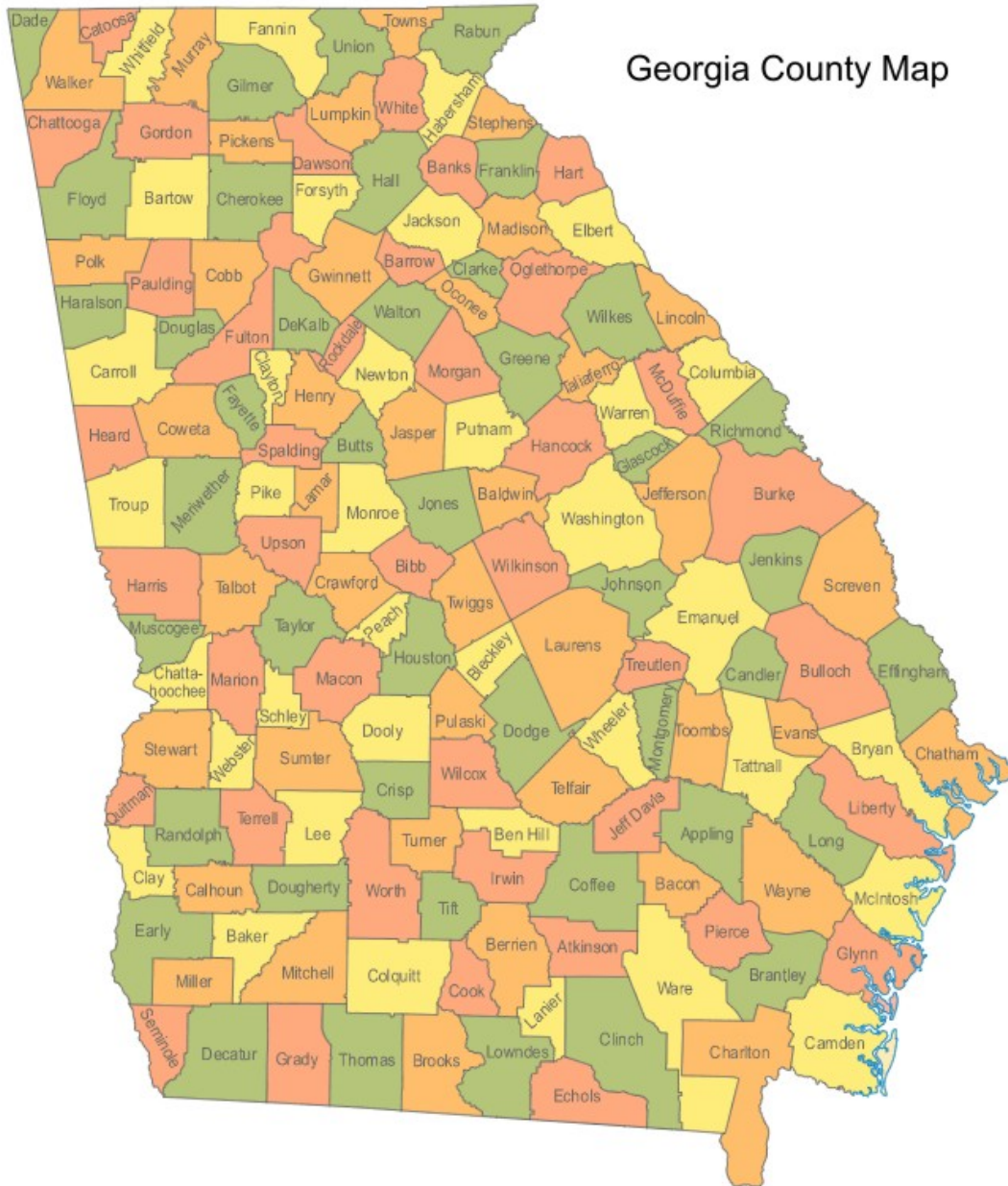


A Location Guide for Rock Hounds in the United States

GEORGIA

Georgia's nearly 59,000 square miles makes it the largest of the Atlantic seaboard states. It is situated at the southern end of the Appalachian chain of mountains. These ranges extend into the northeast corner where Brasstown Bald, a part of the Nantahala Mountains achieve the highest elevation in the state at 4,784 feet.



Georgia

Beginning in the northwest, where the Lookout and Sand mountains loom over rich agricultural valleys, Georgia easily divides into five major physiographic provinces, each one formed during different geologic ages and under varied conditions: the Cumberland Plateau, the Appalachian Valley, the Appalachian Mountains, the Piedmont Plain (about 30% of the state), and the Atlantic Coastal Plain. Thus rocks of every geological age are exposed somewhere over the state's varied surfaces. The upland northern counties are heavily forested with hardwoods, merging into other forests of stately pines on the Piedmont. Beneath the highland forests lie some of the oldest crystalline rocks in the East, both igneous and metamorphic, strongly mineralized and dotted with once-rich abandoned mines.

Dividing the stratigraphically complicated Piedmont Plain from the coastal lowlands in the Atlantic Coast Fall Line, so named from the falls or rapids in rivers at places where they pass from the Piedmont crystalline rocks into softer and less resistant formations of the Coastal Plain. This Fall Line extends southwesterly across the state roughly on a line connecting Augusta, Milledgeville, Macon, and Columbus.

The first real Gold Rush in America occurred in Georgia following two simultaneous discoveries of **Gold** by Negro slaves in 1828, one on the Lovelady place near Loudsville in White Co. and the other on the Bear Cr. near Dahlonega in Lumpkin Co. Not only was placer and lode gold found in abundance here and elsewhere, but the early miners and prospectors panning the regional stream gravels discovered **Diamonds**, the largest a pale yellow crystal of 4½ carats picked up near Morrow Station in Clayton Co. in 1887. Since then, many fine diamonds have been found and are still being occasionally washed out of gold pans. Many other gem crystal species occur in pegmatite exposures, such as **Aquamarine**, **Beryl**, some Ruby-red **Corundum**, **Spodumene** and **Topaz**.

Georgia has been actively prospected for gold since colonial times, and the modern gold panner should concentrate his efforts in the known gold-bearing areas. Lode deposits usually consist of Quartz veins in solid rock, while placer deposits occur in a great many regional streams. Much of the colors are Fluor Gold, too fine to be retained in any commercial operation. The two most important gold belts include ① the Dahlonega Belt that extends from near Tallapoosa northeastward through Dahlonega Co. and Rabun Co., and ② the McDuffie County Belt extending through portions of McDuffie, Warren, Wilcox, and Lincoln counties. In many places, but most notable in the lode gold districts, numerous other colorful minerals occur in association with Gold, such as **Chalcopyrite**, **Galena**, **Pyrite**, **Pyrrhotite** and some **Sphalerite**.

BALDWIN COUNTY

MILLEDGEVILLE, at state farm—**jasper**.

BANKS COUNTY

COMMERCE, along Hwy. 59, 5 mi. E of Jackson-Banks Co. line—**Beryl**.

MAYSVILLE, area gravels along adjoining Co. line—rock **crystal**.

BARROW COUNTY

WINDER, along rd. to Jefferson and 1½ mi. inside the Co. line in a Hornblende-gneiss exposure—**Beryl**, black **Tourmaline**.

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Rivers & Lakes of Georgia

BARTOW COUNTY

AREA, Saltpeter Cave, as float—**jasper**.

CARTERSVILLE: ① area barite pits—**Barite, Goedes, Goethite, Hematite, Limonite, Iron minerals**; ② area mines, as important producers—**Barite, Manganese, ocher**. Manganese deposits have a wide geographic distribution in NW Georgia, but most important occurrences are in the vicinity of Cartersville and Cave Springs (NW Polk Co. and

Georgia

SW Floyd Co.). ③ E 1 mi., extending in a N to S trending belt about 8 mi. long and less than 2 mi. wide, with its S end W of Emerson and about 2 mi. S of the Etowah R., many mines, prospects, and excavations—**ochers**.

EMERSON: ① extensive area deposits—**Barite, Graphite**; ② US 41 bridge over the Etowah R., area Barite pits—**Barite, geodes** (crystal lines).

KINGSTON, S, in area fields, streams, rd. cuts, etc.—**agate**, (banded, various colors), **jasper**.

BIBB COUNTY

MACON: ① at Holton Quarry, 7½ mi. NW—**agate**; ② N of Calloway airport at rd. jct.—**Beryl**.

BURKE COUNTY

GIRARD, along the GA side of the SC border—*Savannah River* **agate, chalcedony, Quartz gemstone, silicified oolite**.

CARROLL COUNTY

CARROLLTON: ① E 1.3 mi., in gravels of the Tallapoosa R.—**Rubies**; ② E 1.3 mi. and just off Rte. 166, vein exposures—**asbestos, Garnets, Olivine** crystals.

VILLA RICA: ① area, and ② at Reid's Mt., extensive deposits—**Pyrite**.

CATOOSA COUNTY

GRAYSVILLE, SE 1½ mi., in Knox dolomite exposed in an abandoned quarry—**Barite, Calcite, Fluorite** (purple cubes), **Galena**.

CHATTAHOOCHEE COUNTY

AREA: ① stream gravels—gemmy **chert, quartz** pebbles (pastel colors), **petrified wood, Pyrite**; ② rd. cuts, banks, cliffs—**Selenite** crystals.

COLUMBUS, SE section along Rte. 103 toward Buena Vista (in Marion Co.), area of Randall Cr. near Ft. Benning, as float over a broad area—**silicified wood**.

CUSSETA, NW 2 mi. on US 27, a rd. cut—**Selenite** crystals, decorative fossil **shark teeth**.

CHATTOOGA COUNTY

GORE, N 6 mi., along lower slopes of Taylor Ridge—**Halloysite**.

SUMMERVILLE: ① S 2½ mi. on US 27: (a) along both sides of Hwy.—**agate**; (b) quarry on W side of rd.—**agate, chalcedony, chert, opal**; ② area of state fish hatchery on Cloudland Rd.—**agate** (cloudy, vivid red-banded); ③ W 3 mi. and 2 mi. N: (a) at the Marble Springs Quarry—**gemmy marble** (red and green); (b) E, in Taylor Ridge area—**agate**; ④ SE 3 mi., on left side of US 27N, on the Roland Hancock farm, a pit—**gemmy chert**.

CHEROKEE COUNTY

BALL GROUND: ① area: (a) local deposits—**talc**; (b) S and W of town, area fields, etc.—**Staurolites**; (c) numerous area mines—**Kyanite**; (d) the Bennett, Chapman and

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Hendrix mica mines—**Aquamarine, Beryl, Amethyst, Garnet, Smoky Quartz** crystals, black **Tourmaline**, etc. (the accessory minerals of all mica mines include Almandite garnet, Feldspar, black Tourmaline, etc.); (e) the Alexander and Cooley mines—opaque **Beryl**; (f) between town and Canton area—**Almandite** garnet; (g) harmony Church, area pegmatite outcrops—**Beryl**; (h) Hickory Flat, 2 mi. NE on rd. to Orange—**Corundum**; ② 1 mi. W of Fairview Church, on E side of Sharp Mt., area—**Staurolite**; ③ NE 2½ mi.: (a) the Cochran Mica Mine (1 mi. from the Cherry Grove School, near old tenant house) —**agate, Aquamarine, Beryl** (yellow, green), **Rutilated Quartz** crystals; (b) 1 mi. W of the school, exposed pegmatites— **Rutilated Quartz** crystals; ④ SW 3½ mi., near Four Mile Church and Shiloh Church, mines—**Kyanite**; ⑤ W 4½ mi., on N side of Bluff Cr., along Rte. 1 —**Staurolite**; ⑥ SE 7 mi., on the Etowah R., at the Creighton-Franklin Mine—**Gold**; ⑦ on the Oscar Robertson farm; and ⑧ on the James Spears farm (fee) —**Staurolite**.

CHEROKKE-PICKENS COUNTIES

NELSON (Pickens Co.), a 300 sq. mi. region surrounding this town contains many pegmatite dike mines—**Mica minerals, Quartz** crystals, **Aquamarine, Beryl**, black **Tourmaline**, etc. The most productive mining districts surround the communities of Holly Springs, Toonigh, Woodstock, Cumming, Arnold, Orange, Canton, Nelson, Ball Ground, Centerville, Jasper, Tate, Bethany Church, Dug Gap, Federal School, marble Hill, Dawsonville and Holcomb Post Office.

CLARKE COUNTY

AREA, many old mines and prospects—gemmy blue **Quartz**.

ATHENS, along Apls Rd. across from the airport, in a field—gem lime-green **Beryl, Quartz** crystals.

CLAYTON COUNTY

MORROW (13 mi. S of Atlanta, Fulton Co.): ① creek beds—**Diamond**; ② the Laurel Creek Mine—**Aquamarine, Beryl**, red **Corundum**.

COBB COUNTY

BELMONT HILLS, on Smyrna-Belmont Hills rd. ½ mi. out of Belmont, turn E for ½ mi. on dirt rd., in quartz exposure—**Quartz**.

MARIETTA, area near the National Cemetery—banded **agate**, mossy **chalcedony, Kyanite, jasper**.

POWDER SPRINGS, S 2 mi., outcrop on Turner property—**Corundum**.

CRISP COUNTY

CORDELE, area fields, cut banks, etc.—moss **agate, jasp-agate, jasper**.

DADE COUNTY

RISING FAWN, S 1 mi., on E slope of hill—**Halloysite**.

Georgia

DE KALB COUNTY

ATLANTA, Emory University, area pegmatite outcrops—**Quartz** crystals (clear, smoky).

BARNESVILLE, THOMASTON, area mines—many gemmy **minerals**.

BERMUDA, Rockbridge rd. to Macedonia church (near Stone Mt.), area—**Quartz** crystals.

LITHONIA: ① area quarries—**Calcite, Epidote, Fluorite, Garnet, Thulite, Tourmaline, Zeolites**; ② Rock Chapel Quarry, on N side of Arabia Mt.—**Calcite, Epidote, Fluorite, Garnet, Thulite, Tourmaline, Zeolites**; ③ N side of Arabia Mt.—gemmy **crystals, Tourmaline**, etc.; ④ Flat Rock Quarry—**Hyalite** opal; ⑤ Lithonia High School, N 60° W 1 mi. and 1 mi. NW of the Covington hwy. on the Philips rd., a pegmatite—green **Muscovite, Feldspar, Quartz**.

STONE MOUNTAIN: ① two area granite quarries—**Beryl, Feldspar, Hyalite** opal; ② area granite outcrops, in joints—**Uranophane** (thinly coated with Hyalite opal).

DODGE COUNTY

DUBOIS, EMPIRE, JAY BIRD SPRINGS, PLAINFIELD, Miocene exposures in all regional fields—**Tektites** (translucent, bottle green).

DOUGHERTY COUNTY

ALBANY, in Flint R.—**red jasper**.

ELBERT COUNTY

AREA: ① Rock Branch Church, old mica mine—**Beryl**; ② Harmony Church, area—**Aquamarine**; ③ Broad River pegmatite exposures—**Sillimanite**.

DEWEYROSE, ① at Antiock Hill, exposures—**Aquamarine, Quartz** crystal, **Amethyst**; ② 2 mi. N to W.B. Perkins place—**Amethyst**.

ELBERTON: ① area Sillimanite mines—**Muscovite, Sillimanite**. Mica-bearing pegmatites occur in Carolina gneiss between Elberton and Hartwell in Hart Co. The known mica district includes some 250 sq. mi., with most mining revolving around the old Chapman Mine in Elbert Co. Similar mines occur also in Madison Co. ② N 10 mi., on N side of Cold Water Cr.: (a) the Chapman Mica Mine, on N side of Cold Water Cr.—**Aquamarine, Garnet, Smoky Quartz** crystals, **Tourmaline**; (b) the nearby Alexander Mine—**Beryl**.

OGLESBY, 3 mi. distant on N side of the Little Broad R., the Yellow Mine—**Amethyst, Beryl**, etc.

FANNIN COUNTY

AREA: ① stream beds, loose soil of fields, schist exposures, rd. cuts and banks, etc.—**Staurolites**; ② extreme N part of Co., a short distance from famed Ducktown copper mining dist. of TN (Polk Co.), area—**Copper minerals**.

BLUE RIDGE: ① take Copperhill Rd. 1.6 mi. to a sawmill, turn left for 1 mi. on a dirt rd. to Hackney farm (fee) —**Staurolites**; ② SW 4 mi., at the Bailey farm, area exposures—**Kyanite**; ③ W of Cole's Crossing—**Staurolite**.

MINERAL BLUFF: ① cross RR on Murphy rd. to Copperhill, along sides of rd. and adjoining forest—**Staurolite**; ② NW, at Windy Bluff, area—**Staurolite**; ③ ½ mi. SE of Union, from where a schist outcrop crosses Mill Cr.—**Staurolite**; ④ 1½ mi. NW of Hogback Mt., on the Thomas farm—**Kyanite** crystals, **Quartz** crystals; ⑤ S ½ mi., exposure—**Talc**.

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FAYETTE COUNTY

FAYETTEVILLE, on the Homer Kellin farm, loose in field soil—gem **Amethyst** (some rutilated), **Rutilated Quartz**.

FLOYD COUNTY

HERMITAGE, E of Hermitage Jct. on Rte. 53 for 6 mi. (NE toward Calhoun in Gordon Co.), turn E at jct., many area mines—**Bauxite, chert, jasper, Marcasite**.

ROME: ① W on Rte. 20 to the Rice Springs Farms, area—botryoidal **chalcedony, geodes, Rose Quartz**, etc.; ② at the Ledbetter Quarry—**Calcite** crystals (some with pyrite inclusions).

FORSYTH COUNTY

CUMMING: ① area stream beds—**Ruby**; ② E 2 mi., a small placer ground—**Gold**; ③ E 6 mi. at the I.H. Gilbert farm—**Amethyst**.

OSCARVILLE: ① area rd. cuts, pegmatite outcrops—**Beryl**, etc.; ② N side of Silver Shoals-Oscarville rd. and E of jct. with rd. to Four Mile Church—**Beryl, pegmatite gemstones**.

SHELTONVILLE, area pegmatite outcrops—**Amethyst, Beryl, Quartz** (clear, smoky).

SUGAR HILL, the Simmons Mine—**Gold**.

FRANKLIN COUNTY

LAVONIA, area prospects and narrow lensy mica pegmatites crossing Lavonia-Royston rd. between Lavonia and Bowersville—dark green **Muscovite, Galena, Quartz**.

FULTON COUNTY

BIRMINGHAM, area of N part of Co. (old Milton Co.), many narrow pegmatite exposures—**Muscovite**.

ROSWELL, E 3½ mi.—**Corundum**.

GORDON COUNTY

AREA, the Piedmont Mine, abundant sources—**Argentiferous Galena**.

RANGER, the Black marble Quarry on US 411—**Calcite, green Fluorite, Pyrite, serpentine, Talc**.

GWINNETT COUNTY

BUFORD, on Addison Lowe farm—**agate, moonstone**.

NORCROSS, Hwy. 141 N to crossing Chattahoochee, in pegmatite on Green farm—**moonstone**.

Georgia

HABERSHAM (and RABUN) COUNTY

AREA: ① Alec Mt., mines in decomposed schists—**Corundum, Garnet**; ② Piedmont Orchard—**Margarite, Ruby** (brilliantly fluorescent).

CLARKSVILLE: ① area mines—**Xenotime**; ② S of the North Georgia Vocational School, in fields and woodlands leading to the Soque R.—**Kyanite**; ③ E ½ mi., stream gravels and banks, veins—**Kyanite**; ④ NE of the school on E side of the Soque R., in biotite-quartzite pegmatite—**Kyanite** crystals; ⑤ W 2 mi., area—banded **agate, chalcedony, jasper**; ⑥ N, in U-shaped belt about 30 mi. long and from 100' to ¼ mi. wide, most important area in GA for mining purposes—**Kyanite**. Veins and lenses of coarsely bladed Kyanite occur in mica schists, locally associated with quartz lenses and boulders of Kyanite.

DEEP CREEK, STONEPILE CHURCH, TURNERVILLE, WOODLANDS, many regional vein pegmatite exposures and mines—**Kyanite**.

HALL COUNTY

GAINESVILLE: ① area: (a) exposures along the Chattahoochee Ridge—**itacolumite** (flexible sandstone); (b) Glade Cr., gravels—**Diamond**; ② regional creeks emptying into the Chattahoochee R., many prospects and placers—**Gold**; ③ W 1 mi., in stream bed—**Corundum**; ④ NW 1½ mi. via Grape St., the Old Hope or Merck Mine, as good specimens—**Muscovite, Feldspar, Smoky Quartz**.

LULA, E 4½ mi. into Banks Co., on the Thurmond Standridge farm, a deposit—**Kyanite** crystals, **Sericite, Vermiculite**.

HANCOCK COUNTY

SPARTA: ① area fields, rd. banks, etc., as float—**carnelian, chalcedony, jasper**; ② W, along shores of the Sinclair Reservoir—**Quartz** gemstones.

HARALSON COUNTY

BREMEN, W 1½ mi.—**Quartz** crystals.

DRAKETOWN, NW 4 mi., at the Waldrop Copper Mine near the Polk Co. line—**Copper** minerals, **Pyrite**.

HART COUNTY

AREA, the old Water Hole Mine at Cross Roads—gem **Beryl**.

BOWERSVILLE, area schist outcrops—**Sillimanite**.

HARTWELL: ① area mica mines—associated gem minerals; ② US 29 E to access rd. to Hartwell Dam, a quarry on right—gem **Beryl, Garnet, Microcline, moonstone**; ③ SW 6 mi., at headwaters of Coldwater Cr., as crystals in biotite gneiss—**Sillimanite**.

HENRY COUNTY

McDONOUGH, N 6 mi. (5 mi. S 25° E of Stockbridge), just N of the Stockbridge-Millers Mill rd. and 1 mi. W of Millers Mill, a pegmatite mine—**Muscovite, pegmatite gems, minerals**, etc.

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IRWIN COUNTY

AREA, regional farm field exposures of Miocene rocks, especially around Osierfield—gemmy **tektites**.

JACKSON COUNTY

COMMERCE: ① area: (a) hard-rock exposures—green **Epidote**; (b) Double Top Mt.; and (c) Sugar Loaf Mt., area—**Rhodolite** garnet; ② on the J.T. Cheatham farm—gem **Beryl**; ③ NE on Rte. 59 and 5 mi. E of Co. line—gem **Beryl**.

JEFFERSON, E 5 mi. on the Brockton rd., pegmatites: ① near the Harris School—gem **Beryl**, **Smoky Quartz**; ② the Venable farm across rd. from the school; ③ N of the school, at the Potts farm; ④ E of the school, the Webb farm—gem **Beryl**, **Mica**, **Quartz** crystals, etc.

NICHOLSON: ① several area pegmatite exposures—gem **Beryl**; ② W side of US 441: (a) toward Commerce, in pegmatite exposure; (b) a dirt side rd. just N of town—gem **Aquamarine**.

