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.
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 the Dahlonega Belt that extends from near Tallapoosa northeastward through Dahlonega Co. and Rabun Co., and 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.
BARTOW COUNTY

AREA, Saltpeter Cave, as float—jasper.
CARTERSVILLE: ① area barite pits—Barite, Geodes, 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
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.

CHATTANOOCHEE 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
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**; (i) 1 mi. W of Fairview Church, on E side of Sharp Mt., area—**Staurolite**; (j) 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; (k) SW 3½ mi., near Four Mile Church and Shiloh Church, mines—**Kyanite**; (l) W 4½ mi., on N side of Bluff Cr., along Rte. 1 —**Staurolite**; (m) SE 7 mi., on the Etowah R., at the Creighton-Franklin Mine—**Gold**; (n) on the Oscar Robertson farm; and (o) on the James Spears farm (fee) —**Staurolite**.

**CHEROKEE-PICKENS COUNTRIES**

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 surrounding 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.): (i) creek beds—**Diamond**; (ii) 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, jaspagate, jasper**.

**DADE COUNTY**

RISING FAWN, S 1 mi., on E slope of hill—**Halloysite**.
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.
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.
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.
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 1¼ 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 ½ 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
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 Withlacoochee 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) McClusky 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 Yahoola 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.
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.

MERIWETHER COUNTY


MASSINGALE, ½ 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 4½ air mi., near Co. line, pegmatite—Feldspar, mica, Quartz (milky, smoky).

FORSYTH: ① area mines and prospects, and ② S 47° W 7¼ 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 1½ 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.

MURRARY 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.
HOCKER 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:  ⊙ E 10 mi., via Rte. 103 to Randall Cr., turn right on dirt rd. to a  
sandpit—Quartz gemstones; ⊙ 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:  ⊙ 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); ⊙ SE 6 mi., loose  
in soil, near Little Bob Copper Mine—Almandite garnets; ⊙ 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; ⊙ N on Rte. 61  
(halfway to Cartersville in Barstow Co.), at Burt Hickory Ridge, placers—Gold.

HIRAM:  ⊙ the Little Bob Copper Mine—Almandite garnet, Azurite, Limonite, Malachite,  
Pyrite; ⊙ 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:  ⊙ area quarries in the Tate-Marble Hill dist.—Almandite garnet, Kyanite,  
Mica, Staurolite; ⊙ immediately S, at jct. of Rte. 5 and 143, a nearby outcrop—Beryl,  
Feldspar, Rutile, Smoky Quartz; ⊙ SW 1 mi., the Holly Springs Quarry, in area forest—  
Apatite, Magnetite, green talc, Verde antique; ⊙ E 2 mi., as boulders of massively in  
mica schist—Kyanite; ⊙ E 2½ mi., residual boulders—Kyanite; ⊙ 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; ⊙ 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:  ⊙ many regional old mines—Gold, Quartz crystal, Beryl, etc.; ⊙ extreme  
NE part of Co., the Laurel Creek Mine—Corundum (major source of corundum).

CLAYTON:  ⊙ many area old mines—Mica, Beryl, Quartz; ⊙ SE 4 mi.: (a) area of  
the Germany Mt.; (b) at Wilson farm—Amethyst (gem quality); ⊙ E 7 mi. and S of War  
Woman Dell, the Becky Beryl Mine—Beryl (as large flawed crystals in pegmatite, with clear
A Location Guide for Rock Hounds in the United States

portions suitable for cutting); ⊗ 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; ⊗ on the dump of the North Georgia Co. Mine, 4 mi. N; ⊗ W.T. Smith Mine at jct. of rd. E from town with Hwy. 28—Amethyst.

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

TALLULAH 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 ¼ 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: ⊗ in fields of the J.T. Allen farm—gem Beryl, Rose Quartz, black Tourmaline; ⊗ along both sides of the rd.—gem Beryl, Rose Quartz, black Tourmaline.

STEPHENS COUNTY

TACCOA, S 9 mi.—Quartz crystals.

TOWNS COUNTY

AREA: ⊗ 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; ② many regional old mines and prospects along the Appalachian Trail—Corundum, Sillimanite.

HIAWASSEE: ⊗ at Charlie’s Cr., in banks and gravels—gem Amethyst; ② area of Hog Cr., disseminated in minute crystals—Chromite in Chrysolite; ② SW 2 mi., the Hog Creek Mine—gem Rubies, Smaragdite; ② W for several mi., as linings in rock cavities of exposures—Rhodochrosite; ② 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.
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.
A Location Guide for Rock Hounds in the United States

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

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.: Ⓞ in lava flow; and Ⓟ in green beach sands of Oahu and South Point—Olivine.
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 Bannorok, 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, Dufrenoisite, 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.
BOUNDARY COUNTY


PORTHILL, SW 26 mi., in T. 64 N, R. 4 W—Gold, Lead, Silver.
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


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).
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 of 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.


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 & 1 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.)
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.
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.


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.
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: ⊙ 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.
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—Chalcopryrite, Gold, Lead, Silver; ② War Eagle and Florida Mt. veins in T. 4 & 5 S, R. 3 & 4 W, all
fissure-type deposits with mineralization occurring as ore shoots—Argentite, Cerargyrite, Electum, Jamesonite, Pyrrargyrite, 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.

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.

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.
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:  ¤ Nutmeg Mt., at the Adaho-Almaden deposit in T. 10 & 11 N, R. 3 W—**Opal, chalcedony, Cinnabar, opalite, Pyrite**;  © 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**;  © 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**.
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 ¾ 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.
Though well endowed with fossils, Illinois has little to offer gem and mineral collectors, even though the state produces more sandstone, silica sand and Fluorspar than any other state in America. Most specimen collecting is done in the Lead-Zinc mining dists. of northwestern Illinois, the glacial drift of the Late Pleistocene Wisconsin glaciation, the bluffs and detritus of the Ohio and Mississippi rivers, and in the southern Fluorspar region.
Fossil hunters are well acquainted 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,
Jarosite, Marcasite, Malachite, Pyrite, Pyrolusite, Quartz, Selenite, Smithsonite and Sphalerite in any combination).

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.
WARSAW, area rd. cuts, pits quarries, gravels, banks along regional creeks and streams (see map) — geodes.
HARDIN COUNTY
CAVE-IN ROCK: ① area Fluorspar mines, and ② NW 4½ mi., mines—Barite, Calcite, Cerussite, Chalcopyrite, Fluorspar, Galena, Pyrite, Silver, Smithsonite, Strontianite, Witherite; ③ the Minerva No. 1 Mine, area minerals and also noted fluorescent minerals—Alstonite, Barite, Strontianite.
ELIZABETH TOWN, area—Aragonite (fluorescent)
ROSCILARE: 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, Chalcopyrite, 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, Chalcopyrite, 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 Al)—agate.
GALVA, N, at Bishop Hill, area—agate, jasper.

KANE COUNTY

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.
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**, **Chalcopryite**, **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.

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

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

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

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

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

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

WYANDOTTE, just NW, in Wyandotte Cave—**Calcite, alabaster, flint, Epsomite** (beautifully crystallized).
DEARBORN COUNTY
WEISBURG, area RR and rd. cuts, of Ordovician age—trilobites fossils (well preserved).

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

FOUNTAIN COUNTY
ATTICA, S 2½ mi., in a coal mine—Sphalerite, associated with notable quantities of Cobalt.
KINGMAN, NE, at the Norgan Company coal mine—Marcasite, Pyrite.

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

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

KNOX COUNTY
BICKNELL, area coal mines—Marcasite, Pyrite.

