mines (located on topographic maps)—**Bornite, Chalcopyrite, Galena, Malchite, Pyrite**, etc.; ② the New Ortiz Gold mine—**Gold, Scheelite** (fluorescent).

CERRILLOS: ① area prospects—some **Chalcopyrite**; ② park car E of Tongue Wash and power line: (a) N, a sandy mt., area—carbonized **fossil wood**; (b) big wash on S, all contributing arroyos—red **jasper**; (c) numerous adjoining localities in general vicinity—**agate, chalcedony, chert, jasper**, etc.; ③ NNE 6 mi. on Rte. 14 (30 mi. SSW of Santa Fe):

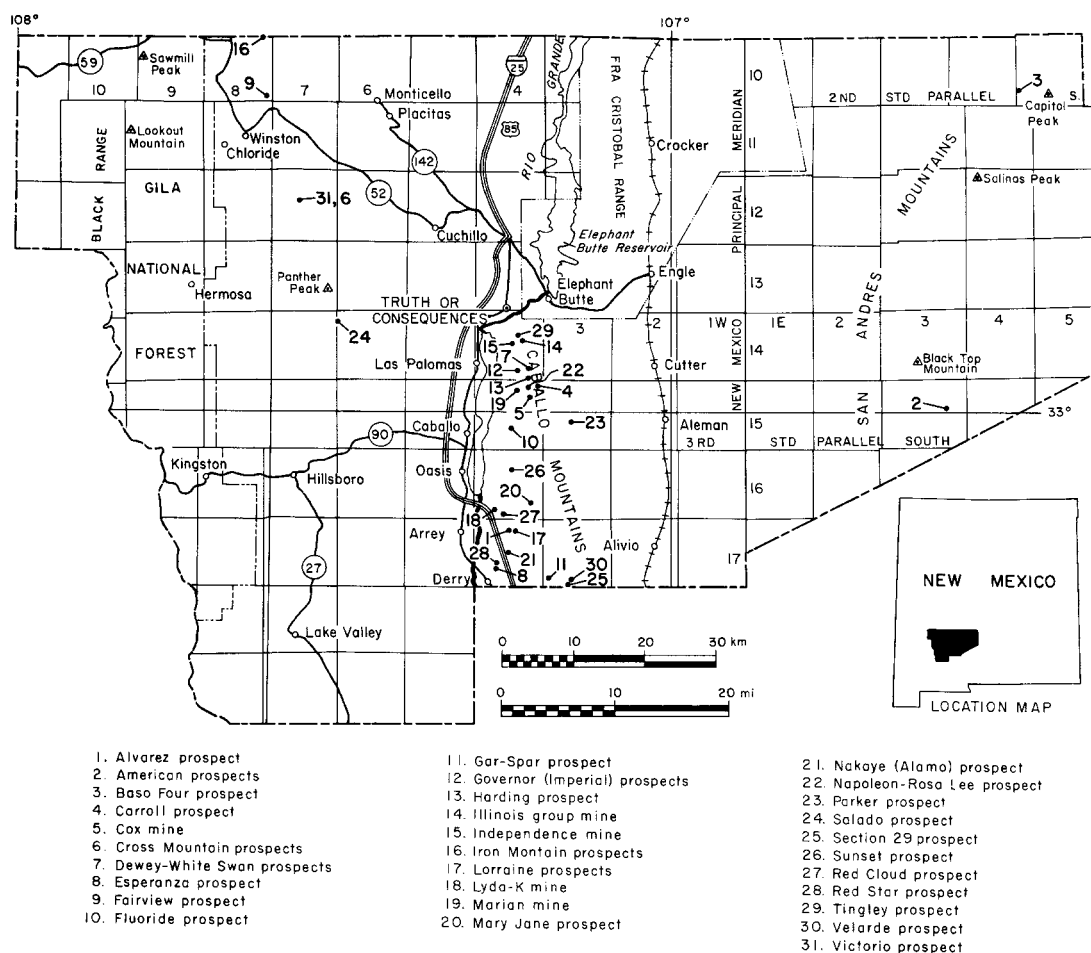
## New Mexico

(a) Turquoise Hill (3 mi. from Mt. Chalchihuitl in the Cerrillos Hills), and (b) area slopes and draws on Mt. Chalchihuitl—**agate, chalcedony, petrified wood, Turquoise**.

GOLDEN, SE, the San Pedro Mts.: ① area placer mines—**Gold**; ② area hard rock mines—**Chalcopryite**, some **Chalcocite**.

### SIERRA COUNTY

AREA: ① Mud Springs Mt., NE flanks—**agate, opalized and silicified wood, petrified palm**; ② extreme NW corner of Co., on W side of the Continental Divide, the Taylor Cr. Dist.—**Fluorite**; ③ in contact metamorphic at Iron Mt.—**Calcite, Scheelite, Willemite** (all fluorescent).



#### FLUORSPAR DEPOSITS IN SIERRA COUNTY

CABALLO, E, in the Caballo Mts., area mines—**Azurite, Chalcocite, Chalcopryite, Fluorite, Malachite**.

CHLORIDE, the Apache and Phillipsburg mines—**Chalcopryite, Cerussite, Bornite** (containing Silver), etc.

CUTTER, area opposite the Aleman Ranch—gem **jasper**.

DERRY, area washes, draws, etc.—**chert** (colorful).

ENGLE: ① area—**agate, chert**; ② along both sides of rd. to Elephant Butte—**agate, chert, chalcedony, jasper**; ③ E to the San Andreas Mts., W side of Mockingbird Gap, area—dendritic **jasper**.

## A Location Guide for Rock Hounds in the United States

**HILLSBORO (Fremont):** ① area mines and prospects—**Cerussite** (rich in Silver), **Gold**, **Willemite** (fluorescent); ② W, toward Kingston, a high cliff just before reaching as iron bridge across Percha Cr., in talus—*flowering rhyolite*.

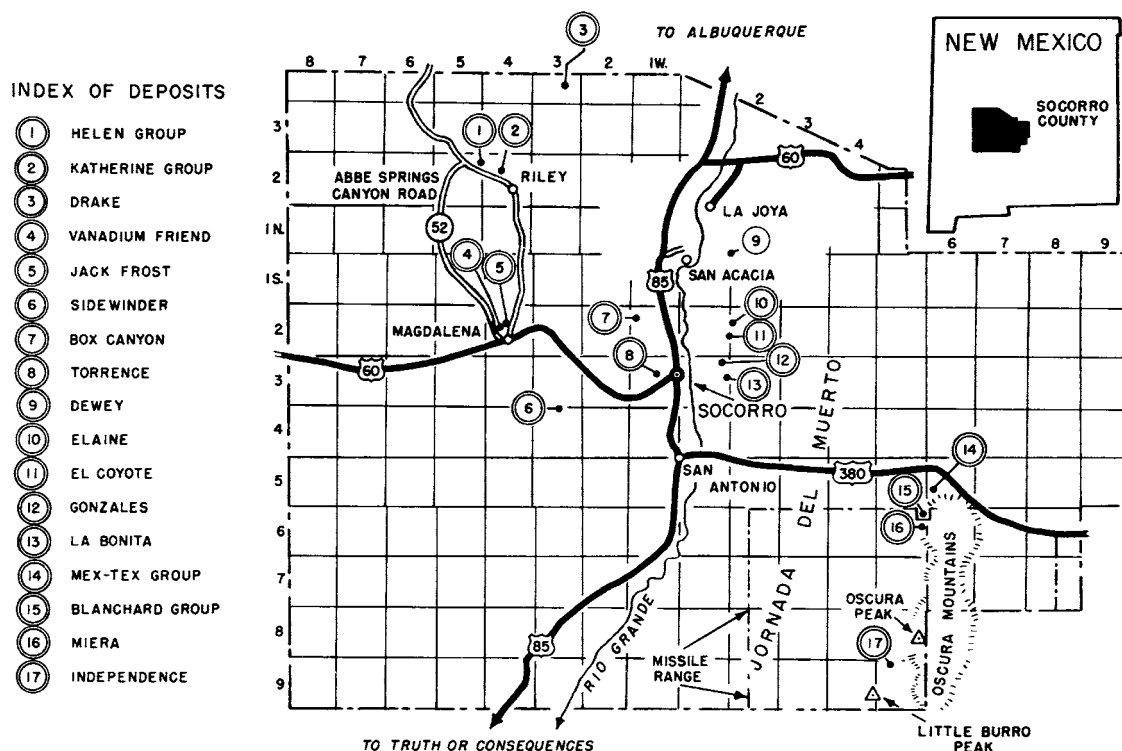
**KINGSTON (Dist.):** ① area mines—**Proustite** (in Silver ore), **Pyrargyrite**; ② the Comstock Mine—massive **Rhodonite**; ③ on W side of town turn N on old mine rd., cross cr. And on for about 1 mi. to a gate, park car, small mt. On the E, area—**Quartz** crystals (unusual clusters, double terminated); ④ E 9 mi. on Rte. 20, cross Percha Cr. On iron bridge, in cliff talus—*flowering rhyolite*.

**LAKE VALLEY (Dist.):** ① area washes, draws, etc.—chert (colorful); ② area mines and dumps—Dolomite, (massive, pinkish), Magnetite, Psilomelane, Pyrolusite crystals; ③ the Apache, Bella, Grande mines—**Iodyrite** (with **Vanadinite**), **Manganite**, **Cerussite** (rich in Silver), native **Silver**, **Embolite**, **Endlichite**; ④ both sides of loop rd. NW of the old town—**agate**, **Calcite** crystals, **jasper**.

**TIERRA BLANCA (Dist.),** area mines—**Bromyrite**, **Gold**, **Silver**.

**TRUTH OR CONSEQUENCES:** ① N, on W side of the Fra Cristobal Mts., area—**agate**, **jasper**; ② E 13 mi., Hot Springs (in the Jornada Valley), area—**agate**, **chalcedony**, **elixirite**, **jasper**, **petrified wood**; ③ Ne 38 mi. to abandoned Ft. Craig, take canal rd. S 11½ mi. to mile port 1370, park car, cross old river bed to hills on E, in all sandy outcrops, excellent black—**opalized wood**; ④ E on Rte. 52 to Engle, the S on ranch rd. paralleling the RR for 13 mi. to a ranch, turn W through ranch, cross RR tracks into low hills (a spur of the Caballo Mts.) for 2 mi., all along both sides of rd.—**carnelian agate**.

### SOCORRO COUTNY



**AREA:** ① Area Barite mines (see above map); ② SE corner of Co.: (a) the Sierra Oscura Mts., regional prospects and mines—abundant **Chrysocolla**, some **Chalcocite**; (b) the Joita Hills, and (c) regional washes, draws, surfaces, etc.—**agate**, **chalcedony**, **jasper**,

## New Mexico

**Quartz** crystals, **quartzite** (colorful), **petrified wood**; ③ the Mogollon Mts., area mines—**Bornite**, **Chalcocite**, **Chalcopyrite**, native **Silver**.

BINGHAM, E ½ mi. on US 380, then S several mi. to the famed Blanchard Mine (claims) in the Sierra Oscura Mts. (fee) —**Atacamite**, **Azurite**, **Barite** (fluorescent), **Brochantite**, **Celestite**, **Cerussite** (fluorescent), **Cyanotrichite**, **Dolomite** crystals, **Fluorite** (fluorescent), **Galena**, **Limonite**, **Linarite**, **Malachite**, **Murdochite**, **Otavite** (fluorescent), **Plattnerite**, **Quartz** crystals, **Spangolite**.

COONEY (Mogollon; dist includes Mill Canyon, Silver Mt., and Rosedale), area mines—**Bornite**, **Chalcocite**, **Chalcopyrite**, **Gold**.

HANSONBURG (San Andreas, San Lorenzo): ① area mines—**Copper** minerals; ② Grandview Canyon, area mines—**Fluorite**.

LAVA (straddles Sierra-Socorro Co. line at end of rd. N from Engle in Sierra Co.): ① the Fra Cristobal Range, N end and NE side of Elephant Butte Reservoir; and ② S of the E end of Bernado Bridge over the Rio Grande, area—**opalized wood**.

MAGDALENA: ① area mines—**Anglesite**, **Cerussite**, **Chalcophanite**, **Cuprite**, **Galena**, **Hydrozincite**, **Smithsonite**, **Sphalerite**; ② SE 3 mi. to ghost town of Kelly, on all old mine dumps—gem quality **Smithsonite** (blue green), **Zinc** minerals in **Quartz**, **fossils**; ③ W, at Silver Hill, on WSW side—**Garnets**; ④ N 16 mi. on gravel rd. to jct. (Riley, 4 mi.), turn W on dim ranch rd. for 5 mi., area surfaces—**agatized Picture Wood**, **petrified cycad** and **palm**; ⑤ at the Kelly Mine—**Calcite** crystal (fluorescent).

SOCORRO: ① NW 4 mi., and ② on E side of Strawberry peak, area—**Satin Spar**.

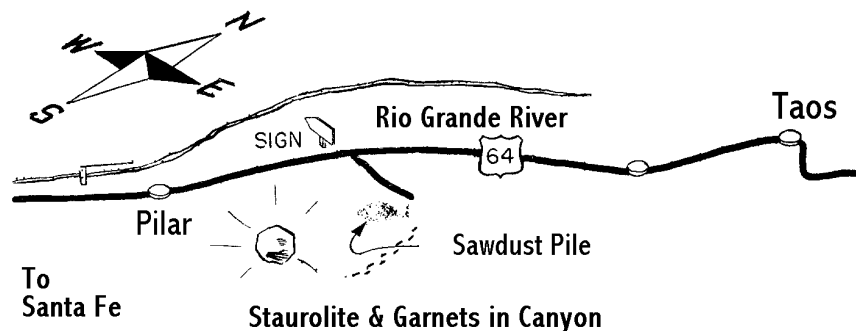
## TAOS COUNTY

AREA, outcrops of the Harding Pegmatite—**Apatite**, **Bityite**, **Eucryptite** (all fluorescent).

GLENWOODY, area gravels—**Staurolite**.

MOLYBDENUM, area mines—**Molybdenum** minerals.

PICURIS: ① area mines—**Chalcocite**, **Chrysocolla**, **Cuprite**; ② area gravels, slopes, washes, etc.—**Staurolite**.



PILAR: ① area mine dumps between mts. and US 64—gem quality **Lepidolite** and **Sericite**; ② both sides of rd. to Velarde—**Garnets**, **Staurolites**; ③ in pegmatite just S of Pilar on E bank of Rio Grande—**Thulite**.

RED RIVER, area mines—**Fluorite**, **Gold**. (Wheeler peak, Elev. 13,161'; to the S)

TRESPIEDRAS, W on Rte. 519 (see La Madera in Rio Arriba Co. and reverse order of localities).

TWINING, area mines—**Copper** minerals.

## A Location Guide for Rock Hounds in the United States

### TORRANCE COUNTY

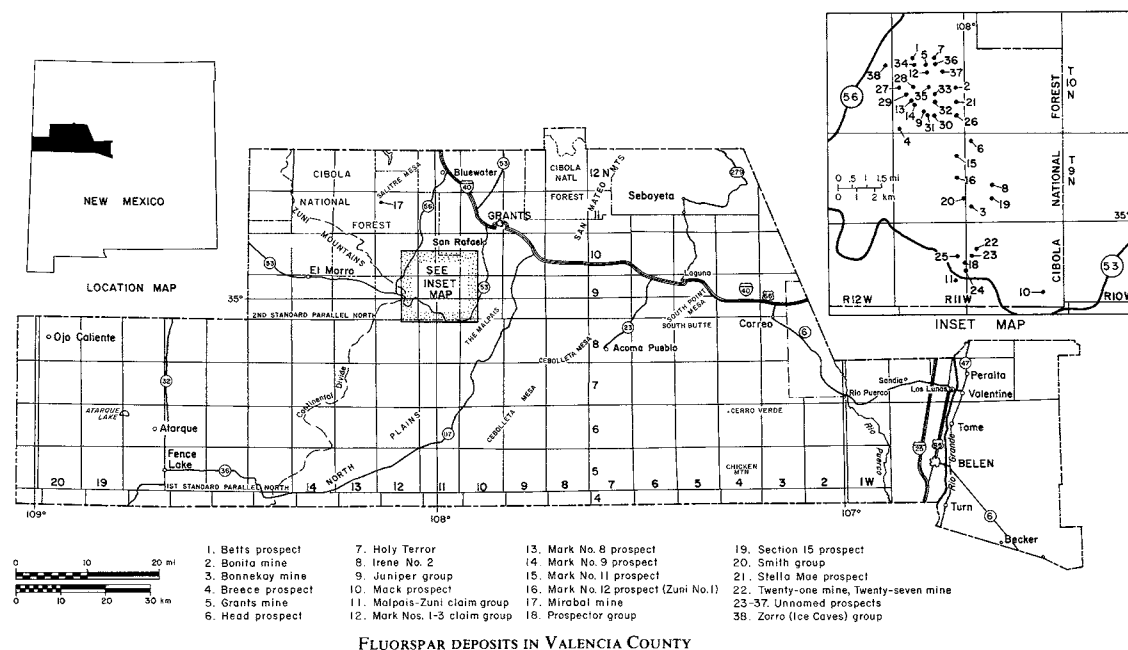
ESTANCIA, the area surrounding the Estancia Lake—**Epsomite**, **Glauberite**.

MANZANO, TORREON, TAJIQUE (adjoining towns on Rte. 14 N of Mountain Air), W, in the Monzano Mts., area schistose outcrops—**Staurolites**.

### UNION COUNTY

AREA, extreme NE corner of Co.: ① the Tri-State Marker (NM, CO & OK): (a) area, extending into OK to Kenton, Cimarron Co.—**petrified wood**; (b) a hill near the marker, area surfaces—rose colored **agate**; ② Ute Cr., deposit—**alum**.

### VALENCIA COUNTY



AREA: ① regional coal mine dumps and seam exposures—**jet**; ② NW part of Co., in the Zuni Mts.: (a) area mines of the Copper Hiss Dist. in the *Red Beds*—**Azurite**, **Chalcocite**, **Malachite**; (b) regional slopes, draws, washes, etc.—**agate**, **chalcedony**, **jasper**, **petrified wood**.

BELEN, N to Los Lunas, area surfaces, draws, washes, etc.—gem **agate**.

GRANTS, the Grants Uranium Dist., very many mines and exposures of radioactive rocks—**Andersonite** (fluorescent), **Autunite**, **Boyleite**, **Carnotite**, **Ilsemanite**, **Liebigite**, **Meta-Autunite**, **Metatyuyamunite**, **Montroseite**, **Pascoite**, **Schröckingerite** (fluorescent, at Homestake Claims), **Thenardite**, **Thermonatrite**, **Todorokite**, **Tyuyamunite**, **Uranopilite**, **Zellerite**, **Zippeite**. Associated with these radioactive minerals (many fluorescent) are often **Barite**, **Calcite**, **Coffinite**, **Jordisite**, **Marcasite**, **Pyrite**, gray **Selenite** and **Gypsum**. This large area of radioactivity extends from Gallup in McKinley Co. on the west to the western edge of the Rio Grande trough on the east  $\approx 110$  mi. long by 20 mi. wide. The principle mining areas revolve around ① Gallup, ② Church Rock, ③ Smith Lake, ④ Ambrosia Lake—also **Andersonite** (fluorescent), ⑤ Grants, ⑥ Paguote or Jackpile—also **Becquerelite** (fluorescent). These area are grouped into three major mining dists.: Gallup, Grants, and Laguna. It was Paddy Martinez who



## New Mexico

first discovery of **Tyuyamunite** in a Todilto Limestone outcrop in Sec. 19, T. 13 N, R. 10 W at the base of Hatstack Butte in 1950.

LAGUNA, area surfaces—**agate, jasper.**

LOS LUNAS, W 6 mi. on Rte. 6, then S on dirt rd. to Dalies (water tank and cattle pen) on the RR, continue S into low hills (taking right forks en route), area of arroyos and breaks leading to the Rio Puerco, abundant—**agate** (red, banded), ***Apache tears***, **agatized wood, obsidian.**

## NEW YORK

Called the Empire State, New York is irregularly shaped, not only from a geographical standpoint but in its varied rock formations. The eastern part of the state is dominated by the great valley of the Hudson River and Lake Champlain, while the rolling hills of the northern (*Upstate*) New York rise from the Mohawk River to the rugged Adirondack Mountains. Here in 1892, the state legislature established a wilderness preserve, the Adirondack Park, larger than any other national or state park in America. Its 8,895 sq. miles makes it greater in area than the state of Massachusetts. Western New York is a rolling, hilly region extending to Lakes Erie and Ontario, cupping many sapphire blue lakes in the folds and wrinkles of a thoroughly glaciated terrain. Most of the southern counties belong to the Allegheny Plateau that culminates in the Catskill Mountains.

Pleistocene glaciers covered all parts of New York State. Geologists think that at least 1,000 ft. of ice once lay over the top of what is now New York City and Long Island and that 2,500 ft. of ice buried the Catskills. The outer (Ronkonkoma) and inner (Harbor Hill) moraines on Long Island are notable examples of glacial termination, while Central Park in New York City exposes many glaciated boulders still clearly showing the scratch marks (striations) made on them thousands of years ago by the moving ice sheets.

More noted for their fossil content than for commercial minerals, gems, and gemstones, the state's rock formations represent almost every class of deep seated igneous rocks and nearly all the important sedimentary groups from the earliest Cambrian to the most recent periods. The state depends primarily on the importation of raw materials to supply its great industries, but does have some mineral resources, such as Iron, Lead, Oil, Natural Gas, Salt, Gypsum, Cement and Limestone.

### CAYUGA COUNTY

AUBURN, sparingly in area (inquire locally), old pits—**Fluorite**.

### CLINTON COUNTY

AREA, the Palmer Hiss Mine and Finch ore bed, abundant—**Fluorite**.

ARNOLD HILL (just NW of Clintonville), area mines and workable ore bodies—**Magnetite**.

CLINTONVILLE, on Harkness rd. across first RR tracks, just before reaching second tracks turn left up steep hill to Arnold mine, in dump—**jasper**, **Martite**.

KEESEVILLE, at Buttermilk Falls—**serpentine**.

LYON MOUNTAIN, area mines—**Aegirine**, **Albite**, **Apatite**, **Augite**, **Biotite**, **Byssolite**, **Calcite**, **Chlorite**, **Epidote**, **Hematite**, **Ilmenite**, **Magnetite**, **Molybdenite**, **Orthoclase**, **Perthite**, **Pyrite**, **Quartz**, **Stilbite**, **Wernerite**, and **Zircon**.

### COLUMBIA COUNTY

ANCRAM, area mines—**Barite**, **Galena** and **Sphalerite**.

### DUTCHESS COUNTY

AREA, NE corner of Co., various old mines—**Galena**.

## New York

### ERIE COUNTY

BUFFALO: ① E 2½ mi., the Fogelsanger Quarry—**Calcite**, ***Favosites*** and other fossil coral; ② Eighteen Mile Cr., area deposits—**Pyrite**.