JASPER COUNTY

AREA, all plowed fields throughout Co.—**Beryl**, **Quartz**, (blue, smoky).

HILLSBORO: ① area rd. cuts (well known to gem collectors)—**Amethyst**, **Quartz** crystals (blue, asteriated, rose, smoky, clear), **Mica**, **Vermiculite**; ② E 3 mi. on unpaved rd., the Barron Fullerton Hospital, area—**Amethyst**, **Quartz** crystals (all kinds); ③ from Baptist Church N on Hwy. 11 to dirt rd. 3 mi. to Barron Fullerton farm, near farmhouse—blue **Quartz**.

KELLY, NE 1½ mi., in kaolinized pegmatite, in mica schist—**Mica**.

MONTICELLO: ① S along Rte. 83, area plowed fields—gem crystals; ② fields along rd. to Hillsboro—**Beryl**, **Quartz** crystals (blue, smoky); ③ in dumps of 13 area mines—**Amazonite**, **Garnet**, **Mica**.

JONES COUNTY

ROUND OAK, area—agate, jasper, petrified wood.

LAMAR COUNTY

AREA, old mines and prospects—**Mica**, **Feldspar** crystals, white **Quartz**.

BARNSVILLE: ① an old mica mine—blue **Beryl** crystals, **mica**; ② SE 5 mi., in area soils—**Apatite**, **Garnet**, **Mica**, **Quartz**; ③ E 7 mi. and 0.8 mi. N of the Forsyth (Monroe Co.) hwy., an old mine shaft in a pegmatite—**Mica**; ④ S 80° E 7 mi. and 1½ mi. due S of the Forsyth hwy. at the point where it crosses the Co. line—**Mica**, white **Quartz**, **Feldspar**.

MILNER: ① 1 mi. W of the Barnsville-Griffin (Spalding Co.) hwy., and ② ¾ mi. SW of the Lighthouse, pegmatites—**Mica** books, **Quartz** (milky, smoky).

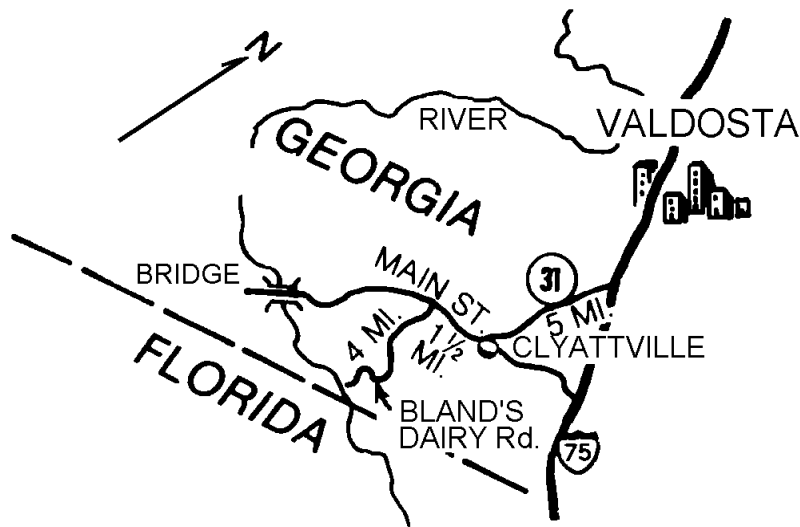
RAMAH CHURCH, W ½ mi., near the Early-Vaughn Mine, pegmatite outcrop—**Aquamarine**, **Golden Beryl**, **mica**, **Quartz**, **Feldspar**.

LINCOLN COUNTY

LINCOLNTON, W 6 mi. on Rte. 378 to Graves Mt.: ① on N side, a mine of the Aluminum Silicates Corp. (fee)—**Lazulite** crystals, gem **Rutile** (deep red), **Pyrophyllite**

Georgia

crystals (fluorescent); ② Paschal and Phelps mines, abundant specimens—**Galena**; ③ base of mt. at picnic ground 1 mi. E of Washington Co. line, take footpath to saddle and top of mt., area—**gem** crystals.



LOWNDES COUNTY

CLYATTVILLE, leave Int. 75 at Valdosta exit, turn W on Hwy. 31 for 5 mi. to Clayattville, take Main St. W 1½ mi., then S on Bland's Dairy rd. 4 mi. to the Withlacooche R, collect at low water stages—**agatized coral**.

LUMPKIN COUNTY

AREA, stream gravels, from placers—**Gold**.

AURARIA: ① S 2 mi., stream gravels of Baggs Branch, placers—**Gold**; ② W, at: (a) Battle Branch Mine—**Galena**, native **Gold**; (b) McKlusky Cr., the Topabri Mine close to the Etowah R.—**Gold, Pyrite**.

DAHLONEGA (gold mining center): ① many area mines—**Gold**; ② area placers claims (fee) —**Gold, gem stones**; ③ E, the Lockhart Mine on Yahooola Cr.—**Garnet, Gold**; ④ S 3 mi., Turkey Hill, many area mines and prospects—**Garnet, Gold, Ruby, Staurolite, Tourmaline, Zircon**; ⑤ SE, at jct. of Long Branch with the Chestatee R., the Long Branch Mine—**Gold**; ⑥ SE, in bottom of the Barlow Cut, the Barlow Mine (largest of the old saprolite working in the dist.)—**Gold sulfides**; ⑦ NE several mi., the McDonald Mine—**Gold, Pyrite**; ⑧ NE 9½ mi., the William Mica Mine (2½ mi. SW of Ward Gap) —colorless **Topaz**.

PORTER SPRINGS, SE 1 mi., exposure—**Corundum**.

LUMPKIN, UNION, FANNIN & TOWNS COUNTIES

Many **Mica** mines occur in these counties, primarily along the Blue Ridge crest near the Lumpkin-Union Co. line. The mining section extends into the N part of Union Co. and the S and E portions of Fannin Co. A total area of about 400 sq. mi. is involved, and nearly all mines (which are locatable on topographic maps) can easily be reached by automobile.

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MADISON COUNTY

AREA, see Elberton in Elbert Co. Numerous scattered mines containing **gems** and **minerals** described.

McDUFFIE COUNTY

THOMSOM: ① area old mines, such as Columbia Park, Hamilton, Seminole, McGruber and others; and ② NW 12 mi., adjacent to the Little R., a Quartz mine—**Gold**.

MERIWEATHER COUNTY

FEDERAL SCHOOL, SW $\frac{3}{4}$ mi., the Bozeman Mica Mine—**Beryl** crystals, **Mica**.

GREENVILLE, N 40° W 6 mi. (12 mi. SE of Hogansville in Troup Co.), mines—**Muscovite**.

MASSINGALE, $\frac{1}{2}$ mi. distant at the Ernest Stozier farm, off Hwy. 109 to the first millpond, then first rd. left of millpond to fourth house on left, in pegmatite (fee)—**Aquamarine, Beryl, Garnet, Tourmaline**.

WARM SPRINGS: ① 1 mi. out of town along RR, area—**agate, chert, jasper**, common **opal**; ② 15 mi. W at Pine Mountain Valley—**Rose Quartz, Beryl**.

WOODBURY, W 5 mi. and 3 to 4 mi. due W of Cane Cr. Church—**Muscovite**.

MONROE COUNTY

CULLODEN: ① area mines and prospects, numerous—**Mica**; ② N 4 air mi. and 1 mi. S of Monroe-Lamar Co. line, pegmatite site of extensive mica mining in large open cut, with many other area cuts and old pits—**Muscovite, Biotite, Feldspar, Quartz**; ③ N $4\frac{1}{2}$ air mi., near Co. line, pegmatite—**Feldspar, mica, Quartz** (milky, smoky).

FORSYTH: ① area mines and prospects, and ② S 47° W $7\frac{1}{4}$ air mi. (9 mi. by rd.) and 3 mi. SW of Brent, the Peters Mine—**Biotite, Muscovite, Feldspar, Rose Quartz**.

JULIETTE, many area mines and prospects—**Feldspar, Mica, Quartz** (milky, smoky).

MORGAN COUNTY

APALACHEE, W, near Adair Plantation, outcrop—**Aquamarine**.

BETHANY (Church), SE 1 mi., the Denson Mica Mines near Rock Cr.—gem **Beryl, Muscovite**.

BUCKHEAD: ① area farm of Benny Ray, in cavities in massive quartz vein—**Amethyst**; ② E 2 mi., area exposure—**Amethyst, Quartz** crystal.

MADISON: ① NE $1\frac{1}{2}$ mi., mine—**Mica**; ② area toward Rutledge: (a) Hard Labor Cr., in drainage area and tributary creeks—**Corundum, Rutile**, pink **Sapphire, Spinel**; (b) 1.6 mi. SW of Talking Rock, in mica prospect—**Beryl**; (c) gravels of confluence of Little R. and Shoal Cr.—**Corundum**.

RUTLEDGE, take dirt rd. from Hwy. 12 for 2 mi. SW of the Georgia RR, on the Bill Oxford farm—**Corundum**.

MURRAY COUNTY

AREA, stream beds and banks, fields, rd. cuts, etc.—Quartz **gemstones**.

CHATSWORTH, 3 mi. distant at Fort and Cahutta Mts., deposits—**Talc**.

ETON, area mines—**Barite, talc**.

Georgia

HOOKER SCHOOL, N on dirt rd. to Fincher Bluff—**silicified oolite**.
SPRINGPLACE, area rd. cuts along Rte. 225 to the S—**agate, chalcedony, silicified oolite**.

MUSCOGEE COUTNY

AREA, gravels along the Chattahoochee R. and its tributaries—**chalcedony, chert, flint, jasper, common opal, opalized wood**, etc.

COLUMBUS: ① E 10 mi., via Rte. 103 to Randall Cr., turn right on dirt rd. to a sandpit—**Quartz gemstones**; ② near Bull and Randall creeks—**petrified wood**.

PAULDING COUNTY

AREA, 5.2 mi. E of the New Georgia Church, several granite pegmatite outcrops—pink **Feldspar, Mica**.

DALLAS: ① from W of Rte. 92 just NE of town, an area of many corundum mines extending S to Brownsville—**Corundum** (blue, gray, lavender, deep red); ② SE 6 mi., loose in soil, near Little Bob Copper Mine—**Almandite** garnets; ③ SW to within 2½ mi. of the Carroll Co. line and 3½ mi. SE of Rose's Store (old Embry), near headwaters of the Turkey Cr., area of active mining around 1914, many old mines—**Corundum, Mica**; ④ N on Rte. 61 (halfway to Cartersville in Barstow Co.), at Burt Hickory Ridge, placers—**Gold**.

HIRAM: ① the Little Bob Copper Mine—**Almandite** garnet, **Azurite, Limonite, Malachite, Pyrite**; ② at nearby Garnet Hill, area—gem **Garnets**. PICKENS COUNTY

AREA, Sharptop Mt., exposures—**Kyanite**.

PICKENS COUNTY

AREA, Sharptop Mt., exposures—**Kyanite**.

JASPER, S 2½ mi. to Harmony School and halfway to Refuge Church—**Kyanite**.

TATE: ① area quarries in the Tate-Marble Hill dist.—**Almandite** garnet, **Kyanite, Mica, Staurolite**; ② immediately S, at jct. of Rte. 5 and 143, a nearby outcrop—**Beryl, Feldspar, Rutile, Smoky Quartz**; ③ SW 1 mi., the Holly Springs Quarry, in area forest—**Apatite, Magnetite**, green **talc, Verde antique**; ④ E 2 mi., as boulders of massively in mica schist—**Kyanite**; ⑤ E 2½ mi., residual boulders—**Kyanite**; ⑥ W 4 mi.: (a) SE of Rock Creek on the Ralph Cook farm near Refuge Church, outcrop—**Golden Beryl, Aquamarine**; (a) the Cook farm, outcrop—**Beryl**; (b) the Denson Mine—**Aquamarine, Mica**; ⑦ SE 2 mi. as buttonlike lenses—**Kyanite**.

POLK COUNTY

AREA, including much of Date, Walker, Chattooga, and Catoosa counties for a distance of approximately 175 mi., as unusually rich deposit and outcrops, especially in the Red Mt., formation series—**Limonite, fossil iron ore**.

CEDARTOWN, area iron mines—**Rhodochrosite**.

RABUN COUNTY

AREA: ① many regional old mines—**Gold, Quartz** crystal, **Beryl**, etc.; ② extreme NE part of Co., the Laurel Creek Mine—**Corundum** (major source of corundum).

CLAYTON: ① many area old mines—**Mica, Beryl, Quartz**; ② SE 4 mi.: (a) area of the Germany Mt.; (b) at Wilson farm—**Amethyst** (gem quality); ③ E 7 mi. and S of War Woman Dell, the Becky Beryl Mine—**Beryl** (as large flawed crystals in pegmatite, with clear

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portions suitable for cutting); ④ SW: (a) 7½ mi. old mica mine on Dicks Cr. rd.; (b) 8 mi. Mark Beck farm via Warwoman and Dick's Creek rds.—**Beryl, Mica**; ⑤ on the dump of the North Georgia Co. Mine, 4 mi. N; ⑥ W.T. Smith Mine at jct. of rd. E from town with Hwy. 28—**Amethyst**.

RABUN GAP: ① the Kell Mica Mine—asteriated **Quartz** crystals; ② N 1 mi., along Black Cr.—gem **Amethyst**.

TALLULA FALLS, area creeks—**Citrine, Quartz** crystals (clear, smoky).

ROCKDALE COUNTY

MAGNET, NW 2 mi. and 1 mi. N of the South Ocmulgee R., in a pegmatite—weathered **Sulfides, Muscovite, Feldspar, milky Quartz**.

SCREVEN COUNTY

SYLVANIA, Hwy. 301 N almost to Savannah R., turn left for 8 mi. to a sharp turn, take dirt rd. there ½ mile, along road—**fossil agate**.

SPALDING COUNTY

GRIFFIN, SW 2½ mi., rock outcrops—gem **Beryl, Quartz** crystals, **Tourmaline**.

VAUGHN, N 2 mi. and slightly W: ① in fields of the J.T. Allen farm—gem **Beryl, Rose Quartz, black Tourmaline**; ② along both sides of the rd.—gem **Beryl, Rose Quartz, black Tourmaline**.

STEPHENS COUNTY

TACCOA, S 9 mi.—**Quartz** crystals.

TOWNS COUNTY

AREA: ① extending into Clay Co., NC, a region of mica schist exposures reaching from (a) Winchester Cr. valley, along rd. as loose crystals—**Sillimanite, blue-bladed Kyanite**; (b) across Hunter Knob, NE side, a 100' zone—**Graphite, Muscovite, Quartz** crystals, **Sillimanite**; (c) through the Brasstown Church section (church yard and area rd. cuts to NE, numerous zones) —**Sillimanite**, associated with **Kyanite, Biotite** and **Muscovite**; (d) along Brasstown Cr., extending to Brasstown Bald, in pegmatite outcrop—**Corundum, Sillimanite**; (e) along an abandoned hwy. to SW of Brasstown Cr., zone of schist 30' to 35' thick—**Sillimanite, Sericite** (as alteration mineral). This mineralization zone extends to Tusquitee in Clay Co., NC. ② Regional stream beds, banks, adjoining fields and hillsides—gem **Amethyst**; ③ many regional old mines and prospects along the Appalachian Trail—**Corundum, Sillimanite**.

HIAWASSEE: ① at Charlie's Cr., in banks and gravels—gem **Amethyst**; ② area of Hog Cr., disseminated in minute crystals—**Chromite** in **Chrysolite**; ③ SW 2 mi., the Hog Creek Mine—gem **Rubies, Smaragdite**; ④ W for several mi., as linings in rock cavities of exposures—**Rhodochrosite**; ⑤ Lake Chatuge (reached via Hwy. 76 or side rds. E of Rte. 69): (a) beach gravel—**Corundum, Garnet, Kyanite, Quartz** crystals, **Rutile**; (b) Elf, area around Mt. Pleasant Baptist Church—**Corundum**.

YOUNG, on S side of Track Rock Gap reached by rd. S from US 76, 2½ mi. W of town—**Corundum**.

Georgia

TROUP COUNTY

LA GRANGE: ① area: (a) pegmatite outcrops near La Grange Airport—**Aquamarine, Beryl** (blue, opaque), **Quartz** (milky, rose), black **Tourmaline**; (b) along the Young's Mill rd., a pegmatite exposure—**Beryl, Quartz** crystals; (c) N along US 27 a short distance, on both sides of rd.—gem **Beryl**; ② N 1 mi. from town square, prospects in pegmatite—green **Muscovite, Garnets, Smoky Quartz** (crystals, nodules); ③ S on Rte. 219 to Cleveland Crossroads, the famed Big Beryl Mine (formerly the Hog Mine—fee)—**Amethyst, Aquamarine, Beryl** (crystals of more than 60 lbs.), **Garnet, mica, Quartz** (rose, rutilated), black **Tourmaline**, etc.; ④ S 8 mi. to Smith's Store: (a) S 100 yds. on W side of Rte. 219, the Stevens place, a pegmatite outcrop—gem **Beryl**; (b) W 0.6 mi., on N side of dirt rd. to Grady Hill School, a peculiar pegmatite outcrop—**Feldspar, Biotite, Muscovite, Quartz** (rose, smoky), **Tourmaline**; (c) S 1 mi. from Smith's Store and Hardins Crossroads, on W side of Rte. 219, in a pegmatite—**Aquamarine, Beryl, green Muscovite, Quartz** (rose, smoky), black **Tourmaline**; ⑤ SW 10 mi. on the Gabbetville rd., pit on the Hugh Allen place—gem **Beryl, Quartz** (rose, milky).

LOUISE, just N of the Calloway Airport, the Chromite prospect—**Beryl, Chromite**.

UNION COUNTY

AREA: ① Gumlog Mt., area schist exposures—**Corundum, Kyanite** (crystals, clusters), black **Tourmaline**; ② 2 mi. S of Hightower Bald, between Jacks Branch and Shoal Branch—**Amethyst, Quartz** crystals.

BLAIRSVILLE: ① S 4 to 5 mi., area—**Gold, Sillimanite**; ② S of Hwy. 76 W, especially ½ mi. E of Akin Mt. and 5 mi. NW in Teece Cr. valley, 1 mi. below hwy. Crossing—**Gold, Kyanite** (crystals to 2" long); ③ on S side of Track Rock Gap—**Ruby**.

UPSON COUNTY

CREST: ① area, gravels of Hurricane Cr.—**Beryl, Kyanite, Quartz** crystals; ② N 1 mi., on W side of Town Mt.—**Garnet, Feldspar, Kyanite, Quartz**; ③ SW 2 mi., pegmatite prospects—**Mica** books to 3" dia.; ④ Mica Hill—**Biotite, Muscovite**.

THOMASTON: ① area, a broad region of rich mines extending from SW of Thomaston S of the Thomaston-Yatesville line to E and N of Yatesville almost as far N as Topeka Jct., more than 50 mines—**Kyanite, Mica**, and associated **gem minerals**: (a) area mica mines—**Citrine, Corundum, Garnet**; (b) Goat Rock, rd. cuts along Rte. 19—**gem** crystals; ② SW 3½ mi., on the Dolly Cherry place—gem **Kyanite, Staurolites** (finest twinned crystals in GA); ③ E 4 mi. and about 1 mi. off the Thomaston-Butler Hwy., the Mauldin Mine (well know locally) —**Albite, glassy Microcline, Apatite, Biotite, Muscovite, Smoky Quartz**; ④ NE 6 mi., near jct. of Thomaston-Yatesville hwy., in banks and cliffs of Wilmot's Ravine—gem **agate, jasper**; ⑤ S 20° W 3½ mi. by air (4½ by rd.) and ½ mi. due E of Bell Cr., the old Bell Mine in a pegmatite—**Microcline, Muscovite, Quartz** (milky, smoky); ⑥ S 5 mi. and 1 mi. W of the Thomaston-Butler hwy., on the Parker Ferry rd., pegmatite—**Feldspar, Mica, Smoky Quartz** nodules; ⑦ S 50° W 5½ mi. and 1 mi. N 35° W of jct. of Patato and Womble creeks and between the two, a pegmatite mine—**Mica**; ⑧ SE 7½ mi., the Mitchell Creek Mine—**Apatite, Muscovite**; ⑨ NE 7 mi. at the Kelly place—**Corundum**.

YATESVILLE: ① Just outside of town, the Herron Mine—**Apatite, Beryl** (crystals to 7" long), **mica, Quartz**; ② N 3 mi. by unimproved rd. that lies 0.8 mi. E of paved rd. to Barnesville, the Adams Mine—gem **Beryl**; ③ S 46° W 3.8 mi., the Charlie Nims Mine, pegmatite, on dump—**Mica** books.

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WALTON COUNTY

BLASINGAME, 6 mi. out on dirt rd. to the Malcom farm, a pegmatite exposure in a field—gem **Aquamarine**, **Beryl**, **Mica**, **Quartz**, **Tourmaline**.

WASHINGTON COUNTY

SANDERSVILLE, S 4 mi. on Rte. 15 and 2 mi. from Buddy's Service Sta., at the Hugh Taubutton farm—**chalcedony**, **jasper**, **agate**, etc.

WHITE COUNTY

AREA, widespread stream gravels, placers—**Gold**, **Diamonds**, **Topaz**, **Rubies**, **Aquamarines**.

CLEVELAND: ① numerous Gold mining area (including Helen) —**Gold**, **gem** crystals; ② N 4 mi., at the Dunbar Mine, placers—**Gold**.

NACOOCHEE: ① area mines—**asbestos**; ② placer gravels of Bean Cr.—**Gold**; ③ 3 mi. and just W of the Cleveland-Helen hwy., placers—**Gold** (nuggets); ④ the Horshaw Mine—**Gold**, **Diamond**; ⑤ in cut on N side of Hwy. 17, 3 mi. E—green **Apatite**.

WHITFIELD COUNTY

DALTON, cut banks and gravels along Tarr Cr.—red oolitic **jasper**, black **siliceous oolite**.

WILKES COUNTY

ADASBURG, area outcrops—**Quartz** crystal.

WASHINGTON: ① SE 7 mi., on the Wingfield plantation on the Wrightboro rd., extensive outcrop of quartzite—**Kyanite** crystals; ② E on US 378 to Co. line, turn onto first right-fork rd., then take a left fork to crest of hill, the Magruder Mica Mine—**Azurite**, **Bornite**, **Chalcopyrite**, **Galena**, **Gold**, **Malachite**, **Pyrite**, **Garnet**, gem green **Spinel**.

WILKINSON COUNTY

GORDON, gravels along nearby lake shore—**opalite**, **jasper**, **chalcedony**, **agate**.

