ILLINOIS

Known as the Prairie State, Illinois exhibits a length of 378 miles and a width of 210 miles, with its 56,000 sq. mi. sloping slightly to the southwest. Containing more than 275 rivers, the state is bounded along 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 a altitude of 900 to 1,000 feet above sea level.

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

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

ALEXANDER COUNTY

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

THERES: 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: (a) area gravels and glacial drift deposits—agate, jasper, geodes (containing blue gray chalcedony); (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); (c) 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: (a) area excavations, pits, stream banks and gravels—fossils, geodes; (b) S 2 mi., at Tyson Cr.—crystal lined geodes; (c) Dewdrop Diamond Locality S of Hwy. 96 (see map next page)—geodes (with blue and pink chalcedony); (d) 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.

ELIZABETHTOWN, area—Aragonite (fluorescent)

ROSICLARE: ① area mines, especially Ozark Mahoning mine—Calcite crystals, Fluorite (blue, yellow, purple, clear), Sphalerite; ② the Empire and Fairview mines—Fluorite, Galena, Pyrite; ③ E, numerous mines—Cerussite, 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.

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, cockscob 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, Chalcopyrite, Fluorite, Galena, Pyrite, Silver, Smithsonite, Witherite.

PULASKI COUNTY

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

RANDOLPH COUNTY

SPARTA: ➊ area mine dumps, pits, etc.—Pyrite disks (radiating); ➋ 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.
INDIANA

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

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

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

In the central and southern counties are many coal mines containing usual associated mineral of Goethite, Marcasite, Pyrite, Selenite and Sphalerite. Regional limestone quarries produce some gemmy Apatite, Calcite, 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, plecyopods, crinoid heads, corals, etc., but do not contain any fossil material.

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

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

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

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

**CASS COUNTY**

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

**CRAWFORD COUNTY**

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

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

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

**DEARBORN COUNTY**

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

**DECATUR COUNTY**

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

**FOUNTAIN COUNTY**

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

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

**HARRISON COUNTY**

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

**HUNTINGTON COUNTY**

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

**KNOX COUNTY**

BICKNELL, area coal mines—**Marcasite**, **Pyrite**.
A Location Guide for Rock Hounds in the United States

LAURENCE COUNTY

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

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

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

GEORGIA, W¾ mi., the Nally Quarry—Barite crystals, Dolomite, Strontianite.

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

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

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

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

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

MARION COUNTY

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

MARTIN COUNTY

SHOALS, S near Coal Hollow—Siderite.

MIAMI COUNTY

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

PERU, as morainal deposits—Diamond.

MONROE COUNTY

BLOOMINGTON: ① area quarries, wide variety on minerals—Fluorite, a new species Smytheite (dark acicular crystals included on peach-colored Dolomite, often as pockets in a greenish matrix); ② N¾ 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, Glaucophane, Goethite, Pyrite.
MORGAN COUNTY

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

MARTINSVILLE, in gravels of Highland Cr. 7 mi. NW—brown chatoyant Sapphire.
MORGANTOWN, in Gold Cr. and other small streams through glacial drift—Sapphire, Garnet.

OWEN COUNTY

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

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 Euheiral 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.

APPANOOSOE 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,
Iowa

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

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

POLK COUNTY
DESMOINE

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

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

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

WEBSTER COUNTY
FORT DODGE, regional quarries—Gypsum.
KANSAS

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

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

About 1,7500,000 years ago northern Kansas was invaded by the Kansan glacier, second of the four Pleistocene ice advances, as far south as the Kaw Valley and the Little Blue river. In this region’s gravel pits, quarries, and morainal deposits can be found a variety of glacial drift gemstones. By contrast, southeastern Kansas constitutes an extension of the Ozark Plateau into what is termed the Tri-State District, where Kansas, Missouri and Oklahoma join boundaries. This district is interesting to the mineral collector because of its many highly productive Zinc and Lead mines. Dumps rising 100’ high are known as chat mountains and produce abundance of desirable mineral specimens of Barite, Calcite, Chalcopyrite, Cerussite, Dolomite crystals, Galena, Pyrite and Sphalerite.