### ESSEX COUNTY

AREA, the Opalescent R., gravel beds, bars—**Labradorite**.  
BURTON HILL, area mines—**Fluorite** and **Magnetite**.  
CASCADE (Lakes), area gravels, outcrops—**Labradorite**.  
CROWN POINT: ① area outcrops and gravels—**sunstone**; ② SW 7½ mi., old mine—**Feldspar**, **Graphite** and **Mica**.  
INDIAN LAKE, SE on Rte. 28 to within 5 mi. of North River in Warren Co., the Crehore Mine—**Garnet** (crystals to 8" dia.) and **Hornblende**.  
IRONVILLE, area mines—**Hematite** and **Magnetite**.  
KEESEVILLE: ① area quarries—**Labradorite**; ② area mines on Mt. Bigelow—**Garnet** (commercial abrasive).  
LEAD HILL, area mines—**Graphite**.  
LEWIS, area mines—**Arsenopyrite** and **Rhodonite**.  
MINEVILLE: ① area high grade iron mines, abundant minerals—**Apatite**, **Fluorite**, **Hematite**, **Magnetite** and **Pyrite**; ② at Fisher Hill Mine—**sunstone**.  
NEWCOMB, E 1 mi., Lake Harris, area outcrops—**Albite**, **Amphiboles** (various), **Apatite**, **Diopside** (fluorescent), **graphite**, **Muscovite**, **Phlogopite** (fluorescent), **Pyrite**, **Pyroxene**, **Smoky Quartz** crystals, **Scapolite**, brown **Tourmaline** and **Tremolite**.  
NORTH CREEK, S 4 mi., on Oven Mt., old mines—**Garnets**.  
OLMSTEADVILLE, W 1 mi. on Rte to Minerva, area—**Idocrase**, gem **Microcline** crystals and **Scapolite**.  
PORT HENRY, NW 6 mi.—**Rose Quartz**.  
PORT KENT, along shore to S—**Labradorite**.  
TAHAWUS, area iron mines—**Hematite**, **Magnetite** and **Titanium**.

### FRANKLIN COUNTY

DAUNE, large area bed, mined—**Pyrite**.  
MALONE, take rd. SE to Owl's Head Village, trail up Mt. to iron mine, in dump—**sunstone**.  
SARANAC LAKE, take Hwy. 3 N for 4 mi. to Leib's rock shop, drive up hill and park, take trail to moonstone mine (fee)—**moonstone**.

### HAMILTON COUNTY

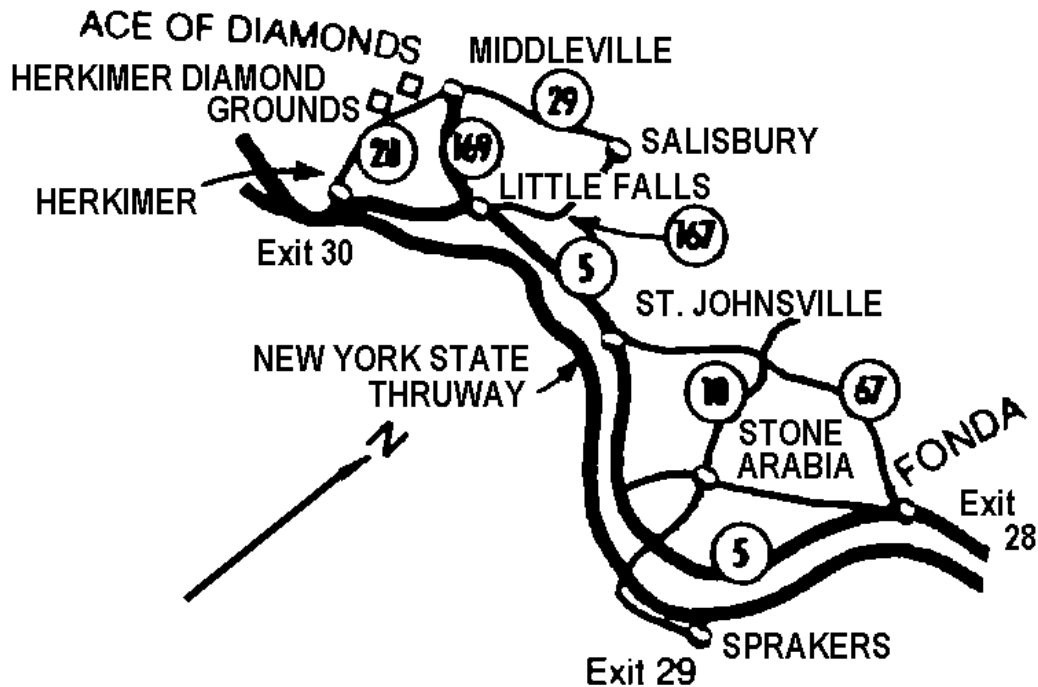
WELLS, in anorthosite boulders to N along Hwy. 8 in E branch of Sacandaga R.—**Labradorite**.

### HERKIMER COUNTY

FAIRFIELD, area quarries—**Barite**.  
MIDDLEVILLE, area sandstone exposures—*Herkimer Diamonds* (usually water clear **quartz**, perfectly terminated), found principally: ① on N side of rd. to Newport along a NW belt; ② E 1 mi. toward the N side of the Fairfield hwy. (Rte 29); and ③ from town 3 mi. S, most prolific on top of hill between town and Herkimer; ④ the Ace of Diamonds collecting

## A Location Guide for Rock Hounds in the United States

area is within the village limits on Hwy. 28, and a mile S on Hwy. 28 is the Atty area known as the Herkimer Diamond Grounds.



### JEFFERSON COUNTY

ALEXANDER BAY, area mines—**Galena**.

PHILADELPHIA, area serpentine outcrops—**Hematite**, **Pyrite** and **Siderite**.

PILLAR POINT, area quarries—**Barite** crystals.

THERESA, Muscalonge Lake: ① area quarries—**Fluorite**; ② NE shore of lake mines—**Fluorite**.

### LEWIS COUNTY

LOWVILLE, area mines—**Fluorite**.

MARTINSBURG, area lead mines—**Galena**.

NATURAL BRIDGE, NE 3 mi., a quarry—**serpentine** and **Talc**.

### LIVINGSTON COUNTY

GENESCO, 3 mi. N in banks and bed gravels of a Cr.—**silicified coral**.

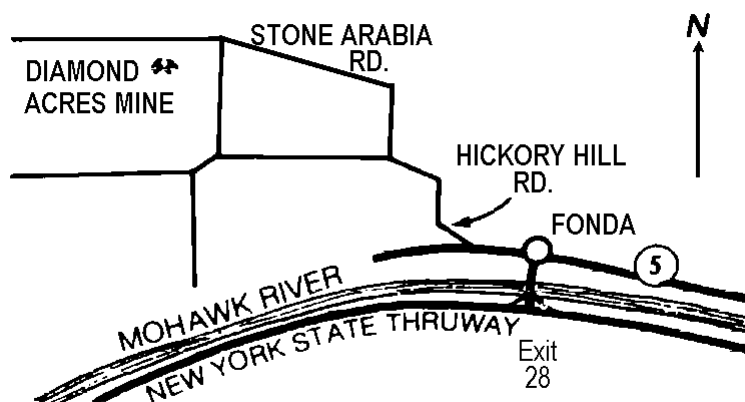
### MADISON COUNTY

CAZENOVIA & CHITTENANGO FALLS, area quarries—**Celestite** (fluorescent).

## New York

### MONROE COUNTY

ROCHESTER: ① regional quarries—**Fluorite**; ② in limestone along E bank of Genesee R. near Norton St. and past Ave. E—**agate**.



### MONTGOMERY COUNTY

FONDA, several collecting sites near Fonda: ① take Exit 28 from the NY State Freeway at Fultonville, cross bridge to Fonda, continue to creek and beyond it, take first rd. right, Hickory Hill rd., go right to Martin rd. to Stone Aradia rd. at left, cross England rd. and the Diamond Acres mine is at left (fee); ② S of Fonda at Exit 28, take Hwy. 55 SW to Sprakers (fee); ③ 1 mi. E of Sprakers on the S side of Hwy. 55 on the crest of a hill known as Little Nose—**Quartz** (*Herkimer Diamonds*).

ST. JOHNSVILLE, at Crystal Grove campsite take Division St., go 4½ mi. to Crystal Grove, take right fork to Lassallsville and to picnic grove (fee) —**Quartz** (*Herkimer Diamonds*).

### NIAGARA COUNTY

LOCKPORT, area limestone quarries—**Fluorite**.

### ONONDAGA COUNTY

FAYETTEVILLE, area quarries—**Fluorite**.

MANLIUS, area quarries—**Fluorite**.

SYRACUSE, area peridotite outcrops—**peridotite**.

### ONTARIO COUNTY

CANADICE, on E side of Canadice Lake and 2 mi. W of Honeoye Lake—**Labradorite**.

### ORANGE COUNTY

AMITY, area limestone outcrops—**Corundum** (blue, white) and **Fluorite**.

BLOOMING GROVE, along the Hudson R., area—**bloodstone** and **jasper**.

CRAIGSVILLE, on Hwy. 94—**bloodstone**.

## A Location Guide for Rock Hounds in the United States

EDENVILLE: ① area mines, and ② between town and Mt. Adam, mines—**Arsenopyrite, Leucopyrite and Scorodite.**

MONROE, near Lake Mombasha, pegmatite outcrop—**Phlogopite** Mica (greenish).

OTISVILLE, the Phoenix Mine—**Galena** and **Sphalerite.**

### OTSEGO COUNTY

TODDSVILLE, area gravel pits, stream beds—**Sapphire.**

### PUTNAM COUNTY

BREWSTER, NW 6 mi., the Tilly Foster Iron Mine—**Actinolite, Albite, Ankerite, Antigorite, Apatite, Apophyllite, Arsenopyrite, Augite, Autunite, Barite, Biotite, Bronzite, Brucite**<sup>1</sup> (fluorescent), **Byssolite, Calcite**<sup>1</sup>, **Chalcopyrite, Chondrodite**<sup>2</sup>, **Chondrodite**<sup>2</sup>, **Chrysocolla, Chrysotile, Clinocllore**<sup>2</sup>, **Clinohumite, Coccolite, Crocidolite, Datolite, Diallage, Diopside**<sup>1</sup>, **Dipyre, Dolomite**<sup>1</sup>, **Enstatite**<sup>1</sup>, **Fluorite, Garnet (Grossularite, Uvarovite), Gypsum, Hematite, Heulandite, Hisingerite, Hornblende, Humite, Hydromagnesite, Hydrotalcite, Ilmenite, Laumontite, Limonite, Magnesite, Magnetite**<sup>2</sup>, **Malachite, Marcasite, Microcline**<sup>1</sup>, **Molybdenite, Muscovite, Natrolite, Oligoclase, Olivine, Opal, Pargasite, Phlogopite, Prochlorite, Pyrite, Pyrolusite, Pyrite, Pyrrhotite, Quartz** (milky<sup>1</sup>, rose, smoky), **Riebeckite, Scapolite, serpentine**<sup>1</sup>, **Siderite, Sphene**<sup>2</sup>, **Spinel, Talc, Thomsonite, Tourmaline, Tremolite and Zircon** (<sup>1</sup> Common, <sup>2</sup> Very Common).

COLD SPRINGS, just E, a mine—**Chrysotile asbestos.**

KENT CLIFFS, in the Highlands near Pine Pond, a mine—**Arsenopyrite, asbestos, Leucopyrite** (Iron di-arsenide) and **Pyrite.**

WEST POINT, S 3½ mi., on bank of the Hudson R., a quarry—**Chrysotile asbestos.**

### RICHMOND COUNTY (Boro on New York City)

TOMPKINSVILLE, area quarries—**asbestos.**

TOTENVILLE, SW tip of Staten Island, the Androvette Clay Pits (near Kreischerville on the shore of Arthur Kill) —**Artinite** (fluorescent), **serpentine.**

### SARATOGA COUNTY

BATCHELLERVILLE: ① area quarries, in pegmatites—**Feldspar** and **Muscovite** Mica; ② N 12½ mi., at Overlook area—**Rose Quartz.**

SARATOGA SPRINGS: ① intersection of Rte. 9 with the Twp. rd., W ½ mi., pegmatite outcrop—**Chrysoberyl**; ② in Maple Ave. (Gailor) quarry on W side of Hwy. 9 on N edge of city—**Quartz** crystals.

### SCHOHARIE COUNTY

AREA, numerous exposures of sedimentary rocks—**silicified coral.**

SCHOHARIE: ① area exposures of the Brayamshales and the Roundout Waterline—**Barite** crystals, **Celestite** (as nodular aggregates of delicate crystals); ② town courthouse, vicinity exposures of water limestones—**Barite** crystals (associated with **Strontianite**); ③ N 2 mi., on face of Terrace Hill (within sight of rd. to Schoharie Jct.), an old mine—**Strontianite**

# ST. LAWRENCE COUNTY

AREA: The Balmat-Edwards Zinc deposit—**Actinolite**, **Anthophyllite**, **Anhydrite**, **Apatite**, **Arsenopyrite**, **Barite**, **Calcite**, **Celestite**, **Chalcopyrite**, **Chlorite**, **Dolomite**, **Feldspars**, **Galena**, **Garnet** (Andradite, Grossular), **Geocronite**, **Goethite**, **Greenockite**, **Guitermanite**, **Gypsum**, **Halite**, **Haüynite**, **Hematite**, **Hydrozincite**, **Ilvaite**, **Jordanite**, **Limonite**, **Magnetite**, **Marcasite**, **Mica** (Biotite, Phlogopite), **Orpiment**, **Pyrite**, **Pyrargyrite-Proustite**, **Diopside**, **Pyrrhotite**, **Quartz**, **Realgar**, **Rhodonite**, **Scapolite**, **serpentine**, **Silver**, **Sphalerite**, **Talc**, **Tennantite**, **Tetrahedrite**, **Tourmaline**, **Willemite** and **Wurtzite**.

BALMAT: ① at Gouverneur Talc Mine—**Anthophyllite**, **Apatite**, **Talc**, **Tremolite** (all fluorescent); ② Arnold Open Pit mine—**Anthophyllite**, **Tremolite** (both fluorescent); ③ in the Zinc mine—**Anhydrite**, **Anthophyllite**, **Sphalerite**, **Tremolite** (all fluorescent); ④ Balmat No. 4 mine—**Anthophyllite**, **Forsterite**, **Tremolite**, **Turneaureite** (all fluorescent).

BRASHER IRON WORKS, area mines—**Iron minerals**.

CANTON, the High Falls Mine—**Pyrrhotite**.

DEKALB: ① area quarries—**Barite** and **Fluorite**; ② in old marble quarries and to S at Richville and also 5 mi. SE at former Mitchell farm in talc—**moonstone**, **Diopside**, brown **Tourmaline** (fluorescent).

EDWARDS: ① area mines, and ② area quarries—**Barite**, **Galena**, **Gypsum** (fluorescent), **Sphalerite** and **Fluorite**; ③ in pockets in St. Joe Minerals Corp. Mine—**Hauynite**, **Scapolite** and **Spinel** (both fluorescent).

FOWLER: ① area quarries—**Barite** and **Fluorite**; ② area Sedimentary exposures, stream beds and banks—**geodes** containing **Barite** and **Hematite**; ③ NW on Rte. 58, the Loomis Talc Mine—**Talc** and **Tremolite**.

FULLERVILLE IRONWORKS, area mines—**Iron minerals** and **Pyrite**.

GOUVERNEUR: ① area quarries, especially Rylestone Quarry—**Barite**, **Calcite** (fluorescent), and **Fluorite**; ② area mines—**Garnet** (abrasive); ③ N 3 mi., as a body of rock—**Garnets** (crystals to ¼" dia.); ④ various outcrops along the Oswegatchie R.—**serpentine**; ④ area old quarries—brown **Tourmaline**, red and brown **Apatite**.

HAILSBORO, area limestone quarries—**Apatite**.

HAMMOND, area quarries—**Barite** and **Fluorite**.

HERMON, area mines—**Pyrite**.

MACOMB, area mines—**Barite** (gangue), **Fluorite** and **Galena**.

OSWEGATCHIE, area pegmatite mines, pits—**Muscovite** Mica.

PIERREPONT: ① area pegmatite exposures—**Tourmaline**; ② at Powers Tourmaline Diggings ½ mi. W on Hwy. 68 (fee); ③ at West Pierrepont—**Apatite**, black **Tourmaline**.

PYRITES, area mines—**Pyrite**.

RICHVILLE: ① area of the Reese Farm, in pegmatites—**Pyroxene**, **Tourmaline** (white **Dravite**) and **Tremolite**; ② N 5 mi. and 3 mi. NE, various area outcrops of pegmatites—**Achroite**, **Diopside**, **Dravite**.

ROSSIE, area mines—**Barite** (gangue) and **Galena**.

SOMERVILLE, N 2 mi., as good crystals—**Phlogopite** Mica.

STAR LAKE: ① area open pit iron mine—**Magnetite**; ② in Benson Mines to E—**Sillimanite**. More than 200 iron mines have been worked in the Adirondacks in St. Lawrence, Franklin and Essex Co. In addition to iron and titanium, the mines also produce abrasive **Garnet**, **Talc**, **Graphite** and **Zinc** minerals.

TALCVILLE, area quarries, especially U.S. Talc Company—**Anhydrite**, **Anthophyllite** (fluorescent), **Apatite**, **Braunite**, **Calcite**, **Chlorite**, **Chromian Tremolite**, **Dolomite**, **Groutite**, **Hexagonite**, **Quartz**, **serpentine**, **Sphene**, **Talc** (fluorescent), **Tirodite** (fluorescent), **Tremolite** (fluorescent), **Tourmaline**, **Uvite**.

## A Location Guide for Rock Hounds in the United States

### SULLIVAN COUNTY

SUMMITVILLE, area mines—**Sphalerite**.

### SULLIVAN & ULSTER COUNTIES

AREA, the Shawangunk Mts., many regional mines—**Sphalerite**.

### ULSTER COUNTY

ELLENVILLE, area mines—**Sphalerite**.

NAPANOCH, area mines—**Siderite**.

### WARREN COUNTY

BRANT LAKE (Horicon), NE to Brant Lake: ① S shore, in rd. cut through pegmatite—**Apatite, Calcite, Diopside, Graphite, Muscovite, Pyrite, Rutile, Tourmaline**; ② N shore, a deposit—**asbestos**.

GRAPHITE, area mines—**Graphite**.

JOHNSBURG, in asbestos mine to SW at Garnet Lake—**serpentine**.

NORTH CREEK: ① WSW 4 mi., mines around Gore Mt.; ② W, mines on Ruby Mt.; ③ S, mines on Oven Mt.; ③ Hwy. 28 N 4 mi., turn at Barton Mines sign, go 5 mi. up Gore Mt. to shop—**Almandite garnet**.

NORTH RIVER, W, into extreme NW corner of Co., the Thirteenth Lake, SW 6½ mi. from S end of lake, at Humphrey Mt., area mines—**Almandite garnet**.

WEVERTOWN, area quarry—**Garnet**.

### WASHINGTON COUNTY

DRESDEN STATION, area South Bay mines—**Graphite**.

### WESTCHESTER COUNTY

BEDFORD (Twp.): ① area quarries—**Allanite, Almandite, Apatite, Autunite, Beryl** (Aquamarine, Golden, Yellow), **Clevelandite, Columbite, Cyrtolite** zircon, **Graphite, Gummite, Hyalite** opal, **Ilmenite, Kryolite, Limonite, Magnetite, Menaccanite, Muscovite, Pyrite, Pyrolusite, Quartz** (all types), **Rutile, Sphene, Torbernite, Tourmaline** (green, black), and **Uranophane**; ② SE ¾ mi., the Kinkel Quarry: (a) this quarry; (b) ½ mi. W, the Baylis Quarry; (c) 1½ mi. SE, along the Mianus R. in North Castle, the Hobby Quarry—golden **Beryl, Citrine, Quartz** crystals (rose with asterism, smoky); ③ Hwy. 22 S, turn off on rd. to Greenwich, Ct., take first dirt rd. N and follow around old quarry to dump and mill ruins—asteriated **Rose Quartz**.

PEEKSKILL: ① area—sunstone; ② SE, an area of igneous rocks known as the Cortlandt series (7 mi. E to W by 5 mi. N to S), regional deposits and mines—**emery, Spinel, Thomsonite**.

PLEASANTVILLE, area mines—**Muscovite** Mica.

RYE, area serpentine bosses (constituting about 15 sq. mi.) —**asbestos** (Amphibole, Chrysotile).



## NORTH CAROLINA

With more than 300 species of gems, gemstones and minerals, this remarkable state is geared for rock collecting as few other states are. Blessed with extraordinary scenic beauty, North Carolina has a gem history equaled nowhere else in North America and innumerable tales of discoveries of **Amethyst**, **Aquamarine**, **Bronzite**, **Diamond** (first found abundantly in the Gold placers in the middle 1850's), **Golden Beryl**, **Rubies**, **Sapphires**, and **Topaz**. Moreover, North Carolina has the only true **Emerald** mines in America, discovered about 1875. To these gems can be added the clear emerald green **Spodumene** crystals called **Hiddenite** after William Hidden, supervisor of one of the larger Emerald mines. This new gem was discovered and identified late in the nineteenth century, along with a second new gem, **Rhodolite garnet**, a rose pink crystal found in Cowee Creek near Franklin, Macon Co., about the same time.

Mining history really began in North Carolina in 1799, when a twelve-year-old boy unearthed a 17 lbs. Gold nugget on his father's plantation in Cabarrus Co. Young Reed sold his nugget to a local jeweler for the unheard of price of \$3.50. Eventually, millions of dollars in gold began coming from other parts of the state as intensive prospecting for **Gold** and **Silver** got under way. It was in the placer gravels that incidental discoveries of many species of gem crystals, especially **Diamonds**, were made.

**Gold** was subsequently found throughout a multi-state region east of the Appalachian Mountains, about 700 miles long by 150 miles wide. North Carolina became the principal producer, inasmuch as the noble metal was found to occur almost universally wherever the rocks were not covered by drift, both free and in association with **Chalcopyrite**, **Iron** and **Pyrite**. In order of decreasing production, the other states in this region are South Carolina, Georgia, Virginia and Alabama. In North Carolina, certainly, the seasonal **Gold** panner will find literally hundreds of profitable stream gravel bars in which to wield pick, shovel and pan.

The sharply defined provinces of North Carolina constitute part of the Atlantic seaboard between the Atlantic Ocean and the Appalachian Mountains. From the tidewater swamps of the coast, the land rises to an elevation of 500' along the western edge of the upper Coastal Plain before beginning the rolling hill country of the Piedmont, with its many swift, gem rich Fall Line streams descending eastward. On the west, the land juts abruptly into the Blue Ridge, 3,000' to 4,000' high, then dips sharply to the broad Carolina Highlands backed up against the Great Smoky Mts. Here, in Yancey Co., Mt. Mitchell, at 6,684' is the highest peak in America east of the South Dakota Black Hills.

The Mountain and Piedmont regions expose rocks from Precambrian to Carboniferous ages, enormously folded, faulted, broken and crushed by diastrophic forces. The older rocks were repeatedly intruded by granites and diorites, and the entire region is blanketed with metamorphic schists, gneisses, quartzites and slates. The igneous rocks produce a great abundance of commercial minerals, and this state leads the Nation in its production of **Feldspar**, **Kaolin**, **Mica** and **Pyrophyllite**. It stands high in production of asbestos, crushed and dimension stone, granite, marble, **Olivine** and **Vermiculite**. The mining of **Copper** and **Tungsten** is also a major contributor to the state's economy. At least 50 species of minerals are mined today, not counting the scores of gem crystals most sought after by rock collectors, while another 20 or so have economic potential.