LAWRENCE COUNTY
AREA: ① all regional stream beds and banks, rd. and RR cuts, pits, excavations, etc., especially around towns of Clevelands, Erin, 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. NW of Martinsville in Johnson Co.)—Hematite, Magnetite, placer Gold, Pyrite, Ilmenite, Corundum, Garnet, Diamond, Zircon. (Diamonds from Indiana’s stream gravels, found while panning for Gold in placer sands, have come principally from this county.) ③ surrounding Cr. sands, especially Greenhorn Cr., placers—Gold; ④ along Highland Cr., numerous glacial gravel bars—Quartz pebbles, Corundum, rare Diamond, Topaz.
MARTINSVILLE, in gravels of Highland Cr. 7 mi. NW—brown chatoyant Sapphire.
MORGANTOWN, in Gold Cr. and other small streams through glacial drift—Sapphire, Garnet.

OWEN COUNTY
FREEDOM, SW 3 mi., the Hahn Bros. Quarry—collophane, Hematite.
SPENCER: ① area limestone quarries, Cr. banks, rd. and RR cuts—Barite, Celestite, Siderite; ② NE 3½ mi. in Dunn Limestone Quarry (4 mi. E of jct. of Rte. 46 and a secondary rd. leading toward Gosport)—Barite, Celestite, Siderite.
PARKE COUNTY

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

COXVILLE, area coal mines and dumps—Pyrite.

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

SHELBY COUNTY

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

SPENCER COUNTY

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

WARREN COUNTY

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

WASHINGTON COUNTY

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

WAYNE COUNTY

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

WELLS COUNTY

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

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

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

ADAIR COUNTY

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

HARPERS FERRY, area Mississippi R. mud beds, in mussel shells—pearls.
LANSING, an abandoned nearby mine (make inquiry)—Cerussite.
NEW GALENA, area mines and dumps—Galena.

APPANOOSE COUNTY

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

BLACK HAWK, BREMER, BENTON COUNTIES

AREA, any limestone quarry, rd. or RR cut, stream bank, gravel bar, or pit—Coldwater agate (nodular, fortification type, gem quality; filled with blue, gray, pink, amethystine centers, or crystals).
LaPORTE CITY, in gravel pit—agate.
WATERLOO, at Burton Ave. quarry and Mitchell Ave. gravel pit near Cedar R.—geodes.

BUCHANNAN COUNTY

BRANDON, in Cr. bed both inside and outside of town—geodes, fossils.
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).
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.
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 ¾ 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,
sagenitic), **chalcedony**, **Quartz** crystals; ② S on US 61 through town past a pearl button factory and mill, turn E on Oregon St. to Steward St. gravel operations—**Lake Superior agates**, silicified and calcified corals, moss agate, jasper, petrified wood, moonstone.

**PALO ALTO COUNTY**

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

**POLK COUNTY**

DES MOINE

**STORY COUNTY**

AMES, area stream gravels, quarries, excavations—chalcedony, fossils.
NEVADA, in Indian Cr. gravels to E—agate.

**VAN BUREN COUNTY**

FARMINGTON, area stream beds, banks, excavations, etc.—**Quartz crystal geodes**.
VERNON, south out of town, geodiferous outcroppings downstream from bridge area along Bear Cr (see map)—**Keokuk geodes** (see map).

**WASHINGTON COUNTY**

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

**WEBSTER COUNTY**

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

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

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

About 1,750,000 years ago northern Kansas was invaded by the Kansan glacier, second of the four Pleistocene ice advances, as far south as the Kaw Valley and the Little Blue river. In this region's gravel pits, quarries, and morainal deposits can be found a variety of glacial drift gemstones. By contrast, southeastern Kansas constitutes an extension of the Ozark Plateau into what is termed the Tri-State District, where Kansas, Missouri and Oklahoma join boundaries. This district is interesting to the mineral collector because of its many highly productive Zinc and Lead mines. Dumps rising 100' high are know 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 Clack, Ellis, Logan, Ness, Rawlins and Wallace. In this formation are found dendriticopal, white translucentopal as irregular masses or nodules, opalized bones, and much petrified wood. From the western Cretaceous chalk beds exposed in the counties of Cherokee, Logan, Norton and Phillips, one can gather colorful gemmy chert and jasper. Anderson, Brown, Chase and Franklin counties yield fine crystals of Barite. In general, the surfaces of draws, washes, and sandhills of all the western half of Kansas produce agate, chalcedony, chert, jasper and petrified wood, although very little is
good quality material, especially along the Smoky Hill River in Gove, Logan, Trego, and Wallace counties. Regional outcrops of shale disgorge Selenite crystals.

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

BARBER COUNTY
AETNA: ① area draws, washes, etc.—agate, agatized wood; ② along the Medicine Lodge R. and on adjoining buttes and terraces—agate, jasper, agatized wood. (gemstone collecting is good over all regional surfaces all the way to Kiowa in the SE corner of the Co. and also includes chert, chalcedony and petrified wood.)
KIOWA, along Medicine Lodge R to Aetna—agate, agatized wood; jasper.
MEDICINE LODGE, 10 mi. S—petrified wood.
SUN CITY, area Gypsum quarries and mines, widespread—Gypsum and Calcite crystals.

BARBER-COMANCHE COUNTIES
area, all regional Gypsum quarries and mines, widespread—Gypsum and Calcite crystals.

BOURBON COUNTY
FORT SCOTT, on Marais des Cygnes, in Pennsylvanian Coal Measures as interstratifications—Siderite.
BUTLER COUNTY
   DAVID CITY, in breaks and cut banks along the Walnut R. in S section of the Flint Hills—crystal lines geodes.
   EL DORADO, in large rd. cut near the Butler-Greenwood Co. line—geodes.

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

CHEROKEE COUNTY
   AREA of the Tri-State Dist., Badger, Peacock, Galena and Lawton Dist., very many huge Lead-Zinc mines with towering dumps—Galena, Sphalerite, Barite, Calcite, Cerussite, Marcasite, Pyrite, Smithsonite.
   BAXTER SPRINGS, area mines with ore bodies occurring in Mississippian limestone with outcrops predominantly in the very corner of Kansas—chert with Galena, Sphalerite and Pyrite.
   COLUMBUS, all area coal mines—fine crystals of Pyrite, Calcite, Dolomite, Marcasite and Sphalerite.
   GALENA, many area mines and huge dumps—Calamine, Galena, Hydrozincite, Marcasite, Pyrite, Sphalerite.
   WEST MINERAL, many area mines—fine crystals of Pyrite, Calcite, Dolomite, Marcasite and Sphalerite.

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

CLOUD COUNTY
   CONCORDIA: odega N, in area called Old River Bed—agate (clear, mossy, banded), jasper, petrified wood; odega 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
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.
YOCMENTO, 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.
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JEWEILL COUNTY
BURR OAK, area deposits—volcanic ash.

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: ʘ 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; ʘ 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.
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 COUNTY
TOPEKA, in glacial moraines near city—**Lake Superior agates**.
SHERIDAN COUNTY
QUINTER, in limestone at Saline R. and S fork of the Solomon R. and in outcrops on US 24 from Hoxie to Hill City—*moss agate*.

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

WALLACE COUNTY
SHARON SPRINGS, in sand pit to N—*agate, petrified wood*.
WALLACE, S 5 mi., in rd. cut—*moss opal* (milky with manganese dendrites; scenic).

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

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

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

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

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

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

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

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

AREA, countywide creeks, rivers, beds and banks, rd. cuts exposing the Warsaw formation—Quartz and other geodes.
COLUMBIA, the Shamrock Stone Co. limestone quarry—geodes.