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

ANDERSON COUNTY

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

BARBER COUNTY

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

COMANCHE COUNTY

AREA, N part of Co., extending E to 12 mi. N of Sun City in Barber Co., all along the valley of Salt Fork Cr., as beds—Gypsum.
WILMORE, beds extending from 1 mi. N of town to 5 mi. S, commercially exploited—volcanic ash.

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

DICKINSON COUNTY
   HOPE, area quarries—Gypsum and associated minerals.
   SOLOMON, area quarries—Gypsum, Calcite, etc.

ELLIS COUNTY
   HAYES, W, in valley of the Smoky Hills R., as massive outcropping beds—Niobrara chalk.
   YOCEMENTO, local cement plant quarry—rock wool.

ELLSWORTH COUNTY
   CARNEIRO: ① area know locally as the Mushroom Rocks—Pyrite concretions; ② S 5 mi., in Cretaceous outcrops (banks) of the Smoky Hill R., in lignite beds—Amber. The old collection area is under waters of the Kanopolis Reservoir, but hunting may successfully be done in lignite beds outcropping back from the impounded waters Also Barite roses.
   ELLSWORTH, area quarries and mines—Halite.
   KANOPOLIS, area quarries and mines, especially to the E and SE, and as local deposits—Halite, volcanic ash.
   MORRILL, NW 2 mi., in banks of Pony Cr. in veins in Permian shales—Celestite.

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

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

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

GOVE COUNTY
   QUINTER: ① area surrounding town—concretions (calcite cemented); ② SW 10 mi., on E side of a S-flowing tributary of Hackberry Cr., as deposit—volcanic ash.
HARPER COUNTY
ANTHONY, area mines—Halite.
HARPER, N, along the Chikaskia R. in gravel bars—agate, jasper, petrified wood.

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

JEWELL COUNTY
BURR OAK, area deposits—volcanic ash.

KINGMAN COUNTY
KINGMAN, area mines—Halite.

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

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

McPHERSON COUNTY
FREEMOUNT (just S of Rte. 4), area—septarian nodules.
ROXBURY, just outside of town at Roxbury Hill—septarian nodules.

MARION COUNTY
FLORENCE, area gravel pits—crystal lined geodes.

MARSHALL COUNTY
BLUE RAPIDS: 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; 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: ❶ E, in a ravine as a deposit—yellow ocher; ❷ in gravel pit—jasper.
BARRENN 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: Ø 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.

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

JEFFERSON COUNTY
LOUISVILLE: ① area beds and banks of the Ohio R.—fossil coral, petrified wood; ② N end of Louisville-Jeffersonville bridge—fossil coral, petrified wood; ③ E via US 60: (a) By-pass 60 to Grinstead Ave., turn right to quarries N of the by-pass near jct.; (b) first left turn of Grinstead Ave., a quarry; (c) across the by-pass at E end of park—silicified fossils, oolites; ④: (a) rd. cuts along US 42; (b) the County Quarry (reached from Grinstead Ave. N from By-pass 60 to Stilz, then left to Frankfort St., and Hillcrest to US 42), quarry is 2½ mi. from jct. —silicified fossils; (c) rd. cuts N of the quarry—silicified fossils; ⑤ Coral Turnpike, an exposure—silicified corals.
VALLEY STATION, S to Muldraugh’s Hill (on or near Co. line.; reached also from West Point in Bullitt Co.), numerous roadside exposures of the Warsaw formation—Quartz geodes.

LINCOLN COUNTY

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

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

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

LIVINGSTON COUNTY

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

CARRSVILLE: ① area fluor spar 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. 387, a fault near the Ohio R. exposing brecciated sandstone—Fluorite cubes.

JOY, area fluor spar mines—Calcite, Fluorite, Galena, Quartz. SMITHLAND, N at Dyer Hill fluor spar mine, in cavities in a massive fluor spar 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.

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

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

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

SCOTT COUNTY

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

WHITLEY COUNTY

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

WOODFORD COUNTY

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

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

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

HARRISON PARISH

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

LIVINGSTON & TANGIPAHOA PARISHES

Regional stream gravels, occasional—carnelian.

OUACHITA PARISH

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

RAPIDES PARISH

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

RAPIDES & VERNON PARISHES

Regional stream gravels—silicified palm (Palmoxylon).