Gems and gemstones occur in almost every county, but most abundantly in Alexander, Mitchell, Yancey, Macon and Cleveland counties. Easy access to the main gem producing districts is from the 470 mi. long Blue Ridge Parkway that follows the spectacular crest of the Appalachian Mts. Not only do many old mines allow gem collecting on a fee basis, but throughout the Mountain and Piedmont regions sparkling streams yield up a never-ending supply of alluvial **Gold**, **Diamonds**, **Rubies** and **Sapphires**. The state's

## A Location Guide for Rock Hounds in the Unite States

pegmatites, mined mainly for **Feldspar**, **Mica** and **Quartz** are rich in the usually associated gems: **Amethyst**, **Aquamarine**, **Golden Beryl**, **Corundum**, **Garnet**, **moonstone**, **Quartz**, **Spodumene** and **Topaz**. Granite outcrops provide an abundance of the state stone **Unakite**, named after the Unaka Mts., as well as the unusual **leopardite**. Petrified wood is found in the alluvial gravels of many counties, particularly Anson, Cumberland, Moore, Montgomery and Wayne. Public and private campgrounds, many with trailer hook-ups abound throughout the gem producing regions. Many *fee* gem mines offer camping facilities.

### ALAMANCE COUNTY

AREA: ① general countywide surfaces, as float—**serpentine**; ② area mines: (a) Dixon's Mine (on both sides of the Haw R.), placers; (b) the Holt Mine; (c) the Anthony Mine; (d) Newlin's Mine—**Gold**; ③ Buck Hill, area, massive and opaque—**Quartz**.

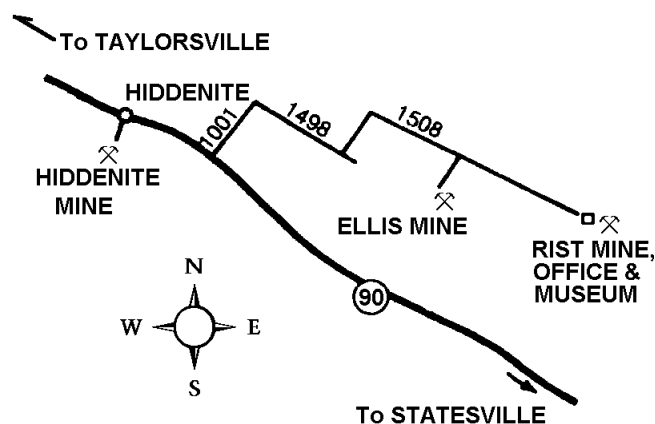
BURLINGTON: ① area fields, streams, cuts, etc.—**Quartz** crystals, red gemmy **quartzite**, **serpentine**; ② the Superior Stone Quarry—**Copper** and **Iron** minerals; ③ on a farm ½ mi. from quarry, loose in soil—**Limonite** (pseudomorph after Siderite), **Quartz** crystals.

### ALEXANDER COUNTY

AREA, Poplar Springs, area—**Rutile** crystals (geniculate, acicular in Limonite and Quartz), **Spodumene**.

ELLENDALE, All Healing Springs (W part of Co. N of Rte. 90): ① near Lambert Cr., pegmatite—**Beryl** (golden, green, yellow); ② near Little R. Church, pegmatite—**Beryl** (pale green, yellow).

HIDDENITE: ① area: (a) in loose soils surrounding town—**Emeralds**; (b) in the Mertie Pegmatite—**Quartz** crystals (champagne color, clear, smoky, amber); (c) many are old mines and dumps—**Aquamarine**, **Beryl**, **Quartz** and **Rutile** crystals; (d) the old Ellis Mine (½ mi. N of the old Hiddenite School, near a creek)—**Emeralds**, blue **Beryl**, **Rose Quartz**, **Rutile**; (e) just S of town, in rd. cuts, massive—**Smoky Quartz**; (f) The Rist Mine and Museum, take Hwy. 1001 N from



Hwy. 90, then right on Hwy. 1498 then left on Hwy. 1508 and follow signs to mine on old American Gems, Inc. digging (pay fee at office)—**Emerald** (crystals and in matrix), **Quartz**, **Hiddenite**, etc.; ② E ¼ mi., old mine—**Aquamarine**, **Calcite**, **Chalcopryrite**, **Dolomite**, crystals, **Emeralds**, **Hiddenite**, **Monazite**, **Muscovite**, **Quartz**, **Rutile** crystals, black **Tourmaline**; ③ E 1½ mi., on ridge between Davis Cr. And the Little Yadkin R., pegmatite exposures—**Aquamarine**, **Beryl**, **Quartz**, **Rutile** crystals; ④ W ½ mi., mine—**Aquamarine**, **Calcite**, **Chalcopryrite**, **Dolomite**, crystals, **Emeralds**, **Hiddenite**, **Monazite**, **Muscovite**, **Quartz**, **Rutile** crystals, black **Tourmaline**; ⑤ SW 1 mi., old Beryl prospect on the Charles Payne farm—**Beryl**, **Mica**, etc.; ⑥ SW 2 mi., the Gwaltney prospects—**Garnet**, **Feldspar**, **Quartz** crystals, **Beryl**, **Tourmaline**; ⑦ SW 3½ mi., the Dagenhart Mine—**Beryl**, **Feldspar**, **Garnet**, **Quartz** crystals, massive **Smoky Quartz**, **Tourmaline**; ⑧ S 6 mi., the Hammer prospects—rutilated **Quartz** crystals; ⑨ N 1 mi.: (a)

## North Carolina

the Warren Farm (near Salem Church and 300 yds. From Rte. 90); (b) NW 1,000', the Osborne-Lackey farm—**Albite**, **Amphibole**, **Ankerite**, **Apatite**, **Aquamarine**, **Arsenopyrite**, **Beryl**, **Calcite**, **Chlorite**, **Emerald**, **Feldspar**, **Hiddenite**, **Muscovite**, **Pyrite**, **Quartz** and **Rutile** crystals, black **Tourmaline**, **Siderite**, **Spodumene**; ⑩ NE 1.2 mi., the old Revis Farm—**Quartz** (rose, rutilated); ⑪ NE 2 mi. on rd. to Smith's Store, as area float, and at the lackey farm on the same rd.—rutilated **Quartz** crystals; ⑫ N 3.2 mi., pegmatite dikes along the south Yadkin R. —**Quartz** (smoky, rutilated).

STONY POINT: ① area—**Chlorite**, **Goethite**, **Monazite** (fine crystals), **Quartz** crystals (rutilated and with **Byssolite** inclusions), **Spodumene** (fine transparent green crystals); ② the Hiddenite Mine: (a) mine dumps—**Emeralds**, **Smoky Quartz** crystals, **Rutile** crystals, black **Tourmaline**; (b) just S of the mine, pegmatite outcrop—rutilated **Quartz** crystals (with inclusions of **Goethite**, **Diorite**, **Tourmaline**, **Byssolite**).

TAYLORSVILLE: ① area: (a) mine dumps—**Beryl**, **Columbite**, **Quartz** crystals, (rose, smoky), **Rutile** crystals, **Scorodite**, **Tourmaline**; (b) N several mi., in the Brushy Mts. (on the Wilkes Co. line), area mines—**asbestos**, **Chalcopyrite**, **Graphite**, tabular **Quartz** crystals; ② SE, at headwaters of the South Yadkin R. ( $\frac{3}{4}$  mi. SE of Hiddenite), the O.F. Patterson Mica Mine—gem **Beryl**, **Muscovite**; ③ SE 2 mi., near Paynes Store on the Kever farm (exposed pegmatites extend  $\frac{1}{2}$  mi. NE to the Payne place), several types of —**Quartz** crystals; ④ SW 5 mi., the Blankenship prospect—**Muscovite**, asteriated **Quartz**, **moonstone**.

WHITE PLAINS: ① area mines—**Beryl**, **Columbite**, **Quartz** crystals, (rose, smoky), **Rutile** crystals, **Scorodite**, **Tourmaline**; ② Liberty church, near Millholland's Mill—**Rutile** crystals.

## ALLEGHANY COUNTY

AREA, Bullhead Mt., area mines—**Garnet**, gem **Kyanite**, **Magnetite**.

DOUGHTON PARK, N  $2\frac{1}{2}$  mi., area of Air Bellows Gap in sandstone schists—fine Iron **Garnets**.

GLADE VALLEY, the Monroe Holloway farm—showy **Magnetite** crystals, **Talc**.

ENNICE, several outcrops along the New R., showy—**Magnetite** crystals.

ROARING GAP, area mine—auriferous **Chalcopyrite**, **Bornite**.

SPARTA, NE 3 mi. on Rte. 18, turn W 1 mi. on unmarked rd., the Crouse Manganese Mine (S of Bald Knob) —**Alleghanyite**, **Galaxite**, **Garnet** (massive **Spessartite**), **Rhodonite**, **Tephroite**.

STRATFORD, W near Elk Cr., the Peach Bottom Mine dumps—**Chalcopyrite**, **Cuprite**, **Galena**, **Malachite**, **Molybdenite**, **Pyrite**, native **Silver**, **Sphalerite** (red).

TWIN OAKS, NE, and  $1\frac{1}{2}$  mi. S of the state line (7 mi. SE of Independence, VA), below Bald Knob, mine—**Spessartite** garnet, **Pyrolusite**, **Rhodonite**.

## ANSON COUNTY

WADWSBORO: ① the Jesse Cox Mine—**Gold**; ② SE 2 mi., the Hamilton (Bailey) Mine, in quartz veins—**Gold**; ③ S 2 mi., a vein—**Gold**; ④ SW 2 mi., in small patch of crystalline rocks on S side of the Triassic sandstone belt—**Gold**.

## ANSON-UNION COUNTIES

AREA, stream gravels—placer **Gold**.

ANSONVILLE, FAIRVIEW, regional stream gravels and mines—**Calcite**, **Garnet**, **Galena**, **Gold**, **Pyrite**, **Siderite**, **Rutile**, **Sphalerite**.

## A Location Guide for Rock Hounds in the United States

PEE DEE, in gravels of the Pee Dee R. and its tributaries, as float—**agatized wood**, **chalcedony**, **jasper**, etc.

### ASHE COUNTY

AREA: ① Helton Cr., near mouth—**Magnetite**; ② Horse Cr., area—**Epidote**, Manganese **Garnet**, **Magnetite**; ③ S part of Co.: (a) near headwaters of the New R., the Copper Knob (Gap Creek) Mine—**Bornite**, **Chalcocite**, **Chalcopyrite**, **Chrysocolla**, **Gold**, **Epidote**, **Hematite**, **Malachite**, native **Silver**; (b) S Fork, near mouth—**Chalcopyrite**, **Chrysolite**, **Magnetite**.

BEAVER CREEK: ① SW 1½ mi., the South Hardin Mica Mine—**Aquamarine**, **Golden Beryl** (crystals to 8" long), **Muscovite**.

CHESTNUT HILL (Twp.): ① area—**rock crystal**; ② area farms on Chestnut Mt. along Long Shoal Cr., weathering out of decomposed granite outcrops—**rock crystal** (very large sized finds).

CRUMPLER, E ½ mi., on N Fork of the New R., in outcrops of Biotite-muscovite gneiss—**Staurolites**.

ELK (Crossroads), NW 2 mi., the Walnut Knob Mine (¾ mi. S of Black Mt.) —**Aquamarine**.

JEFFERSON: ① S, at Blue Ridge, pegmatites—**Muscovite**, black **Tourmaline**; ② E 3 mi., at Mulatto Mts., area mines—**Chalcopyrite**; ③ 2 to 6 mi. distant, mines—**Chalcopyrite**, **Pyrite**.

ORE KNOB, N on Rte. 88, the Ore Knob Mine—**Apophyllite**, **Arsenopyrite**, **Calcite**, **Chalcocite**, **Chalcopyrite**, native **Copper**, **Cuprite**, **Epidote**, **Malachite**, **Pyrite**, **Stilbite**, **Thomsonite**.

PINEY CREEK: ① area granite exposures, fields, cuts, etc.—**rock crystal** (some with inclusions of **Chlorite**, **Manganese** or **Rutile**); ② N Fork, area stream gravels—**rock crystal**.

WEST JEFFERSON: ① area old Mica mines—**Aquamarine**, **Beryl**; ② SW 1.2 mi., the Duncan Mica Mine—**Beryl**, **Muscovite**.

### AVERY COUNTY

CRANBERRY: ① area RR cut banks, and ② SW 1 mi. on dumps of the Cranberry Iron Mine—gem **Epidote**, **Garnets**, **Hematite**, gem **Kyanite**, **Unakite**. (see Mitchell Co. mine location map)

ELK PARK, ½ mi. up Roaring Cr. From hwy., the Bill Burleson farm, (fee) —gem **moonstone**.

PLUMTREE: ① area pits, rd. cuts, gravels—gem **Feldspar** crystals, **Melanite** garnets; ② NE 0.8 mi., the Plumtree Mine—**moonstone**, **Oligoclase** crystals; ③ NE 1 mi. and about ½ mi. off US 19E, the Meadows Mine—**moonstone**, **Oligoclase** crystals; ④ N, on Lick Log Cr., the old Elk Mine—**Garnets**; ⑤ 2 mi. E at dumps of Elk Mica Mine and Slippery Elm mine on Plumtree Cr.—**Garnets**; ⑥ SE 2 mi., the Johnson Mine—**Garnets**.

SPEAR, W 2½ mi. and just off US 19E, the Birch Mine—**Epidote**, soda **Feldspar** crystals.

### BUNCOMBE COUNTY

AREA: ① Cane Cr., in gravels—**Calcite**, **Gold**, **Hematite**, **Limonite**; ② Ivy R., area—**Chrysolite**, **Genthite**, **hornstone**, **Talc**, **Tremolite**, **asbestos**; ③ Reams Cr., as large crystals—**Garnets**; ④ Pisgah Mt., area—**Chrysoprase**.

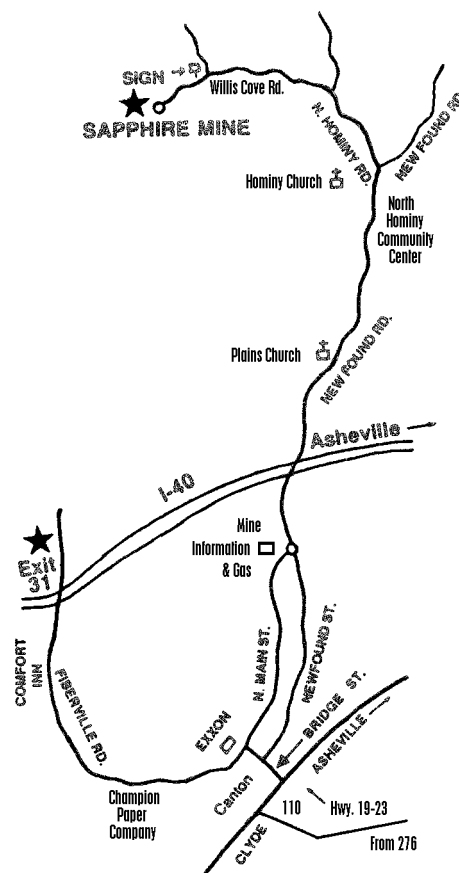
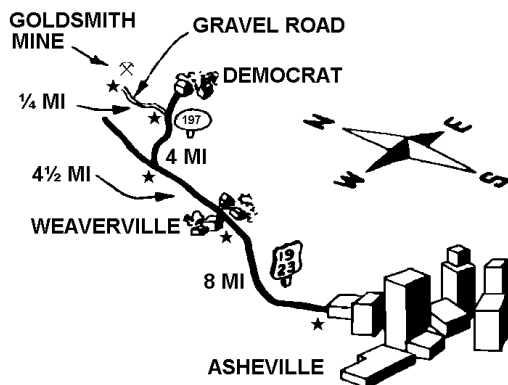
## North Carolina

ASHEVILLE, E and S along the Blue Ridge Parkway: ① Potato Gap; ② NE of the Craggy Gardens picnic area—**Almandite** garnets; ③ Balsam Gap, ½ mi. N of the Parkway, the Balsam Gap Mine—**Albite**, **Allanite**, green **Beryl**, **Columbite**, **Corundum**, black **Garnet**, **Margarodite**, **Biotite** and **Muscovite** mica, **Sapphires** (opaque, muted).

BALSAM GAP, S on Hwy. 276 to Balsam Gap, the 1½ mi. SE, also at Lookout Mt.—**Kyanite**.

BLACK MT.: ① Black Mt. Sta., mine near the Blue Ridge Parkway—**Aquamarine**, gem **Kyanite**; ② just N (and 1.4 mi. SE of Balsam Gap); ③ Lookout Mt., area—**Kyanite** crystals; ④ NE 2 mi., the J.C. Dude Ranch—**Corundum**, **Sapphires**.

CANTON, AT Pressley Corundum Mine, take Main St. to Newfound St., turn left across I-40, left again at first rd. past church, and left again on first gravel rd. Pay fee at second house on left, mine is at end of next rd. on left (see map)—**Corundum**.



DEMOCRAT (N central part of Co.): ① area mines—**Nickel** minerals; ② W on Rte. 197 for ½ mi., turn N 0.2 mi. on secondary rd., the Goldsmith Mine (see map next page)—**chalcedony**, **Feldspar** crystals, gem **Garnets**, **moonstone**, **Olivine** crystals, **Vermiculite**.

SWANNANOA GAP: ① area pegmatite outcrops—**Corundum** (in **Kyanite**), **Damourite**; ② S, at Ridgcrest—gem **Corundum**; ③ SW 2 mi., old mine—**Limonite**.

## BURKE COUNTY

AREA: ① in the Gold placers of the Co. (many) also occur—**Anatase**, **Brookite**, **Chromite**, **Corundum**, **Epidote**, **Fibrolite**, **Hematite**, **Limonite**, **Magnetite**, **Menaccanite**, **Monazite**, **Palladium**, **Pyrope** garnet, **Rutile** crystals, **Tourmaline** (black, green), **Wolframite**, **Xenotime**, **Zircon**; ② SW corner of Co., near Bee Bridge: (a) Brindleton Cr., numerous area mines and prospect; (b) gravels of Hall and Silver creek—**Corundum**, **Diamonds**, **Pyrope** garnets, **Rutile** crystals, **Tourmaline**; ③ Brown Mt., mine—**Albite**, **Fluorite**, **Gold**, some **Platinum**; ④ Linville Mt., mines—**Actinolite**, **Itacolumite**, **Graphite**, **Menaccanite**, **Pyrophyllite**; ⑤ High Peak, N 0.3 mi., area—**Garnets**; ⑥ Scott's Hill, area mines—**Cerargyrite**, **Gold**, **Psilomelane**, **Pyrite**, native **Silver**, **Zircon**; ⑦ South Mt., area mines—**Garnets**, **Graphite**, **Quartz** crystals; ⑧ Sugar

## A Location Guide for Rock Hounds in the United States

Mt., area mines—**asbestos, Beryl, Gold, Magnetite, Quartz** (doubly terminated), **Rutile**;  
⑨ Tremont Mt., area mines—**chrysoprase**.

BRIDGEWATER, area mines—**Garnet, Gold, Manganese** minerals.

BRINDLE TOWN, area mines—**Actinolite, Anatase, asbestos, Beryl, Brookite, Chromite, Columbite, Corundum, Epidote, Fergusonite, Fibrolite, Gold, Graphite, Hematite, Kyanite, Limonite, Magnetite, Menaccanite, Monazite, Montanite, Pyrope** garnet, **Rutile, Samarskite, Smoky Quartz, Talc, Tellurium, Tetradymite, Tourmaline, Tremolite, Xenotime, Zircon**.

BURKE CHAPEL (SE part of Co.): ① S  $\frac{1}{2}$  mi. on gravel rd., turn right on dirt rd. for  $\frac{1}{2}$  mi. area S of rd. extending N about 0.3 mi. to N side of rd.—**Quartz** crystals (clear, smoky, rutilated); ② go 4 mi. on unnumbered rd. to Rte. 18, then right for 4 mi.: (a) area on N side of rd—**Quartz** crystals; (b) N 0.3 mi., in mica schist outcrop—**Garnets**.

GLEN ALPINE, W, in pegmatite dike exposure—**pegmatite gems**.

MORGANTON: ① area: (a) Burkmont Mt., area pegmatites—gem **Beryl**; (b) Buzzard Roost Knob, and (c) Walker's Knob—gem **Beryl**; (d) South Mts., area pegmatites and Mica mines—**Aquamarine, Beryl, Feldspar** and **Quartz** crystals; ② E 4 mi., and 1 mi. S of US 70m the Grill prospect—**Quartz** crystals; ③ S 4 to 6 mi., area mines—**Actinolite, Chlorite, Chrysolite, Breunnerite, Garnet, Hematite, Magnetite, serpentine, Tremolite** asbestos; ④ S 8 mi., and  $\frac{1}{2}$  mi. E of Walker, the Walker prospect—**Aquamarine, Beryl** (golden, green); ⑤ SE 8 mi., area gravels along Laurel Cr.—**Pyrope** garnets; ⑥ SW 9 mi., pegmatite outcrops—**Aquamarine, Beryl**; ⑦ N 4 mi., an old mine—**Corundum** (altered into **Damourite**), **Galena, Quartz** crystals; ⑧ N 13 mi., on Kingy Branch (tributary of Upper Cr.), the Brown Mt. Mine, in quartz veins—**Gold**; ⑨ 5 mi. S on Hwy. 18 to Tweedy house on E side of rd., pay fee and collect—**Pyrope** garnets.

MORGANTON SPRINGS, area mines—**Titanite**.

RAMSEY, NE 1.6 mi., at Shoup's Ford, many old area mines and prospects—**Corundum, Beryl, Diamond, Garnet, gem Kyanite, Sillimanite, Tourmaline**.

## BURKE, McDOWELL & RUTHERFORD COUNTIES

AREA, the Blue Ridge region in which the South Mountain Belt, comprising the South Mt. Range, forms one of the most prominent eastern outliers of the Appalachian Mt. system, constitutes the most important **Gold** bearing belt in NC. The auriferous region embraces from 250 to 300 sq. mi., and panning for **Gold** can be successfully done in practically all streams.

## CABARRUS COUNTY

AREA: (with overlap into S Rowan Co.): ① very many old mines, going back to pre-Civil War times (on regional topographic maps) —**Azurite, Gold, Malachite, Quartz** crystals, **Scheelite, Sphalerite**, etc.; ② specifically: (a) Cosby's Mine—**Cuproscheelite, Siderite, Stilpnomelane, Wolframite**; (b) Cullin's Mine—**Azurite, Cuprite** (cubes), **Malachite, Scheelite, Tetradymite**; (c) Flowe's Mine—**Barite, Scheelite, Tungstate** of lime (rhombic crystals), **Wolframite**; (d) McMakin's Mine—**Argentite, Barite, Galena, Goslarite, Magnetite, Proustite, Pyromorphite, Pyrolusite, Rhodochrosite**, native **Silver, Sphalerite, Tetrahedrite** (var. **Freibergite**); (e) Union Copper Mine—**Copper** minerals, native **Copper**.