ALLEN COUNTY

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

BALLARD COUNTY

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

BARREN COUNTY

CAVE CITY, area commercial quarries, as pink and yellow gemmy varieties—marble.
GLASGOW, in steam to E.—geodes.

BATH COUNTY

OWINGSVILLE, area iron mines—Hematite.

BOURBON COUNTY

MILLERSBURG, area mines—Barite, Galena.

BOYD, CARTER, GREENUP COUNTIES

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

BOYLE COUNTY

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

CALDWELL COUNTY

AREA, many mines throughout W part of Co.—Barite, Calcite, Fluorite, etc.
CRIDER, N, in fault exposures—Fluorite, etc.
FREDONIA, area mines—Barite.
PRINCETON, area quarries—Calcite, Fluorite.
CALDWELL-CRITTENDEN COUNTIES

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

CARLISLE COUNTY

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

CRITTENDEN COUNTY

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

MARION: ① N 3 mi. from jct. of US 60 and Rte. 1668, on E side of rd., the Crittenden Springs fault—Barite, Calcite, Dolomite crystals, Fluorite (every color), Galena, Marcasite, Pyrite, Smithsonite, Sphalerite; ② NW, off Rte. 387 at Hickory Cane Mine dump (W of rd. and up Caney Cr. from the Glendale Baptist Church on Glendale Church rd.)—mica, Fluorite, peridotite; ③ from jct. of US 60 and Rte. 855, go 1 mi. left to old Kirk Mine—Barite, Calcite, Dolomite crystals, Fluorite (every color), Galena, Marcasite, Pyrite, Smithsonite, Sphalerite; ④ SW 5 mi., as scattered deposits—ocher.
MEXICO, SW on US 70, turn left at the Crider Fluorspar Co. sign 0.8 mi. from town, then left at 0.3 mi. (1.1 from town) across RR to the Pigmy Fluorspar Mine (open pit) —Barite, Calcite, Dolomite crystals, Fluorite (every color), Galena, Marcasite, Pyrite, Smithsonite, Sphalerite.

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

Rivers & Lakes of Kentucky

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.
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
   ROWLETT, 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).
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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


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

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

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

SCOTT COUNTY

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

WHITLEY COUNTY

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

WOODFORD COUNTY

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

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

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

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

LIVINGSTON & TANGIPAHOA PARISHES
Regional stream gravels, occasional—carnelian.
OUACHITA PARISH

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

RAPIDES PARISH

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

RAPIDES & VERNON PARISHES

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

TANGIPAHOA PARISH

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

VERNON PARISH

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

The topography of Maine was sculptured by Pleistocene glaciers two miles thick in places, eroding the original Tertiary land surfaces right down to bedrock. Thus, the state rests on its ancient foundation of limestone, sandstone, and shale. The generally mountainous, heavily forested western region slopes northward to the St. John River Basin and eastward toward the Penobscot River. Receding glaciers dammed the valleys with long drift ridges to form some 2,200 lakes. In the more than 5,000 rivers and streams, gravel beds yield up many interesting gem and mineral specimens.
Where deep-seated earth forces caused molten granite to intrude the basal sedimentary rocks and recrystallize them, many valuable mineral and gemstone deposits were formed. Indeed, the mineral wealth of Maine is notable, especially for the wide variety of gemstone minerals which occur in the state's extraordinary pegmatites. These dikes are essentially coarse grained concentrations of feldspar and quartz, developed during the closing stages of widespread granitic intrusions through the foundation rocks. The great glaciers exposed most of the dikes; easily traceable as pod-shaped or sheetlike bodies ranging from a few inches to more than 4,000 feet in length.
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.


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, Montebrasite, Muscovite, Pollucite, Pyrite, Rhodochrosite, Schorl tourmaline, Spodumene, Torbernite, Uraninite and large parallel-growth clustered of Smoky Quartz.
LEWISTON, area of Mt. Robinson, pegmatite outcrops—Vesuvianite (Idocrase).
MINOT:  ○ Bell (Giddings) prospect—Feldspar, Muscovite Mica, black Tourmaline;  ○ La Flamme Mine—Feldspar, Muscovite Mica, Pollucite, black Tourmaline;  ○ Phillips Mine—Autunite, Feldspar, Amethyst, black Tourmaline;

○ Pitts Mine—Feldspar, Muscovite Mica, Quartz;  ○ 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;  ○ Sturtevant Mine—Feldspar, black Tourmaline;  ○ ENE 1¼ mi., mine on Mt. Apatite—Tourmaline;  ○ E 1½ mi., mine on Mt. Apatite—Apatite, Beryl (fluorescent), Morganite and Tourmaline;  ○ 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, Spessarite 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, cinnammon 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.
FRANKLIN COUNTY

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

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

FARMINGTON, area mines—Scheelite.

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

HANCOCK COUNTY

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

Dodge Mine—argentiferous Galena, copper sulfur minerals and Zinblende; (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, Clinochlore, Ferberite, Ferrimolybdite, Fluorapatite, Fluorite, Hornblende, Magnetite, Microcline, Molybdenite, Muscovite, Pyrite, Quartz, Scheelite, Stilbite.


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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 (Soomsville), 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.
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 ¼ mi. on Wattons Mill rd., turn right (W) onto unnamed gravel rd. toward Crawford Pond and proceed ½ 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, Bravoiite, Calcite, Chalcopyrite, Clinochlore, 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, Beryll, Calcite, Cassiterite, Columbite, Heterosite, Lepidolite, Microcline, Monzobrasite, 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, Bravoiite, Calcite, Chalcopyrite, Clinochlore, Cummingtonite, Feldspar, Garnet, Graphite, Hematite, Hornblende, Ilmenite, Mackinawite, Magnetite, Marcasite, Molybdenite, Niggliite, Olivine, Pentlandite, Pyrite, Pyrrhotite, Quartz, Rutile, Sperrylite, Sphalerite, Spinel.
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.

ANOVER: 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 ¾ NW and park, trail SW goes to Nevel and Dunton pits and further S to Bell pit, W from parking area ¼ mi. is Scotty Pit and ¾ mile farther another pit, all on Halls Ridge of Mt.
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, Arseneopyrite, 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, Lithophyllite, Manganapatite (fluorescent), Manganotantalite, Montebraisite, 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
CANTON: 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 © Bennett Quarry); (g) Orchard Mine—gem Apatite. Beryl. Cassiterite, Columbite. Feldspar. 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 2½ 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.