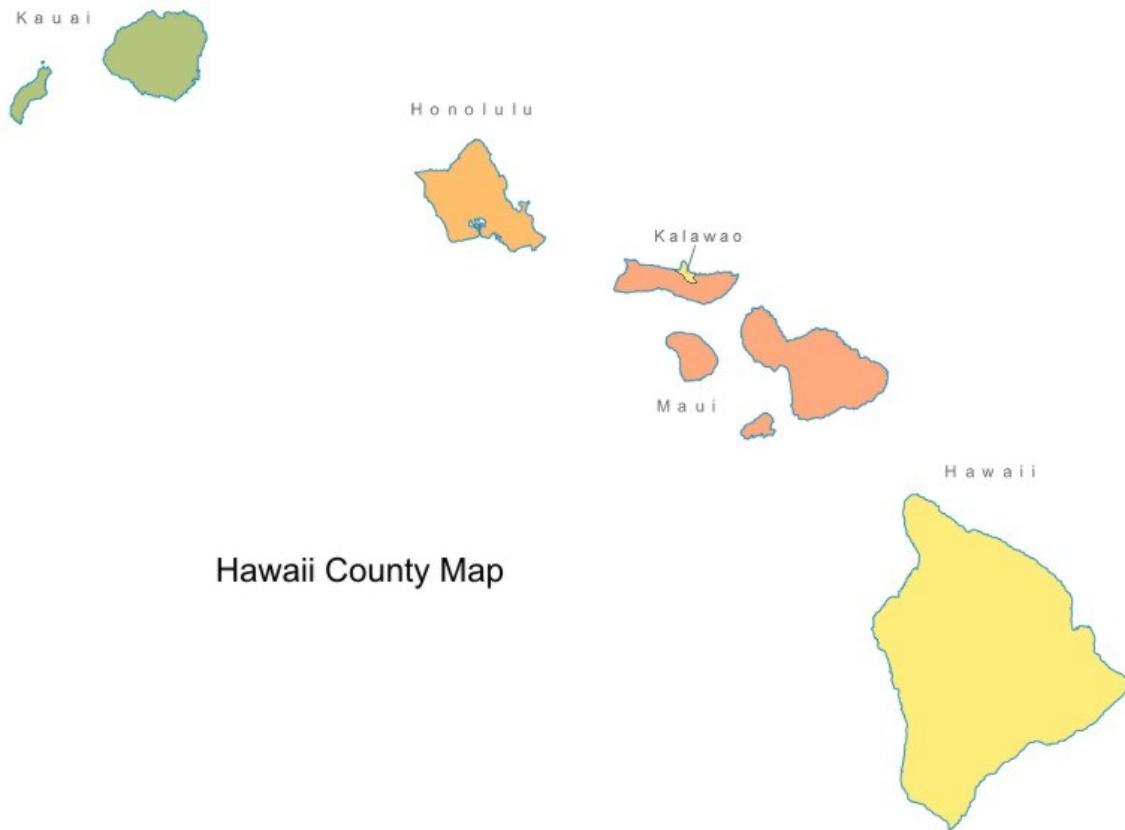
McINTYRE, area mines—**Bauxite**.

Hawaii

HAWAII

Of the twelve Hawaiian Islands which lie approximately 2,000 miles west of California, four are mere barren rocks, and four are large, extremely mountainous islands culminating in Mauna Kea (13,900') and Mauna Loa (13,700'). Four other islands are of lesser extent, but all are composed of basalt.

Almost the only minerals present on any of the islands are sands, some gravel, and limestone, including deposits of calcareous algae and the skeletons of stony corals. In the craters of the still active volcanic cones one can find **sulfur**.



LANAI

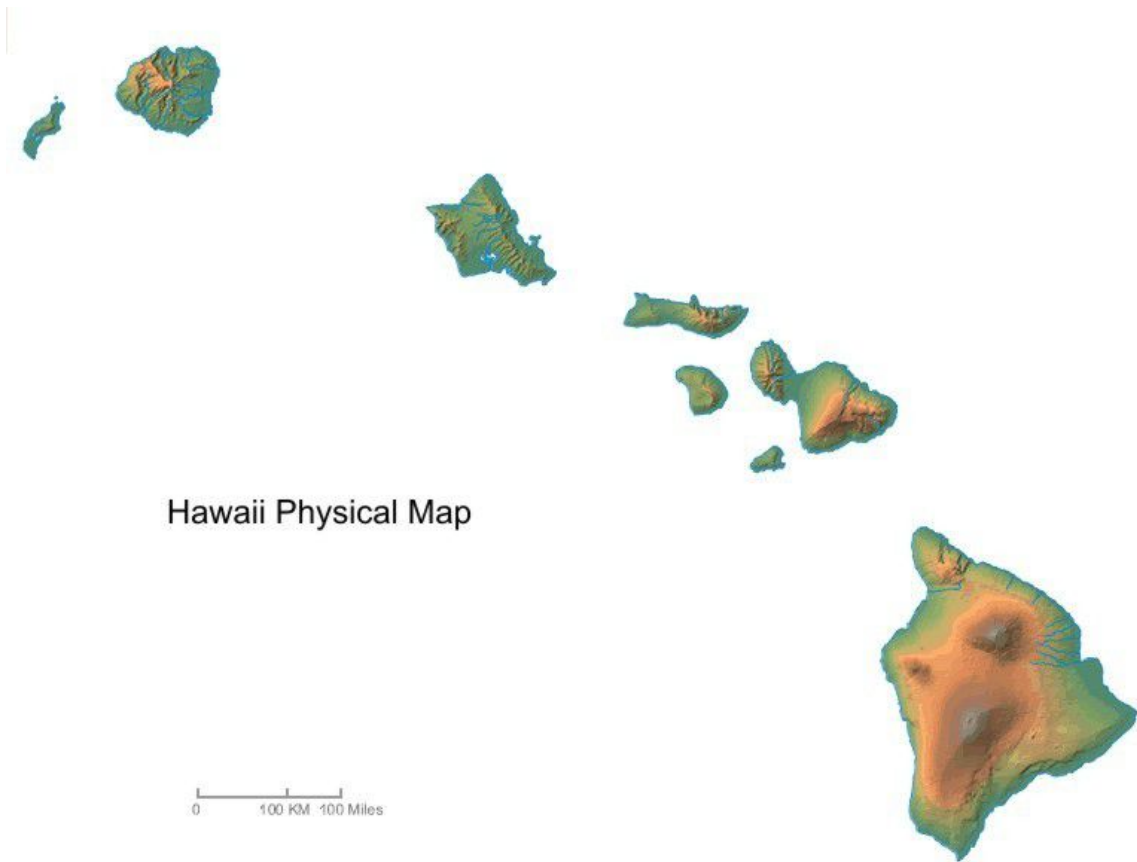
MANELE BAY, on SE shore, in cinder cone—**sunstone**.

HAWAII

HALEMAUMAU, on Kilauea, droplets know as *Pele's Tears*—**obsidian**.

PUNA Dist.: ① in lava flow; and ② in green beach sands of Oahu and South Point—**Olivine**.

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OAHU

KAILUA: ① on N shore in basalt ridges, in ravines from Mount Olokanu, in washes of Keolu hills and in H & D quarry—**Quartz** crystals, **jasper**; ② in Lanikai golf course washes—**jasper**; ③ in Wahiawa Valley—**jasper**.

KANEOHEE, on N shore, ridges in Koolau Range—**jasper**.

OLOMANA PEAK, in gullies, and also in crater of West Molokai volcano—**banded agate**.

WAIANAI RANGE

POHAKEA PASS—clear yellow **Labradorite**.

IDAHO

With an oddly configured *Panhandle* shape, Idaho reveals a varied topography. The central and northern portions are extremely rugged, encompassing the massive Sawtooth and Salmon River mountain systems, with many lakes, and snow-laden peaks that rise more than 12,000' high. The mountains have been extensively prospected and mined for **Copper, Gold, Lead, Silver** and **Zinc**. As a Gold producing state, Idaho ranks 9th in America. Many abandoned mining ghost towns dot the mineralized areas.

The mountainous nature of Idaho led early prospectors from Virginia City, NV, and Bannock, MT into its labyrinthine watersheds in search of Gold and Silver. Idaho's mountain systems are the result of enormous batholithic intrusions that took place during the Laramide revolution some 70 million years ago. Known to geologists as the Idaho Batholith, this granite mass covers from 16,000 to 20,000 square miles and is probably the largest and best-known such geological phenomenon in America.

The earliest known Gold discovery in Idaho was an auriferous sandbar along the Pend Oreille River in 1852. Then in 1860 Captain E.D. Pierce found Gold near what became the town of Pierce in Clearwater Co., with other rich placers soon being mined at Elk City, Orofino, Boise Basin, Florence and Warren. Although many of the richer placers were exhausted by 1870, the following half-century led to intensive exploration for lode Gold deposits. Most of the state's Gold came from lode mines after 1900.

In addition to the basic and noble metals, produced in astonishing abundance, Idaho provided large amounts of strategic minerals of inestimable value to the emergencies of World War I and II. Potentially, at least, the Panhandle State ranks above all others in America in the importance of its mineral resources. Aside from the commercially valuable minerals, the state provides an unusual abundance and variety of gemstones, gem crystals, silicified woods, and other mineral items highly valued by collectors occurring throughout the state in many more localities than enumerated here.

ADA COUNTY

AREA: ① very many localities along Co. roads, prospect almost anywhere—**agate, chalcedony, jasper, petrified** and **opalized wood**; ② gravels of Musselshell Cr. tributary of the Snake R.—**Zircon**.

ADAMS COUNTY

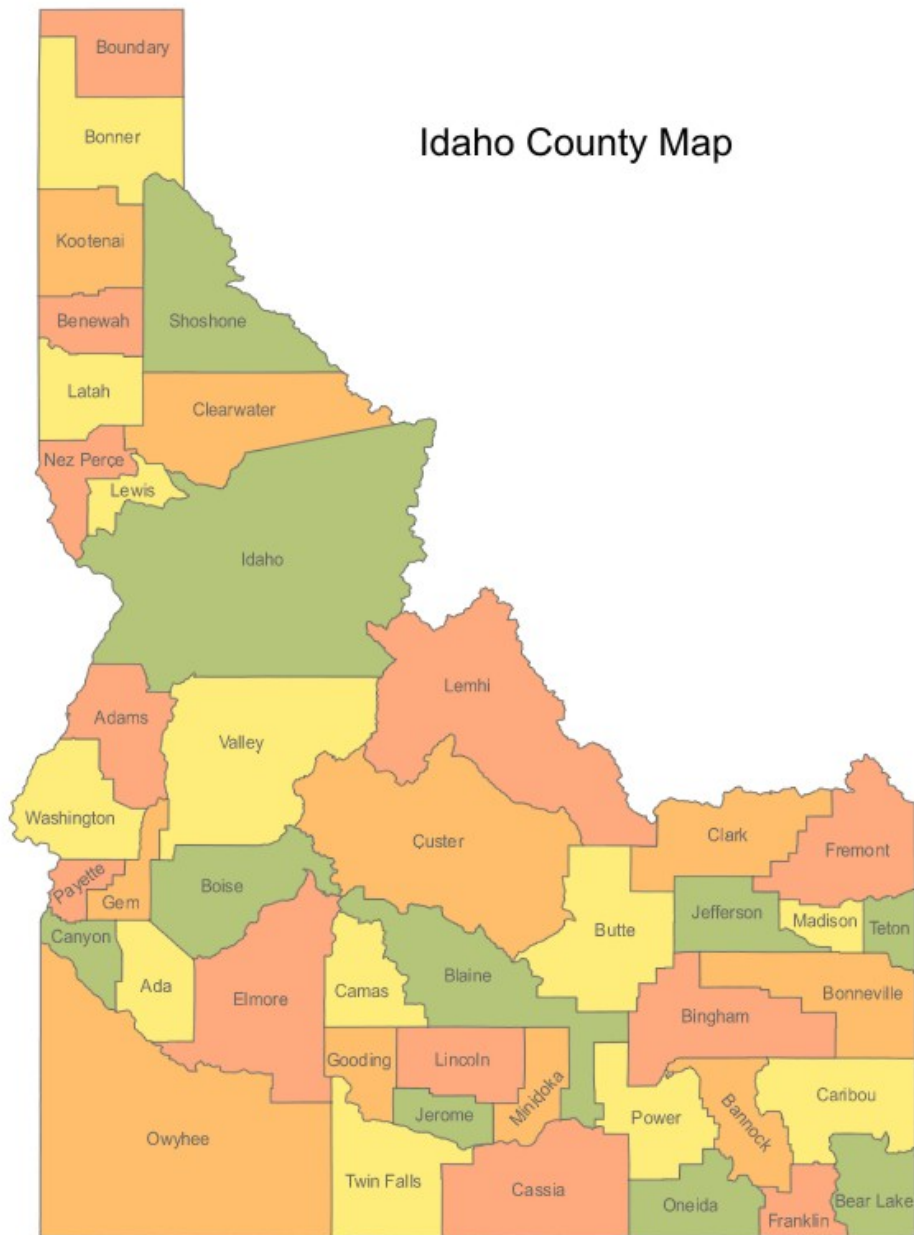
AREA: ① very many regional old mines and dumps—**Azurite**, native **Copper, Gold, Malachite**, etc.; ② Sturgill Cr., area deposits, prospect pits, and mines—**Manganese**; ③ Rock Flat gravels—**Diamond, Garnet, Ruby, Sapphire, Topaz**.

COUNCIL, SE 10 mi., the Mica Queen Mine in Sec. 8, T. 15 N, R. 2 E—**Muscovite**.

CUPRUM, in limestone in contact zone where copper is mined in the Seven Devils dist.—**Andradite** garnet, **Epidote**.

MESA, in all area deposits of volcanic ash—**opalized wood**.

NEW MEADOWS: ① E 5 mi. along Little Goose Cr. Canyon, in gravels—**Diamond**; ② Hwy. 55, 7 mi. E, dirt rd. left, and pan or screen sands of stream at Rock Flat, for stones—**Ruby, Garnet**; ③ a few mi. S in foothills—**Rhodonite**.



BANNOCK COUNTY

LAVA HOT SPRINGS, numerous area mines—**Manganese minerals**.
POCATELLO, the Moonlight Mine (inquire)—**Bornite, Chalcocite**.

BEAR LAKE COUNTY

CLEVELAND, SE 1 mi., on E side of Bear R.—nodules mixed **Psilomelane** and **Pyrolusite**, wad.

Idaho

MONTPELIER: ① E 3 mi., in limestone fissures—**Gypsum**; ② area of Paris Canyon, the Hummingbird Mine—**Quartz** (impregnated with **Cuprite** and **Malachite**).

BENEWAH COUNTY

FERNWOOD: ① SE 5 mi., Emerald Cr. and its East Fork—**Almandite garnet**; ② S 2 mi., gravels of Ruby Gulch—**Almandite garnet**. Some of the garnet from this location is *Star Garnet*.

BLAINE COUNTY

AREA, basalt exposures throughout Co., especially in the Pole Cr. area—**chalcedony geodes** (with **Amethyst** linings), **Quartz crystal geodes**.

BELLEVUE: ① SW corner of Co., in Wood River Dist: (a) Wood R. and tributaries in T. 1 S, R. 17 & 18 E, placers—**Gold**; (b) area mines—**Galena, Dufrenoyite, Magnetite, Malachite, Marcasite**; (c) Camas Croesus, and Tip Top mines—**Pyrrhotite**.

CAREY, gravels of the Little Wood R.—**agate, chalcedony, jasper**.

HAILEY: ① SW, in T. 1 N, R. 17 E and S of Croy Cr.—**Galena, Gold, Monzonite, Sphalerite, Uraninite**; ② W, in T. 2 N, R. 17 E, the Deer Cr. deposits—**Barite**; ③ area mines and dumps—**Galena, Silver, Sphalerite**.

KETCHUM: ① area Lead mines in T. 4 N, R. 17, 18 & 19 E—argentiferous **Tetrahedrite, Arsenopyrite, Galena, Siderite, Sphalerite**; ② the Sawtooth Dist., area mines—**Proustite** with **Pyrrargyrite**.

BOISE COUNTY

AREA: ① the Banner Silver veins—**Gold, Pyrrargyrite, Silver**; ② Deadwood Gulch—**Garnets, Gold**; ③ Willow Creek Dist., at (a) Checkmate, (b) Gold Hill, and (c) many other regional mines—**Gold, Pyrite, Silver**, etc. This Co. has many old mines; the dumps yield **Quartz crystals**, brilliant **Pyrite**, etc. in addition to other minerals.

BANKS, SE 11 mi., the Vaught prospect in Sec. 19, T. 8 N, R. 5 E—**Columbite, Mica**.

CENTERVILLE: ① N to Garden Valley, pegmatite outcrops—**Aquamarine**; ② along Grimes Cr. on way toward Placerville; and (c) along Boise R. near Twin Springs, are placers—**Gold**.

IDAHO CITY, in placer tailing and mine dumps, especially at Gold Hill mine—**Quartz, Garnet**.

PIONEERVILLE: ① the Quartzburg area, and ② around Grimes pass, lode deposits—**Gold**.

BONNER COUNTY

CLARK FORK (Dist.): ① area old mines—**Copper minerals**; ② mines in T. 55 & 56 N, R. 2 E—**Lead-Silver minerals**.

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BOUNDARY COUNTY

CARRIETOWN: ① along Little Smoky Cr., in T. 2 & 3 N, R. 14 & 15 E, placers—**Gold**; ② mines in T. 4 & 5 N, R. 13 & 14 E, lode—**Gold**.
 PORTHILL, SW 26 mi., in T. 64 N, R. 4 W—**Gold, Lead, Silver**.

Idaho

BUTTE COUNTY

ARCO: ① W 20 mi., in the Lava Cr. district—**Manganese** minerals, **Tourmaline**; ② in Antelope Cr. and Road Cr. areas and Upper Lost R. valley—**geodes** (Quartz or Amethyst filled); ③ in veins in Wildhorse Canyon on E side of Hyndman Peak—**Quartz**.

MOORE, follow Antelope Cr. canyon rd. 13½ mi. W, then drive or walk trail left to Big Piney Mt.—black **agate**.

CANYON COUNTY

MARSING, from rd. toward Homedale turn left at abandoned T Inn to Graveyard Point, then left on canal rd. over bridge and 2 mi., crossing canal bridge and backtracking ¾ mi.—gem **Opal**.

CARIBOU COUNTY

SODA SPRINGS, S a few mi.: ① Sec. 2, 11, 13 & 14, T. 9 S, R. 42 E, and ② Sec. 14, T. 10 S, R. 43 E, regional deposit—**Gypsum, Sulfur**.

CASSIA COUNTY

BURLEY, mines along Snake R.: ① T. 9 & 10 S, R. 24 & 25 E, placers—**Gold**; ② T. 15 & 16 S, R. 21 E, mines and dumps—**Copper, Gold, Lead-Silver**.

MOULTON, NW 5 mi. and just W of Almo—**Topaz**.

CLARK COUNTY

SPENCER, in Spencer Opal mine (fee)—**Fire Opal**.

CLEARWATER COUNTY

AREA: Kelly and Morse creeks in T. 39 N, R. 10 & 11 E, placers—**Gold**; ② North Fork (of Clearwater R.) and its tributaries, T. 37, 38 & 39 N, R. 1, 2, 3 & 4 E, placers—**Gold**; ③ Rhodes Cr., gravels—**Zircon**.

PIERCE: ① area placer mines, and ② along Orofino Cr. between Orofino and Pierce, T. 36 & 37 N, R. 2, 3 & 4 E, placers—**Gold**; ③ N 11 mi., near Headquarters, area—asteriated **Almandite** garnet; ④ in placer tailings along Rhodes and Orofino creeks—**Sapphire, Epidote**.

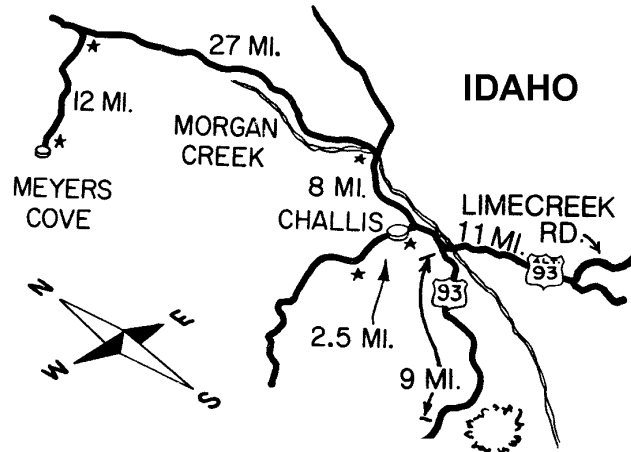
CUSTER COUNTY

AREA: ① Alto dist., near Wild Horse Cr., mines—**Scheelite**; ② Bay-horse, T. 12 & 13 N, R. 18 E, area mines—**Lead minerals**; ③ Bonanza and Custer mines on Yankee Fork, T. 12 & 13 N, R. 14 & 15 E, lodes—**Gold**; ④ Nicholia dist., rich early-day strikes—**Lead-Silver minerals**; ⑤ toward head of Big Lost R., as well as all other Tertiary basalts outcropping over a broad region—**chalcedony geodes (Amethyst linings)**.

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CHALLIS: ① a 7½ mi. long belt extending from the Pacific Mine near Bay-Horse on the S to Mill Cr. on the N, most deposits being in T. 13 N, R. 18 E—**Fluorite**; ② Hwy. 93 S to Hwy. 93A, then 8 mi. S on Hwy. 93 to bridge, stay on Hwy. 93 another 1½ mi. to Malm Gulch, hike or take jeep trail 2½ mi. E to petrified forest on ridge—**agate, petrified wood**; ③ : (a) S on Hwy. 93A through gorge, collect on hills and in valleys to right—**agate**; and (b) 2 mi. on rd. to left—**black wood**; ④ Hwy. 93 to Hwy. 93A, take 93A 11 mi. SE, then Lime Creek Rd. E 2 mi., in hills—**agate**; ⑤ N of town ≈ 8 mi.

in turn-off at Morgan Creek almost due N 27 mi., then sharply left toward Meyers Cove, along rd.—**seam agate** in volcanic ash.



CHALLIS: ① a 7½ mi. long belt extending from the Pacific Mine near Bay-Horse on the S to Mill Cr. on the N, most deposits being in T. 13 N, R. 18 E—**Fluorite**; ② Hwy. 93 S to Hwy. 93A, then 8 mi. S on Hwy. 93 to bridge, stay on Hwy. 93 another 1½ mi. to Malm Gulch, hike or take jeep trail 2½ mi. E to petrified forest on ridge—**agate, petrified wood**; ③ : (a) S on Hwy. 93A through gorge, collect on hills and in valleys to right—**agate**; and (b) 2 mi. on rd. to left—**black wood**; ④ Hwy. 93 to Hwy. 93A, take 93A 11 mi. SE, then Lime Creek Rd. E 2 mi., in hills—**agate**; ⑤ N of town ≈ 8 mi. in turn-off at Morgan Creek almost due N 27 mi., then sharply left toward Meyers Cove, along rd.—**seam agate** in volcanic ash.