CONCORD: ① area: (a) mines—**agate, Bornite, Chalcopyrite, Gold, Hyalite** opal, **Goethite** (acicular crystals in **Quartz**), **Malachite, Magnetite, Quartz** crystals (rose, rutilated), **Tourmaline**; (b) regional fields and stream gravels between town and Harrisburg—**agate, carnelian, chalcedony**, common **opal**; ② SE, the Firness Mine—**Barite, Epidote, Malachite, Scheelite**; ③ SE 7 mi.: (a) the Phoenix Mine—**Gold**;

## North Carolina

(b) S 1 mi., the Tucker (California) Mine, and (c) nearby other mines and prospects—**Gold**; ④ SE 10 mi., the Rocky River Mine—**Chalcopryite, Galena, Gold, Pyrite, Sphalerite**; ⑤ SE 11 mi., the Allen Furr Mine (23 mi. E of Charlotte)—**Gold, Pyrite, Sphalerite**; ⑥ S 13 mi., the Pioneer Mills group of mines (not worked since the Civil War)—**Barnhardtite, Chalcocite, Chalcopryite**, some **Gold, Molybdenite, Molybdite**; ⑦ SE 12 mi., the Nugget (Biggers) Mine—coarse **Gold, Galena**.

Faggart: ① E 1½ mi., the Barnhardt Mine—**Gold**; ② NE 3 mi., the Faggart Mine—**Gold**.

GEORGEVILLE: ① NE 1 mi., the Buffalo Mine—auriferous **Pyrite**; ② SE 1½ mi., the Reed Mine—**Gold**; ③ N 2½ mi. the Crayton Mine—**Gold** (minute grains in **Quartz**), **Pyrite**.

MOUNT PLEASANT: ① SW 5 mi., the Harkey Mine, veins in diorite—**Chalcopryite, Gold, Marcasite, Pyrite**; ② SW 8 mi., the Snyder Mine—**Gold**.

TUCKER, N 3 mi., the Quaker City Mine—**Gold**.

## CALDWELL COUNTY

AREA: ① S part of Co., a broad band of Mica schist runs NE to SW in all regional outcrops—**Sillimanite** (best in nodular form); ② Davis Mt., W slope near the river, the Baker Mine—**Anglesite, Chrysotile** asbestos, **Cerussite, Galena, Marmolite, Pyromorphite, serpentine**; ③ Grandmother's Mt., area placers—**Gold, Pyrite, Quartz**.

COLLETTSVILLE: ① N 1.7 mi., in rd. cuts near Rte. 90—massive **Epidote, Pyrite** cubes; ② S, the Hercules Mine (12 mi. N of Morganton in Burke Co.)—**Gold**.

DUDLEY SHOALS: ① SW ½ mi., the Teague Farm (via Cedar Valley rd. W 1 mi., turn S for ½ mi., on country rd.)—**Sillimanite** nodules; ② N 3 mi., the Travis prospect—**Quartz** crystals.

HARTLAND, NW 1½ mi., adjoining mines (Miller, Scott Hill)—**Gold**.

HARTWELL, pegmatite exposures inside town limits—**Beryl, Garnets**.

LENOIR: ① SE 3 mi., on Hiberton Mt. (4½ mi. W of US 321), area—gemmy **Feldspar**; ② NW 4 mi., on NE slope of Bee Mt., the Bee Mt. Mine, in garnetiferous Mica gneiss with pegmatite intrusions—**Gold**; ③ E 7½ mi. on low ridge 1.3 mi. N of Rte. 90 in the Oak Hill dist.: (a) area old Mica mines—**Garnets, Sillimanite**, massive **Quartz**; (b) 2 mi. E of Oak Hill Sta. On Rte. 90, the land farm—**Quartz** crystals; ④ E 9 mi. (2 mi. N of Rte. 90), the Reid prospect—**Feldspar** and **Quartz** crystals, etc.

YADKIN VALLEY, area 2 mi. NW of Rte. 268 and 5 mi. E of US 321, the Broyhill Mica deposit—**Beryl, Garnets**.

## CASWELL COUNTY

AREA, the Carolina Igneous Belt (comprising Caswell Co. and parts of Person, Alamance, Guilford, Randolph, Davidson, Davies, Rowan, Cabarrus and Mecklenburg counties, and the E fringes of Lincoln and Gaston counties), the second most important Gold bearing section of NC, varying from 15 to 30 mi. wide, very many old mines—**Gold**.

BLANCH, area old Mica mines—**Allanite, Mica**.

LEASBURG, W 3 mi., area prospects—**Chlorite, Epidote, Tourmaline** (fibrous).

MILTON: ① area old Mica mines—**Allanite, Mica**; ② SW 3¾ mi., the Slaughter prospect—**Allanite**.

SEMORA, area old Mica mines—**Allanite, Mica**.

YARBORO, area mine dumps—**Albite, Garnets, Quartz** crystals.

## CATAWBA COUNTY

AREA: ① extreme SW corner of Co.: (a) E of Rte. 18 and about 1 mi. E of Burke Co. line, between two tributaries of Jacob Cr., the Bessie Hudson Mine—**Almandite** garnets, gem **Beryl**; (b) the Tallent prospect (5 mi. NE of Toluca in Lincoln Co.)—**Quartz** crystals, Sillimanite; ② Hooper's Quarry—**Calcite**, **Gold**, **Graphite**, **Pyrite**.

CATAWBA, 4½ mi. slightly S of E, the Shuford Mine (and Quarry) on the Southern RR, in numerous auriferous Quartz seams—**Gold**, with **Calcite**, **Magnetite**, **Rose Quartz**.

CONOVER: ① area N and W, old Mica mines: (a) 1 mi. from town, the Bowman Mine (extending 7 mi. to the Hefner Mine)—**Apatite**, **Beryl**, **Feldspar** crystals, **Garnets**, **Mica**, **Staurolites**; (b) 2½ mi. N of Wray's Gin on Rte. 10 and 2.6 mi. NE of Co. line, the Abernathy Water Mine—**Quartz** crystals with inclusions; ② NW 4½ mi., the Drum Mine—**Apatite**, yellow **Beryl**, **Garnets**, **Mica**; ③ N 7 mi. on Rte. 16, turn E on dirt rd. for 0.9 mi., area on E side—**Corundum**.

DRUMS CROSSROADS, SE 2.3 mi., exposure—**Steatite**.

HICKORY: ① area mines—**Amethyst**, **Chalcopyrite**, **Garnets**, **Graphite**, **Hematite**, **Limonite**, **Magnetite**, **Muscovite**, **Pyrite**, **Pyrrhotite**, **Pyrolusite**, **Quartz** crystals; ② NE 5 mi., near the Catawba R. dam, the Sigmon Mine—**Apatite** (green crystals).

MAIDEN: ① many area mines and prospect—**Gold**; ② E 6 air mi. (or Rte. 16 E for 7 mi., then S for ¾ mi. on Co. rd.), pegmatite dike—pegmatite **minerals**.

NEWTON: ① many area mines and prospects—**Gold**; ② E 2 mi. (and N of Rte. 10), at McLin Cr., deposit—**Steatite**.

SOUTH CREEK, area 1 mi. NE of Rte. 16—**Steatite**.

## CHATHAM COUNTY

AREA, Battle's Dam, area mines—**Garnets**, **Hematite**, **Manganese** minerals (such as psilomelane), **Rose Quartz**.

BENNETT: ① area old Copper mines and prospects—**chalcedony**, **jasper**, **Rose Quartz** along with **Copper** minerals; ② SE 4½ mi.: (a) the Phillips prospect (via Rte. 22 for 2.6 mi. SE, turn E 2 mi. to crossrds., prospect on the N); and (b) the adjoining Bear Creek prospect—**Azurite**, **Bornite**, **Calcite**, **Chalcopyrite**, **Cerussite**, **Chrysocolla**, **Cuprite**, **Galena**, **Pseudomalachite**, **Malachite**, **Pyrite**.

PITTSBORO, N 1½ mi. on Rte. 87, in area rd. cuts—**Limonite** (pseudomorphs after Pyrite).

SILK HOPE, NW to Co. line area (3.3 mi. SE of Snow Camp in Alamance Co.), an old **Pyrophyllite** mine—gemmy **chert**, **Quartz** crystals (with Pyrite inclusions).

## CHEROKEE COUNTY

AREA: ① Hanging Dog Cr., area gravels—**Staurolites**, **Tourmaline**; ② in stream gravels where Peachtree Rd. crosses Valley R.—**Chloritoid** (dark green mica), **Ottrelite**, metamorphic minerals; ③ Little Snowbird Mts.: (a) area at headwaters of Vengeance Cr.—**Calcite**, **Garnet**, **Quartz** crystals, **Staurolites**; (b) area of Vengeance Cr. to Valletown, a distance of 12 to 15 mi. along the lower slope of the mts., many diggings in the drift—**Gold**, **Staurolites**; ④ very many countywide exposures of schists in the mountain regions—metamorphic gems and minerals, **Chloritoid**, **Ottrelite**.

ANDREWS, MARBLE, area 2 mi. from Palmer Museum, on the Bettis Bros. farm—**Staurolites**.



## North Carolina

MARBLE: ① area cr. beds, dike exposures, gravel pits—**Sillimanite** (cat's eye), **Staurolites**; ② SE 1 mi.: (a) Valley R. gravels—placer **Gold**; (b) between Parson's and Brunt branches—**Almandite** garnets; ③ N 1.3 mi., in Hyatt Cr., Fishermare Branch and Allmon Cr. —**Almandite** garnets, **Staurolites**; ④ NW, in the Snowbird Mts., the Parker Mine—**Garnets**, **Gold**, **Staurolites**.

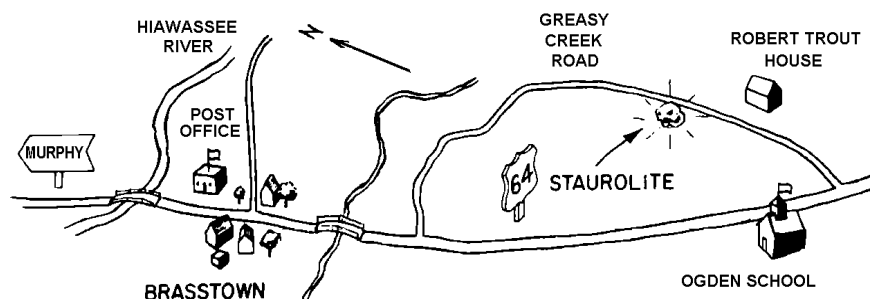
MURPHY: ① area mines—**Cerussite**, **Dravite** (brown tourmaline), **Galena**, **Gold**, **Lead**, **Pyrolusite**, **Sillimanite**, **Silver**, **Talc**, **Tremolite** asbestos; ② the No. 6 Mine—**Calcite**, argentiferous **Galena**, **Gold**, **Tremolite** asbestos; ③ N 1½ mi., the Hitchcock Mine—**Dravite**, **Sillimanite**, **Steatite**, **Tremolite**; ④ SW ½ mi., area along US 64—**Limonite** cubes; ⑤ SW 4.2 mi., the Metals and Minerals Mine—**Dravite**, **Sillimanite**, **Steatite**, **Tremolite**; ⑥ at Voiles Cabins off Rte. 290 on Haiwasee Dam rd.—**Smoky Quartz**.

UNAKA: ① area gravels, pits, etc.—**Staurolites**; ② E ½ mi. on rd. toward Murphy, gravels of Beaverdam Cr.—**agate**, **Epidote**, pink **Feldspar**, placer **Gold**, **jasper**, **petrified wood**, **Smoky Quartz** crystals, **Staurolites**.

## CLAY COUNTY

AREA: ① East central part of Co. N of US 64, Buck Cr.: (a) area mines in peridotite-dunite—pink **Corundum**, **Smaragdite** (green amphibole), **Anorthite**, **Olivine** crystals, **Spinel**, **Zoisite**; (b) the Cullakanee Mine (6 mi. N of the GA state line and 20 mi. SW of Franklin in Macon Co., via US 64) —**Bronzite**, **Corundum**, **opal**, **Peridot**; (c) the Maney Cut—pink **Corundum**, **Smaragdite**; (d) S side of US 64, area boulders—**Unakite**; (e) the Buck Creek Dude Ranch, SW 0.3 mi., the Herbert Mine (on Little Buck Cr.) —**Corundum**; (f) the Buck Creek Campground, area—**serpentine**; ② the Cat Eye Cut (600 ft. W of Chestnut Knob) —cat's eye **Corundum** (asteriated); ③ Chestnut Knob, area—**Corundum** (white star); ④ Park Gap (near Chunky Gal Mt.): (a) area—**Garnets**; (b) on NE slope of the mt., area—**Staurolites**; ⑤ Red Corundum Knob, area—**Actinolite**, pink **Corundum**, gem **Kyanite**, **Olivine** crystals, **Ruby**, **serpentine**.

BRASSTOWN: ① area prospects and mines—**Gold**; ② W ½ mi., on N side of US 64, area **Garnets**; ③ E 1 mi., on Tusquitee Cr. (near Hayesville), area—**Staurolites**; ④ in rd. cuts along Greasy Cr. —**Staurolites**; ⑤ in bank along gravel rd. and nearby pastures and in matrix on mountainside (see map above) —**Staurolites**; ⑥ Greasy Cr. gravels—**Almandite** garnets, **Staurolites**.



HAYESVILLE: ① Corundum Knob (½ mi. W of the Bureau of Mines Sta.), area—**Corundum** (two tones); ② E, on Penland Bald, area—**Garnets**; ③ E 12 mi., near US 64, area Amphibole exposures—**Rubies**, **Sapphires**, **Smaragdite**.

SHOOTING CREEK: ① area exposures and gravels—Hyalite opal **geodes**; ② N 1.8 mi. on US 64, near Muskrat rd., in outcrop of Mica schist—pink **Corundum**; ③ W, near

Spring Hollow, area—**Rutile** crystals; ④ W, at Elf: (a) area—**Corundum** (red, in nodules of green Amphibolite), **opal**, **Quartz** crystals, **Smaragdite**; (b) as float around lake Chatuge—**Corundum** (deep to gray blue, pink), **Smaragdite**; (c) area near Myers Chapel—**Corundum**.

## CLEVELAND COUNTY

CASAR: ① area, NE via Rte. 10 into NE corner of Co.: (a) Carpenter's Knob, 0.3 mi. NE of rd. following E side of the hill, on W bank of a farm rd. trending NW, area—**Corundum** (black, blue gray) enclosed in **Sillimanite**; (b) 1.6 mi. W of Toluca, Lincoln Co., on SE flowing tributary of Knob Cr., the A.F. Hoyle Mine—**Apatite**, **Autunite**, **Garnet**, **Zeolite** minerals; (c) area around St. Peters Church, numerous old mines—**gem** crystals; (d) S, on mining area centered at Carpenter Grove Church—**gem** crystals; ② S, on farms reached after crossing Ward's Cr. W of town and along W fork of the Broad R.—**Quartz** crystals (rutilated); ③ N, on N side of Old Sheep Knob (just N of a dirt rd.), area mines—**Corundum**; ④ W 2 mi., area—**agate**, **Quartz** crystals (rutilated); ⑤ SW 2½ mi., the Cooke Mine—**Beryl**; ⑥ SW 3½ mi., the Elliott Mine—**Beryl**.

FALLSTON: ① E 1 mi. and N 3.8 mi., the Norman Mine—**Garnets**, **Tourmaline**; ② E 1.3 mi., on S side of the main rd., the Fallston prospect—**Smoky Quartz** crystals; ③ SE 3 mi., the Mauney Carpenter Mine—**Quartz** crystals (clear, smoky).

GROVER, N 2½ mi. on US 29E, then N on Co. rd., pegmatite—**Aquamarine**.

HOLLYBUSH, W side of Broad R., pegmatite—yellow **Beryl**.

KINGS MOUNTAIN (major mineral dist.): ① area gravels—**Diamonds**; ② the Foote Mineral Co. Mine, more than 30 gems and minerals, including—**Apatite**, **Beryl**, **Bikitaite**, **Brannockite** (fluorescent), **Calcite**, **Cassiterite**, **Childrenite**, **Eucryptite** (fluorescent), **Fairfieldite** (as good crystals), **moonstone**, **Purpurite**, **Rhodochrosite**, **Roscherite**, **Spodumene** (fluorescent), black **Tourmaline**, **Vivianite**; ③ 1 mi. NW of jct. of US 74 and US 29, the Bun Patterson Mine—**Beryl**; ④ the Mountain Mine—**Alunogen**, **Arsenopyrite**, **Galena**, **Garnet**, **Gold**, **Graphite**, **Muscovite**, **Melanterite**, **Pyrite** (abundant crystals), **Tourmaline** and **Quartz**.

LATTIMORE: ① S ½ mi., the Jones Mine—milky **Quartz** crystals; ② SE 1 mi., the Hunt Mine, abundant—**Quartz** crystals; ③ W 1½ mi., the Joe Humphries Mine—**Beryl**, **Feldspar** crystals (penetrating massive quartz), **Tourmaline**; ④ the L. Yates Brooks farm, area—**Anatase** (blue crystals), **Muscovite**; ⑤ 1 mi. from the Yates farm (inquire), area—**Anatase**, **Muscovite**.

POLKVILLE: ① NE 0.9 mi., the Getty No. 1 Mine—**Muscovite**, **Marcasite**, **Quartz** crystals, **Spar**, **Sillimanite**; ② NW 3¼ mi. and just W of Duncan's Cr., dumps of the Lattimore Mine, abandoned—**Beryl**, **Quartz** crystals, black **Tourmaline**.

SHELBY: ① area mines (very many), all highly mineralized: (a) N to Union Church and Double Shoals; (b) W to Mooresboro and Lattimore—**Anatase** crystals, **Actinolite**, **Beryl**, **Emerald**, **Magnetite**, **moonstone**, **Muscovite**, **Quartz**, **Tourmaline**, etc.; (c) S along Rte. 18 all way to Blackburg, Cherokee Co., SC, in regional fields, streams, cat banks, etc.—**gem** crystals; ② S on Rtes. 18 & 150 at the forks, then W 1.8 mi. to a secondary rd., turn S ½ mi.: (a) area along the Broad R., in fields on both sides of rd., several localities—**Quartz** crystals; (b) Charon Church crossrds., S 1 mi., area—**Quartz** crystals; (c) ¼ mi. due N of the Stice Dam, area—**Corundum** (bronze, gray), **Quartz** crystals; (d) 1.3 mi. due E of Earl, on tributary of Buffalo Cr., area—**Aquamarine**, **Garnet**; (e) 1½ mi. E of the Stice Dam, the Turner Mine—**Aquamarine**; (f) 1 mi. NE of the dam, the Old Plantation Mine—**gem Beryl**; ③ N, along Little Harris Cr. Near rd. to Double Shoals, numerous Mica mines: (a) 1 to 1¼ mi. SW of Union Church, mines (especially the Spangler Mine)—**Garnets**, **Quartz** with green mica inclusions; (b) 1.1 mi. S of the church, the Weathers Mine—abundant **Garnets**; (c) 2½ mi. SE of Union Church, area—**Garnets**, **Mica**; (d) on N

## North Carolina

side of Cr. By Double Shoals, the Bowen Mine—**Garnets, Mica**; (e) ½ mi. from the Bowen Mine, at edge of woods S of Little Harris Cr., the Harris Mine—**Feldspar** crystals, **Garnets, Smoky Quartz** crystals; (f) 1½ mi. SW of Double Shoals on S side of dirt rd., the Mary Gold Mine—**Sillimanite** (gem); ④ NW 2.7 mi., the Niagara Mine; ⑤ NW 3.3 mi., the McGinnis Mine; and ⑥ NW 4¾ mi., the Martin Mine—crystals of **Feldspar, Pyrite, Quartz**; ⑦ S 30° W 4¾ mi., near E bank of first Broad R. and ½ mi. NE of the dam, area—**Aquamarine, Beryl, Emeralds, Mica, Smoky Quartz** crystals, **Tourmaline**; ⑧ SW 4¾ mi., the Allen property (and Turner Mine), area 6' thick dike—**Aquamarine, Emeralds, moonstone**, rutilated **Quartz** crystals; ⑨ W 6.2 mi., near Cr. ¼ mi. S of US 74, the McSwain Mine—**Garnets, Sillimanite**; ⑩ SW 6.2 mi., the Mill Race Mine, in mica schist—**Garnets**.

### CUMBERLAND COUNTY

AREA: ① Countywide stream gravels and alluvial deposits, gravel pits, excavations, rd. cuts, etc.—**agate, chalcedony, chert, jasper**, common **opal, agatized wood**; ② Cape Fear R. and tributaries, gravel beds—**agate, chalcedony, chert, jasper**, common **opal, agatized wood**.

### DAVIDSON COUNTY

AREA, very many regional mines—**Chalcopyrite, Gold**, arsenic **Pyrite, Tetradymite**.

CID: ① area mines—**Chalcopyrite, Gold**, arsenic **Pyrite, Tetradymite**; ② W, the Emmons (Davidson) Mine (12 mi. SE of Lexington) —**Calcite, Chlorite, Gold, Siderite, Silver**.

LEXINGTON: ① area S and E, noted old Gold-Silver belt, many abandoned mines—**Gold, Silver, Marcasite, Pyrite**, etc.; ② E 6 mi., the Conrad Hill Mine—**Chalcopyrite, Limonite, Malachite, Silver**, specular **Hematite**; ③ W 10 mi. and 1 mi. W of Oaks Ferry on Yadkin R. on Hairston farm—**orbicular granite**.

LINWOOD, NW 5 mi. and 1 mi. S. of Tyro, area—**Amethyst**.

SILVER HILL (5 mi. SE of Lexington, an old abandoned mining town): ① area mines—**Anglesite, Argentite, Calamine, Calcite, Cerussite** (fine crystals, massive), **Chalcanthite, Chalcocite, Chalcopyrite, Cuprite**, argentiferous **Galena, Goslarite, Malachite, Melaconite, Pyromorphite, Silver, Sphalerite, Stolzite, Wavellite** (green, brown, black, colorless, yellow), **Zoisite**; ② N ¼ mi., old mine—**Argentite, Feldspar** crystals, **Malachite, Pyromorphite, Scheelite, Wavellite**; ③ S 1 mi., on W side of Flat Swamp Cr. Valley, NW of the Silver Valley crossrds., the Silver Valley Mine—**Chalcopyrite, Galena, Gold, Pyrite, Silver, Sphalerite**; ④ W 5 mi., David Beck's Mine—**Chalcopyrite, Gold**, arsenic **Pyrite, Tetradymite**.

THOMASVILLE: ① SE 1½ mi., the Loftin Mine—**Gold**; ② SE 2 mi., the Lalor (Allen) Mine: (a) on old dumps—**Copper Pyrites, Gold, Limonite, Hematite**; (b) ½ mi. W of the Loftin Mine, the Eureka Mine—**Gold**.

### DAVIE COUNTY

AREA, mines, including Butler, County Line, Isaac, Allen and several old mines on Callahan Mt.—**Gold**.

FARMINGTON, E 2 mi. to Rte. 801, turn N for 1½ mi., area pegmatite exposures—**Autunite, Columbite**.

OAKS FERRY, W 1 mi., near the Yadkin R. on the Hairston farm—**orbicular granite**.

## A Location Guide for Rock Hounds in the United States

### DURHAM COUNTY

BETHESDA, W of US 70, area fields, cuts, gravels, etc. as float—**silicified wood**.

DURHAM: ① W, near jct. of US 75 and Rte. 98, area float—**petrified wood**; ② inquire in town rock shops for directions to a major quarry about 15 mi. distance—**Calcite**, **Biotite**, **Kobellite** (steel gray var. of Jamesonite), **Siderite** (gemmy olive green crystals).

WEAVER, gravels of the Eno R.—**agatized wood**.

### FORSYTH COUNTY

KERNERSVILLE, area fields, rd. cuts, gravels, etc.—**Chrysolite**, **Bronzite**, **Tourmaline**.

WINSTON-SALEM: ① area quarries, pits, deposits, etc.; and ② S 4 mi., mines—**Halloysite**, **Hematite**, **Magnetite**, Manganese **Garnet**.