TANGIPAHOA PARISH

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

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

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

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

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


ANDROSCOGGIN COUNTY

AUBURN: ① Kennedy Mine—Aquamarine, Beryl and Topaz; ② W 4 mi. (1¼ mi. ENE of Minot), many area mines such as the Androscoggin Tourmaline, Fisher, Hatch Farm, Greenlaw, Keith (Towne), Maine Feldspar, Pulsifer, etc. —Amblygonite, Apatite (purple), Beryl, Feldspar, Garnet, Lepidolite, Spodumene, Tourmaline and Morganite; ③ Greenlaw and Maine Feldspar mines, from jct. of Rtes 4-100-202 and 11-121 in Auburn, go W on Rtes. 11-121 for 1.9 mi., turn right onto Garfield rd. and drive NW for 0.5 mi., turn left onto Stevens Mill rd., go 0.2 mi. and park outside military compound on left, follow dirt rd. W across open field, then uphill through woods for about 0.75 mi. to quarries, Greenlaw on right; larger water filled Maine Feldspar on left (dumps scattered through woods) —Almandite garnet, Amblygonite, Autunite, Bertrandite, Beryl, Biotite, Cassiterite, Columbite, Cookeite, Cyrtolite zircon, Elbaite tourmaline (green, pink, blue), Feldspars, Fluorapatite (purple), Gahnite, Hydroxyl-Herderite, Lepidolite, Montebasite, Muscovite, Pollucite, Pyrite, Rhodochrosite, Schorl tourmaline, Spodumene, Torbernite, Uraninite and large parallel-growth clustered of Smoky Quartz.
LEWISTON, area of Mt. Robinson, pegmatite outcrops—*Vesuvianite* (Idocrase).
MINOT: ① Bell (Giddings) prospect—Feldspar, Muscovite Mica, black Tourmaline; ② La Flamme Mine—Feldspar, Muscovite Mica, Pollucite, black Tourmaline; ③ Phillips Mine—Autunite, Feldspar, Amethyst, black Tourmaline; ④ Pitts Mine—Feldspar, Muscovite Mica, Quartz; ⑤ Pitts-Tenney Mine, from jct. of Rtes. 11-121 with Rte. 119, drive N on Rte. 119 for 1.1 mi. to woods rd on left, park at rd. entrance and follow ud. uphill (keep left at fork) for about 600’ to prospect pits—Actinolite, Beryl, Calcite, Clinohlole, Clinozoisite, Diopside, Feldspar, Grossular garnet (orange), Meionite (scapolite gr.), Quartz, Schorl, Titanite, Vesuvianite; ⑥ Sturtevant Mine—Feldspar, black Tourmaline; ⑦ ENE 1¼ mi., mine on Mt. Apatite—Tourmaline; ⑧ E 1½ mi., mine on Mt. Apatite—Apatite, Beryl (fluorescent), Morganite and Tourmaline; ⑨ Hwy. 121 E to Haskell’s Corner, then Left 2 mi. to Hatch rd. to right to quarries on side of Mt. Apatite: (a) Pulsifer & Wade quarries—Apatite and Lepidolite; (b) Maine Feldspar Mine—Morganite; (c) Littlefield Quarry—Smoky Quartz.

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

AROOSTOOK COUNTY

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

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

LITTLETON, area Molybdenite mine—Molybdenite.

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

CUMBERLAND COUNTY

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

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

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

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

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

POWNAL, the Tyon Mt. quarries, from town go 1.3 mi. on Elmwood rd., turn right onto Lawrence rd. and drive NE 1.05 mi. to the Tyron residence (brick house on right), park and get permission, quarry rd. is just before house on same side of rd.—Almandite garnet, Autunite, Beryl, Columbite, Feldspar, Mica (Biotite, Muscovite), Monazite, Pyrite, Quartz (milky, rose, smoky), Schorl, Uraninite, Zircon.
WINDHAM, area Staurolite exposures of Micaceous slates, especially Cook rd.,
from jct. of US Rtes. 302 and 202 at Fosters Corner (traffic circle), drive S 2.4 mi. on Rte.
202, turn right onto Cook rd. and continue 0.35 mi., park on right side at utility pole #270,
follow trail to brook on NE side of Cook rd.—Almandite garnet, Biotite, Ilmenite,
Kyanite, Quartz, Staurolites.