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


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, Ambygonite, Arsenopyrite, Beraunite, Beryllonite. Beryl (pale green, pink), Cassiterite, Columbite, Elbaite tourmaline (blue, green), Eosphorite, Fairfieldite, Fluorapatite, Hureaulite, Herderite. Johnsite. Landesite, Laueite, Lepidolite, Lithiophyllite, Löllingite, Ludlamite, Mitridatite, Montebrasite. Moraesite, Muscovite, Perhamite, Phosphosiderite, Pollucite, Purpurite. Reddingite, Rhodochrosite, Robertsite, Rockbridgeite, Schorl, Scorodite, Spodumene, Stewarteit, 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; ⑦ Noble's Corner. NW 2 mi. and ½ mi. E of Mud Pond, a pegmatite—Tourmaline ③ 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; ③ Tamminen Quarry (at the base of Noyes Mt.)—Almandite garnet, Autunite, Bertrandite, Beryl (blue, green, pink), Bismuth. Calcite. Cassiterite, Cookeite, Dickinsonite, Elbaite tourmaline, Eosphorite, Feldspars, Fluorapatite, Fourmarierite. Herderite, Lepidolite mica,
Lithiophyllite, Manganotantalite, Montebrasite, Muscovite, Petalite, Pollucite crystals, Quartz, Scheelite, Schorl, Sphalerite, Spodumene, Topaz, Uraninite, Vandendriesscheite, and Vesuvianite; © 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; © 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—Alamandine garnet, Apatite (fluorescent), Arsenopyrite, Autunite, Bertrandite, Beryl, Beryllonite, Biotite, Brazilianite, Calcite, Cassiterite, Columbite, Cookeite, Diopside, Elbaite tourmaline, Feldspars, Fluorapatite (purple, blue), Gahnite, Goyazite, Herderite, Lepidolite, Montebrasite, Muscovite, Phenakite, Pollucite, Quartz, Schorl, Sphalerite, Spodumene, Topaz, 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.): © Dickvale, SE 2 mi. on S slope of Hedgehog Hill, pegmatite—Aquamarine and Golden Beryl; © 2 mi. S of S end of Worthly Pond in area of
Ragged Jack Mt., exposure (rugged location)—Almandite garnet, Chrysoberyl, Feldspar, Fluorapatite, Muscovite, Schorl.

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

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

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

MASON, the Anderson Mine—Muscovite mica.

MEXICO, the Gogan prospect—Feldspar, Muscovite mica.

NEWRY (Twp.): ① area mines: (a) Dunton Mine (Newry Gem Mine), and (b) the Newry Mines (False Mine, Lower Mine, Nevel Quarry)—Almandite garnet, Ambygonyte, Autunite, Beraunite, Bertrandite, Beryl, Beryllonite, Brazilianite, Cassiterite, chalcedony, Columbite, Cookeite, Diadochite, Elbaite (fluorescent), Eosphorite, Fieldfieldite, Feldspar, Fluorapatite, Francholite, Galena, Goethite, Goyazite, Hachtottolite, Hematite, Herderite, Heterosite, Hydroxylapatite, Jahnsite, Lauite, Lepidolite, Ludlamite, Microlite, Mitridatite, Montesbalas, Morasite, Muscovite, Opal, Perhamite, Petalite, Phosphophyllite, Pollucite (fluorescent), Purpurite, Pyrite, Quartz, Reddingite, Rhodochrosite, Rockbridgeite, Roscherite, Rutherfordite (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, Ambygonyte, 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
Maine

Chrysoberyl site—Almandite garnet, Autunite, Chrysoberyl, Feldspar, Garnet, Muscovite, Quartz, Schorl, Sillimanite, Torbernite and Zircon.

Oxford, the Jordan prospect—Feldspar, Muscovite and Quartz.

Paris: (see location map) (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, Jahnite, Laueite, Lepidolite, Lollingite, Microlite, Mitridatite, Montebrasite, Moraesite, Muscovite, Palermoite, Pollucite (fluorescent), Pyrite, Quartz crystals (citrine, rose and smoky), Romanachite, Rosopherite, 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. (©) 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.): (©) 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; (©) 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; (©) Perry prospect—Autunite, Spodumene and Triphylite.

Rumford (Twp.): (©) area: (a) Black Mt., N on Hwy. 120 10 mi. to Roxbury Notch, turn Left on dirt rd. 2 mi. to mine rd. to Left., area quarries—Almandite garnet, Autunite,
**Beryl, Beryllonite, Cassiterite, Columbite, Cookeite, Dickinsonite, Elbaite, Eosporhite, Fairfieldite, Feldspar, Fluorapatite, Goyazite, Gummite, Herderite, Heterosite, Hornblende, Hurlbutite, Laueite, Lepidolite, Magnetite, Micolite, Mitridatite, Montebasite, Muscovite, Pollucite, Purpurite, Pyrite, Quartz crystals, Rhodochrosite, Rockbridgeite, Roscherite, Schorl, Siderite, Sphalerite, Spheene, Spodumene, Strunzite, Talantalite, Torbernite, Triphylite, Uraninite, Uranophane, Vivianite, Whitlockite and Zircon; (b) Whitecap Mt., area mines and prospects—Apatite, Feldspar, Garnet, Muscovite, Quartz crystals and Tourmaline; (b) 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 ¾ mi. to house on left, park and get permission, continue on woods rd., keeping to right past just place 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, Eosporhite, 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 ¼ 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.
Eosphorite, Fairfieldite, Feldspar, Fluorapatite, Heterosite, Luclamite, Muscovite, Pyrite, Quartz (milky, smoky), Sphalerite, Stewartite, Strunzite, Triphyllite, Uraninite (sharp crystals), Uranophane, Vivianite, Zircon.

STOW (Twp.): ① Cotton Hill, area prospect—Feldspar and Quartz; ② Deer Hill area (Big Deer Hill, 4 ½ mi. N of Stow or 1¾ mi. ESE of North Chatham, NH), mine—Amethyst, Feldspar, Garnet, Muscovite, Pyrite and Quartz crystals; ③ Hwy. 113 N for 5 mi., then E on dirt rd, take trail N up valley ½ mi. to CTA trail, take it E when it heads up mt. Jeep trail leads to Eastman Ledge and Deer Hill Amethyst prospect on top of Deer Hill—Almandite garnet, Amethyst, Beryl, Columbite, Fluorapatite, Muscovite, Pyrite, and other Quartz (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—Chalcopryrite, 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—Chalcopryrite 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—sulfurwets of Antimony, Gold and Silver; ② Vinegar Hill Mine—Arsenopyrite, Chalcopryrite 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
mines—**Feldspar** and **Tourmaline**; ⊗ Thorne prospect—**Feldspar**, **Bertrandite**, mica (**Biotite**, **Muscovite**), **Herderite** and **Spodumene**; ⊗ 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.): ⊗ McKay Farm prospect—**Beryl**, **Feldspar**, **Garnet**, mica (**Biotite**, **Muscovite**), **Quartz** crystals and black **Tourmaline**; ⊗ 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**; ⊗ Perry Mine—**Feldspar**; ⊗ Robbins Mine—**Beryl**, **Feldspar** and **Magnetite**; ⊗ Rogers Mine—gem **Beryl**, **Feldspar** and black **Tourmaline**; ⊗ Thomas Quarry—**Apatite**, **Beryl**, **Feldspar**, **Muscovite** and **Tourmaline**; ⊗ 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**, **Clinozoisite**, deep reddish-orange crystals of **Grossular** garnet, **Meionite** (scapolite gr.), **Pargasite**, **Quartz**, **Scheelite** and **Titanite**.

**TOPSHAM** (Twp.): ⊗ N, overlooking the Cathance R., feldspar quarries at Brunswick—**Aquamarine**, **Smoky Quartz** crystals, **Topaz** and **Tourmaline**; ⊗ 2 mi. NW of Cathance Sta., the Willes Feldspar Quarry—**Beryl** and **Tourmaline**; ⊗ 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**; ⊗ area mines: (a) Chapman, Given, Graves, Mallett,—**Feldspar**, **Muscovite** mica and **Quartz**; (b) Direnzo (Cormier Farm) prospect—**Feldspar**, **Muscovite** mica and **Quartz**; ⊗ 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**, **Muscovite**, **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**; ⊗ 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; ⊗ 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**
Maine

(aquamarine, and excellent golden), Biotite, Elbaite, Fluorapatite, Molybdenite, Muscovite, Quartz (milky, smoky) and Schorl; @ 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: ⊙ Trott Cove Mine—green Apatite, Beryl, Feldspar, Garnet, Muscovite, Quartz crystals and black Tourmaline; ⊙ Woolwich Mine—Azurite, Bornite and Malachite.