### FRANKLIN COUNTY

AREA: ① N part of Co., many pegmatite outcrops—**Beryl**, **Mica**; ② the Portis Mine—**Diamond**, **Gold**.

CENTERVILLE: ① area: (a) the Taylor place on Rte. 561 W of the crossrds., outcrop—royal purple **Amethyst**; (b) old mine dumps near Rte. 58 on rd. to Inez—**Gold**; (c) near Sandy Cr., on S side of first rd. out of town leading NW from Rte. 561, the Van Alston prospect—**Gold**; ② NW several mi., near 58, many pegmatites—**Beryl**, **Feldspar** and **Quartz** crystals, **Tourmaline**, etc.

FRANKLINTON, W 4 mi., several pegmatite outcrops, some mined—**gem** minerals.

LOUISBURG: ① area gravels, fields, etc.—**Amethyst**; ② E 18 mi., old placers—**Gold**, **Diamonds**.

YOUNGSVILLE: ① NW 4 mi., the Mitchell Mine, and ② NW 5 mi., near rd. to Pokomoke, the Gully Mine, both in pegmatites—**gems** and **minerals**.

### GASTON COUNTY

ALEXIS: ①: (a) E 1½ mi.; and (b) E 2.4 mi., in area fields as float—gem **Kyanite**, **Lazulite**, **Rutile** crystals; ② Chubb's (Clubb) Dist.: (a) many area mines—blue **Corundum**, **Dumortierite**, gem **Lazulite**, gem **Kyanite**, **Lithiophyllite**; (b) Chubb Mt. area—**Corundum** (red, blue), **Damourite**, **Gold**, Manganese **Garnet**, **Hematite**, **Magnetite**, **Margarite**, gem blue **Kyanite** crystals, **Rutile** crystals, **Talc**, **Tourmaline**; (c) at the Lowe farm on Chubb Mt. On Hwy. 27 between Lincolnton and Charlotte—**Rutile** crystals; (d) Crowder's Mt.—**Barite**, **Chalcopyrite**, **Corundum** (red, blue), **Damourite**, **emery**, argentiferous **Galena**, **Gold**, Manganese **Garnet**, **Hematite**, **Limonite**, **Magnetite**, **Margarite**, **Menaccanite**, **Monazite**, gem blue **Kyanite** crystals, **Rutile** crystals, **Pyrite**, **Talc**, **Topaz**, **Tourmaline**.

BESSEMER CITY: ① S, in the Devil's Workshop area—**Goethite**; ② E 2.3 mi., near Long Creek Church, a pegmatite dike exposure—**Apatite**, **Beryl**, **Spodumene**.

CHERRYVILLE, N of Rte. 277 and E along Little Beaverdam and Beaverdam creeks: ① at confluence, pegmatite exposure—**Cassiterite**; ② SE 3½ mi., the Big Bess Mine—gem **Apatite**, **Beryl**, **Garnet**, **Feldspar**, **Marcasite**, **Pyrite**, **Quartz** (blue), **Rutile** crystals, **Sillimanite**, **Tourmaline**, **Zircon**; ③ SE 4.3 mi., the Self Mine—**Feldspar** crystals, **Smoky Quartz**, **Zircon**; ④ SE 5 mi., on Rte. 274, the Huskins Mine—**Beryl**, **Garnet**, **Tourmaline**.

CRAMERTON, S in extreme corner of Co.: ① the Oliver Mine (12 i. SW of Charlotte, Mecklenburg Co.) on W side of the Catawba R.—**Galena**, abundant **Gold**, **Pyrite**; ② the

## North Carolina

McLean or Rumfeldt Mine (15 to 16 mi. SW of Charlotte); ③ the Duffie Mine (16 mi. SW of the same town); and ④ the Rhodes Mine (18 mi. SW) —**Gold**.

CROWDERS, the King's Mt. area, numerous mines—**Altaite, Bismite, Calcite, Chalcopyrite, Galena, Gold, Magnetite, Nagyagite, Pyrrhotite, Sphalerite, Tetrahedrite**.

DALLAS, NW 6 mi., the Long Creek Mine (3 veins) —**Gold**.

KING'S MT. STATION: ① S 1½ mi., the Catawba (King's Mt.) Mine, in limestone—**Gold**; ② E side of King's Mt. and 4 mi. E of the Catawba Mine, the Crowder's Mt. (Caledonia) Mine—**Gold**.

## GRANDVILLE COUNTY

AREA: ① N half (with overlap into Person Co. on W), very many regional Copper and Gold mines including: Royster (Blue Wing), Holloway, Mastodon, Buckeye, Pool, Gillis, Copper World and Yancy—**Bornite, Chalcocite**, native **Copper, Gold, Pyrite**; ② area stream gravels—**Topaz**; ③ area mine dumps, rock exposures, etc.—**Andalusite, carnelian, Malachite**; ④ Reed's Cr. gravels—**agate, jasper, jasp-agate, Quartz** crystals; ⑤ Oak Hill, S, on Mountain Cr.—**agate, jasper**; ⑥ Long Mt., area—**agate, jasper**.

BULLOCK: ① E and SE, area exposures, abundant—**Pyrite**; ② NE 1½ mi.: (a) outcrop of metabasalt porphyry—**Clinozoisite, Epidote, Labradorite, Titanite**; (b) ½ mi. farther N—**Epidote, Hornblende, Quartz** crystals; ③ NW 6 mi. and ¾ mi. from state line, area—**Limonite, Hematite, Quartz** crystals.

BUTNER, area—**agate, Amethyst, jasper**.

CREEDMORE-GRANVILLE-OXFORD, a 15 mi. long stretch along US 15 and I-85, area both sides of highways—cryptocrystalline **quartz gemstones**.

POCOMOKE, N 2 mi., area—**Lepidolite** (with **Rubellite**).

STEM, 2 mi. distant on Bowling Mt., deposit—**Pyrophyllite**.

VIRGINIA: ① area to S, many old Copper mines—**Copper** minerals, native **Copper** and **Silver, Epidote, Hematite, Malachite**, pink **Feldspar, Pyrite, Quartz**; ② S 2 mi., and 1 mi. W, the Holloway Mine—**Bornite, Chalcocite**, native **Copper, Gold, Pyrite**; ③ the Blue Wing Church: (a) N, the Blue Wing Mine—**Azurite, Calcite, Argentite, Chlorite**, etc.; (b) across rd. from church, prospect pits—**Malachite**, specular **Hematite**.

WILTON, E 2 mi., a granite quarry—**Calcite, Epidote, Feldspar, Molybdenite, Quartz**.

## GUILFORD COUNTY

BIGSONVILLE, area—**Quartz** crystals (green, with **Actinolite** and **asbestos** inclusions).

FRIENDSHIP: N, the Tuscarora Iron Mine—**Limonite, Hematite, Magnetite, Corundum**; ② NE, the mine on the McCarvisten farm—**Iron** minerals.

GIBSONVILLE, area—green **Quartz** with asbestos inclusions.

GREENSBORO: ① SW 5 mi., the Fisher Hill Mine; ② SE 6 mi., the Hodges Hill Mine; ③ SSW 6 mi., the Mills Hill Mine—**Chalcopyrite, Gold, Hematite, Magnetite, Menaccanite, Pseudomalachite, Pyrite, Siderite**; ④ SW 6 mi., the Twin Mine—**Gold**; ⑤ SW 8 mi., the Gardner Mine—**Chrysocolla, Gold, Malachite**; ⑥ S 9 mi., the North Carolina (Fentress) Mine, old, with Gold vein traced for 3 mi. along the outcrop—**Copper** minerals, **Gold**.

JAMESTOWN: ① NE 2 to 3 mi., the Gardner Hill Mine—**Chrysocolla, Gold, Malachite**; ② 2¼ mi., on N side of Rte. 29, the North State (McCullough) Mine—**Chalcotrichite**, native **Copper**, Cupric **Pyrites** (fine crystals), **Cuprite, Malachite, Gold, Siderite**.

## A Location Guide for Rock Hounds in the United States

### HALIFAX COUNTY

AREA, all exposures of Quaternary gravels throughout Co.—**petrified wood**.

BRINKLEYVILLE, S, on property of the Boy Scouts of America, area—**Chalcopyrite, Molybdenite, Pyrite, Sericite**.

GLENVIEW, W 1.7 mi., old mine—**Gold**.

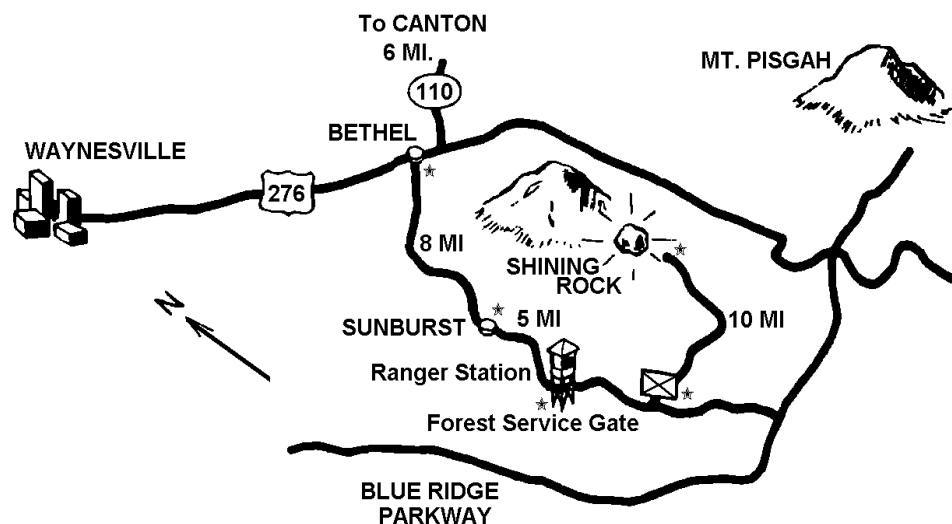
ROANOKE RAPIDS, the Gaston Ore Banks—**Limonite, Hematite, Magnetite**.

### HAYWOOD COUNTY

AREA: ① several pegmatite mines in Co. are open on a fee basis; make inquiry at any rock shop—**Tourmaline** and other gems, etc.; ② Hall's Mine—**Chlorite, Chrysolite, Corundum, Talc, Tremolite**.

CANTON, NW 4 mi., the Presley Mine—**Albite, Amphibolite, Corundum** (blue, gray, altered into Damourite and Albite), **Damourite** (large crystals and scales), **Sapphire** (clear, color-zoned, opaque, star).

HAZELWOOD, S 21° E 3.9 air mi., on SW slope of Roberson Ridge between two unnamed branches of Deep Gap Cr., the Big Ridge Mine—**Ankerite, Apatite, Biotite, Garnets, Hedenbergite, Margarodite, Menaccanite, Muscovite, Pyrrhotite, Quartz** crystals and **Tourmaline**.



WAYNESVILLE: ① AREA, Newfound Gap, pegmatite—**Rubies**; ② N 2 mi., old mine—**Talc, Tremolite, asbestos**; ③ S 2 mi., on Richland Cr., old mine—**Damourite, Garnet, Limonite, Psilomelane**; ④ SE 6 mi., on the Pigeon R., the J.H. Edmondson property at Retreat—**Almandite** garnets, **Corundum**, gem **Kyanite**; ⑤ an outstanding locality for Rose Quartz is Shinning Rock ledge, E on Hwy. 276 for 7 mi. to Bethel, S through Sunburst to US Forest Ranger Sta., get permit and key to gate and drive 10 mi. to Shinning Rock—**Rose Quartz**.

### HENDERSON COUNTY

BAT CAVE: N on Rte. 9: ① 1 mi., in gneissic outcrops—moss **Epidote**; ② ½ mi. farther, in rd. cut—**Unakite**.

## North Carolina

ETOWAH, on SE slope of Forge Mt., the Boylston Creek Mine (12 mi. W of Hendersonville)—**Gold**.

MILLS RIVER, W, along the Green R. on the S side of the Blue Ridge, area—granular **Calcite**, **Xanthitane**, **Zircon**.

TUXEDO: ① area pegmatite mines, in a zone running NE to SW for several mi. semi-parallel with the Green R.: (a) ½ mi. E of town the Freeman Mine; (b) 1.8 mi. SW of town, the Pace Mine; (c) ½ mi. E, the Jones Mine; and (d) 3 mi. SW of the Freeman Mine—**Apatite**, **Epidote**, **Garnet**, **Octahedrite**, **Sphene**, abundant **Zircon**; ② W shore of Lake Summit, at W end—**agate**.

## IREDELL COUNTY

AREA, countywide scattered outcrops of **Quartz**—**Quartz** crystals, specular **Hematite**.

HARMONY-TURNERSBURG, along the South Yadkin R., area— **Beryl**, **Corundum**, **Tourmaline**, etc.

MOORESVILLE, WNW 4½ mi., area—**agate**, **Amethyst**, **Quartz** crystals.

NEW HOPE: ① area old Mica mines—**Beryl**, **Garnet**, **Mica**, **Quartz** crystals, **Tourmaline**, etc.; ② ½ mi. S of the Post office, the McClelland prospect—**Beryl**, **Quartz** crystals; ③ SW 2 mi., the Campbell prospect—**Beryl**, **Quartz** crystals.

STATESVILLE: ① area: (a) the Statesville Quarry—**Oligoclase** sunstone; (b) the Cook farm, ½ mi. W, area; (c) and 1½ mi. S, area—**agate**, **Amethyst**, **Quartz** crystals; ② area fields just N of town—**Amethyst**; ③ N on US 21 and 1.6 mi. N of the Prison Camp—**Corundum** (pale blue); ④ W, at the Acme (Collins) Mine—**Sapphires** (in stream gravels behind a drive-in theater; old mine dumps have been built over); ⑤ S 3 mi., area—**agate**, **Amethyst**, **Quartz** crystals; ⑥ W 5 mi., near old city airport, area—**Zircon** (fluorescent), ⑦ S 12½ mi., area—**agate**, **Amethyst**, **Quartz** crystals; ⑧ SW 14 mi., at Snow Creek: (a) N, on the Campbell property—**Beryl** (golden, green), **Quartz** crystals, black **Tourmaline**; (b) Fox Mt., area—**Rutile** crystals; ⑨ NW 14 mi.: (a) on farms along Rte. 115; (b) S of Rhyne's store —**Citrine**, **Quartz** crystals (smoky, clear); (c) ½ mi. N of Rhyne's store, a massive outcrop— **Rose Quartz**.

## JACKSON COUNTY

AREA: ① countywide Cr. Gravels, particularly along the S slope of the Blue Ridge, near Hogback, Chimney Top Mts. and Cashiers, placers—**Gold**; regional pegmatite outcrops—**Golden Beryl**; ③ confluence of Johns Cr. With Caney Fork, a ridge 1¼ mi. SSE, outcrop—**Golden Beryl**; ④ E central border, near Pinhook Gap, the McCall Mine—**Feldspar**, **Garnets**, **Mica**, **Quartz** crystal, **Tourmaline**, **Uranium** minerals; ⑤ Hall Sta., area—**Almandite** garnets; ⑥ the Wolf Creek Mine—**Chalcocite**, **Chalcopyrite**, **Chrysocolla**, native **Copper**, **Malachite**; ⑦ 1¾ mi. NE of Whiteside Cove, the Grimshawe Mine—**Golden Beryl**; ⑧ SW of Toxaway Mt. and ¼ mi. NW of US 64, pegmatite outcrop—**Beryl**, **Aquamarine**, **Garnets**, black **Tourmaline**, etc.; ⑨ S of US 64 on Transylvania Co. line: (a) area mines, especially the Rice Mine—**Aquamarine**, **Sapphire**; (b) along S shore of Sapphire lake, the Sapphire Mining Co. Mine—**Sapphires**.

BALSAM, S 57° E 2 air mi., the Big Flint (grassy Ridge) Mine—**Biotite**, **Garnets**.

CASHIERS: ① E 4¼ mi., between Fairfield Lake and a tributary of Horse-pasture R., in peridotite exposure spanned by US 64 and extending to Little Hagback Mt. on the N—**Corundum**; ② Sheepcliff Mt., the Sheepcliff Mine—**Aquamarine**, **Golden Beryl**, **Feldspar**, **Garnets** (various colors), **Mica**, **Quartz** crystals, **radioactive minerals**; ③ Whiteside Mt., area old mines—**pegmatite gems**.

## A Location Guide for Rock Hounds in the United States

CULLOWHEE: ① the Cullowhee Copper Mine—**Chalcocite, Chalcopyrite, Malachite, Melaconite**; ② S 41° W 3½ air mi. and 2,000' NW of Presley Cr., on a steep E facing slope (elev. 3,000'), the Bowers Mine—**rum Mica**.

DILLSBORO, S 23° W 7½ air mi., the Eagle Cope Mine (above Savannah Cr. And US 23, about ½ mi. W of the Cowee sawmill) —**Biotite, Garnets, Muscovite, Pyrite, Pyrrhotite**.

HOGBACK, the Hogback Mine—**Chromite, Chrysolite, Corundum, Damourite, Dudleyite, Margarite, Quartz** crystals (drusy), **Rutile** in Corundum (rare), **Tourmaline**.

MONTVALE: ① area stream gravels—**Rubies, Sapphires**; ② the Grimshawe Mine—**Aquamarine**, gem **Corundum**.

SAPPHIRE: ① area stream gravels along border of Transylvania Co. line; ② SSW 2 mi., the Beryl Mines (½ mi. N of summit of Sassafras Mt.); and ③ the Sapphire and Whitewater mines—**Golden Beryl, Corundum**.

WEBSTER: ① near town, an outcrop—gem **Olivine**; ② area dunite outcrops—**Bronzite** (altered Enstatite), **Websterite** (Bronzite-diopside); ③ area mines—**Actinolite, chalcedony, Chromite, Chrysolite, Corundum, Deweylite, Enstatite, Genthite, Magnesite** (crystalline, earthy), **Marmolite, Penninite, Pyrolusite**, drusy **Quartz** crystals, **serpentine, Talc, Tremolite, Wad**; ④ SE, via Rtes. 107 & 116, area deposits—**Actinolite, Bronzite, Chromite, Diopside, Garnierite, Genthite, Goethite** (botryoidal), drusy **Quartz** crystals, **serpentine, Steatite, Websterite**; ⑤ large pegmatite dike exposed in W central part of Co.—**Gems, pegmatite minerals**.

WILLETS: ① area not far E of town and Sylvia—**Rhodolite** garnets; ② SE 1 mi., on Sugarloaf Mt., via US 19A and old rd., a mine—**Garnets**.

## LINCOLN COUNTY

AREA: ① an extensive Tin-Spodumene mining belt shared with adjoining Co.: (a) regional old mines, and (b) regional stream gravels, as float—**Cassiterite** nodules (pegmatites are most exposed SE of Laboratory and E of US 321); ② Pumpkin Center, SE 1 mi., old mines dating back to the Civil and Revolutionary wars—**Goethite, Hematite, Tin** minerals.

COTTAGE HOME, are gravels—**Diamond**.

DENVER: ① S 1.3 mi., at the Forney farm—**Amethyst, Quartz** crystal; ② SW 1¼ mi. and 2 mi. NE of Iron Station, a farm—**Amethyst**.

FALLSTON: ① NE 2½ mi. and extending for some distance, series of pegmatite outcrops (some mixed) —**Gem** crystals and minerals; ② NE 3 mi., the Biggerstaff place (¼ mi. N of residence), the Deadman Mine—**Feldspar** crystals, **Garnets, Hornblende, Quartz** crystals, **Tourmaline**; ③ NE 4 mi. (on way to Flay): (a) the Brown and Carbine mines; and (b) the Foster Mines—**Beryl, Garnet, blue Quartz, green Feldspar**.

FLAY (near Fallston): ① area mines—**Apatite, Corundum, Mica, Sillimanite** (schist), black **Tourmaline**; ② S, at the Baxter Mine (off Rte. 274, almost on the Gaston Co. line) —**Smoky Quartz** crystals; ③ S 2 mi. and ½ mi. W of Rte. 274, the Eaker Mine— gem **Garnets**.

IRON STATION: ① area all way to Denver, in NE part of Co., scattered localities—gem **Amethysts**; ② NE 1.7 mi., on the Lynch farm—**Amethysts**; ③ NE 2 mi., at the Randleman (Goodsen) farm, (fee) —museum quality **Amethysts**; ④ NE 4 mi., the Grahan Mine—**Chalcopyrite, Gold**; ⑤ N on Hwy. 1314 to Hwy. 73, turn right, then right on Hwy. 1509, and right again on Hwy. 1417, pay fee and walk to digging area on Reel farm —**Amethysts**.

LINCOLNTON, near the Hope Mine—**Gold**.

MACPELAM CHURCH, E 2 mi., old mine—Manganese **Garnets, Chalcopyrite, Pyrite**.



## North Carolina

### MACOM COUNTY

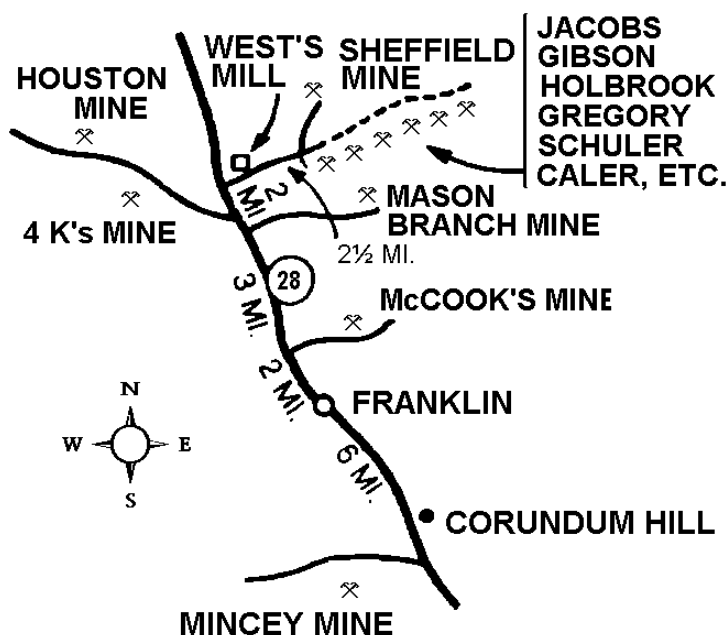
AREA: ① Hanging Dog Cr., gravel beds, and ② Persimmon Cr.—**Staurolites**.

BURNINGTOWN (3 mi. N of Franklin), off Rte. 28 via Co. rd., in gravels of Burningtown Cr.—**Sapphires** (orchid, pink).

ELLIJAY (3 mi. SE of Franklin), the Mincey Mine—**Corundum** (various kinds), **Ruby**, **Sapphire** (bronze, blue).