CLAYTON: ① area of Squaw and Thompson creeks in T. 11 & 12 N, R. 16 E, mines—**Scheelite, lode Gold**; ② mines in T. 11 & 12 N, R. 17 E—**Lead minerals**.

LOST RIVER, on the North Fork of Lost R.—**agate, jasper**.

MACKAY, area Copper mines and dumps—**Azurite, Chalcopyrite, Chrysocolla, Malachite, Pyrite, Pyrrhotite**.

STANLEY: ① area stream gravels of the Stanley Basin—**Corundum, Gold, Sapphire**; ② placer mines in T. 10 & 11 N, R. 12 & 13 E; and ③ along the Salmon R., particularly between Robinson Bar and Clayton in T. 11 N, R. 15, 16 & 17 E—**Gold**; ④ the Willis placers along Stanley Cr.—**Cinnabar, Gold**.

ELMORE COUNTY

AREA: ① along the Boise R.: (a) Middle Fork, in T. 6 N, R. 10 E; (b) South Fork, in T. 2 N, R. 10 E; (c) Twin Springs, in T. 3, 4 & 5 N, R. 5, 6 & 7 E, placers—**Gold**; ② the Neal dist., area mines—**Stibnite**.

MOUNTAIN HOME, NE 25 to 50 mi.: ① Pine mining dist., as stringers in granite—**Cinnabar, Gold**; ② Featherville and Rocky Bar, regional old mines—**Gold**; ③ Atlanta, famous old Gold camp: (a) T. 5 N, R. 11 & 12 E, mines—**Gold**; (b) W 20 mi., on East Fork of Sevenholm Cr., in Sec. 13, T. 6 N, R. 9 E, the Hermada deposit, high grade—**Stibnite**. (The original old mining camp of Pine now lies under the waters of the Anderson Ranch Reservoir.)

Idaho

FREMONT COUNTY

ASHTON, in volcanic rocks to N and then E of US 191 in Island Park Caldera—**agate**.

ST. ANTHONY, N 18 mi. and 8 mi. SE of Ivan, at Crystal Butte, area—**andesine**.

GEM COUNTY

EMMETT: ① take rd. toward Horsehoe Bend and up Black Canyon about 1 mi. to old diggings in rock walls—precious **Opal** (containing red and green fire); ② 5 mi. E of Squaw Butte—**agate**.

PEARL, extending NE to Co. line and including parts of T. 6 & 7 N, R. 1 E, many old mines—**Gold**.

GOODING COUNTY

BLISS, in volcanic ash along Clover Cr.—**opalized wood**.

GOODING, area along both sides of Clover Cr. extending E into Lincoln Co. and embracing a considerable region—**opalized wood**.

IDAHO COUNTY

AREA: ① Bear Valley, a deposit in T. 12 & 13 N, R. 9 E—**Monazite, Uranium minerals**; ② Lolo, Musselshell and Eldorado creeks, many once rich placer mines—**Gold**; ③ Resort area placers—**Corundum, Gold, Zircon**; ④ Salmon R. sands and gravels, both sides and all tributaries—**agate, chalcedony, jasper, petrified wood**, etc.; ⑤ Slate and McKinsey creeks—**agate, chalcedony, jasper, petrified wood**, etc.; ⑥ T 33 N, R. 5 E, six or more ledges within a few square mi.—**Amphibole asbestos**. The western and southern halves of this large Co. are extensively mineralized and contain many old abandoned mine, and mining camps.

BURGDORF-WARREN (the entire region S of the Salmon R.): ① many area placers, especially in T. 22 N, R. 4, 5 & 6 E—**Gold, Monazite, Topaz**; ② in placer mining dumps at mouth of Grouse Cr. S of rd. to Warner; and ③ beyond Secesh Cr. at Ruby Meadows in placer mining dump—**Corundum, Quartz**.

DIXIE, N side of the Salmon R. along Sheep and Crooked creeks—**Gold**.

ELK CITY, region along side the American R. and the South Fork of the Clearwater R., many old mines and placers—**Gold**.

KOOSKIA: ① S, along the South Fork of the Clearwater R., including areas around Stites and Harpster, placers—**Gold**; ② E, along the Middle Fork of the Clearwater R., and on Maggic Cr., placers—**Gold**; ③ N on Hwy. 13, then NE to site—**petrified wood**.

LUCILLE-RIGGINS, regional placers along the Salmon R.—**Gold**.

OROGRANDE, SW, the Buffalo Hump mining dist., many mine dumps—**Copper minerals**.

RIGGINS, for several mi. to N in Little Salmon R.—**Garnet**.

ROOSEVELT, E 10 mi., the Pringle-Smith Mine at Sugar Cr.—**Cinnabar**.

WHITE BIRD, area gravels of the Wind and Salmon rivers, to 6 mi. N of town—**Gold**.

IDAHO-LEWIS COUNTIES

AREA, the Lolo Dist., many mines—**Copper minerals**.

A Location Guide for Rock Hounds in the United States

JEFFERSON COUNTY

CAMAS, in rhyolite near source of E branch of tributary to S fork of Camas Cr.—**Topaz, Fire Opal.**

KOOTENAI COUNTY

BAYVIEW, S and SW sides of Lake Pend Oreille, many mines and prospects—**argentiferous Galena.**

COEUR D'ALENE (Dist.), many area mines, (such as Bunker Hill and Sullivan at Kellogg)—**Gold, Lead, Silver.**

HAYDEN LAKE, area: ① T. 51 & 52 N, R. 1 & 2 W; and ② T. 48 & 49 N, R. 2 W, many mines—**Lead-Silver minerals.**

SETTERS, area land surfaces—**common opal** (yellow to brown).

LATAH COUNTY

AREA: ① NW part of Co., along Emerald and Ruby creeks—**Garnet**; ② the Hoodoo Dist., area mines—**Copper minerals.**

AVON: ① N 6 mi., on flanks and crest of Mica Mt. in Sec. 15, 22, 23 & 27, T. 41 N, R. 2 W, in pegmatite outcrops with numerous mines between Deary and Princeton, especially the Levi Anderson and Muscovite mines—green **Beryl, Biotite, Muscovite**; ② the Fitzgerald property and adjoining exposures in Sec. 27—**graphic granite.** The pegmatites found in a belt about 1 mi. wide extend for about 24 mi. in a NE to SW direction. There are many prospects and old workings along the outcrops.

DEARY, E on Hwy. 8 to Helmer, in Boulder Cr.—**Garnet.**

MOSCOW, W, toward Whelan and squarely on the boundary between ID and WA, in decomposed basalt exposures—precious **Opal.**

LEMHI COUNTY

AREA: ① Blue Wing dist., on W slope of the Lemhi Range in Sec. 23, T. 14 N, R. 23 E, the Ima Mine—**Tungsten (Huebnerite)** with **Tetrahedrite, Chalcopyrite, Galena, Scheelite, Sphalerite**; ② Parker Mt. dist., area—**agate, chalcedony.**

COBALT, the Panther Cr. valley 6 mi. below headwaters in porphyry dike extending 1½ mi. along Cr.—**Opal.**

GIBBONSVILLE: ① T. 25 N, R. 21 E; ② T. 26 N, R. 21 E, regional mines—**Autunite, Galena, Hematite, Gold, Pyrite, Torbernite**; ③ along the Salmon R. and area creeks, as placer sands—**Gold**; ④ back of the Salmon R., as lode mines—**Gold.**

GILMORE, T. 13 N, R. 26 E, lode mines—**Gold.**

LEADORE, T. 13 N, R. 27 E, area mines—**Lead** minerals.

LEESBURG, area placers—**Gold, petrified wood.**

MAY, on W side of Pahsemeroi valley in ledge of porphyry paralleling Panther Cr. and about 6 mi. from its source—**Fire Opal, opalite.**

MEYERS COVE, near Camas Cr. in T. 18 N, R. 17 E, 2 to 3 mi. NW, as vein fillings in composite lode-type veins in Challis volcanics and Miocene porphyries—**Barite, Fluorite, Quartz.**

SALMON, SW 45 mi.: ① Blackbird Dist., on Blackbird and Meadow creeks in T. 20 & 21 N, R. 18 E, numerous mines and prospects—**Cobaltite, Chalcopyrite, Pyrite, Pyrrhotite**, minor **Lead-Silver-Zinc** ores; ② T. 20 & 21 N, R. 21, 22 & 23 E, many regional mines of considerable richness—**Azurite, Bornite, Chalcopyrite, Cuprite, Malachite.**

Idaho

SHOUP, the Salmon R. and its tributaries in N part of Co. (near Gibbonsville), as placers and lode deposits in same region but extending farther S near Leesburg and Salmon—**Gold**.

LEWIS COUNTY

KAMIAH, SE 14 mi., exposure—**Amphibole asbestos**.

LEWIS, NEZ, PERCE, IDAHO, ADAMS, WASHINGTON COUNTIES

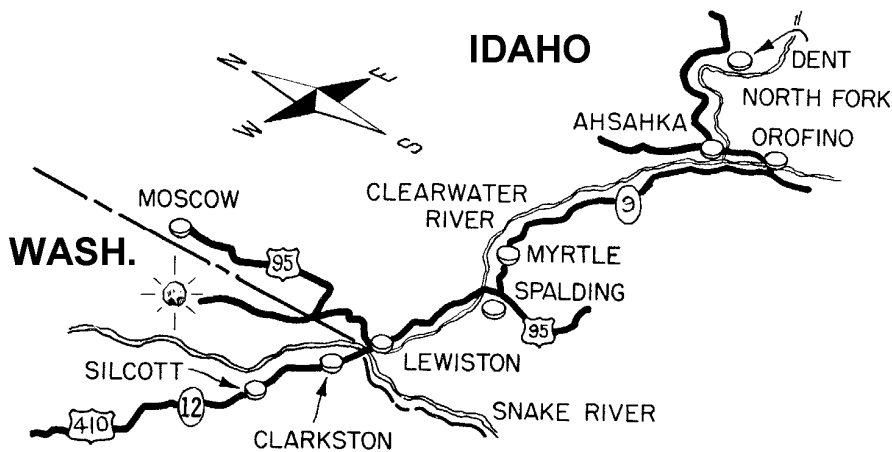
The Seven Devils mining dist., extending along the Snake R. for about 120 mi., known as the Snake River Copper Belt, very many mines and prospects—**Azurite, Bornite, Chalcocite, Chalcopyrite, Covellite, Malachite**, etc.

LINCOLN COUNTY

SHOSHONE, large surrounding area, especially W into Gooding Co.'s Clover Cr. region—**opalized wood**.

NEZ PERCE COUNTY

AGATHA, area E and N—**opal, opalized wood**.



LEWISTON: ① gravel bars all along the Clearwater R. between town and Dent—**agate, jasper**, (with Sillimanite inclusions), cherty *Clearwater Picture stone* (gray with black stripes); ② Clearwater R. gravels upstream from town for about 100 mi., but especially between Lewiston and Myrtle—**Fibrolite** (gem Sillimanite); ③ all regional streams—**agate, Aquamarine, Garnet, Gold, Quartz** crystals; ④ 8 mi. down the Snake R. on N side, on weathered basaltic hillsides—**Fire Opal** (in black matrix); ⑤ 11 mi. downstream to gravel pits at Silcott, take steep hill trail to caves near top, in basalt—fine gem **Fire Opal**.

A Location Guide for Rock Hounds in the United States

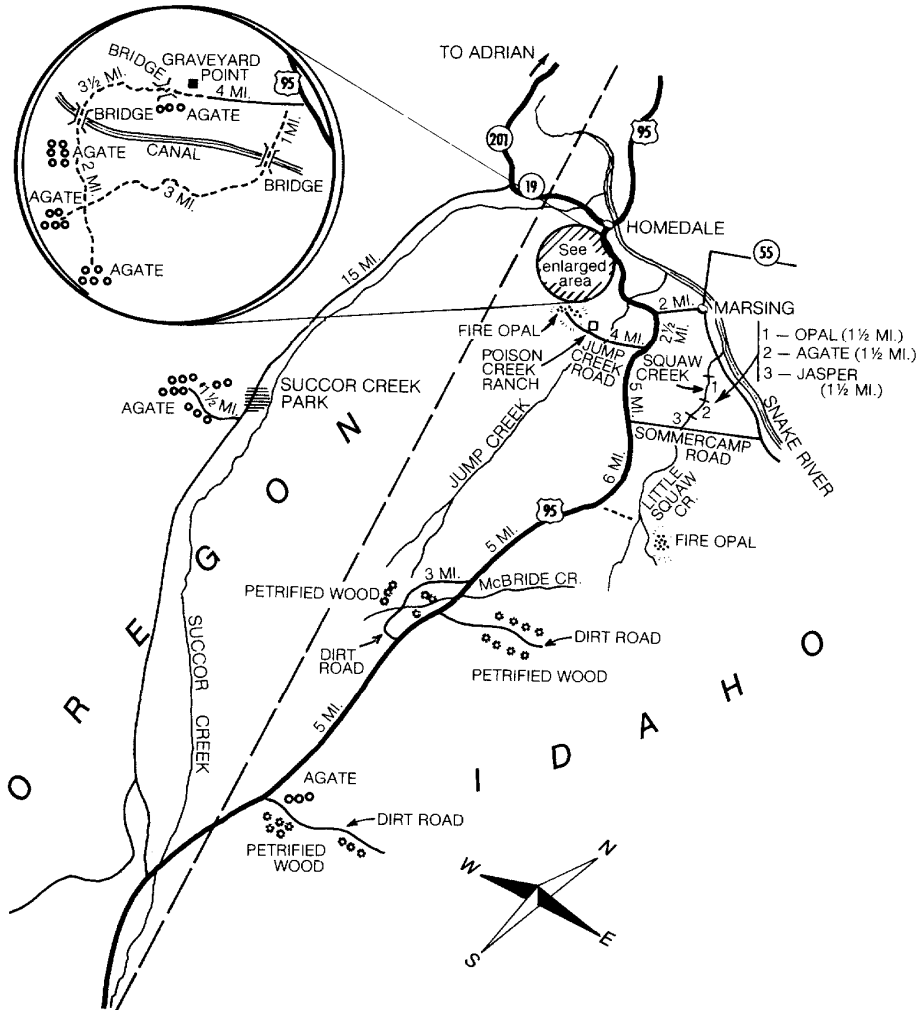
OWYHEE COUNTY

BRUNEAU: ① entire region of the Bruneau Desert, along almost any access rd.—**agate, chalcedony, jasper**; ② SE, in the Bruneau Canyon area—*Bruneau Canyon jasper*; ③ SE 8 mi. to Indian Hot Springs, then S past ranch 8½ mi., at Indian Bathtub—purple **agate**.

CLIFFS (40 mi. S of Jordan Valley, OR), the Brace Brothers ranch—precious **Opal**.

ENTERPRISE, W 3 mi. and 2 mi. SW of Sommer Camp, in open cuts and pits in perlitic rhyolite—**Opal**.

GRAND VIEW, along the Snake R., area placers—**Gold**.



HOMEDALE, S 2 mi. on US 95 to Graveyard Point marker, then 4 mi. W and 1 mi. S to area of ID - OR boundary. A very rich gem **agate** area lying mainly on the OR side (see map above).

NAMPA: ① area of Graveyard Point, SE—plume **agate**; ② SW 8 mi., at Squaw Cr. Canyon, just below jct. of Squaw and Little Squaw creeks and 3 mi. back of the Snake R., in basalt gas cavities—**chalcedony, Opal, onyx**; ③ W, along Sucker Cr.—**plume agate**.

OREANA: ① area old mines—**Lead-Silver minerals**; ② SE 6 mi., along Castle Cr.—precious **Opal**.

SILVER CITY: ① Black Jack and Trade Dollar mines in town—**Chalcopyrite, Gold, Lead, Silver**; ② War Eagle and Florida Mt. veins in T. 4 & 5 S, R. 3 & 4 W, all

Idaho

fissure-type deposits with mineralization occurring as ore shoots—**Argentite, Cerargyrite, Electum, Jamesonite, Pyrargyrite, Stibnite**, Silver-bearing **Tetrahedrite**, etc.; ③ many other regional mines, all abandoned, with occasional summer prospecting and placers, **Gold, Lead, Silver, Marcasite, Pyrite, Quartz** crystals, etc.; ④ NW a short distance to ghost camp of De Lamar, lode deposits and huge mines—**Gold, Lead, Silver**; ⑤ in mine dumps in Long Gulch—**agate, Quartz, Cassiterite**.

SHOSHONE COUNTY

AREA: ① region of the Coeur d'Alene mining dist. (as extension from Kootenai Co.); ② the Idaho Giant and other mines, as center of one of the world's richest Lead-Silver zones—**Argentiferous Tetrahedrite, Barite, Galena, Pyrite, Pyromorphite, Siderite, Sphalerite**, etc.; ③ the *Silver Belt*, in T. 48 N, R. 3 & 4 E, and area in which the chief product is Silver extending about 6½ E to W and 2½ mi. N to S, very many famous mines—**Argentiferous Tetrahedrite, Galena, Sphalerite**, etc.

AVERY: ① the area to S on divide between headwaters of the St. Joe and Clearwater R.—**Kyanite, Staurolite**; ② around Bathtub Mt.—**Staurolite**.

CALDER, W, in the St. Joe (Benewah Co.) mining district: ① many area mines in Shoshone Co.—**Copper minerals**; ② along the St. Joe R., in T. 45 N, R. 3, 4 & 9 E, lode mines—**Gold**. (Most Gold from Shoshone Co. comes from ores mined for Copper, Lead, Silver and Zinc.)

KELLOGG, the Bunker Hill and Sullivan mines (now combined) —fluorescent minerals (**Anglesite, Cerussite, Pyromorphite**), **Lead-Silver minerals**.

KINGSTON, area of the Pine Cr. dist. in T. 48 N, R. 1 & 2 E, numerous old mines—**Arsenopyrite, Gold, Pyrite, Stibnite**.

MURRAY (principal Gold mining part of Co.), lode mines—**Gold**.

PRICHARD, area creek placers—**Gold**.

WALLACE: ① many area mines, some world famous, such as the Sunshine Mine—**Gold, Lead, Silver**; ② T. 47 & 48 N, R. 4 & 5 E, placers—**Gold**; ③ S to Goat Mt., on S side of mt.—**Kyanite, Garnet**.

TWIN FALLS COUNTY

AREA, along Hwy. 93 and 3 to 4 mi. N of the NV state line—chalcedony **geodes**.

CASTLEFORD, W, across Salmon Falls, Cr. to Balanced Rock, take dirt rd. W and SW to Bruneau R. Canyon (Owyhee Co.), area—*Bruneau Canyon jasper*.

VALLEY COUNTY

BIG CREEK: ① area streams in T. 20 & 21 N, R. 9 & 10 E, placers—**Gold**; ② NW, to the Ramey Range dist. (extending into S part of Idaho Co.), many mines—**Copper minerals**; ③ E, to Long Valley, near confluence of Big Cr. with the Salmon R., one of the richest **Thorium** placers in Idaho—**Ilmenite, Garnet, Monazite, Zircon**.

CASCADE: (a) in pegmatites on mt. just to N; (b) also with agate to S and E of US 55; and (c) in placer tailings along Big Cr.—**agate, petrified wood**.

EDWARDSBURG, T. 20 N, R. 9 E, lode mines—**Gold**.

STIBNITE, area old mines—**Arsenopyrite, Gold, Pyrite, Stibnite**.

YELLOW PINE: ① T. 18 N, R. 8 E, placers—**Gold**; ② general region, in volcanic exposures—**Opal** (white spotted with Cinnabar); ③ T. 19 N, R. 8 & 9 E, area mines—**Arsenopyrite, Gold, Pyrite, Stibnite**; ④ T. 19 N, R. 9 & 10 E, as deposits distributed over an area of about 4 sq. mi.—**Cinnabar**; ⑤ T. 18 & 19 N, R. 11 E, Monumental Cr., near

A Location Guide for Rock Hounds in the United States

Thunder Mt., lode veins—**Gold**; © SSW about 40 mi. to Warm Lake, T. 15 N, R. 6 & 7 E—
placer **Gold**.

WASHINGTON COUNTY

EATON, E 5 mi., along Grouse and Hog creeks—**agate** (banded, iris), **chalcedony**.

SEVEN DEVILS mining dist., the Peacock claim—**Bornite**, **Garnet**, **Melaconite**,
Powellite, **Specularite**.

WEISER: ① Nutmeg Mt., at the Adaho-Almaden deposit in T. 10 & 11 N, R. 3 W—
Opal, **chalcedony**, **Cinnabar**, **opalite**, **Pyrite**; ② N 30 mi., on the Snake R. in Sec. 7, 8,
17, 18 & 20, T 13 N, R. t W, many deposits as banded lenses—**Gypsum**; ③ NW 16 mi., in
Fourth of July Canyon at jct. of July and Mann's creeks, in volcanic ash 500 ft. above creek
bed, high quality—**opalized wood**.

Illinois

ILLINOIS

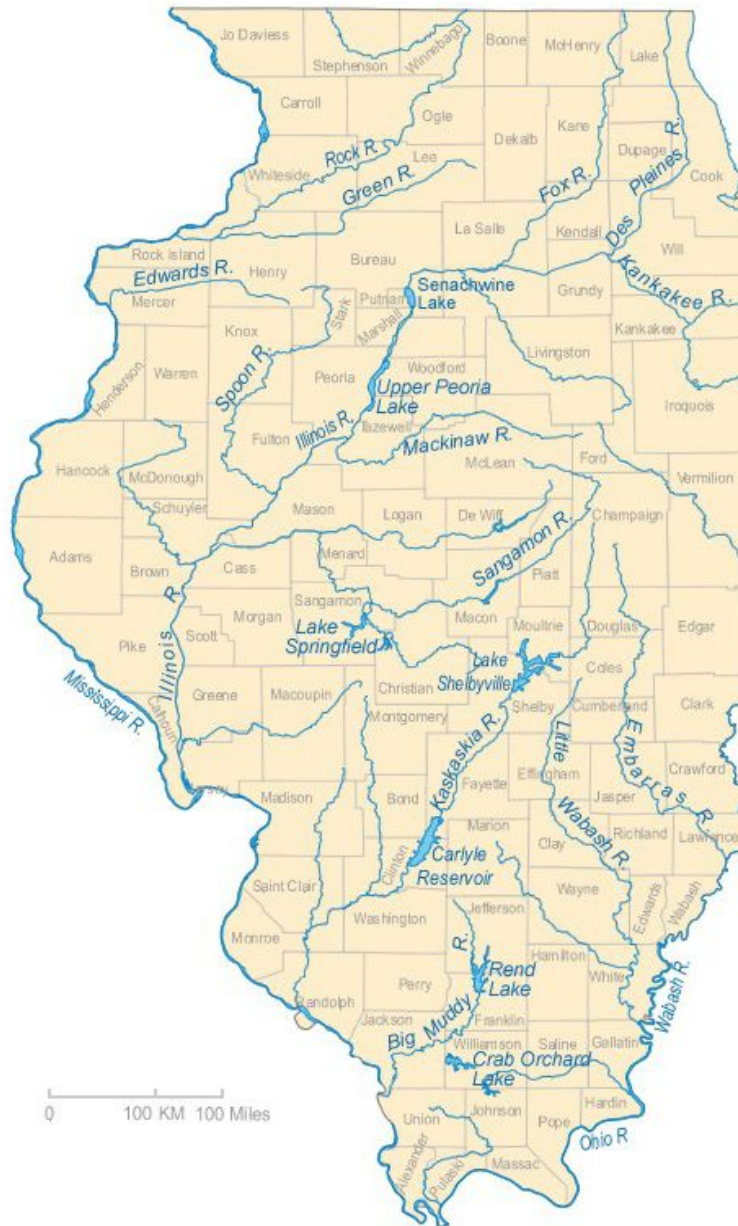
Known as the Prairie State, Illinois exhibits a length of 378 miles and a width of 210 miles, with its 56,000 sq. mi. sloping slightly to the southwest. Containing more than 275 rivers, the state is bounded along $\frac{3}{4}$ of its circumference by navigable waters, primarily the Ohio and Mississippi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



Illinois County Map

A Location Guide for Rock Hounds in the United States

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.