SOMERSET COUNTY

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

ST. ALBANS: ⊙ the Gould prospect—Copper, Lead and Silver; ⊙ Indian Lead Mine—Galena; ⊙ 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: ⊙ the Britton Mine—Galena; ⊙ Cherryfield Mine—Chalcopyrite, Galena, Gold quartz, Pyrrhotite, Silver sulfurets and Sphalerite.


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: ⊙ the Big Hill Mine—Chalcopyrite, Galena, Pyrite, Pyrrhotite and Sphalerite; ⊙ Pembroke Mine—Azurite, Bornite, Chalcopyrite, Galena and Sphalerite; ⊙ Young’s Point Mine—argentiferous Galena; ⊙ at Gleason Cove—jasper.

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

TRESCOTT-LUBEC: ⊙ the Trescott Mine—Galena; ⊙ 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, Romanchechite, Quartz, Smithsonite, Sphalerite, Titanite, Wulfenite.

WESLEY: ⊙ the Bacon & Snow Mine—Chalcopyrite, Pyrite and Sphalerite; ⊙ Rollins Mine—Bornite, Cuprite, Galena, Pyrite, Pyrrhotite and Sphalerite.
YORK COUNTY

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

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

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

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

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

NORTH LOVELL, in boulders in game preserve—Vesuvianite.

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

WATERBORO, the Caton prospect—Feldspar and Quartz.
MARYLAND

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

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

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

From the gem collector’s point of view, the most rewarding gemstones occur in the serpentine and Chromite deposits that are widely distributed through five northern counties (Cecil, Hartford, Baltimore, Carroll and Frederick) in a region locally known as the Barrens because of the stunted nature of its vegetation. Here a gemmy serpentine called Greenstone has long been quarried for building stone and railroad ballast. The associated Verde Antique, laced with twisting white veinlets (the serpents that originally gave serpentine it’s 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.
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 magnesium 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: ⊙ area deposits, prospects, etc.—Fluorite; ⊙ old mining town of Roberts and on W side of Wills Mt., area of abandoned strip mines—Hematite.

FROSTBURG, area coal mine dumps (park car at Dan’s Mt. State Park) —Barite crystals and Siderite.
ANNE ARUNDEL COUNTY

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

RIVIERA BEACH (S of Baltimore and NW of Annapolis): ① Magothy R.: (a) area exposures of the Magothy fm.—Pyrite. (Deposits of this pyrite were mined and the mineral roasted for the manufacture of H₂SO₄) (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.
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.
  HOLOFIELD: 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.
  WHITE HALL, SE 1 mi. and 2½ mi. NE, area mines—Magnetite.
  WHITE MARSH, area exposures of pegmatite—Amethyst.

Baltimore, Carroll, Frederick & Howard Counties
  AREA, the Blue Ridge district, regional exposures of crystalline rocks, as veinlets, stringers, discolorations, etc.—Malachite.

Baltimore and Harford Counties
  AREA, quarries in inferior deposits of fibrous serpentine—Chrysotile asbestos.

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

Carroll County
  AREA, W part of Co. and E part of Frederick Co., in limestone exposures—Galena.
  Eldersburg, N 1½ mi.: ① at the Monroe prospect dumps—Azurite and Malachite; ② 1 mi. E of Monroe prospect, on both sides of Rte. 32, the Beasman prospect, abundant—Pyrite.
  Finksburg: ① E 1 mi., on both sides of US 140 and Rte. 526: (a) the Patapsco Mines—Cobalt and Nickel minerals; (b) 200 yds. S of Rte. 526, the Wildesen Mine—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 ¼ mi. W of Beaver Dam Church on Beaver Dam rd.—Quartz crystals.

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

Cecil County

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

Bald Friar, Conowingo Creek, Flintville & Pilot, area mines and feldspar quarries—Feldspar crystals, Garnets, Mica and Quartz crystals.

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

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

Rock Springs Crossroads, N ¾ mi., area pits—Brucite, purple Kämmererite, Magnesite, serpentine and Williamsite.

West Nottingham, area quarry, forming wall rock—serpentine.

Frederick County

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

Frederick, in area crushed stone quarry—pink Fluorite.

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

Lantz, Catoctin Mt., area outcrops, as specimen material only—native Copper.
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 ¾ mi. and ¾ mi. S of Rte. 26 on both sides of Dolly Hyde Cr., the Dolly Hyde Mine—Copper minerals and some marble; ③ SW ¾ mi., on dumps of the Hammond prospects—Bornite, pink Calcite, Covellite, Malachite and rock crystal; ④ N 2 mi., the Liberty Mine, and ⑤ ¾ 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).

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 ¾ 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 ½ 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 2½ 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.

GAIHERSBURG, 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.
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

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.

![Massachusetts County Map](image)

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

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

BERKSHIRE COUNTY
DALTON, area mines, quarries—asbestos and talc.
HOOSAC TUNNEL, area mines—talc.
WILLIAMSTOWN, area deposits, once mined—ocher and sienna.
WINDSOR, area quarries—soapstone.
A Location Guide for Rock Hounds in the United States

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**.
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

HAMPERSHIRE 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.
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.

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

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

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*(Image: Michigan County Map)*
Keweenaw Co. However, virtually every community shown on maps of the Upper Peninsula is a mining center and consequently of interest.

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

The gem and mineral collector will find that there are two different types of collecting to be considered in Michigan: Hunting along the State’s lake beaches for gemstones (especially Lake Superior type agates) and working over almost countless iron and copper mine dumps. The Keweenaw Peninsula, especially in Houghton and Keweenaw counties, contains the richest copper mines. At the same time, the Lake Superior beaches surrounding the peninsula are rich in agates, with Thomsonite and Chlorastrolite occasionally encountered.
The agates are generally small but richly banded and quite colorful. An occasional large nodule may be found, as witness the 17 lbs. prize reported from Keweenaw Point. They represent a subvariety of the Lake Superior type, differing in their primary color, are brown with generally tone-on-tone bands and a tendency toward greater opaqueness. The associated Thomsonite is a pastel pink and green cutting material (perhaps a pink Prehnite) occurring in radiating sunburst patterns. The Chlorastrolite, locally termed greenstone, is a rare Zeolite gemstone. Along with these sought after materials, the collector is also likely to find waterworn samples of chalcedony, jasper, gemmy chert and Adularia orthoclase.

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

The Lower Peninsula, constituting most of Michigan, also contains a considerable mineral wealth, but mainly in such less spectacular products as Gypsum, sandstone, limestone and salt. One exception to the general paucity of gemmy materials is the locally abundant occurrences of the famed calcified Hexagonaria coral 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.
A Location Guide for Rock Hounds in the United States

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.
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, Thomsonite, 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, talc; (c) the Holmes Mine—Hematite, jasper, Limonite, Calcite (fillings in Hematite), mica, Magnetite crystals, specular Hematite; (d) the Cliffs Shaft Mine—chert, jasper, Pyrite, specular Hematite; (e) the Morris-Lloyd Mine—Hematite (with blue jasper), Iron minerals.

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

NEGAUNEE: ① the Cambria Mine—massive Hematite, specular Hematite (schist), Talc; ② Lucy Mine—Barite; ③ the Baltic Mine dumps, massive—Rhodochrosite.
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 Sate Park): (a) area mines—Hematite, chalcedony, jasper, jaspilite, Specularite; (b) area exposures of abundant gemmy masses—jaspilite (a jasper laced attractively with steely specularite).