FRANKLIN (Gem Capital of the World): ① area mines, prospects and diggings—**Amethyst**, **Bronzite**, **Epidote**, **Fibrolite**, **Rhodolite** garnet, **jasper**, **Kyanite**, **Menaccanite**, **Quartz** crystals (dendritic), **Rhodochrosite**, **Ruby**, **Rutile** crystals, **Sapphires**, **Sphalerite**, **Staurolites**, **Wad**; ② E 1½ mi. at Corundum Hill in dunite and serpentine—industrial **Corundum**, **Rubies**, **Sapphires** (blue, green, orchid, pink, yellow; to large size), **Bronzite**, **Chromite**, **Olivine** crystals; ③ ESE 4½ mi., on S slope of Higdon Mt. ½ mi. N of US 64, W of Crows Branch Cr. Jct. With the Cullasaja R. (part of

Hill), area outcrops (in dunite) and mines—**Actinolite**, **Anthophyllite**, **Cerolite**, **chalcedony**, **Chromite**, **Chrysolite**, **Corundum**, **Culsageeite**, **Deweylite**, **Diaspore** (rare), **Enstatite**, **Genthite**, **Kerrite**, **Maconite**, **Margarite**, **Magnetite**, **Hyalite** opal, **Penninite**, **Prochlorite**, drusy **Quartz** crystals, **Ruby**, **Rutile** (rare), **Sapphire**, **serpentine**, **Spinel** (crystals, granular), **Tourmaline**, **Talc**, **Tremolite**, **Wilcoxite**; ④ E



6½ mi., the Mincey Mine (also under Ellijay)—**Corundum** (various kinds), **Ruby**, **Sapphire** (bronze, blue); ⑤ S, along the Tennessee R., area—**Columbite**, **Damourite**, **Garnets**, **Kyanite**, **Staurolites**; ⑥ NW 1¼ mi. (from center of town), the Allman Cove group of Mines—**Biotite**, **Feldspar**, **Muscovite**, **Quartz**; ⑦ N 6 mi., the Cowee Valley (take Rtes. 23-141 N 3 mi. from Franklin, turn NW on Rte. 28 about 4 mi. into signposted mining dist. And up Cowee Cr. Past the Cowee Baptist Church): (a) many area mines (fee)—**Garnets**, **Rubies**, **Sapphires**, etc.; (b) confluence of Calor Fork and Cowee Cr., area gravels—**Corundum** (pink, orange, violet, white), **Corundum** nodules (in Saprolite); (c) turn E to the famed Cowee Creek Ruby Tract (of mines) along the Calor Fork of Cowee Cr., (Dale, Demko, Carter, Cowee Valley, Gibson; in creek flume diggings Holebrook, Rockhound Haven Gem, Shuler, etc.; fee charges at all mines)—**Corundum**, **Garnets**,

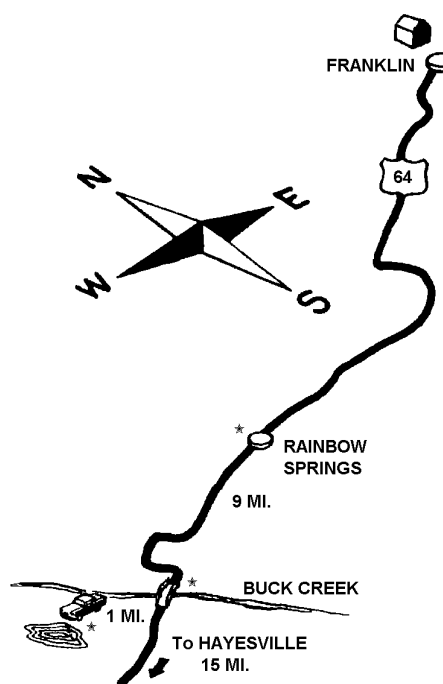
**Rubies, Sapphires;** (d) regional mine dumps also contain **Beryl, Bronzite, Chromite, Corundum, Fibrolite, Gahnite** (zinc spinel), **Garnets, Gold, Hornblende, Ilmenite, Iolite** (colorless), **Kyanite, Monazite, Pleonaste** (black spinel), **Pyrite, Quartz** crystals, **Rubies, Rutile** crystals, **Sapphires, Staurolite** (transparent), **Tremolite** and **Zircon**; ⑧ N 5 mi. on Hwy. 28, right to head of valley to Masom Mt.—**moonstone**; ⑨ 10 mi. E at Sheep Knob Mt.—**Aquamarine**; ⑩ one of the most reliable locations for Rhodolite garnets, is a Mason Branch Mine known as the Ried Mine, Take Hwy. 28 NW from Franklin 5 mi. to Mason Branch sign pointing to mine, take rd. ¼ mi. to mine—**Rhodolite** garnets, **Sapphires**.

**HIGHLANDS:** ① in city limits, a pegmatite outcrop just N of US 64—**Beryl**; ② SW on US 64 (NW of town) and W 2 mi. to dry Falls, then take Co. rd. southerly along Turtle Pond Cr.: (a) in area gravels—**Corundum, Almandite** garnets, **Quartz** crystals, etc.; (b) an old mine in area—**Beryl** (common, golden), **Feldspar, Muscovite, Quartz** crystals, black **Tourmaline**; ③ 3 mi. out on US 64 turn onto gravel rd. ¾ mi. to Whiteside Mt., area—**Almandite** garnets; ④ SE 4½ mi., N of rd. just W of the Jackson Co. line, the Ammon Mine—**Amethyst**; ⑤ SW 5½ mi. on Rte. 106, to Little Scaly Mt.: (a) in area rock exposures, and (b) area mines—**asbestos**, gem **Corundum, Rutile** crystals, **serpentine, Vermiculite**; ⑥ 6 mi. out on Rte. 106, the Waggoner Mine (on Abe's Cr.)—**Amethyst**.

**OTTO** (9 mi. S of Franklin): ① E 0.6 mi.: (a) a mine on Tessentee Cr.—**Amethyst** (in Kaolinite weathered from pegmatite); (b) area stream gravels—**Amethyst, Garnets**; (c) near headwaters of Tessentee Cr., old mine—**Amethyst, Beryl, Corundum**; ② mouth of Tessentee Cr.: (a) NE 2 mi., the Connally Mine; and (b) E 4 mi., area gravels—**Amethyst, Quartz** crystals.

**RAINBOW SPRINGS**, SW 9 mi. on Hwy. 64 to bridge where Buck Cr. Crosses hwy., turn right at bridge and go 1 mi. to another bridge, park and hike up mt. To outcrop—**Pyrope** garnet, **Ruby** in **Smaragdite**.

**WESTSMILL** (6 mi. N of Franklin via Rte. 28), S 1.6 mi. from the Wests Mill bridge to slopes of Mason Mt.: ① area stream gravels—**Corundum** pieces, **Garnets, Hornblende** and **Quartz** crystals; ② the Rhodolite Mine—**Rhodolite** garnets (abundant), **Gedrite, Hypersthene, Biotite**; ③ ½ mi. S of crest of Mason Mt., a quarry—**Rhodolite** garnets, **Gedrite, Hypersthene, Kyanite, Biotite, Quartz** crystals.



## MADISON COUNTY

**AREA:** ① many rock exposures along Co. rds. and hwys.—**Unakite**; ② N part of Co., many localities—**Essonite** garnet, **Vesuvianite**; ③ W part of Co., in mined deposits—**Ilmenite, Hematite, Magnetite, Psilomelane, Pyrolusite**; ④ Bear Cr., 2 mi. above mouth, area—**Calcite, Chlorite**, green **Coccolite, Epidote, Garnet** (large crystals), gem **Kyanite, Magnetite, Staurolite, Talc**; ⑤ gravels of Reed's Cr.—**jasper**; ⑥ Lemon Gap, S ½ mi. on East Fork Cr., area—**Allanite**.

**BLUFF:** ① area outcrops—**Unakite, jasper**; ② NE 1 mi., old mine—**Barite** crystals; ③ SW 2 mi., Roaring Fork Cr.: (a) ½ mi. W of confluence with Meadow Fork,

## North Carolina

outcrop—**Unakite**; (b) 1 mi. N of confluence with Spring Cr. (which empties into French Broad R.)—**Unakite**.

DEMOCRAT, N, 1.7 mi. to first E trending rd. after passing the Pleasant Gap Methodist Church, then ½ mi. to the Carter Mine (at head of Holcombe Branch) —**Beryl, Chromite, Chrysolite, Corundum** (pink, white), **Culsageeite, hornstone, Hyalite** opal (aqua color), **Menaccanite, Olivine** crystals, **Prochlorite, Quartz**, gem **serpentine, Spinel, Tremolite**.

HOT SPRINGS: ① area, a new discovery—orange fluorescent **Barite** crystals with **Sphalerite**; ② area gravels, float in field, rd. cuts, etc.: (a) along the French Broad R., (b) around Knapp's store, and (c) near Reed's Cr.—gem **jasper**; ③ just S and extending to Joe and E to big Laurel and Walnut creeks, the Max patch Mts., type locality, with many outcrops in a broad area along the Tennessee border—**Unakite, jasper**.

MARSHALL: ① area—**Bornite, Calcite, Chalcopyrite, Epidote, Fluorite, Galena**; ② gravel beds of Little Pine Cr.—**Rhodolite** garnets; ③ N 6 mi. on Redmon Dam rd, cross dam, turn right, go to forks, take left for to Lone Pine Mine (fee \$2.00) —**Almandite** garnets.

REDMON: ① just N, above RR tracks—gem **Almandite** garnet; ② SW 2 mi., on Little Pine Cr., the Little Pine Garnet Mine—**Almandite** garnet; ③ SW, near headwaters of Paw Paw Cr., old mine—**Barite**.

WALNUT: ① area exposures, occasional—**Staurolites** (twinned crystals); ② Walnut Cr., near the French Broad R., area—green **Coccolite** in **Calcite, Phlogopite** mica.

## McDOWELL COUNTY

AREA: ① stream gravels of Co.—**Pyrope** garnets, placer **Gold**; ② area Mica mines (many) —**Garnets, Mica**, etc.; ③ Glade Cr., North Muddy Cr., and South Muddy Cr.—**Gold, Platinum**, etc. ④ Hunt's Mt., area—**Gold**; ⑤ Second Broad R., between Vein Mt. And Huntsville Mt., the Vein Mt. Mine—**Chalcopyrite, Gold, Pyrite**; ⑥ the old toll rd. to Mt. Mitchell, near Greybeard Mt. (almost on the Buncombe Co. line), pegmatite outcrop; and ⑦ many other pegmatite exposures in area—**Almandite** garnet, **Autunite, Beryl, Columbite, Smoky Quartz** crystals, **Samarskite**.

BRACKETTOWN, in valley of the headwaters of South Muddy Cr., the Marion Bullion Co. Mine—**Chalcopyrite, Diamonds, Galena, Gold, Platinum, Pyrite, Sphalerite**.

DYSARTSVILLE: ① numerous area old era Gold mines, placers—**Gold**; ② South Muddy Cr. Crossing of Rte. 26: (a) in cr. gravels—**Diamond, Gold**; (b) nearby placer mines —**Corundum, Gold, Zircons**; (c) a tributary 1.2 mi. SE of town, the Mills farm—**Corundum**; ③ SW 2 mi., on N side of paved rd. to US 221, as float in stream gravels —**Corundum**.

GRAPHITEVILLE, area exposures, extending into Buncombe Co.—**graphite**, gem **Kyanite, Quartz** crystals.

MARION: ① S, in pegmatite dike exposures—**gem** crystals; ② Lincolnville Mt.: (a) area—**Quartz** crystal; (b) ½ mi. S of North Cove School, on the Gregg and Lonon farms—**Psilomelane, Pyrolusite**; (c) near the North Cove along Honeycutt Cr. And Tom Cr. N of US 221, in Mica prospects on the Swofford property—**Mica, Uranium** minerals; ③ headwaters of North Fork of the Catawba R.—**Pyrite, Sphalerite**; ④ SW 6 mi., the Sugar Hill area, on the Charles Laney farm—**Amethyst**.

NEBO: ① RR and rd. cuts along Rte. 105—**Quartz** crystals; ② outcrops of Mica schist in the banks of Lake James, abundant—**Garnets**.

OLD FORT: ① W, in the Brevard Belt, area mines—**Graphite**; ② W 4½ mi., along Mills Cr., area mica prospects—**Beryl, Mica**.

## A Location Guide for Rock Hounds in the United States

WOODLAWN: ① quarry near US 221—dogtooth **Calcite**; ② a few hundred yds. N, area—phantom **Quartz** crystals.

### MECKLENBURG COUNTY

AREA, Clear Cr. Twp., on a high plateau from which flow McAlpine's Cr. to the SW, Reedy Cr. to the NE, and Clear Cr. to the SE: ① the Surface Hill Mine—**Chalcopyrite, Gold**; ② old mine on Clear Cr.—**Diamond, Gold**.

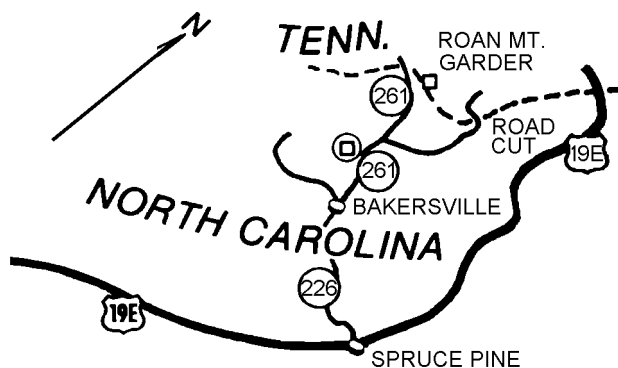
CALDWELL, area float—**agate, carnelian, chalcedony**.

CHARLOTTE: ① building excavations in city—**jasper, leopardite**; ② S ½ mi. from town center, the St. Catherine (Charlotte) Mine, and ③ S 1 mi., the Rudisil Mine—**Copper Pyrites, Gold, Iron, massive Pyrite, Silver** (traces); ④ W 2½ mi., the Clark Mine—**Gold**; ⑤ NW 5½ mi., the Capps Mine (between Rossel's Ferry and Beattie's Ford rds.) —**Copper** minerals, **Gold**; ⑥ W 9 mi., the Stephen Wilson Mine—**Gold**; ⑦ NW 11 mi., the Hopewell (Kerns) Mine, and other nearby mines and prospects—**Copper** minerals, **Gold, Pyrite**, etc.

### MICHELL COUNTY

AREA: This is a generally rugged, mountainous county with so many gem mines that detailed topographic quadrangle maps, or such rockhound maps as are pit out by Baker's Motel and Tainter's New Service in Spruce Pine are required for pin-point accuracy in locating any of the prolific collecting locations. Nearly all such locations are old or active mines, privately owner, and requiring either permission to enter or a modest fee to collect. Almost all the mines listed here are in the Spruce Pine surroundings. ① countywide stream gravels and gravel pits—**agate**; ② Grassy Cr.: (a) area gravels—**Aquamarine, Golden Beryl**; (b) the prehistoric Indian Sink Hole Mine—blue **Beryl**; (c) the Meadows Mine—blue **Beryl**; ③ the Buchanan Mine—**Albite** feldspar, **Allanite, asbestos, Beryl, Gummite, Manganese Garnet** (black Andradite), **Graphite, Muscovite, Kyanite, Phosphuranylite, Yttrogummite**.

BAKERSVILLE: ① nearby Clarence Wilson farm, exposure of a Feldspar matrix—gem **Epidote** crystals; ② the Kona area, exposures—**Epidote**; ③ Medlock Mt., area—**Feldspar** crystals (included with Hematite or Goethite); ④ SE 1 mi. on white Oak rd., the Pannell Mine (reached by turning left out of town on Rte, 226) — **Bronzite, Corundum, Mica, Vermiculite**; ⑤ SE 1.2 mi., the Pannell farm, exposures —**Ruby, Sapphire**; ⑥ S 2½ mi., a mine— **Actinolite, Chromite, Chrysolite, Deweylite, Enstatite, Magnesite, Penninite, Quartz** crystals, **Rutile** (in Corundum), **Saponite, serpentine, Talc, Tremolite**; ⑦ SE 4 mi. on Hwy. 226 in Quartz near top of Yellow Mt.—**Kyanite**; ⑧ E 3 mi., area—**Albite, Epidote**; ⑨ N 1 mi., at base of Meadow Mt., area **moonstone, Oligoclase** feldspar (transparent); ⑩ NE 1½ mi., Clarence E. Wilson property—**Epidote** (doubly terminated crystals); ⑪ N, on McKinney Cove rd., at Lick Ridge, area—chatoyant **moonstone, Epidote** (dark crystals), **Sphene**; ⑫ N on the Roan Mt. rd. (Rte. 261) to area of scenic Roan Mt. (elev. 6,267'): (a) turn W 0.3 mi. S of Carvers Gap, opposite sign *Pete's Crest Farm*, a mine—**Uranium** minerals; (b) area outcrops on Roan Mt.—**Unakite**; (c) 12 mi. NW on Hwy. 261 at Roan Mt. Flower Garden—green **Feldspar, Thulite**; ⑬ NE 7 mi., on the Dillinger farm—gem **Kyanite** (bladed green crystals).



## North Carolina

BANDANA: ① the Sink Hole Mine—**Apatite**, **Beryl**, **Apatite Garnet**, **Kyanite**, **Thulite**; ② S 3 mi., the Abernathy Mine—**Apatite**, **Biotite**, various **fluorescent minerals**.

CARVERS GAP: ① W 1½ mi., on N bank of the Roan Peak rd.—**Unakite**, massive green **Epidote**; ② S 3 mi., granite outcrops—**Unakite**.

CROSSNORE, N, at the Hanshaw Mine—**Garnets**.

FLAT ROCK: ① area—**Chrysoberyl**; ② from 4 mi. NW of Spruce Pine turn N at Lawson Jct. To Rag Branch, pegmatite mine—**Hyalite** opal (fluorescent), **Thulite**, **Uranium** minerals; ③ the major area mines—**Albite Autunite**, **Epidote**, **Garnet**, **Gummite**, **Menaccanite**, **Muscovite**, (pink, white), **Phosphuranylite**, **Uraninite**, **Uranotile**, **Zircon**, **Zoisite** (var. **Thulite**).

GILLESPIE GAP (on the Blue Ridge Parkway S of Spruce Pine), N 4 mi., turn E on Co. rd. 1117 (Carter Ridge rd.) for 1.2 mi., on N side of rd., the Wiseman Aquamarine Mine (no collecting on Sundays)—**Aquamarine**.

GLEN AYRE (NE of Spruce Pine): the Biddix place—**moonstone**; ② NE 2.4 mi. (½ mi. E of Rte. 261), mine owned by Benton McKinney—**Orthoclase** feldspar (with sunstone sheen).

HAWK (4½ mi. ENE of Spruce Pine on Co. rd. 1211, about halfway between Rte. 226 and US 19E): ① N 1 mi., the Hawk Mine—**Allanite**, **Apatite**, **Epidote**, **Oligoclase** feldspar (water clear crystals), **Pyrite**, **Thulite**, black **Tourmaline**; ② E 1 mi., the Stagger Weed Mine—**Feldspar** and Milky **Quartz**; ③ the Sugar Tree Mine—**Garnets** (huge clear crystals); ④ S, at the Clarissa Mine—gem **Garnets**; ⑤ E 2.6 mi.: (a) old mine dumps—**Corundum**, **Kyanite**, **Ruby**, **Sapphire**, **Tremolite**; (b) the Dillinger farm—**Ruby**, **Sapphire**.

INGALLS, W on Co. rd. 1143 (area starting 3 mi. E of Spruce Pine leading from main hwy.), area fields, cuts, etc.—**Actinolite** crystals (in boulders), foliated **Talc**, **Steatite**.

KINGS MT., the Foote Mineral Co. Mine—**Cassiterite**, **Spodumene**.

LINVILLE FALLS, E 4 mi., at Wiseman View, area—dendritic sandstone, **Quartz** crystals.

LITTLE SWITZERLAND (on the Blue Ridge Parkway), NW via Co. rd. 110 and 1104 to the Crabtree Emerald Mine (map next page)—**Apatite** (fluorescent), **Emerald**, **Emerald** matrix.

MOUNT PLEASANT, NW 2½ mi. on rd. to Hughes, turn left on dirt rd. at Hughes, the Lieback Mica Mine—fine large red **Garnets**.

PENLAND: ① E 0.2 mi., in horseshoe bend of the North Toe R., the Deer Park Mine (map 5)—**Autunite**, **Feldspar** crystals, **Garnet**, **Hyalite** opal, **Mica**, **Monazite** crystals, **Thulite**, **Torbernite**, **Uraninite**; ② Penland Jct.: (a) in rd. cut on Rte. 226—gem **Epidote**; (b) N 1½ mi., Bear Cr. Gap (on Bear Cr. Rd. N of Rte. 226), area—gem **Kyanite**.

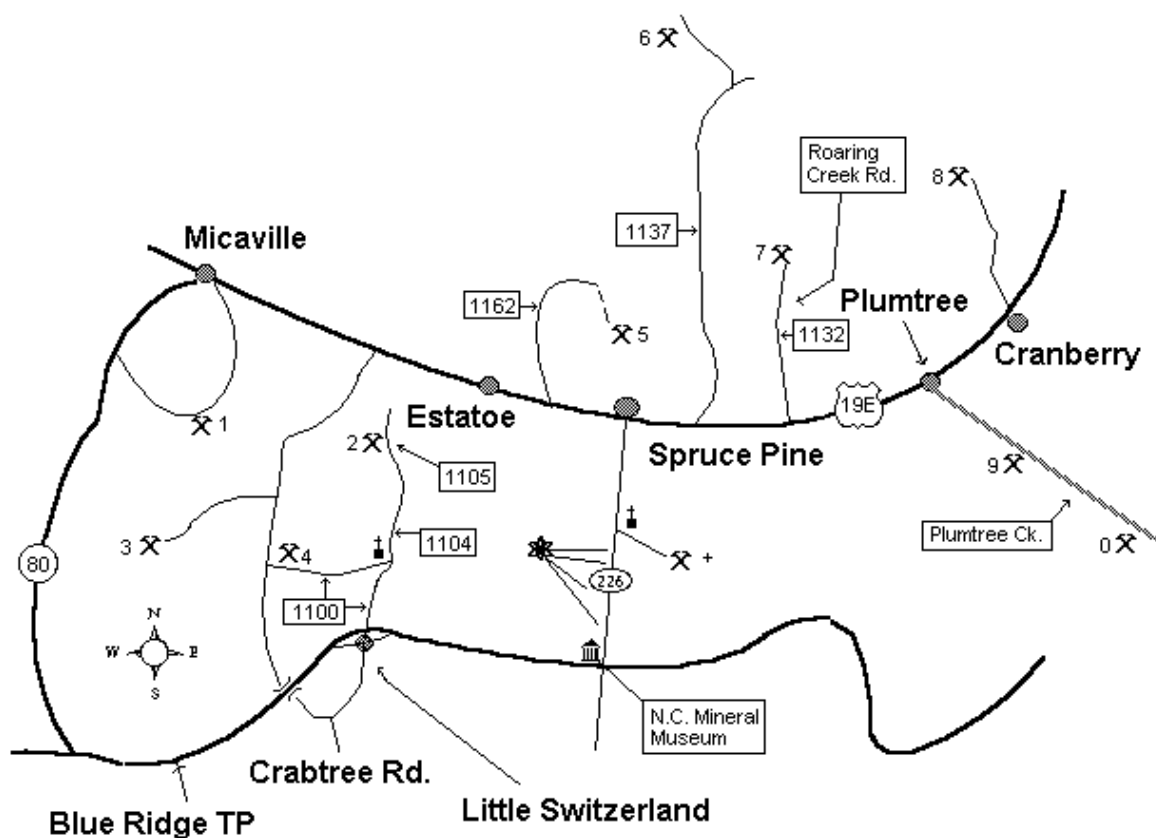
SPEAR, many area mines and dumps—**Beryl**, **Garnets**, **Epidote** crystals, **Mica**. Most mine rds. Require 4-wheel drive.