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 Benis 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
and sluicing gold from all area stream gravels for generations. The source of the gold is unknown,
and there has never been a gold mine, as such, in Maine. Gravel caught in natural potholes
and between upended ledges of rock makes for productive panning.)

FARMINGTON, area mines—Scheelite.

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

HANCOCK COUNTY

BLUE HILL: ① Atlantic Mine—pyrites (copper, gold, silver); ② Blue Hill
Manganese Mine, 1¼ mi. SW on Hwy. 176—manganese minerals and Rhodonite; ③
Blue Hill Mine—Chalcopyrite and Pyrite; ④ Douglas Mine—Arsenopyrite,
Chalcopyrite, native Copper, Cuprite, Galena, Magnetite, Molybdenite, Pyrite,
Pyrrhotite, Sphalerite, Stibnite, Tennantite and Tetrahedrite; ⑤ Granger Mine—
Bornite, Chalcopyrite, Pyrite and native Silver; ⑥ Mammoth Mine—Chalcopyrite,
Galena, Pyrite, Pyrrhotite, Specularite and Sphalerite; ⑦ Owen Lead Mine—
Chalcopyrite, Galena, Magnetite, Pyrite, Pyrrhotite; ⑧ Owen Mine—Chalcopyrite,
native Copper, Pyrite, Pyrrhotite; ⑨ Stewart Mine—Chalcopyrite, Magnetite, Pyrite,
Pyrrhotite; ⑩ Stover Hill Mine—Chalcopyrite, Pyrite; ⑪ Twin Lead Mine—Bornite,
Chalcopyrite, Magnetite, Pyrite, Pyrrhotite.

BROOKLIN, the Brooklin Mine—Gold and Silver.

BROOKSVILLE: ① Abner Gray Mine—carbonate minerals and copper sulfur
minerals; ② Cape Rosier Mine (Callahan, Rosier Consolidated), 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 talc, Tennantite, Titanite, Tremolite, and Valleriite;
Dodge Mine—argentiferous Galena, copper sulfur minerals and Zincblende; (a) Jones & Dodge Mine, and (b) Tapley Mine—Chalcopyrite, Galena, Pyrite, Pyrrhotite and Sphalerite.

CASTINE: (a) Castine (Castine Head) Mine—Copper, Gold, Lead and Silver ore; (b) Emerson Mine—Galena, Magnetite, Pyrite, Pyrrhotite and Sphalerite; (c) North Castine Mine—Chalcophyrite, Galena, Pyrite.

DEER ISLE: (a) Belle of Deer Isle Mine—Galena; (b) Deer Isle Mine—Chalcophyrite, Galena, Magnetite, Pyrite, native Silver, Sphalerite and Tetrahedrite.

ELLSWORTH: (a) Boston Silver Mine—argentiferous Galena; (b) Brimmer Mine—Silver.

FRANKLIN: (a) Franklin Extension Mine—gray Copper, Galena, ruby Silver and native Silver; (b) Frenchman’s Bay Mine—Galena; (c) 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, Ferrimolybdate, Fluorapatite, Fluorite, Hornblende, Magnetite, Microcline, Molybdenite, Muscovite, Pyrite, Quartz, Scheelite, Stilbite.
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 (Somerville), 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.
SURREY: 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’,
A Location Guide for Rock Hounds in the United States

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

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

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

WINFLOW, 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*.