PRESQUE ISLE COUNTY
ONAWAY, area quarries, gravel pits, etc.—fossils, Petoskey stones.
PRESQUE ISLE, area beach gravels of Lake Huron—agate, chalcedony geodes, gemmy brown sandstone (veined with Calcite).

SCHOOLCRAFT COUNTY
WHITEDALE, area quarries, pits—silicified corals.

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

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

The only section that might be termed at all mountainous lies in the northeastern triangle. Here the Lake Superior hill ranges (Sawteeth, Mesabi, Cuyuna, Gunflint, Giant’s Range, Vermillion) rear a few worn and rounded peaks to the elevation near 2,000' above sea level, or 500' above the surrounding countryside. Even these ranges from which much of the world’s richest Iron ores have come are heavily drift covered.
By far the most widely distributed and popular gemstone, for which Minnesota is especially noted, is Lake Superior agate, distinguished by its translucency, rich glowing colors, and fine parallel banding. Lake Superior agate are usually found in sizes from ½” to 2” in dia. (with an occasional nodule weighting several pounds) and containing high grade gem quality throughout. Three forms are recognized: eye agates, an onyx-like banded agate, and fortification agate that resembles the famed Fairburn agates of South Dakota. Practically every glacial moraine of drift deposit, every gravel bank and stream bar, every lake beach, quarry, excavation, and gravel pit in the entire state yields up a surprising abundance of these eagerly sought after gemstone.

BLUE EARTH COUNTY

MANKATO, all regional quarries, gravel pits, stream gravels, etc.—Lake Superior agates.
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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.
HENNEPIN COUNTY
OSSEO (NW suburb of Minneapolis), S ¼ mi. on Rte. 110, then W on rd. dead ending in a series of gravel pits—Lake Superior agates; chalcedony, jasper.

HOUSTON COUNTY
CALEDONIA, area sand quarry—Calcite crystals.

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

LAKE OF THE WOODS COUNTY
AREA, Sec. 6, T. 167 N, R. 33 W, a mine—Feldspar.

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 ¼ mi. to the dam parking area), best under RR bridge in schist outcrops—Garnets, Staurolites; ④ Charles Lindbergh State Park, in area stream sands—Staurolites.
ROYALTON: ① W 3 mi., along both sides of the Mississippi R. (W side reached from Bowlus and Royalton)—Staurolites.

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

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

PIPESTONE COUNTY
PIPESTONE, N 1 mi., Pipestone national Monument Indian Reservation (no collecting)—catlinite (red pipestone).
REDWOOD COUNTY
REDWOOD FALLS, area deposits and pits, as kaolinized gneiss and granite—ocher.

ST. LOUIS COUNTY
BIWABIK: ① W 1 mi., the Mary Ellen Mine; ② W 2 mi., the Corsica Mine; ③ all in-between stream gravels, rd. cuts and cut banks, and all abandoned mine waste dumps—Lake Superior agates, Iron minerals, Mary Ellen jasper and other jaspers. These minerals are found in all regional outcrops of the Mesabi Range Sudan formation.
ELY, SW, Vermillion Range regional creeks, washes, breaks, etc.—gem jasper, Quartz crystals, chaledony.
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.
WASHINGTON COUNTY

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

WINONA COUNTY

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

Although its surface is everywhere characterized by Cretaceous to Tertiary sediments less than 100 million years old, Mississippi lends its name to a 25 million year long depositional epoch in American geology that began 355 million years ago during the Lower Carboniferous period. Like other adjoining states that also anciently lay beneath the extended Gulf of Mexico, all of the state’s formations were laid down under salt water as the gulf slowly receded southward from its northern-most Paleozoic reaches below the present Ohio River Valley. Such sedimentation is still actively going on, wherever rivers discharge their burdens of mud, silt and sand into the modern Gulf of Mexico.
The sixteen counties that embrace most of north-central Mississippi are part of a very low North Central plateau, underlain by Eocene formations of 60 million years ago. In the two most northeastern counties of Alcorn and Tishomingo, the Tennessee River Hills achieve maximum elevation of 700', while the general statewide surface is at or near sea level.

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

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

The state's chief topographical feature is the Ozark Uplift, a broad plateau with gentle slopes rising to 1,500' above sea level and extending entirely across the southern part of Missouri, bordered on all sides by deep grooves and narrow gorges. This Ozark region, containing rock formations of several different geological ages, is one of the most heavily mineralized areas in the world. Many great mines and pits enrich the state's economy with their production of Barite, clay, Hematite and Lead & Zinc with Silver as a by-product.
Missouri’s mineral wealth is found three main regions: Coal in the west and north-ventral counties, Lead in the Tri State district (in the corner of Missouri, Kansas and Oklahoma) and the New Lead district in the Viburnum Trend of southeastern counties centered at Viburnum, MO.

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

Gemmy crystals of Crested Barite are much sought after in St. François and Washington counties in eastern Missouri, while directly across the state in Jasper Co., gorgeous crystals of Lead and Zinc minerals make dramatic cabinet specimens. These crystals occur abundantly deep in the Joplin and Tri-State area mines: brilliant cubes of Galena, a distinctive bronyz 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.

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

ADAIR & MACON COUNTIES
AREA, in dark colored streams materials near Elmer and other areas—fine grained Gold, Garnets.

AUDRAIN COUNTY
MEXICO, in fire clay pits and spoil piles—Pyrite.
BARTON COUNTY
LIBERAL, 2.5 mi. NE and other area coal deposits—Pickeringite, Pyrite, Siderite.

BATES COUNTY
FOSTER, HUME & RICH HILL, area coal strip mines—Alunogen, Gypsum (fluorescent and phosphorescent), Melanterite.
ROCKVILLE, in coal deposits—brown and white Calcite crystals.

BENTON COUNTY
LINCOLN, ① area quarries, rd. cuts, gravel pits, etc.—chalcedony, gemmy chert (Mozarkite), jasper; ② 4 mi. E—Galena.
WARSAW: ① all area of low hills along the W edge of the Ozark Uplift, and ② throughout the SE (Bootheel) part of Co.—agate, gemmy chert.
BENTON, HICKORY, POLK & DADE COUNTIES

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

BOLLINGER COUNTY

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

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 ≈ 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**, **Glaucnite**, **Limonite**, **Marcasite**, **Microcline**, **Muscovite**, **Opal**, **Plagioclase**, **Pyrite**, **Sphalerite**, **Tourmaline**, **Tridymite**.
CAPE GIRARDEAU COUNTY
CAPE GIRARDEAU, all Co., area excavations, rd. cuts, gravel operations, etc.—agate, 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](Image)

![Fox City Geode Site](Image)
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, Chalcantite, 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.
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, Chalcopryrite, 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.

LESLIE, area mines, the Leslie mine, 2.5 mi. SW—Ankerite, Calcite, Chalcanthite, Goethite, Hematite, Marcasite, Pyrite, Quartz; ① the Duckworth mine, a filled sink iron deposit 2 mi. W—Hematite, Malachite, Marcasite, Pyrite; ② St. Clair mine, a filled sink iron mine 2 mi. W, adjacent to Duckworth mine—Chalcanthite, Copiapite, Hematite, Marcasite, Melanterite, Pyrite; ③ the Thurmond mine, 6.5 mi. SW (and ≈ 1 mi. W of the Kelsey)—Azurite, Goethite, Malachite. STANTON: ① the Ruepple Iron Mine, 2 mi. NW—Amethyst, Copiapite, Goethite, Hematite, Marcasite, Melanterite, Pyrite, Quartz crystals and Siderite; ② the Ruepple Copper Mine, 1 mi. W—Azurite, Barite, Brochantite, Copiapite, native Copper, Cuprite, Chalcotrichite, Gypsum, Halloysite, specular Hematite, Malachite, Melanterite, Pisanite, Pyrite and Quartz; ③ the Kelsey mine (Anaconda, Beulah and Pickles shafts), an iron filled sink mine 2 mi. NE—Barite, Goethite, Marcasite, Pyrite.