SPRUCE PINE. This small community is located on US 19E about 4 mi. N of the Blue Ridge Parkway, a center for a large Feldspar and Kaolin mining industry. Within a radius of 20 mi. are far too many gem and mineral mines to list other than a few of great interest. Many of the commercial mines are open to collectors on weekends only, or weekdays if no blasting is scheduled. Because of the rugged terrain, it is advisable to hire a local guide with a 4-wheel drive vehicle. Mine owners usually charge a modest fee. The town itself has many rock shops through the center of town. ① Area mica and Feldspar mines (very many)—**Actinolite**, **Amazonite**, **Autunite**, **Garnet**, **Hyalite** opal, gem **Kyanite**, foliated **Talc**, **Thulite**, **Tourmaline**, etc.; ② the Grassy Creek Mine near town—**Aquamarine**; ③ E on US 19E to English Knob (0.4 mi. W of the Avery Co. line), mine on E side of hwy.—**Autunite**, **Columbite**, **Cyrtolite**, **Gummite**, **Monazite**, **Pitchblende**, **Samarskite**, **Torbernite**; ④ E on US 19E to jct. With Co. rd. 1143 (second rd. branching N), then: (a) N 1 mi., a mine—**Actinolite**, **Talc**; (b) N 1.3 mi., turn right on unmarked rd.

## A Location Guide for Rock Hounds in the United States

(leading to city dump) 0.2 mi. to the Wiseman Uranium Mine (closed weekends - map 6) and 0.9 mi. to the Pink Mine (3 mi. from town; closed on weekends) —**Apatite, Garnets,**

### The Spruce Pine - Little Switzerland Area



- |                       |                           |
|-----------------------|---------------------------|
| 1 Fanny Gouge Mine    | Aquamarine, Garnet        |
| 2 Crabtree Mine       | Emerald, Golden Beryl     |
| 3 No 20 Mine          | Thulite                   |
| 4 McKinney Mine       | Beryl, Thulite, Amazonite |
| 5 Deer Park Mine      |                           |
| 6 Wiseman Mine        |                           |
| 7 Burlson Mine        | Moonstone                 |
| 8 Cranberry Iron Mine |                           |
| 9 Elk Mica Mine       | Garnet                    |
| 0 Slippery Elm Mine   | Garnet                    |
| + Grassy Creek Mine   | Aquamarine, Moonstone     |

★ Local Rock Shops

**Uranium** minerals; (c) N 5 mi., the Spread Eagle Mine—**Feldspar, Garnets, Gummite** and rare **Uranium** minerals. Five mi. out on Co. rd. 1143 is a 3-way fork (the right fork leading to Ingalls). The center fork has two mines on a trail to the right—**Smoky Quartz**

## North Carolina

crystals, **radioactive minerals**; the left fork leads to three mines (the most distant being 6 mi. from town) —**Garnets**, **Hyalite opal**, **pegmatite minerals**.<sup>⑤</sup> S on Rte. 226 leading toward the Blue Ridge Parkway, three major mines: (a) 1½ mi. from town, the Henry Mine—**Steatite**, foliated **Talc**; (b) ½ mi. ESE of Chalk Mt., the McHome Mine—**Amazonite**, **Aquamarine**, **Golden Beryl**, gem **Spodumene**; (c) 2½ mi. from town, the Wiseman Mine—**Aquamarine** (sea blue), **Golden Beryl**, **Mica**, **Spar**; <sup>⑥</sup> SE 2½ mi. (air) and SE of Brush Cr. (follow Rte. 226 to Little Switzerland 5 mi. S of Spruce Pine, turn right on Co. rd. 1100 to a church, take Co. rd. 1104 to the Crabtree Emerald Mine (elev. 5,000'), (fee) —**Emerald**, **Garnets**, **Beryl** (pale colors, yellow), **Schorl**; <sup>⑦</sup> W to jct., with Crabtree rd. (Co. rd. 1002): (a) S on Crabtree rd. to the McKinney Mine (map 4) —**Amazonite**, **Autunite** (staining feldspar), **Beryl** (massive opaque green or blue), **Bornite**, **Chalcopyrite**, **Columbite**, **Covellite**, **Gummite**, **Hyalite opal** (blue, translucent, brilliantly fluorescent), **Malachite**, **Muscovite**, (with brilliant Garnet inclusions), **Samarskite**, **Sphalerite**, **sunstone**, **Torbernite**, **Uraninite**; (b) W to next S trending rd., S to fork, turn W to the Old No. 20 Mine (5 mi. SW of Spruce Pine on W fork of Crabtree Cr.) —**Beryl**, **Crystallite**, **Kryolite** (amber), **Feldspar**, gem red **Garnets**, **Gummite** (orange), **Hyalite opal**, **Muscovite** (greenish), **Thulite**, **Torbernite**, **Uraninite**; (c) nearby Ray Olivine Mine—**asbestos**, **Chlorite**, **Chromite**, **Olivine**, **serpentine**, **Talc**; <sup>⑧</sup> W 2 mi. on US 19E, then SW 1 mi. on a mine rd., the Chalk Mt. Mine (a working mine with a sheer face of 200') —**Autunite**, **Feldspar**, **Hyalite opal**, **Muscovite**, **Quartz** crystals, **Thulite**, **Torbernite**; <sup>⑨</sup> NW 1 mi. on Rte. 226 (toward Bakersville): (a) area rd. cuts—**Byssolite**, gem **Epidote** crystals, **Stilbite**, **Zeolites**; (b) 1½ mi. up Sullins Branch rd., the Sullins Mine—**Autunite**, **Hyalite opal**, **Torbernite**; <sup>⑩</sup> NW 1.7 mi. on Rte. 226 to dirt rd. leading ½ mi. N, the Southern Branch Mine—**Garnets**, **Hyalite opal**, pink **Orthoclase** crystals, **Unakite**; <sup>⑪</sup> NNE 1.8 mi., the Wiseman Tract (¼ mi. SW of English Knob) —**Aquamarine**, **Golden Beryl**; <sup>⑫</sup> NW 2 mi. on Rte. 226 and 1½ mi. NE of Minpro on a private rd., the Pine Mt. Mine—**Autunite**, **Hyalite opal**, **Torbernite**; <sup>⑬</sup> N on Rte. 226 about 4 mi., turn NE onto first unmarked mine rd., park car and hike 2½ mi. uphill to the Chestnut Flats Mine—**Garnets**, **Uranium** minerals; <sup>⑭</sup> NW 5 mi., the Putnam Mine (and on dumps of adjoining Deer Flat and Pine Mt. mines) —pink **Thulite**; <sup>⑮</sup> NW 8 mi. on Rte. 226 and 2 mi. on the Slagle gravel rd., in the Snow Cr. Section, the R.B. Phillips Mine—**Garnet**, **Mica**.

## MONTGOMERY COUNTY

AREA: <sup>①</sup> regional abandoned silica quarries—**Quartz** crystals (clear, smoky, some rutilated); <sup>②</sup> Beaver Dam Cr. Jct. With the Yadkin R., NE 2 mi., the Beaver Dam Mine—**Gold**, **Pyrite**; <sup>③</sup> regional mines, especially in the extreme NW corner of Co. (such as the Bright, Ophir, Dry Hollow, Island Cr., Deep Flat, Spanish Oak Gap, Pear Tree Hill, Tom's Cr., Harbin's, Bunnell Mt., Dutchman's Cr., Worth, etc.) —**Gold**; <sup>④</sup> Extreme N part of Co. along the Randolph Co. line, the Uwharrie Mts., numerous mined deposits—**Anatase** crystals (clear blue, bi-colored, in Quartz), **Limonite**.

CANDOR: <sup>①</sup> W 2½ mi., the Montgomery Mine—**Gold**; <sup>②</sup> W 3 mi., the Iola Mine—**Gold**, siliceous **Pyrite**.

ELDORADO: <sup>①</sup> area old mines—**Azurite**, **Calcite**, **Gold**, **Hydrozincite** (strongly fluorescent), **Malachite**, **Pyrite**, **Silver**, **Smithsonite**, **Sphalerite**; <sup>②</sup> SE 2 mi., on E side of the Uwharrie R., a mine—**Gold**; <sup>③</sup> E 3 mi., the Riggon Hill Mine—**Gold**; <sup>④</sup> S 8 mi., the Moratock Mine—**Copper** minerals, **Gold**, **Pyrite**; <sup>⑤</sup> N 1½ mi.: (a) the Coggins (Appalachian) Mine, in argillaceous slates and schists—**Gold**; (b) E, at the Eldorado Mine—**Gold**, **Silver**, **Pyrite**, etc.; <sup>⑥</sup> N 3 mi., near the Randolph Co. line, the Russell Mine in silicified slate—**Calcite**, **Gold**.

STAR, W 3 mi., the Carter Mine—**Gold**.

## A Location Guide for Rock Hounds in the United States

TROY: ① area stream gravels—**petrified wood**; ② a nearby old mine—**leopardite**; ③ NE 14 mi., the Black Ankle Mine—**Gold**.

WADEVILLE: ① W, to within e mi. of the jct. of Rtes. 24 and 27, the Sam Christian Mine—**Gold** nuggets; ② area abandoned silica quarries—**Quartz** crystals (smoky, rutilated).

### MOORE COUNTY

AREA: ① mines such as the Bat Roost, Grampusville, and Schields—**Gold**; ② gravels of Deep Cr.—**petrified wood**; ③ gravels of Shut-In Cr.—**jasper** (gemmy, showy).

CARTHAGE: ① NW 8 mi., the Bell Mine—**Gold**; ② NW 11 mi., the Burns (Alfred) Mine—**Gold**; (a)  $\frac{3}{4}$  mi. N, the Cagle Mine, and (b)  $\frac{1}{4}$  mi. W of the Cagle, at the Clegg Mine—**Gold**.

GLENDON: ① area **Pyrophyllite** mine—**Fluorite, Hematite, Lazulite, Pyrite**; ② NE 1.6 mi. (go 1 mi. E from town, turn E 1.3 mi. on old logging rd. and take right fork to an old Copper mine on the Haw Branch rd.)—**Azurite, Calcite, Malachite**.

ROBBINS, SW, at confluence of Cabin and Dry creeks, on the Moore farm—**Amethyst, Quartz** crystal.

### NASH COUNTY

AREA: ① regional mines such as Conyer's, Nick Arrington, Thomas, Kerney, Taylor, Mann, Davis, etc.—**Gold**; ② Portis Mine: (a) on dumps—**Gold, Iron, Manganese** minerals; (b) SE 1 mi., the Arrington Mine—**Gold**.

ARGO (NW corner of Co. and 5 mi. SE of Ransom's bridge), the Mann-Arrington Mine, in chloritic and porphyritic schist—**Gold**.

### NASH & FRANKLIN COUNTIES

AREA, the N portion of these two counties plus the S sections of Warren and Halifax counties, known as the Eastern Carolina Belt, comprises some 300 sq. mi. containing very many old mines—**Gold**.

### ORANGE COUNTY

CHAPEL HILL: ① area woods, fields, creek gravels—moss **agate, petrified wood**; ② area mines—**Chalcopyrite, Epidote, Hematite, Limonite, Magnetite, Pyrite, serpentine**; ③ NW 12 mi., the Robeson Mine in Quartz—**Gold**.

HILLSBORO: ① area fields, stream gravels, rd. cuts, etc.—moss **agate**, sagenitic **Quartz** crystals (Chlorite inclusions); ② area mines—**Barite, Chlorite, Epidote, Pyrite** cubes, **Pyrophyllite**; ③ S, in abandoned Barite pit—**Barite, Calcite, Celestite**; ④ NE 5 mi. and just S of city, near RR crossing on Rte. 86, area—**Andalusite** crystals, **Pyrophyllite** rosettes; ⑤ at Piedmont Minerals Mine—**Andalusite, Lazulite, Topaz**.

### PERSON COUNTY

REGION, extending SW, covering part or all of the counties of Durham, Orange, Alamance, Chatham, Randolph, Moore, Montgomery, Davidson, Stanley, Cabarrus, Anson and Union. Known as the Carolina Slate Belt, this region contains many once rich **Gold** mines in a zone from 15 to 50 mi. wide. The chief gangue minerals in these mines are: **Bornite, Calcite, Chalcopyrite, Quartz, Rhodochrosite** and **Siderite**.



## North Carolina

ALLENSVILLE, NE  $\frac{1}{4}$  mi., then N on secondary rd. 1 mi. to the old Durgy Copper Mine—**Malachite**.

LONGHURST, NW 2 mi. to Hager's Mt., Quartz vein exposed between rd. and Marlowe Cr. to the W—gem **Kyanite** (with **Pyrophyllite**).

SURL: ① N 2.3 mi. on paved rd. to Mt. Tizah (S part of Co.), on W side of rd. across from a church, area fields, rd. cuts—**Actinolite**, **Hematite**, **Limonite**, **Manganese** minerals, **Quartz** (with Chlorite inclusions); ② 1 mi. E of Mt. Tizah along rd. to Moria, area fields and cuts—**Pyrite** crystals, **Limonite** (most cubes found  $\frac{1}{4}$  mi. W of Mt. Tizah).

### POLK COUNTY

AREA: ① the many regional Gold mines are in extensions of the South Mountain region and include noted old mines as the Double Branch, Red Springs, Splawn and Smith—some **Chalcopyrite**, **Gold**, **Pyrite**; ② regional stream gravels—**Garnets**, placer **Gold**, **Rutile** crystals, **Staurolites**, **Zircons**.

PEA RIDGE: ① area old mines, and ② S  $\frac{1}{2}$  mi., the North Star Mine—gem **Feldspar** and blue **Quartz**, **Garnets**, **Tourmaline**.

SALUDA, SE 5 mi., an old mine—**Calcite**, **Epidote**, brecciated **jasper**, **Feldspar** crystals, **Pyrite**, **Quartz** crystals.

### RANDOLPH COUNTY

ASHEBORO: ① area granite outcrops—**Unakite**; ② W 6 mi. and N of US 64, abandoned road dept. quarry via secondary rds.—**Epidote**, **Feldspar**; ③ W to near Co. line, the Jones (Keystone) Mine (18 mi. E of, S from Lexington, Davidson Co.) —**Limonite** pseudomorphs after **Pyrite**, **Gold**.

FARMER: ① on S side of rd. between town and Denton, Davidson Co., at Copper Hill—**Quartz** crystals (with mossy green inclusions of **Actinolite**); ② the Hoover Hill Mine (17 mi. E of S from High Point, Guilford Co.) in quartz veins—**Gold**.

STALEY, W  $4\frac{1}{2}$  mi., the Bernhardt **Pyrophyllite** mines—**Andalusite** crystals, **Barite** crystals, pearly **Diaspore**, **Fluellite** (fluorescent), **Lazulite** (crystal, massive), **Pyrophyllite** (radiating green crystals, fluorescent), foliated green **Ottrelite**, **Pyrite**.

### RICHMOND COUNTY

ELLBERLE, area creek gravels—**petrified wood**.

### ROCKINGHAM COUNTY

PRICE: ① very many regional mine dumps—**gems**, **minerals**; ② W 1 mi., on state line, the Clifton Mine—**Garnets**, variegated **Quartz**; ③ SW  $3\frac{1}{4}$  mi., on S side of the Price-Sandy Ridge rd., the Short Top Smith Mine, reached via VA Rte. 692 left of US 220, Rte. 691 (left of Rte. 692) to third graded Co. rd. (mine rd.), turn left  $\frac{1}{2}$  mi.—**Allanite**, **Autunite**, **Tourmaline**, **Uranophane**, **Uraninite**; ④ W and S, a broad region of rural rds. (requires topographic map): (a) SW 5 mi. (leave town on US 220, turn immediately left to reach VA Rte. 692, cross VA state line and immediately turn left on VA Rte. 691 to first ungraded rd., turn left 1 mi.), the Long Tom Smith Mine—**Garnet**, **Quartz** (clear, smoky); (b) 1 mi. farther along same rd., the Rosa Evans Mine, on steep slope—**Spessartite** garnet, **Smoky Quartz** crystals.

## ROWAN COUNTY

GOLD HILL: ① area mines, numerous—**Magnetite**, Manganese **Garnet**; ② a nearby quarry—**Amethyst**, **sunstone**; ③ SW 1½ mi., the Mauney Mine—**Gold**; ④ E 3 mi., the New Discovery Mine—**Gold**; ⑤ E 3½ mi., the Dun's Mt. Mine—**Gold**, **Pyrite**; ⑥ E 6 mi.: (a) the Reimer Mine, on the Yadkin R.—**Gold**; (b) 1½ mi. E of the Reimer, the Bullion Mine (little worked), in outcrops as traces—**Gold**; ⑦ SE 9 mi., the Gold Knob Mine—**Gold**; ⑧ SE 10 mi., the Dutch Creek Mine—**Gold**, **Pyrite**.

GRANITE QUARRY, area outcrops and exposures of granite—**Smoky Quartz** crystals.

MT. ULLA, area fields, gravel pits, etc.—**Amethyst**, **Quartz** crystals.

SALISBURY: ① area fields, gravels, rd. cuts—**Amethysts**; ② regional pegmatite outcrops—**Tourmaline** (bi-colored, pink and green, crystals area small); ③ E 3½ mi., the Dun's Mt. Mine—**Gold**.

WOODLEAF, area quarry—pale green **Prehnite** crystals.

## RUTHERFORD COUNTY

AREA: ① many old Gold mines, in quartz mostly—**Gold**, some **Platinum**; ② Sandy Level Church, area mine dumps—**Gold**, **Platinum**, **Diamonds** (rare); ③ the J.D. Twitty placer mine—**Gold**, **Diamonds**.

ELLENBORO: ① on outskirts of town, the Maurice Mine—**Tourmaline**; ② NE 3.2 mi., on W banks of Sandy Cr.: (a) the Dycus Mica Mine—**Beryl**, **Rose Quartz**; (b) farms of Martin and Toney, pegmatite outcrops—**Beryl**; ③ NE 5 mi., the D.G. McKinney Mica prospect—**Beryl**.

GILKEY, E, on W side of Blacksmith Shop rd. 1.4 mi. S of the Green Hill School, pegmatite outcrop—**Corundum**, **Fuchsite** mica.

HOLLIS, N, in area of Huckleberry Mt. and Lisenberry Mt., many old mines—**Mica**, **Quartz** crystals.

RUTHERFORDTON: ① area mines, such as the Ellwood and Leeds—**Gold**; ② NW 0.6 mi., in gravels of Hollands Cr.—**Diamonds**, **Platinum** nuggets, **Quartz** crystals (blue); ③ N on country rd. between Rtes. 221 and 64, a short distance S of the Oak Springs Baptist Church, a deposit—**Corundum**, **Fuchsite**, **Sericite**; ④ N 3½ mi. on US 221, near Isinglass Hill outcrop—**Unakite**; ⑤ NE 4 mi., the Marville Mica prospect—**Mica**; ⑥ N 5 mi., on divide between Cathey's Cr. and the Broad R., the Alta (Monarch, Idler) Mine, showing 13 parallel quartz veins—**Gold**; ⑦ W 3½ mi., the Wilkins Mine—**Mica**; ⑧ W 15 mi. on US 74, pegmatite outcrops—various **gems** and **minerals**.

SUNSHINE, W, on Duncan's Cr. Rd., the McFarland farm (2 mi. E of rd. to Sunshine), a Mica prospect—**Golden Beryl**, **Quartz** crystals (blue, star).

THERMAL CITY: ① area gravels of Stony Cr.—**Garnets**; ② N 1 mi., the McDaniel Mine—**Garnets**; ③ W 2½ mi., the Flack Mine; and ④ W 7 mi., the Kay Mine—**Garnets**; ⑤ the Whitehouse area, on E side of Shingle Hollow rd., 1 mi. NW of the Welcome Home Church, an old prospect—**Bornite**, **Chalcopyrite**, **Galena**, **Marcasite**, **Pyrite**.

WESTMINSTER: ① N 4 mi., granite outcrops on Marlin's Knob E of US 64—**Garnets**, **Unakite**; ② outcrops and gravel along Puzzle Cr. All the way to Ellenboro—**Garnets**.

## STANLY COUNTY

ALBEMARLE: ① NW 2½ mi., the Haithcock and Hern mines, in quartz—**Gold**; ② E 4 mi., the Crawford (Ingram) Mine, placer—**Gold**; ③ NW 7 mi., the Parker Mine, **Quartz** veins in greenstone—**Gold** nuggets.

## North Carolina

MISENHEIMER, the Barringer Mine (4 mi. SE of Gold Hill, Rowan Co.) —**Gold**  
NEW LONDON: ① W, in area stream gravels of Mountain Cr. (in Cabarrus Co.)  
—**Golden Beryl, Diamonds**, placer **Gold**; ② E 1 mi., the Crowell Mine, in silicified,  
sericitic and chloritic schist—**Gold, Pyrite**.

### STOKES COUNTY

DANBURY: ① area stream gravels—**agate, carnelian, chalcedony, jasper, Hyalite** opal, **Hematite, Amethyst, sardonyx**; ② SW 3 mi., a deposit—**Itacolumbite**.

DAN RIVER, area quartz outcrop—**Rose Quartz** (cat's eye, star).

FRANCISCO, SE 4 mi., on N bank of Big Cr. Near confluence with the Dan R. (take dirt rd. left from Rte. 89 midway to Danbury), the Hole Mine—**Garnets, moonstone, Quartz** crystals (milky, smoky).

GAP, COFFEE GAP on Rte. 66 near Hanging Rock State Park, center of a gem and gemstone region: ① area in the Sauratown Mts., a well known Quartz outcrop—**Lazulite** (dark blue gem crystals, massive in quartz), **Quartz** crystals; ② 2 mi. SW of Gap, an excellent deposit—**Itacolumbite**.

SANDY RIDGE: ① W 1 mi. on Rte. 770, turn SW on Co. rd. 1½ mi. to dumps of the Hawkins Mine—**Garnet, Pyrite, Quartz** crystals; ② SW 4½ mi. (turn left off Rte. 704 1 mi. W of Oak Ridge onto unmarked rd. for 1½ mi.), the Moorefield Mine—**Quartz** and dark **Tourmaline**.

### SURRY COUNTY

BURCH STATION, E 1½ mi. from Rte. 268 to the Clarence Greenwood farm —**jasper, Quartz** crystals.

DOBSON, N 10 mi., area mines—**Actinolite, Breunnerite, Chlorite, Hausmannite, Magnesite, Magnetite**, Manganese **Garnet, Pyrolusite, serpentine, Steatite, Talc** (green), **Wad**.

ELKIN, MT. AIRY: ① area outcrops—rock **crystal** (some with inclusions of Iron, Chlorite, Actinolite); ② Mt. Airy: (a) a nearby Feldspar quarry—**Oligoclase** crystals (clear); (b) NE, in large granite quarry—**jasper, Quartz**; ③ gravels of the Mitchell R.—yellow **chalcedony**, gemmy **Hornblende** crystals, **Steatite**; ④ W, on Pleasant Hill (Wilkes Co.), near Rte. 268—quartz **gemstone**.

PILOT MOUNTAIN: ① area—rutilated **Quartz** crystal; ② NE 1.3 mi., on the Phillips and Cos farms—rutilated **Quartz** crystal.