Rivers & Lakes of Illinois

Illinois

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).

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

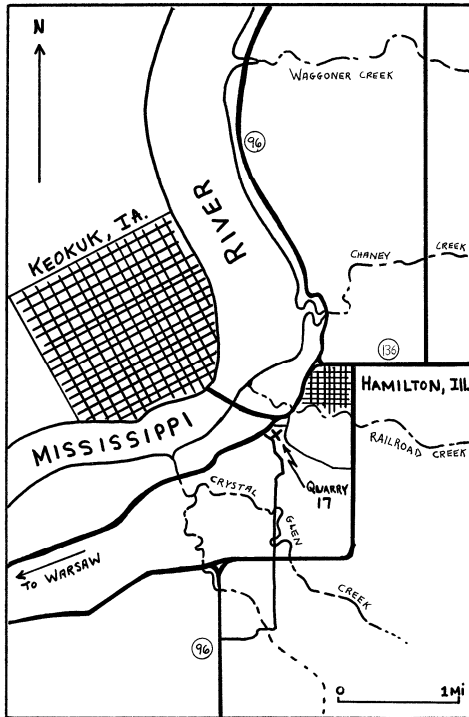
HANCOCK COUNTY

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

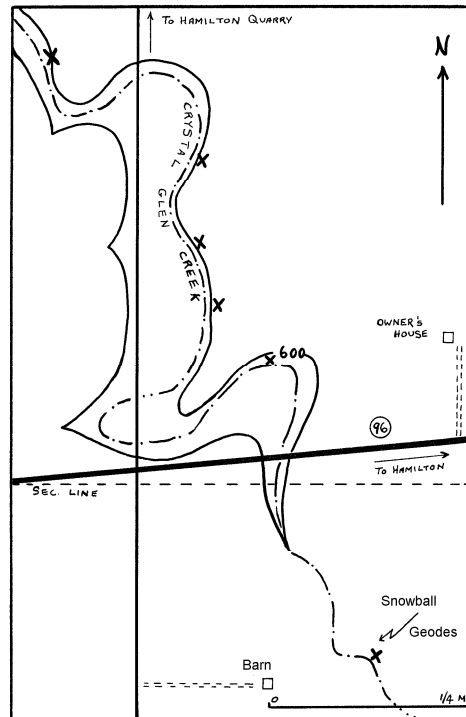
HAMILTON: ① area gravels and glacial drift deposits—**agate**, **jasper**, **geodes** (containing blue gray chalcedony); ② (a) S of the Keokuk bridge, in stream banks and gravels —**geodes** (lined with crystals); (b) Hamilton Quarry, the lower Warsaw section at the top of the quarry (see map) —**geodes** (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**, **Chalcopyrite**, pink **Dolomite**, **Goethite**,

A Location Guide for Rock Hounds in the United States

Jarosite, Marcasite, Malachite, Pyrite, Pyrolusite, Quartz, Selenite, Smithsonite and Sphalerite in any combination).



Hamilton Quarry Location

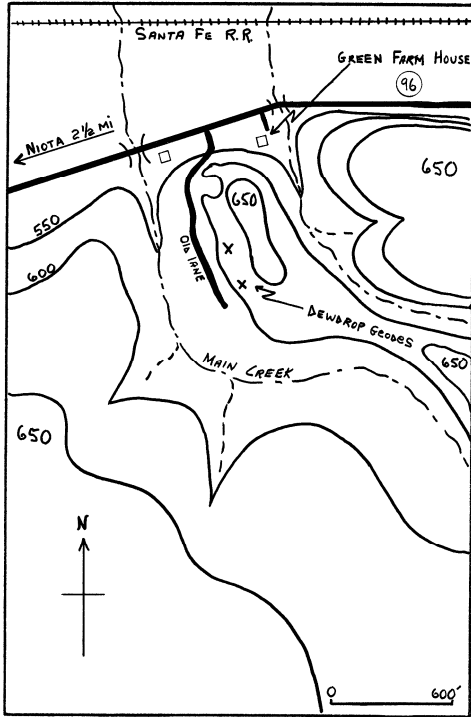


East Branch Crystal Glen Creek

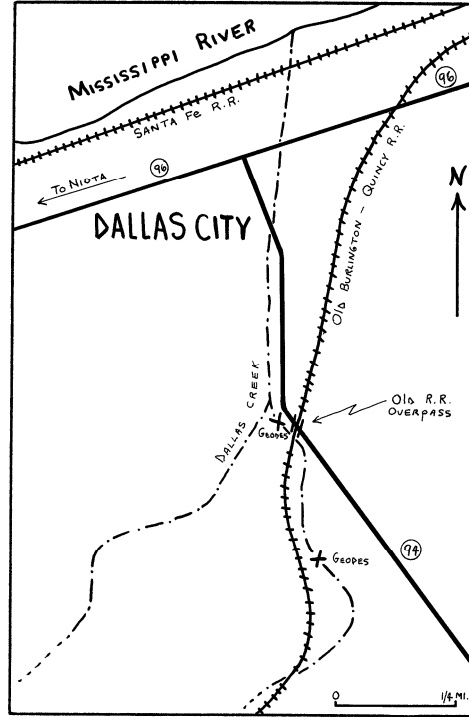
NAUVOO, area stream and creek tributaries and Mississippi R. gravels, in cuts, pits, banks, etc.—**geodes**.

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**).

Illinois

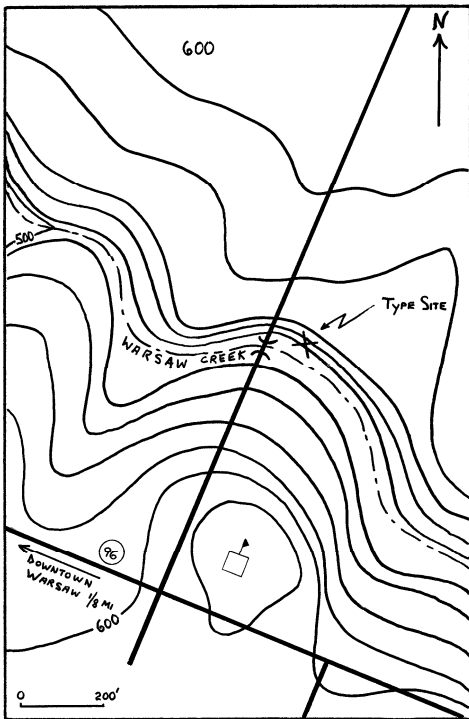


Niota Dewdrop Diamond Geode Location

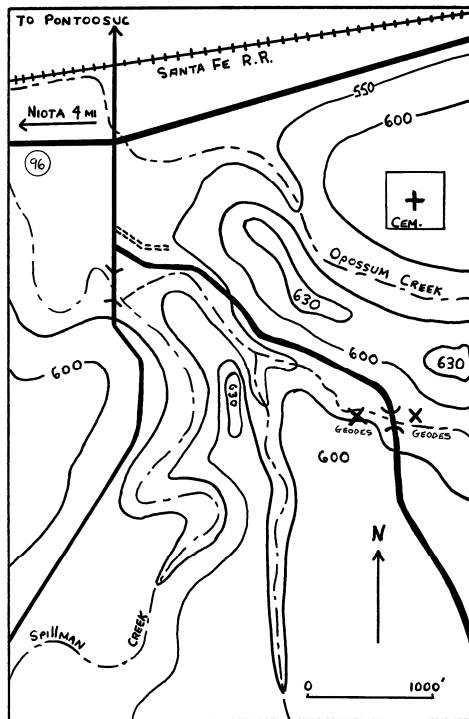


Dallas City Geode Location

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**.

KANE COUNTY

North Aurora, Conco Quarry. North of I-88 on Hwy. 25 – **Bornite**, **Calcite**, **Chalcopryrite**, **Pyrite**.

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 ½ W. of Hwy. 107 (see map) —**geodes** (lined pink scalenohedral **Calcite** and occasionally **Sphalerite**).

POPE COUNTY

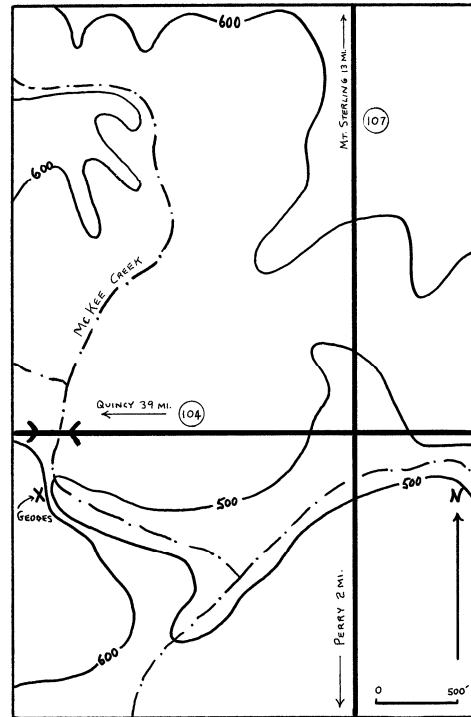
AREA, mines, including the Pittsburg, McClellan, etc.—**Cerussite**, **Chalcopyrite**, **Fluorite**, **Galena**, **Pyrite**, **Silver**, **Smithsonite**, **Witherite**.

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**.

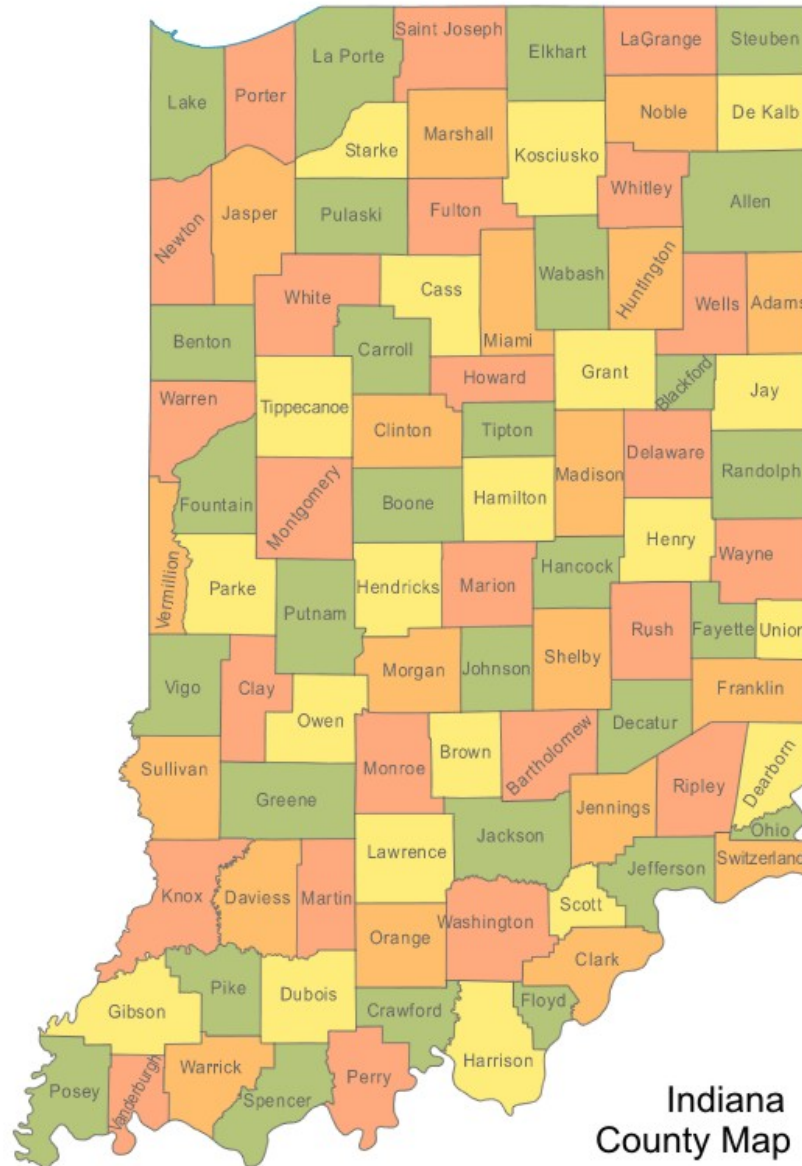
WILL COUNTY

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.



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 **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

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

A Location Guide for Rock Hounds in the United States



Rivers & Lakes of Indiana

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).

Indiana

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**.

A Location Guide for Rock Hounds in the United States

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**.

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**.

Indiana

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 $\frac{1}{2}$ mi., the Cave Stone Co. quarry—**Calcite** (lamellar, Fluorescent, UV pink-blue var.), **Fluorite**, **Marcasite**.

SPENCER COUNTY

MAXVILLE, W $2\frac{1}{2}$ 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 $1\frac{1}{2}$ 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 $1\frac{1}{4}$ mi., an abandoned quarry—**Barite**, **Calcite**, **Selenite**, **Sphalerite** (in vugs, as twinned crystals).

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).

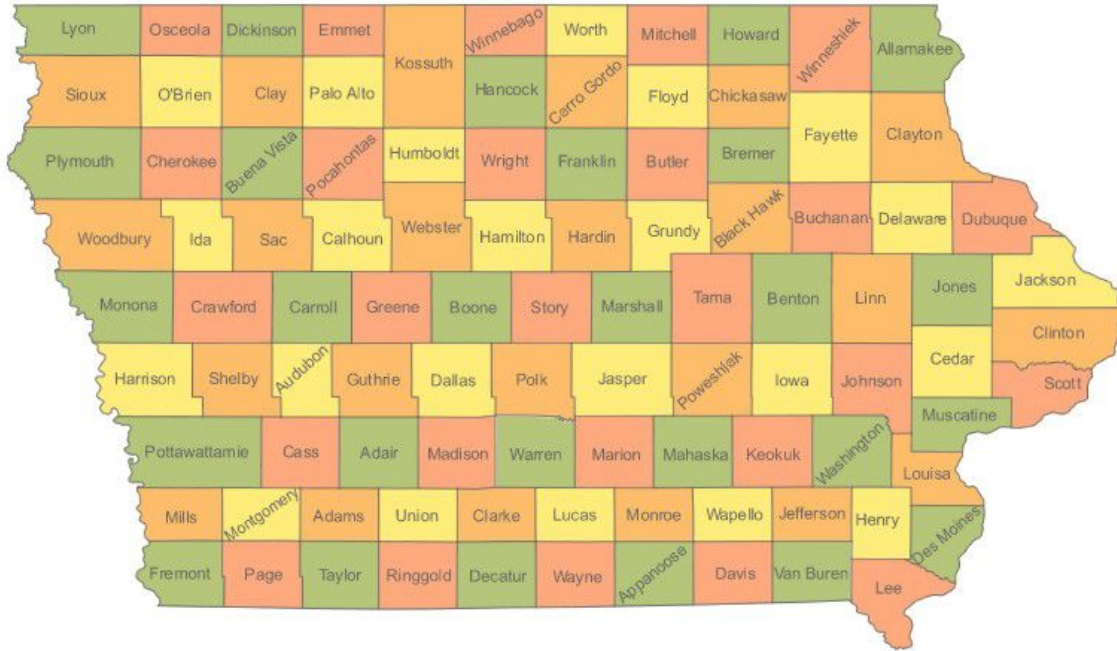
WELLS COUNTY

BLUFFTON, N $1\frac{1}{2}$ mi., the Erie Stone Co. quarry—**Dolomite**, **Marcasite**, **Pyrite**.

A Location Guide for Rock Hounds in the United States

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.



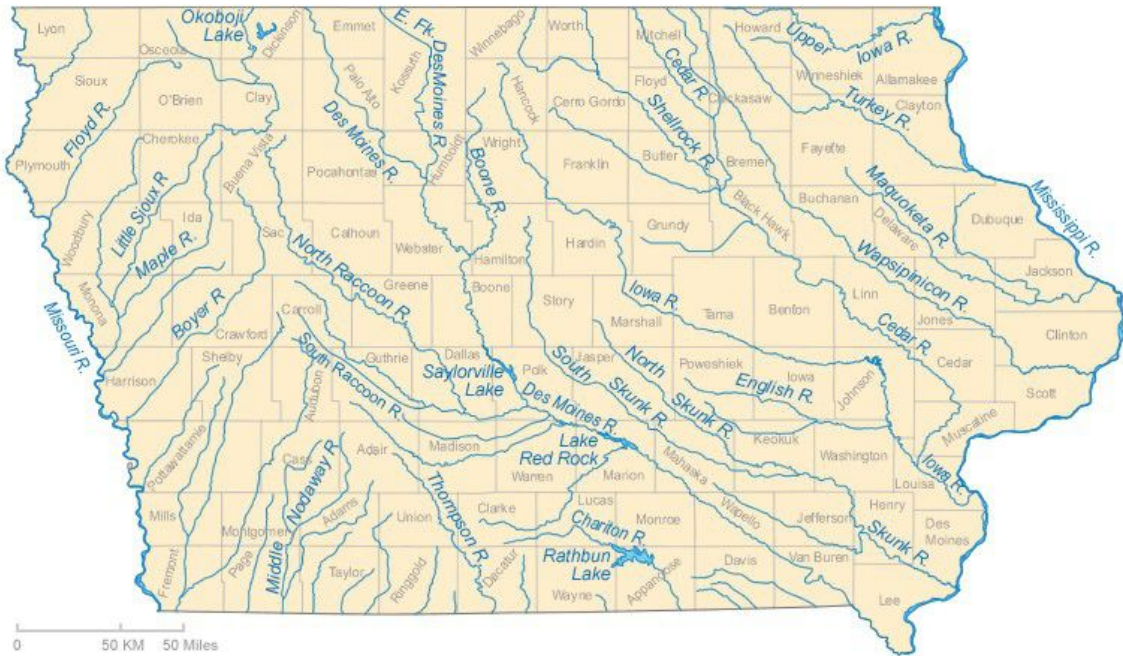
Iowa County Map

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 know around Iowa City.

ADAIR COUNTY

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

Iowa



Rivers & Lakes of Iowa

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**.

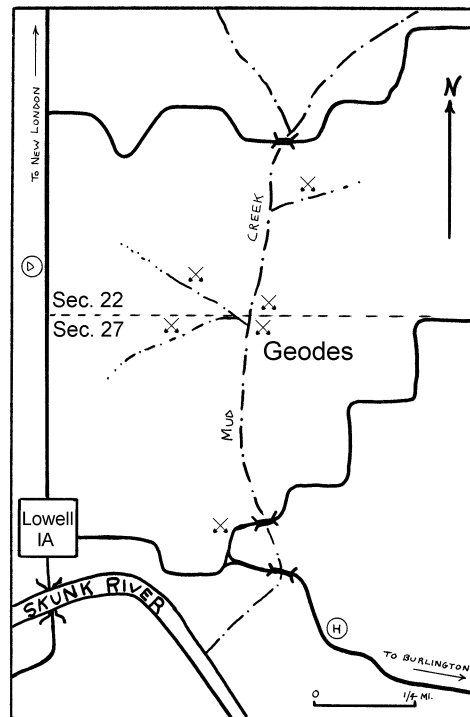
JOHNSON COUNTY

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**.

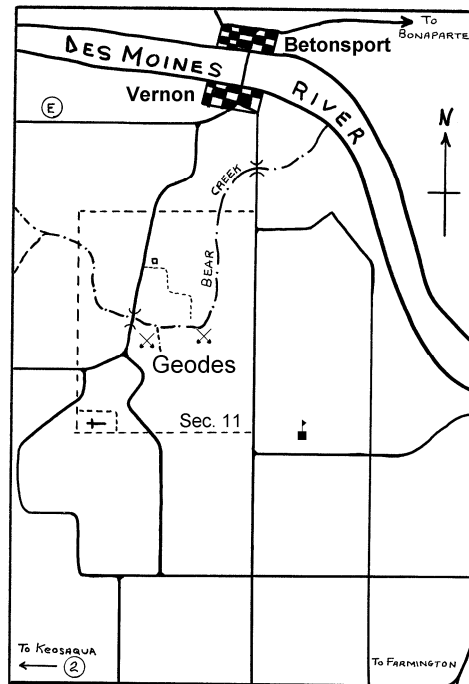
VERNON, south out of town, geodiferous outcroppings downstream from bridge area along Bear Cr (see map)—*Keokuk geodes* (see map).

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**.

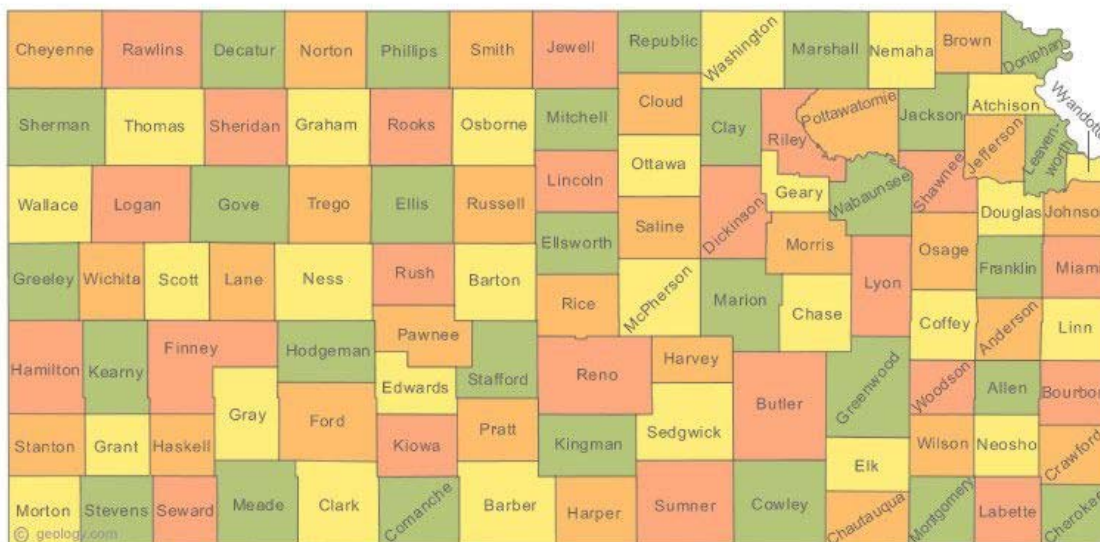
WEBSTER COUNTY

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.