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

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

GENTRY, DAVIES, GRUNDY, LIVINGSTON COUNTIES

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

GREENE COUNTY


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: ☺ area rd. cuts, banks, excavations—chalcedony, gemmy chert; ☻ 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: ☺ the Annapolis mine, 1.4 mi. E—Galena; ☻ 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.: ☺ Magmont Mine, just S on KK, and ☻ Buick Mine farther S on KK—Bornite, Bravosite, Chalcocite, Chalcopyrite, Covellite, Enargite, Galena, Malachite, Marcasite, Millerite, Polydymite, Pyrite, Pyrrhotite, Siegenite, Sphalerite, Tennantite, Vaesite, Wurtzite.

GRANITEVILLE: ☺ Sheahan Quarry, 0.5 mi. W—Actinolite, Apatite, Beryl (common blue), Fluorite, Galena, Hematite, Maghemite, Molybdenite, Orthoclase, Pyrite, smoky Quartz, Rutile, Topaz, Zircon; ☻ Schnieder’ granite quarry, 1 mi. NE, in
granite pegmatite—Anglesite, Barite, Chlorite, Fluorite, Hematite, Galena, Gypsum, Goethite, Melanerite, 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, Bravoiite, 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, Sarcoxie, Thoms Station, Webb City), all great regional mines—Allophane, Aluminate, Anglesite, Apatite, Aragonite, Aurichalcite, Azurite, Barite, Bornite, Calcite, Caledonite, Cerussite, Chalcanthite, Chalcopyrite, Chrysocolla, Copiapite, Covellite, Cuprite, Diadochite, Dolomite, Enargite, Epsomite, Galena, Glaucodite, Goslarite garnet, Greenockite, Gypsum, Hematite, Hemimorphite, Hydrozincite, Jarosite, Lanarkite, Leadhillite (fluorescent), Linarite, Luzonite, Malachite, Marcasite, Melanerite, Millerite, Picropharmacolite, Plumbojarosite, Pyrite, Pyrolusite, Pyromorphite, Quartz, Smithsonite (some fluorescent), Sphalerite, Starkeyite, Sulfur, Szomolnokite, Vivianite, Wavellite, Wurtzite in underground working; and as fine tabular crystals in the ores and on mine dumps—Anglesite, Calamine, Calcite (museum type crystals), Cerussite, Greenockite, Marcasite, Pyrite. Some dumps also have Barite, Chalcopyrite, Dolomite crystals (some fluorescent) and Galena.

JEFFERSON COUNTY

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

ARNOLD, 1 mi. S on Richardson Rd., on W side of I-55, in geodes—Calcite, Dolomite, Marcasite, Pyrite, Sphalerite.
BLACKWELL, the Southwest Jefferson Co. Barite & Lead Dist., 2 mi. S—**Barite, Galena, Goethite, Pyrite, Quartz**.

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

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

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

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

JOHNSON COUNTY

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

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

KNOX COUNTY

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

LAFAYETTE COUNTY

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

LAWRENCE COUNTY

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

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

LEWIS COUNTY

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

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

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

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

TROY: ① just S on Hwy. 61, the Magruder Quarry—Calcite, Marcasite, Pyrite; ② Waton 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, Anabergite, Aragonite, Asbolane, Azurite, Bieberite, Brochantite, Calcite, Carrolite, Cerussite, Chalcanthite, Chalcocite, Chalcopyrite, Copiapite, Dickite, Dolomite, Galena, Glaucnite, Greigite, Malachite, Marcasite, Millerite, Pyrite, Quartz, Siegenite, Smithsonite, Sphalerite, Skutterudite, Tetrahedrite; ② the Silver Mines Dist., 1 mi. W on the St. Francois R., the Einstein, Apex, Gabriel, Henson, Ozark, Martin and Killian prospect—Alamandine, Antimonpearceite, Apatite, Arsenopyrite, Augite, Berryite, Cassiterite, Chalcopyrite, Chlorite, Covellite, Epidote, Ferritungstite, Fluorite, Galena, Gorceixite, Hausmannite, Hematite, Huebnerite, Ilmenite, Magnetite, Malachite, Marcasite, Muscovite, Psilomelane, Pyrite, Pyrrhotite, Quartz, Rutile, Scheelite, serpentine, Sphalerite, Stibnite, Stolzite, Tennantite, Topaz, Wolframite, Zinnwaldite; ③ S of Rte. 72, on dumps of the Einstein Silver Mine—argentiferous Galena, Arsenopyrite, Cassiterite, Covellite, Fluorapatite, Fluorite, Pyrite, Quartz crystals, Sphalerite, Scheelite, Topaz, Wolframite, Zinnwaldite.

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

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

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

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

MARIES COUNTY

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

McDONALD COUNTY

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

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

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

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

MONITEAU COUNTY

CALIFORNIA, countrywide gravel pits—Barite crystals, Chalcopyrite, Galena.

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; 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.
A Location Guide for Rock Hounds in the United States

PLATTE COUNTY

PLATTE CITY, in several limestone quarries—Barite, Calcite.

PUTNAM COUNTY

AREA, coal measures shale in coal mines and exposures throughout the Co.—Pyrite, Gypsum crystals.

RALLS COUNTY

HANNIBAL, Atlas cement quarry, S of town—Marcasite, Pyrite.
NEW LONDON, N on US 61, in rd. cut near the Salt R. bridge—silicified conodonts.
SAVERTON, along Hwy. 79 ≈ 1 mi. N of Saverton turnoff—Pyrite.

RANDOLPH COUNTY

AREA, coal deposits in the W half of the Co.—Copiapite, Gypsum, Halotrichite, Melanterite, Pyrite, Quartz.

RAY COUNTY

STANWYCK, in limestones and shales associated with coal deposits—Barite crystals.

RENOLODS 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, Sagenite, Sphalerite, Wurtzite.

RIPLEY COUNTY

DONIPHAN: ① E along US 160 toward Butler Co. line, area farms, hillsides, etc.—gemmy flint; ② along banks and in gravels of the Current R., sometimes to giant size, gemmy—chert nodules.

SHANNON COUNTY

EMINENCE: ① the nearby Casey (2 mi. N near Hwy. 19), Slater (2 mi. E), Sutton (5 mi. SE), Tyrell and Jerktail (6 mi. NW) mines—Calcite, Chalcocite, Chalcopyrite, Cuprite, Dolomite, Malachite; ② SE, the Elliot (9 mi. SE), Thorny Mt. mines (9 mi. SE)—Braunite, Fluorite, Psilomelane, Pyrolusite, Tremolite.
ST. CHARLES COUNTY

DEFIANCE, N to jct. of Hwy. 94 and Rte. DD, the Defiance Quarry, in limestone—Calcite (yellow, white), Goethite, cupriferous Marcasite, Pyrite, some Sphalerite, fossils.

ST. CHARLES, on South River rd., the St. Charles Quarry, in limestone—Calcite (white, green), large chert nodules, pink Dolomite, Fluorite, large plant fossils.

ST. CLAIR COUNTY

VISTA, the Crystal (Harmon) deposit, 0.5 mi. W, in veins and fractures in sandstone—Barite (colorless crystals).