### SWAIN COUNTY

BRYSON CITY: ① area: (a) region extending from town to the Deep Cr. Church, (b) extending to the Franklin Grove church, area—**Allanite, Garnet, Magnetite, moonstone, Quartz** crystals, **Pyrite**; (c) a few hundred yds. From the Deep Cr. Church —**Allanite, Feldspar, Garnet, Magnetite, Mica, moonstone, Quartz** crystals, **Pyrite**; ② N 1½ mi. and just N of the Deep Cr. Campground, in Graphite vein exposures—**Kyanite, Staurolites**; ③ 2½ mi. N of Proctor on Gold Mine Cr., mine—**Copper** minerals; ④ just N of Toot Hollow Branch, the Cox No. 1 Mine—**Almandite** garnets, **Feldspar, Biotite, Pyrite**.

### TRANSYLVANIA COUNTY

AREA, at the end of the Blue Ridge Parkway: ① SE of the Parkway at Looking Glass Rock, just E of US 276: (a) above the Pink Beds Recreation Area—**Smoky Quartz**

## A Location Guide for Rock Hounds in America

crystals; (b) vein extends about 1 mi. up the mt. along old rd. —**Smoky Quartz** crystals; ② E of the mt., area of Looking Glass Falls—**Garnets**; ③ in rd. cuts along US 276 about 23 mi. S of the falls, in pine grove N of the hwy., area—**Almandite** garnets.

CEDAR MOUNTAIN, on unnumbered rd. leading E from US 276, along the Carolina Power & Light Co. line between Cedar Mt. and Blue Ridge—**Almandite** garnets, **Pyrite** crystals.

FAIRFIELD VALLEY, along Georgetown Cr., as placers—**Gold**.

MONTVALE, area mines—**Sapphires**.

OAKLAND, N, on E side of Great Hogback Mt., area old mines in peridotite—**Bronzite**, gem **Corundum**.

ROSMAN: ① E, on the Tinsley farm N of the Girl Scout Camp, area—dogtooth **Calcite**; ② N off US 64: (a) 1 mi. toward Balsam Grove, the W on secondary rd. crossing North Fork, on S side of rd. W of the river, area—**Quartz** crystals; (b) 2.2 mi. SW of Balsam Grove, in pasture of the Hogsed farm (reached via rd. W from the main rd. 2 mi. S of Balsam Gap), as float—**Quartz** crystals.

WAYNESVILLE, SE, on US 276 to Bethel (first crossrd. Stop, up side rd. to recently opened cr. Bed min, fee), abundant—**Sapphires**.

### UNION COUNTY

MONROE, W (including much of the W side of Co.): ① area mines, such as Lemmonds (Marion), New South, Crump, Fox Hill, Phifer, Black, Smart, Secrest, Moore Hill (group) 2 mi. S of Indian Trail—**Calcite**, **Gold**, **Pyrite**, etc.; ② N 14 mi., in extreme NW corner of Co., the Crowell Mine: (a) on dumps—**Gold**; (b)  $\frac{3}{4}$  mi. SW, the Long Mine, and (c) 3 mi. SE of Long Mine at the Moore Mine—**Calcite**, **Chalcopryite**, **Galena**, **Pyrite**, **Siderite**, **Sphalerite**.

POTTER'S STATION, N  $1\frac{1}{2}$  mi., the Bonnie Belle (Washington) Mine—**Chalcopryite**, **Gold**, **Pyrite**.

WAXHAW, E 3 mi. (22 mi. S of Charlotte, Mecklenburg Co.), the Howie Mine—**Gold**, **Pyrite**.

### VANCE COUNTY

BULLOCKSVILLE: ① area along Nutbush Cr., pegmatite outcrops—**gem** minerals; ② SW 1.7 mi., area—**Quartz** crystals (with inclusions of Sillimanite).

GRASSY CREEK: ① W 2 mi., the Yancey farm on Jonathan Cr., area—abundant **Pyrite**; ② NW 2 mi., area outcrops—**quartz** minerals; ③ SW 3 mi., area—**Pyrite**; ④ the Graystone Quarry—**Hornblende** crystals, gemmy pink pegmatite.

HENDERSON: ① NE, near the Kerr Reservoir on the state line, in phyllite gneiss exposures—**Quartz** and **Rutile** crystals, **Sillimanite**; ② NW 13 mi. (9 mi. E of Clarksville, VA), center of a mining region with major deposits S of the Kerr Reservoir in drainage of Island Cr. (tributary of the Roanoke R.): (a) area surfaces, gravels, etc.—**agate**, **chalcedony**, **quartz**, **Tourmaline**; (b) area mines—specular **Hematite**, **Pyrite**, **Quartz** crystals; ③ N 18 mi., in the Hamme Tungsten Dist. (NE part of Co., extending into VA), between Big Island and Little Island creeks, many area mine dumps—**Apatite**, **Chalcopryite**, **Fluorite**, **Galena**, **Hyalite** opal, **Huebnerite**, **Quartz** crystals, **Rhodochrosite**, **Scheelite**, **Sphalerite**, **Tetrahedrite**.

KITTRELL, N, along US By-pass 1, in granite outcrops—**Hyalite** opal (highly fluorescent).

TOWNSVILLE: ① W, area as float—**quartz**; ② E of Marrow Chapel, as float—**quartz**; ③ around Townsville Lake—**Quartz** crystals; ④ SW 2 mi., at the Devil's Backbone, area—quartz **gemstones**.

## North Carolina

WILLIAMSBORO, NW, as area float—**quartz**.

### WAKE COUNTY

AREA: ① NW corner of Co., many regional deposits, mined—**asbestos**, **Actinolite**, **Kyanite**, **serpentine**, **Steatite**; ② Barton's Cr., area mines—**Chlorite**, **Hematite** pseudomorphs after Pyrite, **Margarodite**, **Pyrite** (large crystals), **Tourmaline**; ③ the Durham Quarry—**Rosenhahnite** (fluorescent).

PURNELL: ① area: (a) the Powell farm, between Newlight Cr. and Water Fork, area—**Corundum**; (b) Bayleaf, area contact zone exposures (take rd. W from village leading to Rte. 50, 2 mi. to Barton's Cr. crossing; or via the Neuse R. NE of village, or go to the jct. of Buckhorn and Newlight creeks) —carvable **Steatite**, **Actinolite**; ② S 2 mi., near Horse Cr., a pegmatite outcrop on the Thompson farm—**Allanite** (black), **Beryl** (green and yellow, opaque).

RALEIGH: ① E, in area of Wilder's Grove: (a) E½ mi. on US 64, turn N on dirt rd. 1 mi., area near the Neuse R. to the E—**Amethyst** (large, color zoned); (b) W 2½ mi. near US 64, area—**Amethysts**; (c) N 1 mi. on paved rd. the jct. with a secondary rd., then E 0.7 mi. to entrance to a dim trail S of the rd., area—**Amethysts**; ② N, turn off US 70 on N side of Crabtree Cr. bridge onto paved rd. 3½ mi. to Mine Cr., area exposures—gem **Kyanite**; ③ S 5 mi.: (a) area Mica mines in pegmatite—**Feldspar** crystals, **Garnets**; (b) ½ mi. E of US 15A, on the Coburn farm—**Feldspar**, **Garnet**, **Mica**, snowy **Quartz**; ④ NE 5 mi., area—**Amethyst**, **Quartz** crystals.

WAKE FOREST, W 3 mi. and 2 mi. S of Rte. 264, the Wakefield Mica Mine—**Mica**, massive **Quartz** (gray, pale blue).

### WARREN COUNTY

INEZ: ① S 2 mi. to the Franklin Co. line, many area pegmatite exposures—gems, minerals; ② S 2½ mi., on E side of Rte. 58, pegmatite on the Fowler farm—**Amethyst**, **Beryl**, **Lepidolite**, **Smoky Quartz** crystals, **Staurolites**; ③ just E of the Fowler farm, on both sides of Rte. 58, the Harris deposits—**Mica**, **Quartz** crystals.

### WATAUGA COUNTY

AREA, Rich Mt.: ① head of Cove Cr., area—**Actinolite**, **Chromite**, **Chrysolite**, **Epidote**, **Quartz**, **Penninite**, **Tremolite**; ② mouth of Squirrel Cr., area—**Chrysotile** asbestos.

BLOWING ROCK, area stream gravels, placer—**Gold**.

BOONE: ① area stream gravels, especially Hardings Cr., placer—**Gold**; ② N 8 mi., at Elk Knob, area old mines—**Azurite**, **Garnets**, **Epidote**, **Limonite**, **Malachite**, **Calcite**, **Cuprite**, **Pyrite**, **Pyrrhotite**, etc. (mainly primary Copper minerals).

### WILKES COUNTY

AREA: ① E part of Co., on Zeb Souther farm—**Smoky Quartz** crystals; ② Bending Rock Mt., area exposures—**Itacolumbite**; ③ headwaters of Honey Cr., area gravels—**Amethyst**, **Quartz** crystals (clear, smoky).

CHAMPION, area old Mica mines—**Beryl**, **Garnet**, **Mica**.

DEEP GAP, E 6 mi.: ① the Flint Knob Mine—**Galena**, some **Gold**, **Pyrite**, **Silver**; ② the Laurel Spur of Flint Knob, area—**Calcite**, **Galena**.

NORTH WILKESBORO, area old asbestos mine—gem **serpentine**.

## A Location Guide for Rock Hounds in America

TRAP HILL: ① area fields, cuts, gravels, etc.—**agate** (silvery, mossy), brecciated **jasper**, **chalcedony**; ② the Trap Hill Mine—auriferous **Chalcopryite**, **Garnet**, **Galena**, **Magnetite**, **Pyrrhotite**, **Pyrite**, **Rutile** crystals, **Tourmaline**; ③ E side of Bryan's Knob, in quartz veins—**Chalcopryite**, **Pyrite**, **Pyrrhotite**; ④ Bryan's Gap on E face of the Blue Ridge, a bold outcrop of Quartz (has been traced for nearly 3 mi.)—**Gold**, **Pyrite**.

WILKESBORO, N 2 mi., area—**Garnet**, **serpentine**, **Talc**.

### YADKIN COUNTY

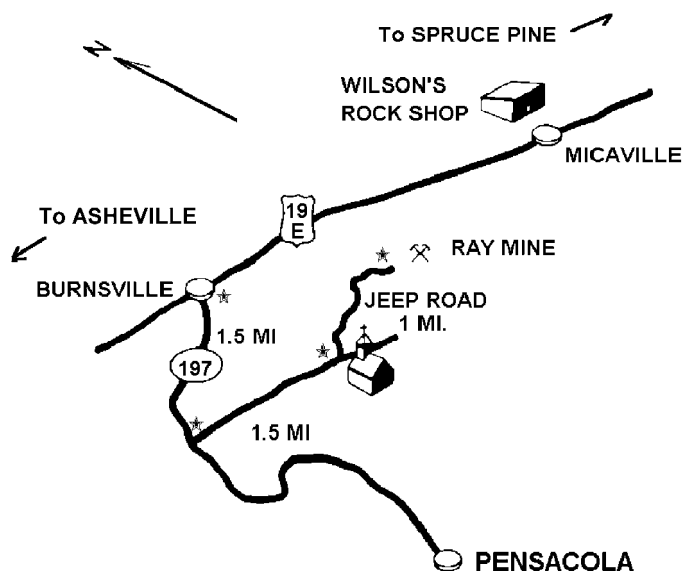
AREA: ① area pegmatite outcrops, many—**Beryl**, **Garnet**; ② area stream gravels—**carnelian**.

YADKINVILLE: ① E 6 mi., on SW side of a creek, at the Hauser Mine—**Feldspar** crystals and **Smoky Quartz** crystals; ② SE 8 mi., the Dixon Mine—**Gold**.

### YANCEY COUNTY

AREA: ① ON Blue Rock rd., the Spider Mine—**Thulite**; ② the Guggenheim Mine—**Albite**, **Apatite**, **Autunite**, **Halite**, **Manganese Garnet**, **Margarodite**, **Muscovite**, **Tourmaline**; ③ the Hampton's Mining Creek Mine—**Actinolite**, **Bronzite**, **Chromite**, **Chrysolite**, **Deweylite**, **Epidote** (fine green crystals), **Enstatite**, **Magnesite**, **Penninite**, **serpentine**, **Talc**, **Tremolite**; ④ the Young's Mine—**asbestos**, **Bronzite**, **Chromite**, **Chrysolite**, **Enstatite**, **Manganese Garnet**, **Muscovite**, **Pyrite**, **serpentine**, **Talc**, **Tremolite**; ⑤ the North Toe R., area gravels—**Dithene** (gem Kyanite crystals); ⑥ Yellow Mt., area outcrops—**Dithene**.

BOWDITCH, E 1.9 mi., the Gibbs Mine on W bank of the Smith Toe R.—**Oligoclase** crystals (transparent, greenish).



BURNSVILLE: ① many area mines—**Garnets**, **Mica**, **Platinum**, etc.; ② E ½ mi. to trail leading S of US 19, E ½ mi. to the Doe Hill Mine—**Feldspar**, **Garnets**, **Mica**, **Pyrite**; ③ SE 2½ mi., on Hurricane Mt.: the Ray Mica Mine (see map page 291) —**Albite**, **Amazonite**, **Apatite**, **Aquamarine**, **Autunite**, gem **Beryl**, **Columbite**, **Emeralds**,

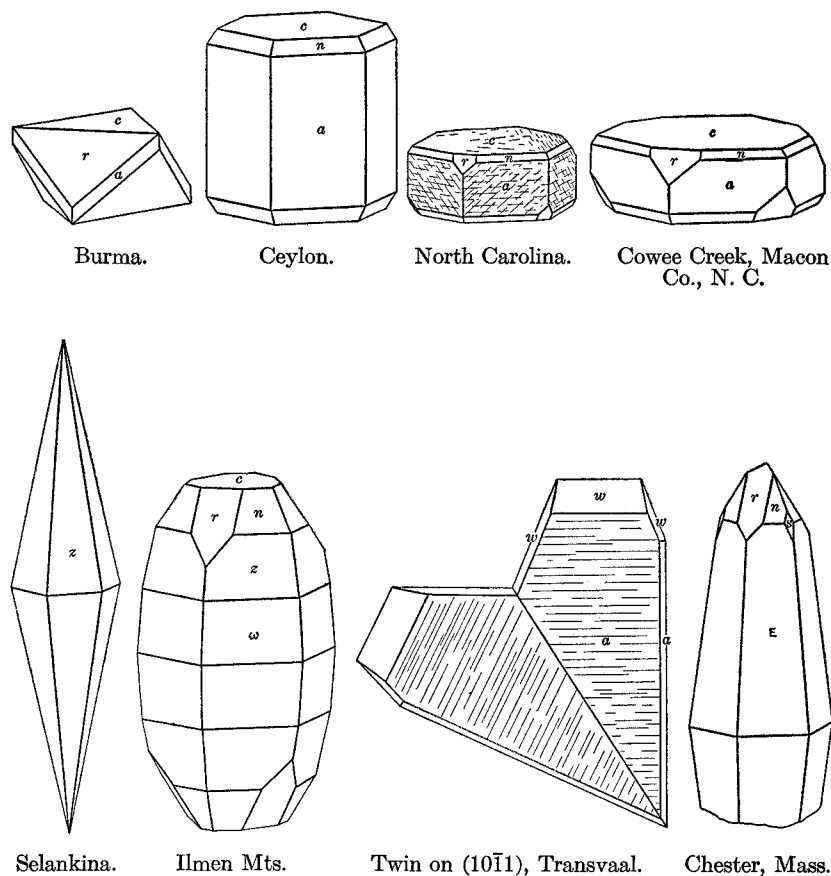
## North Carolina

**Eschynite, Fluorite, Fluorite** pseudomorphs after Apatite, **Garnets**, gem **Kyanite** crystals, **Monazite** (rare), **Muscovite**, gem **Oligoclase** crystals, **Rutile** crystals, **Smoky Quartz** crystals, **sunstone**, **Tourmaline** (black, also greenish yellow), **Yttrocerite**, **Zircon**; (b) along the right fork of the rd. to the Shanty Mine—**Apatite, Garnets, Hyalite** opal; ④ Parrot's Ford (3 mi. distant from town), area—**Tantalite, Tourmaline**; ⑤ SW 5 mi. on Rte. 197, the Ray Olivine Mine—**Apatite, asbestos, Beryl, Chlorite, Chromite, Columbite, Garnets, Olivine** crystals, **serpentine**; ⑥ W 6 mi. on rd. to Red Hill, on E side of rd. at Green Mt., area outcrops visible from rd.—**Chromite, Olivine** crystals; ⑦ N 6 mi., area—**Labradorite, Platinum**; ⑧ NW 10 mi., on W side of Sampson Mt. via US 19 to Lewisburg, turn SW along Bald Mt. Cr. (with Sampson Mt. visible 5 mi. to the S): (a) the Hayes Mine—**Corundum** (blue, gray, beige, white, cat's-eye); and (b) head of Bald Mt. Cr., the Cattail Branch Mine—gem **Beryl, Garnets**.

**CELO:** ① area: (a) Celo Ridge, area mine dumps—**Sapphires**; (b) Toe R. gravels—**Corundum, Sapphires**; (c) mine dumps about town—**Feldspar, Garnet**, gem **Kyanite, Mica**; ② NE 1½ mi., the Little Gibbs Mine, on the South Toe R.—gem **Oligoclase** crystals.

**MICAVILLE:** ① N 2 mi., the Presnell Mine—**Apatite, Almandite** garnets, **Columbite, Mica**; ② SE 2.7 mi.: (a) the Fanny Gorge Mine—**Apatite, Columbite, Autunite, Garnets, Pitchblende, Thulite**; (b) on S side at the Spec Mine—**Aquamarine, Almandite** garnets; ③ SE 3½ mi., the old Charles Mine—blue **Apatite** crystals, pink **Thulite**.

## BERYLS



## NORTH DAKOTA

This fertile state, geographic center of North America, is everywhere surfaced by Quaternary soils and sediments overlying rock formations of greatly varied ages. The eastern half, known as the Lowlands, once lay beneath the vanished waters of the great Pleistocene Lake Agassiz. Deeply buried beneath the lake sediments are rock formations of Mississippian, Jurassic and Cretaceous ages. The western counties exposed here and there much older formations, of Devonian age. West of the Red River Valley, abrupt escarpments rise 300' to the glacial drift prairies of scattered lakes, occasional moraines, and extensive, rolling, grass covered hills. Along the Little Missouri River lie the strongly eroded scenic, and almost inaccessible spires and minarets of the famed Badlands, extraordinarily rich in fossils that reach back to the era of the dinosaurs.

The state's mineral resources are limited almost exclusively to organic fuels and inorganic clays. Vast lignite beds, so close to the surface as to permit strip mining, cross the western counties, and North Dakota leads the nation in the production of this fuel. In close proximity to the lignite beds are large deposits of commercial clays in several varieties. Last, but not least, the discovery of oil in the Williston Basin some years ago has made petroleum production a prominent contributor to the state's mineral economy.

From the standpoint of the gem and mineral collector, it can truthfully be said that North Dakota really needs intensive prospecting. From east to west and north to south, the alluvial gravels underlying the topsoil are rich in Quartz family gemstones. Prospecting alluvial gravels, quarries, excavations and stream beds everywhere should be productive of more **agate, chalcedony, jasper, silicified wood** and **Quartz** crystals than would appear in the small list of known localities mentioned here. The eastern counties reveal Lake Superior type agates, while the western counties yield Fairburn and Montana type moss agates. All gemstone occurrences are products of erosion from long-gone ranges of mountains and water distribution over the state's characteristic of Tertiary epochs.

### ADAMS COUNTY

HETTINGER, N. 10 to 12 mi., NE and E, along both sides of the entire course of the Cedar R.—**agatized wood**.

### BILLINGS COUNTY

MEDORA, area buttes and badlands formations—**agate, chalcedony, silicified wood, concretions** (filled with yellow Calcite, Aragonite or Siderite).

### BURLEIGH COUNTY

BISMARCK, area gravel pits and alluvial beds along the Missouri R.—**agate, chalcedony, silicified wood, jasper**.

### GOLDEN VALLEY COUNTY

SENTINEL BUTTE, area Uranium mines and prospects, especially in T. 137 N, R. 100 W (Lutheran Church) and T. 139 N, R. 104 W (Sentinel Butte) —**Uranium** minerals.



## North Dakota

### GRANT COUNTY

CARSON, area breaks along the entire course of the Cannonball R.—**agate, chalcedony, silicified wood, jasper.**

### HETTINGER COUNTY

MOTT, N 11 mi., along steep hillsides on both sides of the Cannonball R.—**agate, chalcedony, silicified wood, jasper, Selenite** crystals.

### HETTINGER & STARK COUNTIES

AREA: ① from Mott to Richardton, a broad area along both sides of Rte. 8—**agate, chalcedony, agatized wood, jasper, jasp-agate**; ② from NW of Mott 150 mi. to Williston (Williams Co.), area breaks, rd. cuts, etc.—**Selenite** crystals.

### KIDDER COUNTY

TAPPEN, E, in regional gravel pits—**agate, chalcedony, jasper, etc., fossils.**

### McHENRY COUNTY

DENBIGH, regional gravels of the Mouse R. SW to Velva—quartz **gemstones, fossils.**

### McKENZIE COUNTY

AREA, gravels of the Yellowstone, Missouri and Little Missouri rivers—*Montana* moss **agate, jasper, silicified wood, etc.**

EAST FAIRVIEW, in gravel bars near confluence of the Missouri and Yellowstone rivers—*Montana* moss **agate, jasper, silicified wood, etc.,** especially around Cartright just to the E on Rte. 23/200.

GRASSY BUTTE, W and N, gravels of the Little Missouri R.—*Montana* moss **agate, jasper, agatized wood, plasma.**

SEARING, broad general surrounding region—**petrified wood.**

### MERCER COUNTY

GOLDEN VALLEY, S, the Crowley Flint Quarry (a historic site) —gem **flint.**

HAZEN, area mines—**Uranium** minerals.

### MORTON COUNTY

MANDAN: ① area hills, draws, washes, etc.—**agate, chalcedony, chert, silicified teredo wood**; ② area gravel pits.—worm-bored **teredo wood** (borings filled with Calcite or chalcedony).

## A Location Guide for Rock Hounds in the United States

### MOUNTRAIL COUNTY

STANLEY, N and W around several highly saline lakes (White Lake, Cottonwood Lake), area mine dumps, as crystals—**Glauberite, Halite, Thenardite**.

### PEMBINA COUNTY

CONCRETE (on the Tongue R.): ① area blue-gray limestone exposures—**crystals, fossils**; ② regional limestone quarries—**Calcite, fossils**; ③ deltas of the Pembina, Elk and Sheyenne rivers—**fossils, quartz gemstones, petrified wood**.

### RAMSEY COUNTY

DEVILS LAKE: ① area gravel pits (in bed of the prehistoric Lake Agassiz) —gem **agate, jasper**, etc.; ② gravel bars of all regional (countywide) streams, especially the James and Sheyenne rivers—quartz **gemstones, petrified wood**.

### RAMSOM COUNTY

LISBON, in gravel bars along the lower Sheyenne R.—quartz **gemstones, teredo wood**.

### ROLETTE COUNTY

DUNSIETH, on edge of the Turtle Mts.: ① a large gravel pit—quartz **gemstones**; ② area slopes and draws of the mountains—**Manganese** minerals.

### STARK COUNTY

DICKINSON: ① area land surfaces—agate, chalcedony; ② N 6 mi. on Rte. 22, a large gravel pit—**agate, jasper, petrified wood**.

### WARD COUNTY

MINOT, S, in numerous area gravel pits, great variety—quartz **gemstones, fossils**.

### WILLIAMS COUNTY

AREA, regional stream gravels—*Montana* moss **agate**.