Kansas County Map

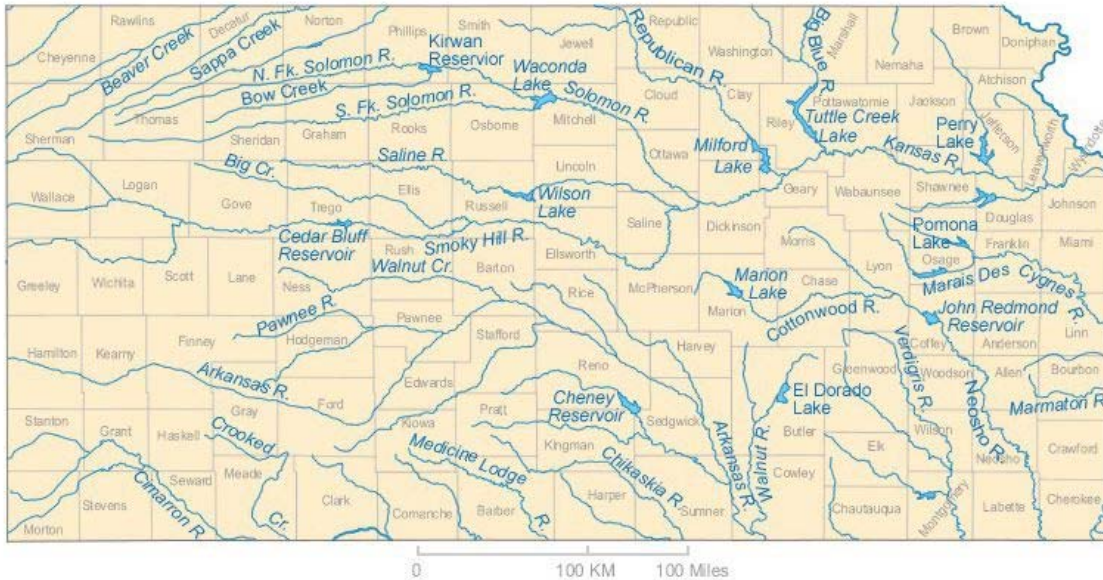
Western Kansas comprises the rather rugged semiarid Great High Plains. The land surface is thinly covered by Pleistocene and Recent gravels, with extensive Pliocene lavas capping the buttes and mesas. Few gemstones, but an enormous variety of fossil vertebrate bones weather from the cut banks and washes.

About 1,7500,000 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**, **Chalcopyrite**, **Cerussite**, **Dolomite** crystals, **Galena**, **Pyrite** and **Sphalerite**.

To be noted on geologic maps is the widespread Ogallala formation (Tertiary), embracing the counties of Clark, 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

Kansas

good quality material, especially along the Smoky Hill River in Gove, Logan, Trego, and Wallace counties. Regional outcrops of shale discharge **Selenite** crystals.



Rivers & Lakes of Kansas

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.

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**.

A Location Guide for Rock Hounds in the United States

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**.

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**.

Kansas

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**.

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**.

A Location Guide for Rock Hounds in the United States

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**.

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**.

Kansas

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.

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**.

A Location Guide for Rock Hounds in the United States

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

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.

A Location Guide for Rock Hounds in the United States

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**.

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**.

Kentucky

CALDWELL-CRITTENDEN COUNTIES

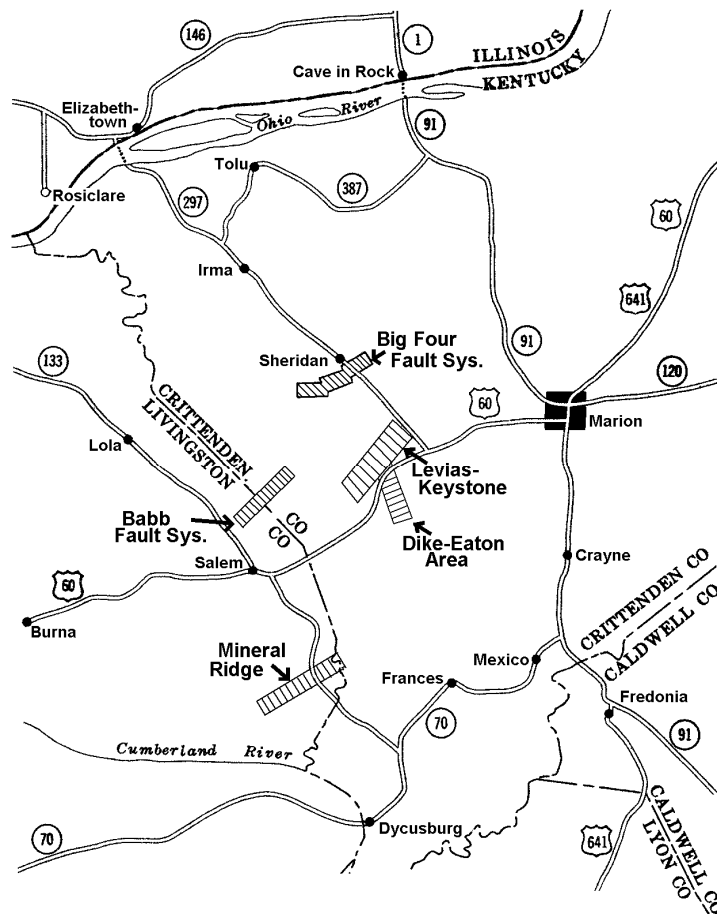
AREA, many well-known old mines such as Ashbridge, Glendale, Tabor, and other regional mines back of the Ohio R.—**Galena, Fluorite.**

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.**



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.**

A Location Guide for Rock Hounds in the United States

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, Smithsonian, 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, Smithsonian, 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**.

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**.

Kentucky

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

ROWLETTTS, 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.**

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).

A Location Guide for Rock Hounds in the United States

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**.

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**.

Kentucky

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

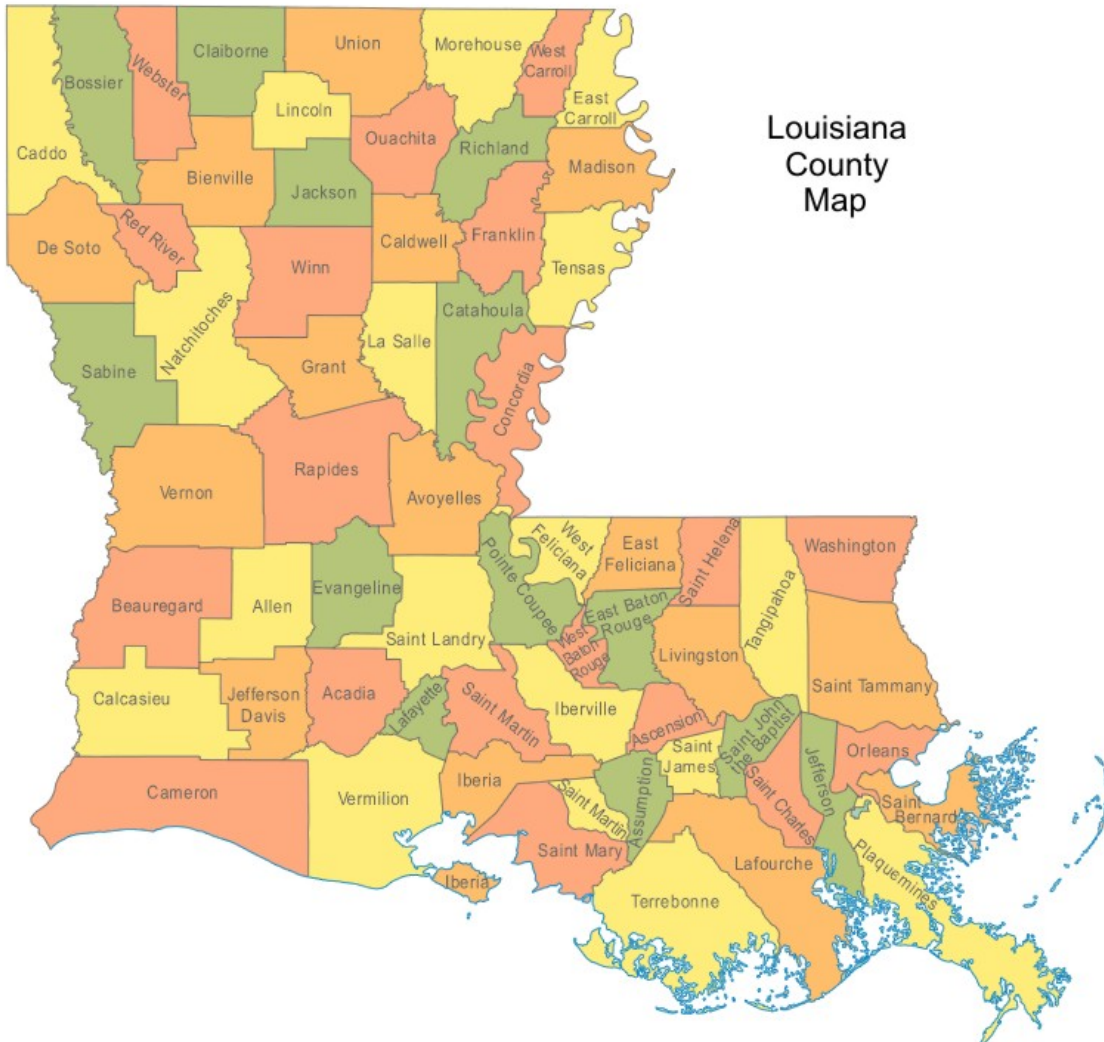
CUMBERLAND FALLS, area quarries and stream banks, rd. cuts, etc.—*Rockcastle conglomerate* (a sandstone matrix filled with well cemented pebbles of flint, jasper quartz, etc.)

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

Louisiana

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 Soto 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.**

A Location Guide for Rock Hounds in the United States

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**.

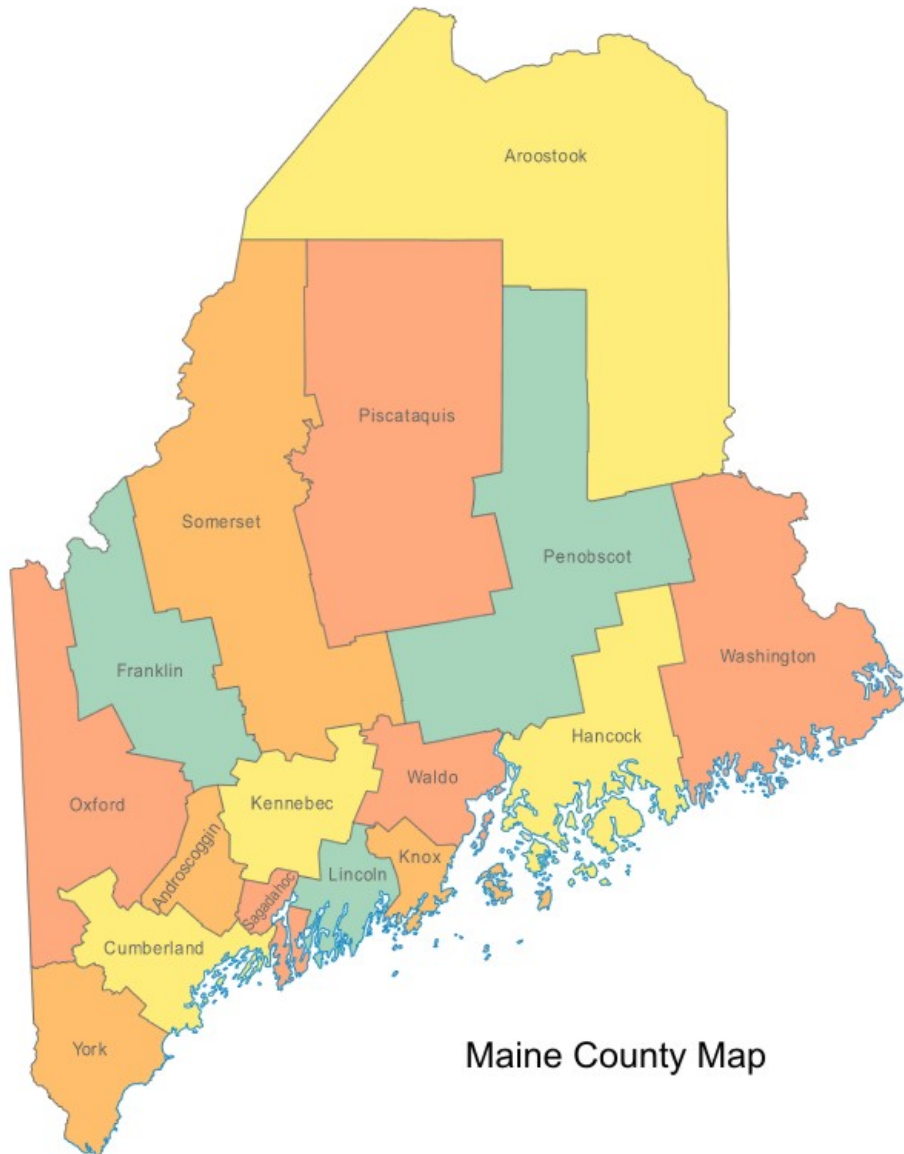
VERNON PARISH

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

Maine

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.



A Location Guide for Rock Hounds in the United States

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.



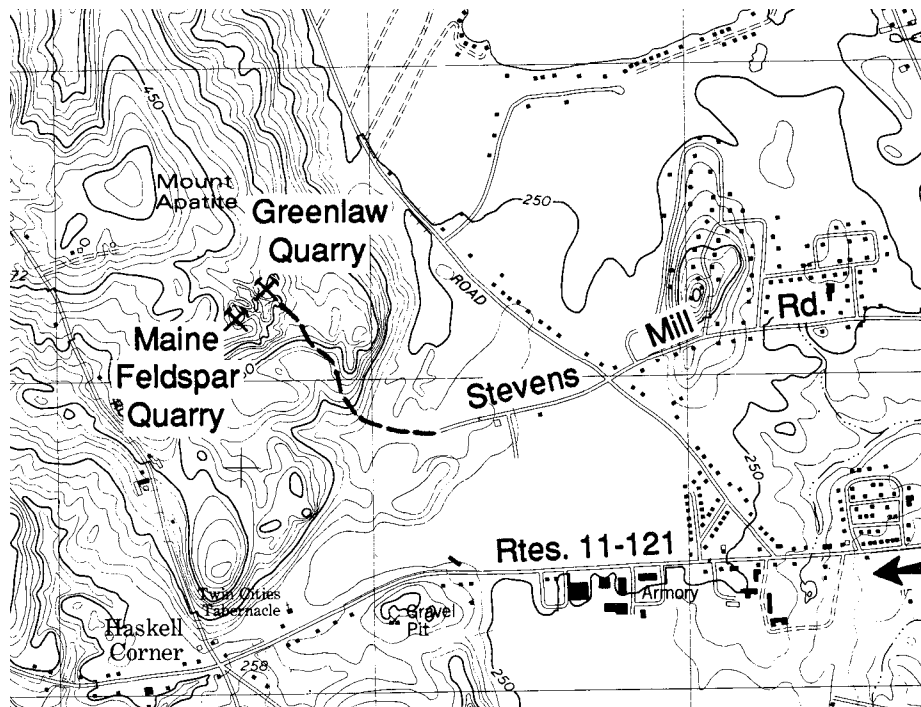
Maine

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

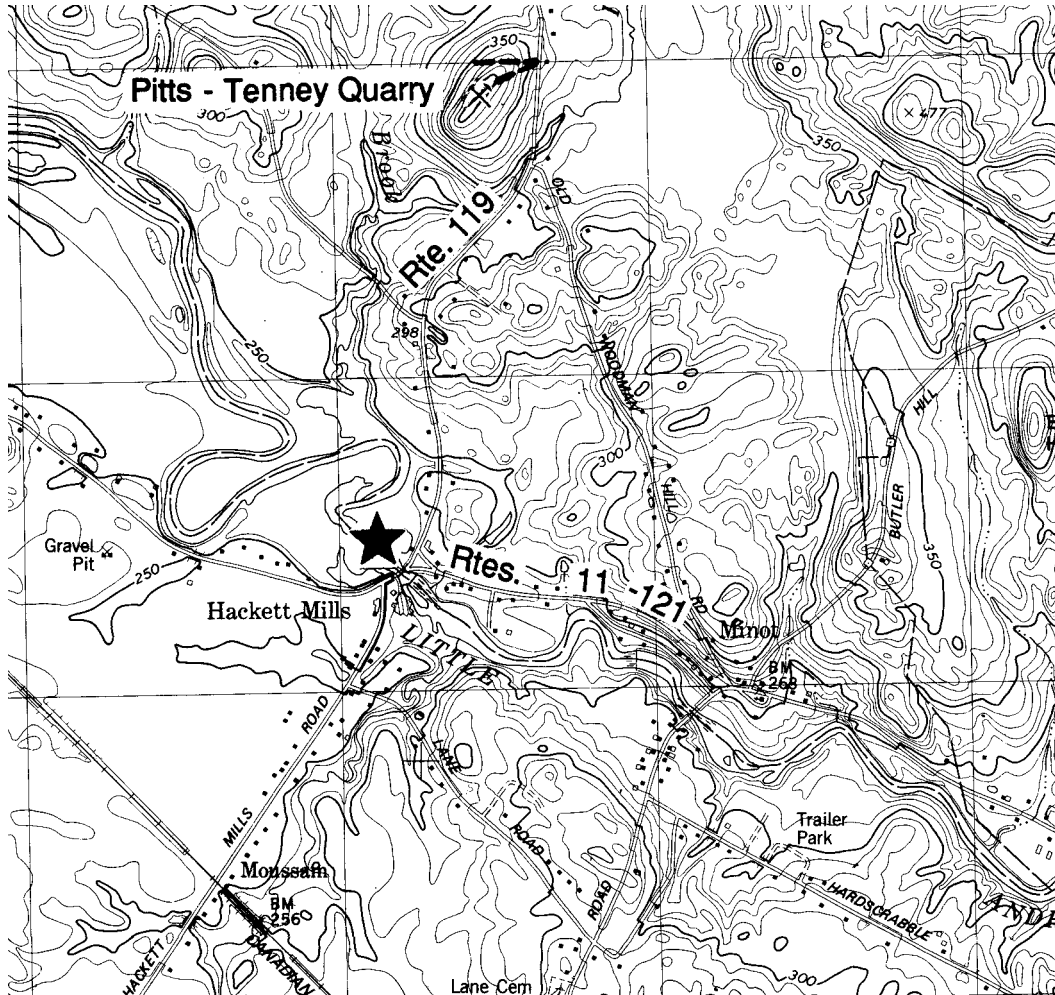
AUBURN: ① Kennedy Mine—**Aquamarine, Beryl and Topaz**; ② W 4 mi. (1¼ mi. ENE of Minot), many area mines such as the Androscoggin Tourmaline, Fisher, Hatch Farm, Greenlaw, Keith (Towne), Maine Feldspar, Pulsifer, etc. —**Amblygonite, Apatite (purple), Beryl, Feldspar, Garnet, Lepidolite, Spodumene, Tourmaline 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, Montebasite, Muscovite, Pollucite, Pyrite, Rhodochrosite, Schorl tourmaline, Spodumene, Torbernite, Uraninite** and large parallel-growth clustered of **Smoky Quartz**.



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

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**, **Clinochlore**, **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**.

Maine

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**.

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**.

A Location Guide for Rock Hounds in the United States

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 Bemis 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, Montebasite, 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**.

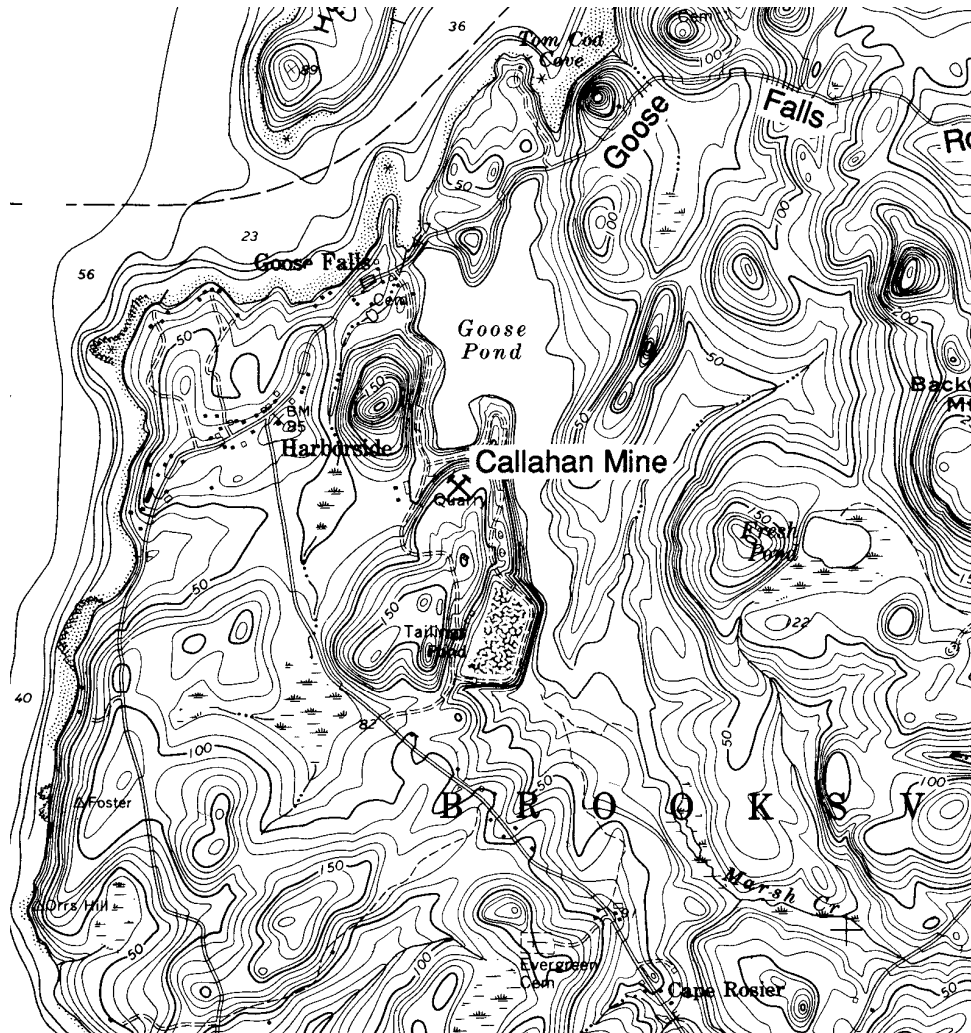
HANCOCK COUNTY

BLUE HILL: ① Atlantic Mine—**pyrites** (copper, gold, silver); ② Blue Hill Manganese Mine, 1¼ 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 – see map following page), 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**;

Maine



③ Dodge Mine—**argentiferous Galena, copper sulfur minerals and Zinblend**; 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**.