ST. FRANCOIS COUNTY

AREA, many large deposits and pits throughout Co.—crested Barite.

BONNE TERRE, Northwest County Barite Dist., NW of town—Barite, Goethite, Pyrite, Quartz.

BONNE TERRE, FLAT RIVER, DELOGE, area mines, the St. Joe No. 1 -9(Doe Run) Flat River, Des Loge, Esther, Elvins and West Elvins (River mines) Federal mines, Leadington, and National—Bravoite, Barite, Calcite, Cerussite, Chalcopyrite, Galena, Malachite, Pyrite, Pyrrhotite, Sphalerite, Sphalerite, Smithsonite.

FARMINGTON, Knob Lick, in alteration zones of granite—Actinolite, Epidote.

IRON MT., area mines and pits—Actinolite, yellow Andradite garnet, Apatite, Barite, Bornite, Calcite, Chalcopyrite, Chlorite, Diopside, pink Dolomite, Epidote, Fluorite, Galena, Garnet, Hematite, Magnetite, Pyrite, Quartz.

LEADWOOD: ① the Leadwood Dist., within 2 to 3 mi. around town, St. Joe mines No. 11, 12, & 14, Des Loge mines No. 5 & 6, Doe Run No. 8, the Baker shaft—Dolomite, Galena, Sphalerite; ② on bypass Hwy. 8 just W—Chalcopyrite, Dolomite, Galena, Millerite, Sphalerite.

MINERAL CITY, the Greasy mine, 4 mi. S in granite—Hematite.

ST. LOUIS COUNTY

AREA: ① jct. of Hwys. 141 and I-44, on SE side in bluff behind McDonalds and Taco Bell—Calcite crystals, Millerite, Quartz; ② jct. of Hwys. 141 and 30, in pockets in rd. cuts—Barite, Calcite, Goethite, Pyrite, Quartz; ③ N, at Hwy. 67 near the Missouri R., in the St. Genevieve formation—Pyrite crystals and Goethite replacements, ④ South county: (a) in the old Alpha Portland Quarry on Green Park rd. just north of I-55; and (b) Weber South quarry—geodes containing Calcite, Fluorite and Millerite, (c) area roadcuts, washes—Union Road agates, (d) Antire quarry off I-44 on Antire rd.—Calcite, Honessite, Linnaeite, Millerite, Pecoraite, Violarite, Quartz.

CHESTERFIELD, in river gravels at area sand and gravel operations—some Garnets, Staurolites.

FLORISSANT: ① off New Halls Ferry rd., in the Coldwater Cr., banks—Vivianite replacing fossils in glacial deposits; ② Quarries at Hwy. 67 on the river—Calcite, Celestite.

LEMAY, Ruprecht quarry, on Mt. Olive—Barite, Calcite, chalcedony, Dolomite, Fluorite, Millerite, Pyrite, Sphalerite.
A Location Guide for Rock Hounds in the United States

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, Spalerite, Xonolite.

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, Chalcocite, Chalcopyrite, Chrysoberyl, Cuprite (as red massive tile ore), Dolomite, Enargite, Fluorite, Galena, Goethite, Gypsum, Malachite, Marcasite, Quartz, Pyrite, Smithsonite, Spalerite, 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 Spalerite.

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, Spalerite.

RICHWOODS, area old mines—Barite, Galena, Goethite, drusy Quartz.

WAYNE COUNTY

AREA, at Granite Knob—abundant Pyrite (in granite), Copiapite, Hyalite opal, Voltaite.

PIEDMONT, at Iron Knob, 4.7 mi. NE—Hematite.

SHOOK, the Shook Stone quarry (SE of Greenville) —Calcite, Dolomite, Limonite, Quartz.
WRIGHT COUNTY

AREA, the Mansfield (Lead Hill) Dist., half way between Mansfield and Norwood—Galena, Hemimorphite, Smithsonite, Sphalerite.
MONTANA

Montana was named from its mountains. Dominated by the complex Rocky Mt. system that originated with the Laramide revolution to close the Mesozoic era and initiate the Cenozoic, western and southwestern Montana carries the Continental Divide on the rugged granite shoulders of the Bitterroot Range that is the state’s western boundary. Every few years, earthquakes smashing across the mountain regions remind us that the mountain-building forces are still dramatically active.

Early prospectors, who followed trails pioneered by Lewis and Clark in 1805 and the fur voyageurs of subsequent decades, came as losers from the California gold fields. They discovered enormous new sources of mineral wealth in Gold, Silver, Lead, Copper, Manganese, and Zinc, causing Montana to become known primarily as a mining state. Montana also has another kind of mineral wealth in Montana moss agate and Sapphires, contributed to the state’s high placement in every gem and mineral collector’s places to visit list.

Montana is seventh in the list of America’s gold producing states. Many placers were discovered in Powell, and Beaverhead counties. Many other rich placers were also found in Alder Gulch where Virginia City (1864) now slumbers as the county seat of Madison Co. Such placers, which produced nearly half of the state’s total gold, were most active prior to 1870 but continued pouring out the yellow metal until W.W.II. Today, panning for gold is a major summer hobby.

Inauspicious showings of colors in an iron gossan covering a major butte in Silver Bow Co. in 1864 created a modest Gold and Silver camp known as Butte. But when the underlying Copper ores were penetrated in 1880, Butte erupted into the greatest Copper center on earth, adding more than $2 Billion to the states economy. The Copper brought the railroads to Montana and greatly aided the settlement of the state.

Although for nearly a century Montana made exciting economic and political news with its metal mines, late comers began making Montana world famous for Montana moss Agate. This gray chalcedony nodules shaped like Idaho potatoes occur in the gravel bars and adjoining benches along the Yellowstone R. for some 250 mi. eastward from Billings to Miles City, with numerous side streams out of Wyoming contributing a minor supply. This extraordinary gemstone consists of unusually translucent chalcedony laced with
Manganese Dioxide against a background often of brilliant red **carnelian**. When sliced, the nodules reveal delicate landscape scenes of mountains, forests, trees, bushes, ferns, lakes, clouds, and figures.

Two other highly desired gems, purple **Amethyst** and cornflower blue **Sapphires**, are notable from Montana. The Gold mines of Jefferson Co., E of Butte, produce high quality **Amethyst** as a by-product, along with lovely water clear Quartz. The **Sapphires** come mostly from the stream gravels of Lewis and Clark Co., out of Helena, although other western counties also produce the blue gem **Corundum**.

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**Rivers & Lakes of Montana**

**BEAVERHEAD COUNTY**
- **ARGENTA**: ① area mines—**Lead-Silver minerals**; ② NE ¼ 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**.

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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.
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.
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—Hematite, Magnetite.

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 placer—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, chaledony, Garnet, Gold, Kyanite, Limonite, Sapphires, Topaz; ⑧ N and SE, all gravel bars along Missouri R.—Cassiterite, chaledony, Garnet, Gold, Kyanite, Limonite, Sapphires, Topaz; ⑨ Prickly pear Cr. in lower end of magpie Gulch: (a) Emerald Bar—Cassiterite, chaledony, 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, chaledony, Garnet, Gold, Kyanite, Limonite, Sapphires, Topaz; ⑪ very many other gravel bars, benchlands, and tributary draws and streams—Cassiterite, chaledony, 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.
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).

SYLVDNITE-YAAK, area mines and prospects along the Yaak R. and surrounding tributaries—Gold, Pyrite, etc.

MADISON COUNTY

AREA: ① Cow Camp, Elk Mt., Finnean 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).
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


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, Ancyline, 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.