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 ¼ mi. on Wattons Mill rd., turn right (W) onto unnamed gravel rd. toward Crawford Pond and proceed ¾ mi. park at entrance to woods rd. on right, walk N on rd. for 360’, turn left just before stone wall and continue 120’ NW along old woods rd. to small pit, metal sulfides in igneous rock—*Augite, Biotite, Bornite, Bravosite, 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, Beryl, Calcite, Cassiterite, Columbite, Heterosite, Lepidolite, Microcline, Montebasite, Muscovite, Opal, Pyrite, Quartz, Rutile, Schorl, Sillimanite, Sphalerite, Spodumene, Talc, Torbernite, Triphylite, Uraninite, Zircon*. (Very fine Spodumene can be found by digging in the dump). (b) Starret prospect—*Microcline, Muscovite, Quartz and Spodumene*. ② Warren Nickel prospect, from jct. of Rtes. 17 and 131S (E of Union), drive S 2.6 mi. on Rte. 131, crossing the Warren town line at 2.3 mi., turn left onto woods rd. (note large boulder to right of rd. entrance, and stone wall to left), park and walk E on woods rd. until reaching the prospect (0.1 mi.), metal sulfides in igneous rock—*Apatite, Augite, Biotite, Bravosite, Calcite, Chalcopyrite, Clinochlore, Cummingtonite, Felspar, Garnet, Graphite, Hematite, Hornblende, Ilmenite, Mackinawite, Magnetite, Marcasite, Molybdenite, Niggliite, Olivine, Pentlandite, Pyrite, Pyrrhotite, Quartz, Rutile, Sperrylite, Sphalerite, Spinel*. ③ area boulders, glacially transported—*Aegirine, Albite, Annite, Cancrinite, Corundum, Hydronepheline* (mixture of Natrolite, Gibbsite and Diaspore), *Magnetite, Nepheline, Sodalite, Zircon*. ④ area pegmatites—*Zircon*. ⑤ 1,000 ft. N of Spears Corner—*Sodalite*. ⑥ area boulders, glacially transported—*Aegirine, Albite, Annite, Cancrinite, Corundum, Hydronepheline* (mixture of Natrolite, Gibbsite and Diaspore), *Magnetite, Nepheline, Sodalite, Zircon*. ⑦ Nurse Farm prospect—*Feldspar, Muscovite*. ⑧ Vienna Mt. prospect—*Feldspar*. ⑨ the Winslow Tin Mine—blue *Beryl, Cassiterite, Galena, Fluorite, Margarite, Lepidolite, Quartz and Tourmaline*. ⑩ Union Pyrrhotite Mine—*Pentlandite, Pyrrhotite, Chalcopyrite, Magnetite, Sphalerite and Labradorite*. ⑪ Porterfield Mine—*Copper, Gold, Nickel and Silver*. ⑫ Riverside Mine—*Arsenopyrite*. ⑬ Owl’s Head Mine—*Gold and Silver*. ⑭ the Union Pyrrhotite Mine—*Pentlandite, Pyrrhotite, Chalcopyrite, Magnetite, Sphalerite and Labradorite*. ⑮ Harriman prospect, from East Union drive ¾ mi. on Wattons Mill rd., turn right (W) onto unnamed gravel rd. toward Crawford Pond and proceed ¾ mi. park at entrance to woods rd. on right, walk N on rd. for 360’, turn left just before stone wall and continue 120’ NW along old woods rd. to small pit, metal sulfides in igneous rock—*Augite, Biotite, Bornite, Bravosite, 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; ⑲ 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. 
LINCOLN COUNTY

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

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

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

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

MIDDLESEX COUNTY

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

OXFORD COUNTY

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

ANDOVER: ① W, in area of Baldpate Mt., pegmatite outcrops and float—Aquamarine; ② Leach Beryl prospect, as small crystals—gem Beryl; ③ Spruce Mt., area pegmatites (inquire locally) —massive Beryl; ④ West Surplus, Frye Brook-West Branch (inquire locally) —gem Beryl; ⑤ (a) Hwy. 5 S for 7 mi. to abbot farm, drive 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:  ⊗ (a) SW 2 mi., the Lewis Mine and (b) the adjoining J.H. Fletcher Mine—cesium Beryl and Tourmaline;  ⊗ SW 2½ mi., the Robinson Dudley Mine—Aquamarine, Cesium Beryl and Pollucite (rare);  ⊗ SW 2½ mi. and ¼ mi. S of Rte. 117, exposure (mine) —Amblygonite, Arsenopyrite, Beryl, Cassiterite, Feldspar, Loellingite, Mica, Pollucite and Tourmaline;  ⊗ 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, bicoloered, watermelon), Eosphorite, Fairfieldite, Feldspar, Fluorapatite, Goyazite, Herderite, Hureaulite, Landesite, Lepidolite, Lithophillite, Manganapatite (fluorescent), Manganotantalite, Montebrasite, Morganite, Muscovite, Pollucite, Quartz, Reddingite, Rhodochrosite, Romanechite, Roscherite, Schorl tourmaline, Spodumene, Topaz, Uraninite and Zircon;  ⊗ 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
Maine

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, Spodumene, Topaz** and gem **Tourmaline**.