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

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

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, Chalcopyrite, gray Copper, Copper silicates, native Copper, Galena, Pyrite, Pyrrhotite, native Silver, Specularite** and **Sphalerite**.

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

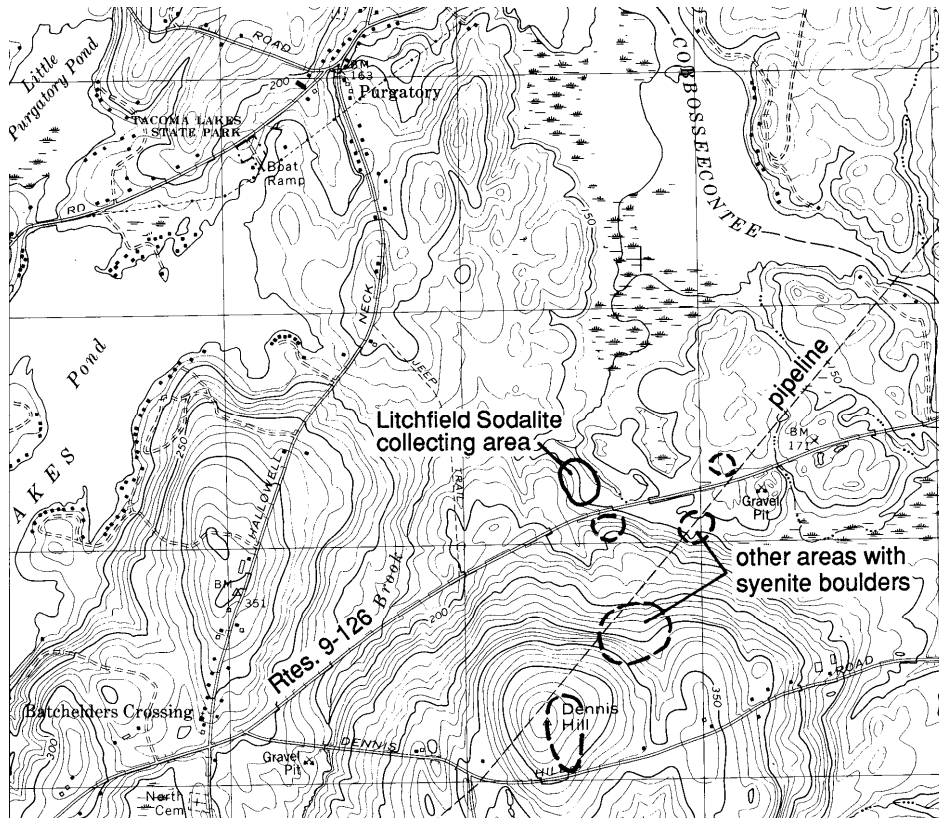
SORRENTO, the Boss o' the Bay Mine—**native Copper** and other **Copper** minerals.

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



Maine

LITCHFIELD (see map previous page): 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 ½ mi. on Wattons Mill rd., turn right (W) onto unnamed gravel rd. toward Crawford Pond and proceed ¾ 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, Montebrasite, 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, Cummingtonite, Feldspar, Garnet, Graphite, Hematite, Hornblende, Ilmenite, Mackinawite, Magnetite, Marcasite, Molybdenite, Niggliite, Olivine, Pentlandite, Pyrite, Pyrrhotite, Quartz, Rutile, Sperrylite, Sphalerite, Spinel**.

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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**.

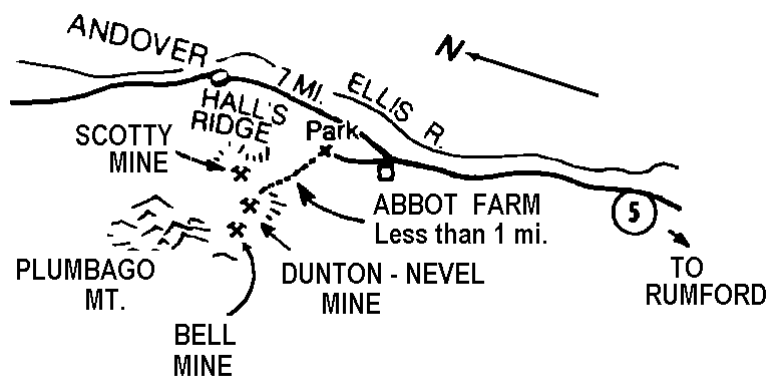
WICASSET, the LaPoutre prospect—**Feldspar, Muscovite and Quartz**.

MIDDLESEX COUNTY

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

OXFORD COUNTY

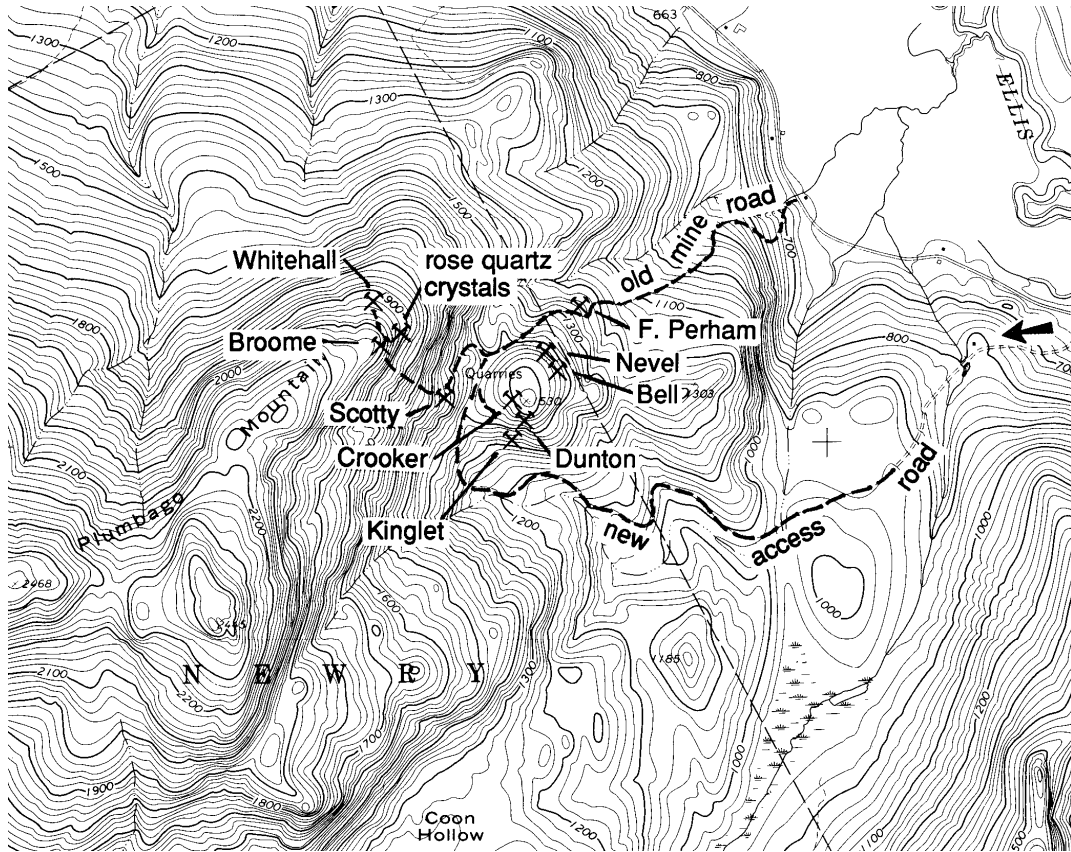
ALBANY (Twp): ① area: (a) Frenchman Mt., along the crest—**Aquamarine and Rose Quartz**; (b) Rattlesnake Mt., area pegmatite outcrops—gem **Beryl**; ② regional mines and prospects: (a) the Donahue prospect—**Beryl, Feldspar, Muscovite, Quartz and black Tourmaline**; (b) General Electric Glass Quartz 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.

Maine

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**, **Lithophilite**, **Manganapatite** (fluorescent), **Manganotantalite**, **Montbrasite**, **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**.

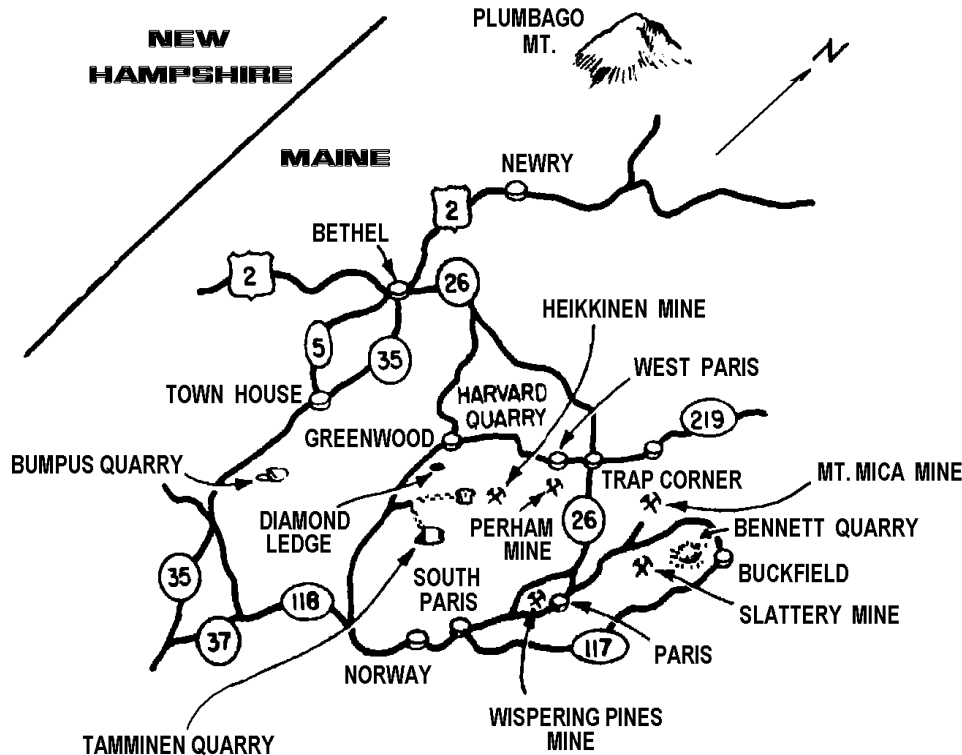
DIXFIELD, on S slope of Hedgehog Hill—**Beryl** and **Garnet**.

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; ④ 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 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,

Maine



Lithiophyllite, Manganotantalite, Montebbrasite, Muscovite, Petalite, Pollucite crystals, Quartz, Scheelite, Schorl, Sphalerite, Spodumene, Topaz, Uraninite, Vandendriesscheite, and Vesuvianite; ① 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**; ② 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—**Almandine** 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**, **Montebbrasite**, **Muscovite**, **Phenakite**, **Pollucite**, **Quartz**, **Schorl**, **Sphalerite**, **Spodumene**, **Topaz**, **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 Worthy Pond in area of

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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**, **chalcedony**, **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 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

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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** mica, **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**, **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**,

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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 Triplite;** (d) N 5 mi., mine on Speckled Mt.—**Golden Beryl;** (e) Sugar Hill prospects—**Aquamarine, Beryl and Beryllonite;** (f) 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—**Alamandine garnet, Beryl, Biotite, Columbite,**

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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 1¼ 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**.

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

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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**, **Samaraskite**; 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 (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**

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(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**.

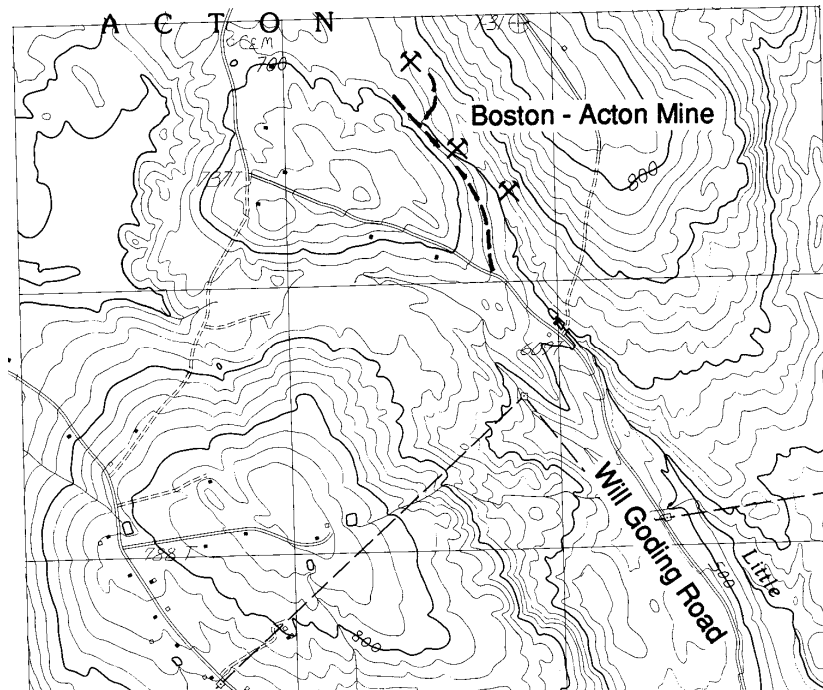
TRESCOTT-LUBEC: ① the Trescott Mine—**Galena**; ② Lubec Lead Mine, from jct. of Rtes. 189 and 191 in West Lubec, go W 0.1 mi. on Rte. 189, turn right (N) on Crow Neck rd. for 0.45 mi., turn right onto Lead Mine rd. and proceed 1.65 mi., park on left side of rd. and follow gravel road that turns right (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**, **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**.

A Location Guide for Rock Hounds in the United States

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**.

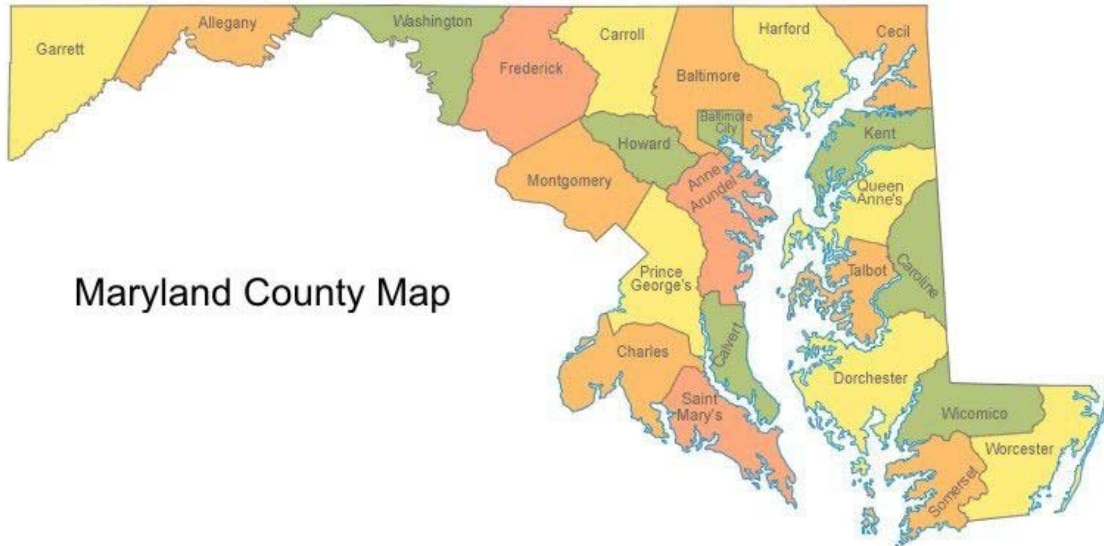
SANFORD: ① the South Sanford Mine—**Molybdenite, Molybdenite, Powellite, Scheelite (fluorescent) and Vesuvianite**; ② in pit and dump 1½ mi. E on School Street at Goodhall farm—**Actinolite, Calcite, Clinozoisite, Diopside, Fluorite, Greenockite, Grossular garnet, Meionite (scapolite gr.), Molybdenite,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

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

Maryland

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.

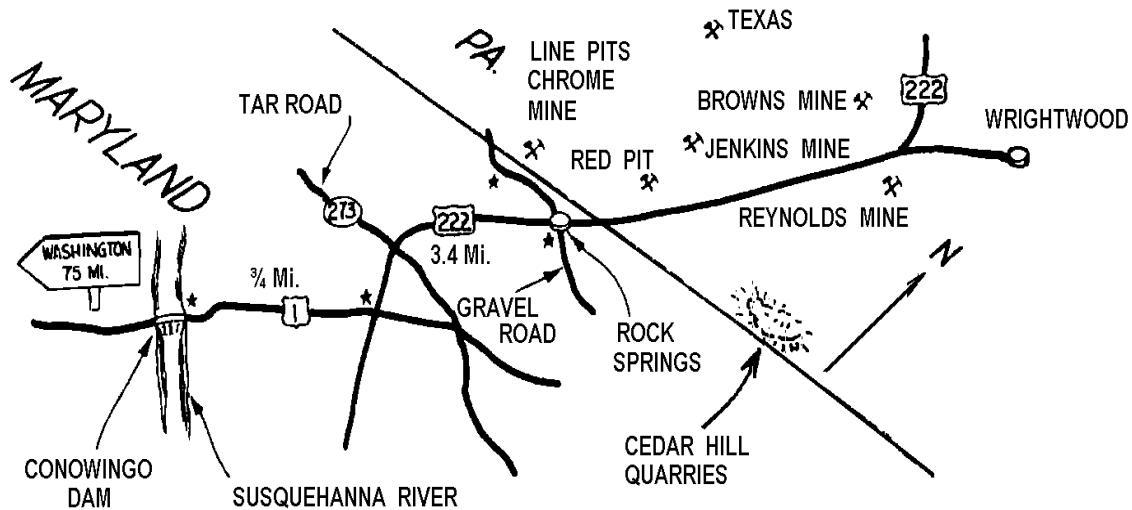


The Piedmont Plateau forms the central part of Maryland, extending westward from the plains, or Fall Line, to the east side of South Mountain. This region is an undulating upland with a maximum elevation of 1,000 ft., formed of ancient, intricately folded and gently faulted strata thoroughly metamorphosed 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, Harford, 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**.

Maryland



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_2SO_4 .) (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**.

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.

A Location Guide for Rock Hounds in the United States

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 HANOVER 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—**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—

Maryland

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 $\frac{1}{4}$ mi. W of Beaver Dam Church on Beaver Dam rd.—**Quartz** crystals.

WESTMINSTER, N of new Windsor rd. $\frac{1}{4}$ 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 $\frac{1}{2}$ 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 $\frac{3}{4}$ 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**.

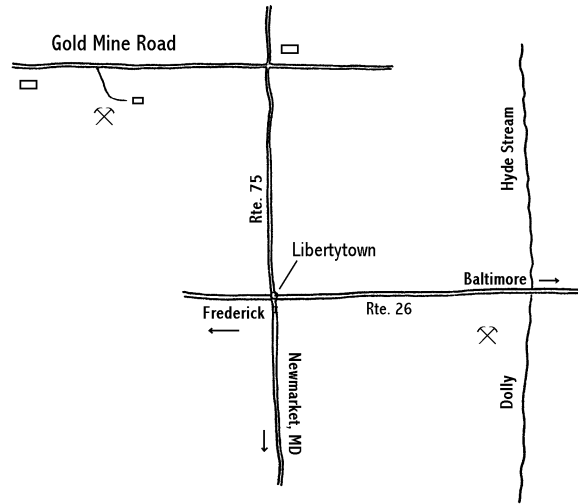
FREDERICK, in area crushed stone quarry—pink **Fluorite**.

JOHNSVILLE: ① area mines, the Liberty, Bare Hill, etc.—**Bornite**, **Chalcocite** and **Malachite**; ② SE 1 mi. and $\frac{1}{2}$ mi. N of the Coppermine Rd., at the Repp Mine—**Copper** minerals (abundant in dumps), brecciated **marble** (pink and purple), milky **Quartz**; ③ SE $1\frac{1}{2}$ mi., on E side of Beaverdam Cr.—**Barite** crystals and **marble**; ④ NE $1\frac{3}{4}$ 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**.

A Location Guide for Rock Hounds in the United States

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.

Maryland

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**.

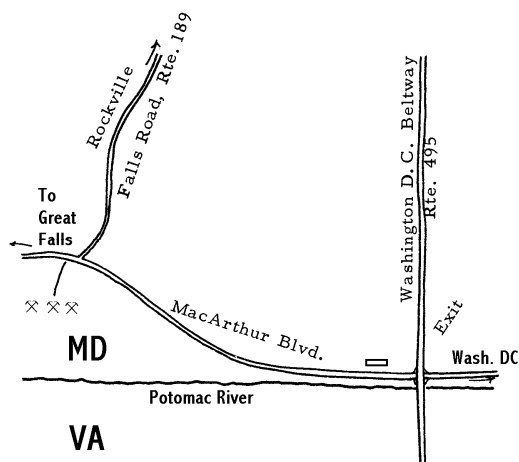
GREAT FALLS, the Great Falls Mine—**Gold** and **Tetradymite**.

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**.

PRINCE GEORGES COUNTY

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



The Great Falls Mine

A Location Guide for Rock Hounds in the United States

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**.

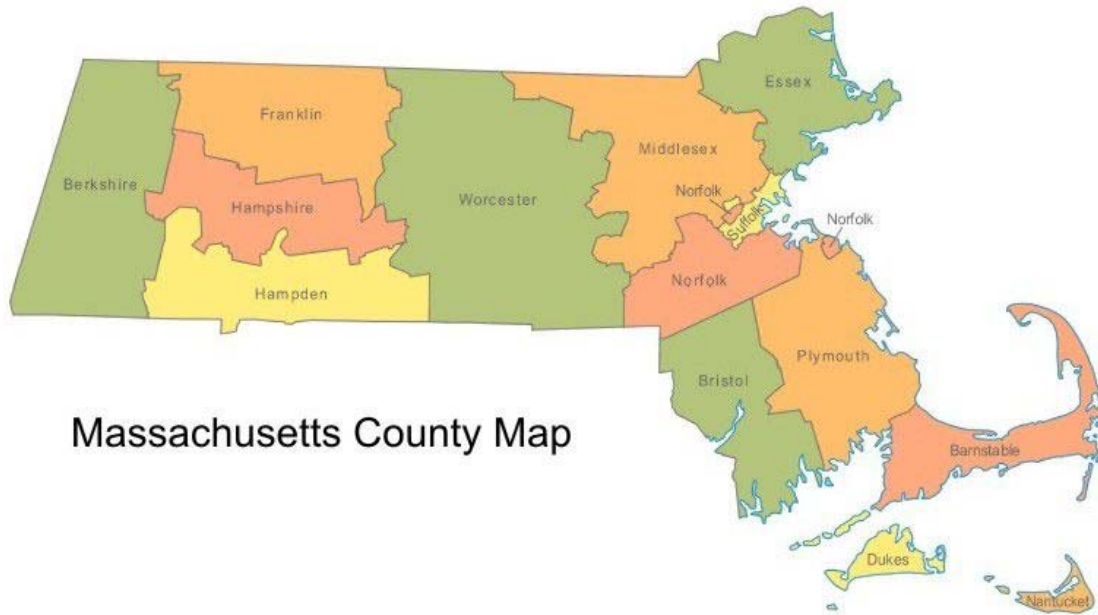
HARPERS FERRY (Jefferson Co.), N 3 mi. on N shore of the Potomac R.—**Pyrolusite**.

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 **talca**.

HOOSAC TUNNEL, area mines—**talca**.

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

WINDSOR, area quarries—**soapstone**.

A Location Guide for Rock Hounds in the Unites States



Rivers & Lakes of Massachusetts

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**.

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**.

Massachusetts

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**

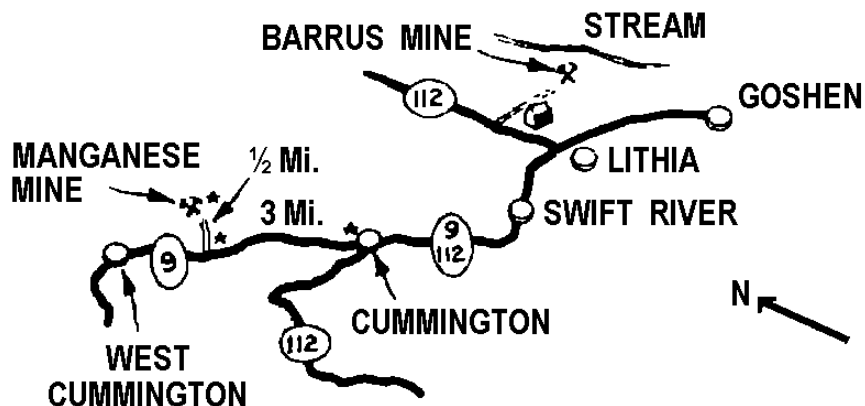
HAMPSHIRE COUNTY

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**.



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

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

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

NORTHHAMPTON, area mines—**Fluorite, Galena, Wulfenite** and some **Chalcopyrite**.

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 **Chalcopyrite**.

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

WEST CUMMINGTON; West Cummington 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 Cummington, on dump or in ore—**Rhodonite**.

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

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).

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**.

A Location Guide for Rock Hounds in the United States

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.

Michigan

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 known as *Petoskey* stones. These gemmy fossils are most abundant along the beaches of Traverse Bay from Petoskey in 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**.

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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**.

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,

Michigan

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.

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 Siskwit 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**.

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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**.

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*.

MARQUETTEE 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, **talca**; (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**.

Michigan

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 Algomah mines—**Copper** minerals, **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

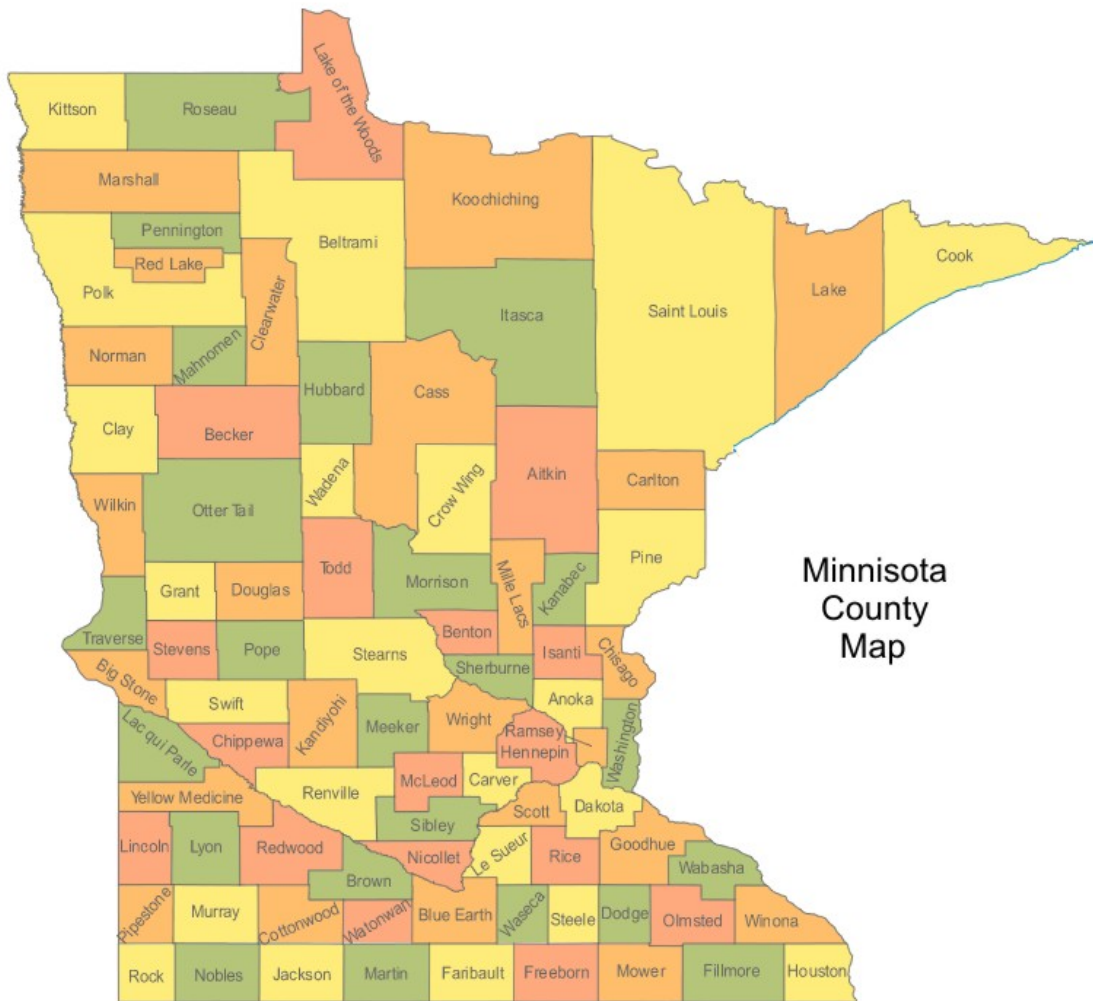
WHITEDALE, area quarries, pits—**silicified corals**.

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.

Minnesota

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.

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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 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*.

Minnesota

HENNEPIN COUNTY

OSSEO (NW suburb of Minneapolis), S $\frac{1}{4}$ 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**.

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 $\frac{1}{2}$ 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).

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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**.

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.

Minnesota

WASHINGTON COUNTY

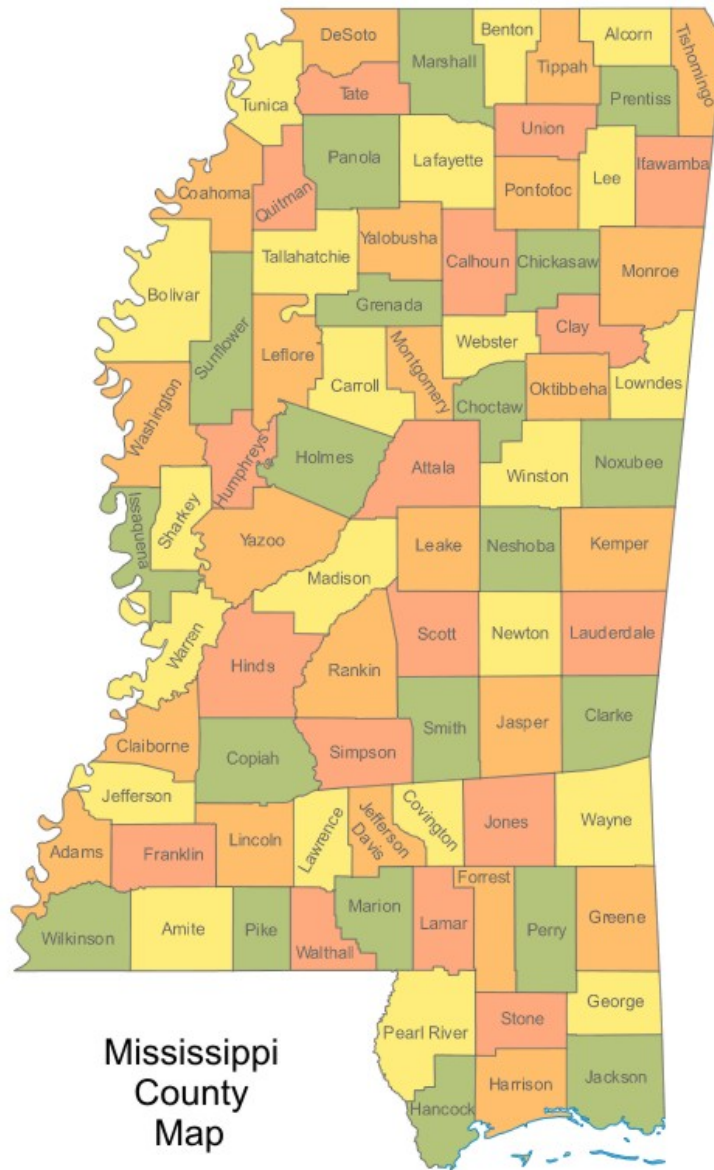
STILLWATER, area between bluffs of Browns Cr., a deposit—**tripoli**.

WINONA COUNTY

WINONA: ① area quarries, gravel pits, stream gravels, etc. —*Lake Superior* **agate**s; ② beach gravels around shores of Lake Winona—*Lake Superior* **agate**s; ③ Goodview (suburb of Winona), in gravel pit beside US 61—**agate**s; ④ all along right of way of US 61, especially in roadway gravel beds—**agate**s; ⑤ gravelly shores of a boat harbor (on Mississippi R.) just behind the Northwestern shops—**agate**s; 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.



Mississippi

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

A Location Guide for Rock Hounds in the United States

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).

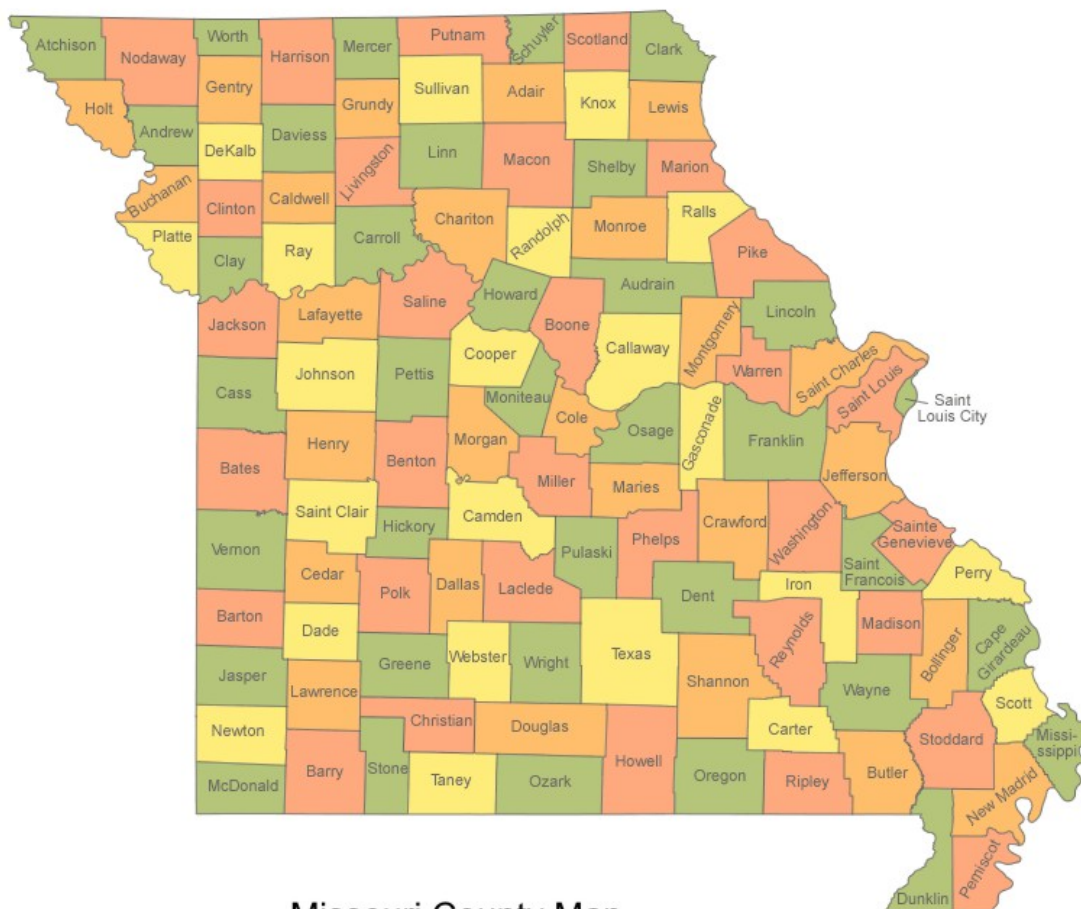
PADEN, area exposures of the Tuscaloosa formation—**Amber**.

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.



Missouri County Map

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.

A Location Guide for Rock Hounds in the United States

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 discharge 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 **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.

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ADAIR COUNTY

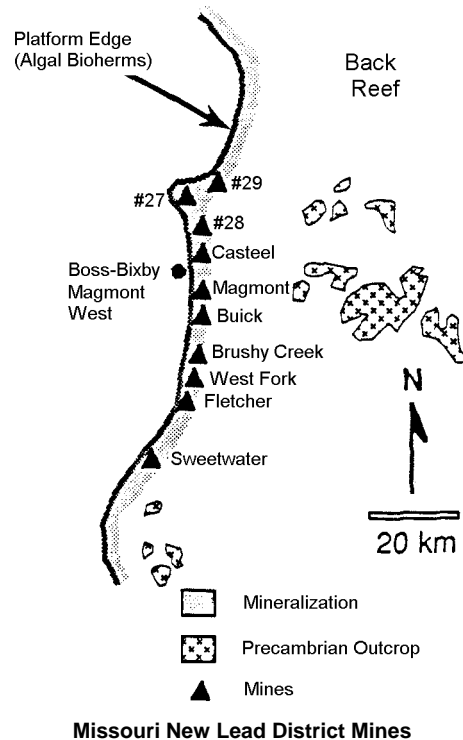
AREA, in the Chariton River, 2 mi. N of the Macon Co. line—**Calcite** crystals, **Goethite**, Quartz, **septarian nodules**.

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**.



Missouri



Rivers & Lakes of Missouri

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**.

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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**.

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, Glauconite, Limonite, Marcasite, Microcline, Muscovite, Opal, Plagioclase, Pyrite, Sphalerite, Tourmaline, Tridymite**.

Missouri

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.

CASS COUNTY

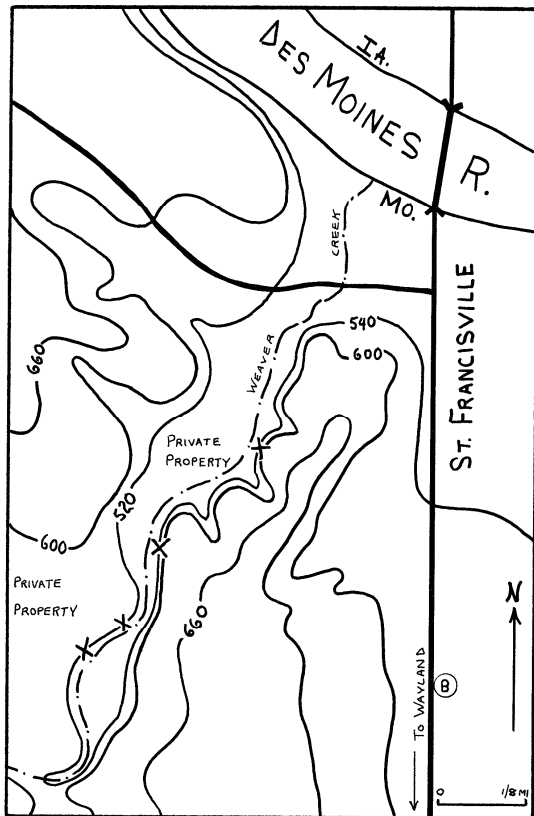
PLEASANT HILL, in soil in creek valley—**Calcite** (brown & white assoc. with coal), **Vivianite** (as small nodules and crystals).

CHARITON COUNTY

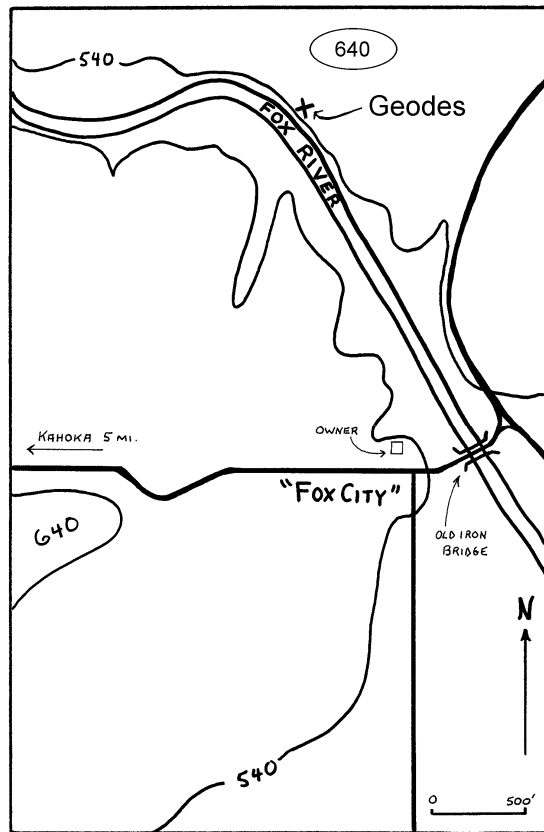
DALTON, extensive area quarries—**tripoli.**

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

CLARK COUNTY



Geode Mine - St. Francisville



Fox City Geode Site

A Location Guide for Rock Hounds in the United States

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 previous 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**, **Chalcopyrite**, **Dolomite**, **Fluorite**, **Goethite**, **Honessite**, **Malachite**, **Marcasite**, **Millerite**, **Pyrite**, **Pyrolusite**, **Quartz**, **Smithsonite**, **Siderite** and **Sphalerite**).

COLE COUNTY

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

COOPER COUNTY

BLACKWATER, 3 mi. E NE, the Collins mine—**Barite**, **Chalcopyrite**, **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**, **Chalcopyrite**, **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**, **Chalcopyrite**, **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) **Chalcopyrite**, (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 ≈ 3 mi. dia. The Metcalf and Jonas mines—**Barite**, **Galena**, **Marcasite**, **Pyrite**, **Sphalerite**.

Missouri

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.

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 \approx 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**.

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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.*

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

Missouri

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), **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 63rd 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, Sarcoux, 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.**

A Location Guide for Rock Hounds in the United States

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.**

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.**

Missouri

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**.

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).

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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**.

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**,

Missouri

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**.

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)—**Chalcopyrite**, **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**, **Chalcopyrite**, **Halloysite**, **Hematite**, **Malachite**, **Marcasite**, **Melanterite**, **Pyrite**, **Smoky Quartz**.

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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 \approx 1 mi. N of Saverton turnoff—**Pyrite**.

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**.

Missouri

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**.

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**, **Chalcopryrite**, **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**, **Chalcopryrite**, **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—**Chalcopryrite**, **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**.

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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**.

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**.

Missouri

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.



Montana County Map

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.

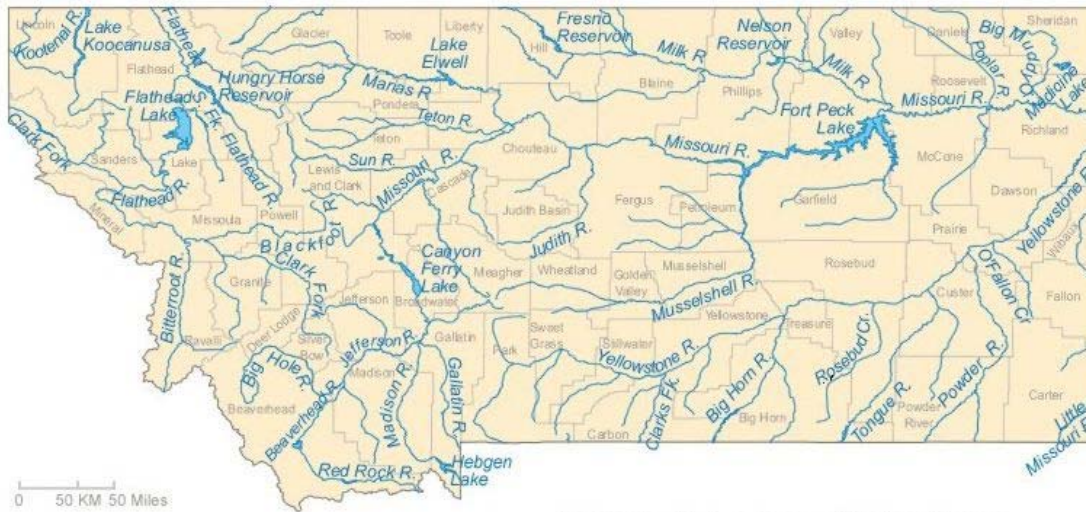
Inauspicious showings of colors in an iron gossan covering a major butte in Silver Bow Co. in 1864 created a modest Gold and Silver camp known as Butte. But when the underlying **Copper** ores were penetrated in 1880, Butte erupted into the greatest Copper center on earth, adding more than \$2 Billion 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

Montana

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**.



Rivers & Lakes of Montana

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 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**.

A Location Guide for Rock Hounds in the United States

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**.

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**.

Montana

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 Sapphire gulches and along all tributary draws—**Quartz** crystals, **Sapphires**; ⑧ 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**.

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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, 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 (Ottowa) - 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**.

Montana

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**.

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*).

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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**.

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, Ancyrite, 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).

Montana

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**.