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

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

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

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

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

**GILEAD**: ⊗ Peak Hill Mine—**Feldspar, Garnet, Mica** (Biotite, Muscovite) and **Quartz**; ⊙ Peak Hill prospect—gem **Beryl**; ⊙ Wheeler Mine—**Beryl, Cleavelandite** feldspar and **Muscovite** Mica.

**GREENWOOD** (Twp.): ⊗ Diamond Ledge (Yale or Yates Quarry)—**Quartz** crystals; ⊙ Emmons Quarry (Uncle Tom Mine), from jct. of Rtes. 26 and 219 in West Paris, drive west 5.55 mi. to end of Rte. 219, turn right and drive 2.3 mi. on Twitchell Pond rd. and go 0.1 mi. NW, turn left onto Patch Mt. rd. (paved) continue 0.6 mi., turn right at fork onto unnamed gravel rd (rough) and proceed W 1.05 mi. to where dirt rd. enters to left at Willis Mill, bear right and continue 0.05 mi. to next bend in main rd where a woods rd. turns to the right, park and go N about 0.65 mi. on woods rd. to jct. with quarry rd. on left (about 500’ after crossing brook), turn left onto this rd. and walk WNW for about 2,310’ to next jct., take rd. to right and walk uphill to W for about 480’ to next fork (located in small clearing), go right and proceed uphill on quarry rd. as follows: 600’ NNW, bend 150’ W, bend 300’ NE; this brings you to lower part of quarry dump, the pit just uphill—**Almandite** garnet, **Amblygonite, Arsenopyrite, Beraunite, Beryllonite, Beryl** (pale green, pink), Cassiterite, Columbite, Elbaite tourmaline (blue, green), Eosphorite, Fairfieldite, Fluorapatite, Hureaulite, Herderite, Jahnsite, Landesite, Laueite, Lepidolite, Lithiophyllite, Löllingite, Ludlamite, Mitridatite, Montebrasite, Moraesite, Muscovite, Perhamite, Phosphosiderite, Pollucite, Purpurite, Reddingite, Rhodochrosite, Robertsite, Rockbridgeite, Schorl, Scorodite, Spodumene, Stewartite, Strengite, Strunzite, Switzerite, Uraninite, Vivianite and **Zircon**; ⊙ 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; ⊙ Nobles Corner, NW 2 mi. and ½ mi. E of Mud Pond, a pegmatite—**Tourmaline** ⊗ 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, Spalerite, Triphyllite and Spodumene; 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, Montebasite, Muscovite, Petalite, Pollucite crystals, Quartz, Scheelite, Schorl, Spalerite, 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 — Almandine garnet, Apatite (fluorescent), Arsenopyrite, Autunite, Bertrandite, Beryl, Beryllonite, Biotite, Brazilianite, Calcite, Cassiterite, Columbite, Cookeite, Diopside, Elbaite tourmaline, Feldspars, Fluorapatite (purple, blue), Gahnite, Goyazite, Herderite, Lepidolite, Montebasite, Muscovite, Phenakite, Pollucite, Quartz, Schorl, Spalerite, Spodumene, Topaz,
Maine

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

HARTFORD (Twp.): ① Dickvale, SE 2 mi. on S slope of Hedgehog Hill, pegmatite—Aquanarine and Golden Beryl; ② 2 mi. S of S end of Worthy 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 of Mt. Rubellite: (a) Dunton Mine (Newry Gem Mine), and (b) the Newry Mines (False Mine, Lower Mine, Nevel Quarry)—Almandite garnet, Amblygonite, Autunite, Beraunite, Bertrandite, Beryl, Beryllonite, Brazilianite, Cassiterite, chalcedony, Columbite, Cookeite, Diadochite, Elbaite (fluorescent), Eosphorite, Fairfieldite, Feldspar, Fluorapatite, Francelite, Galena, Goethite, Goyazite, Hatchettolite, Hematite, Herderite, Heterosite, Hydroxylapatite, Jahnsite, Laueite, Lepidolite, Ludlamite, Microlite, Mitridatite, Montebrazite, Moraesite, Muscovite, Opal, Perhamite, Petalite, Phosphophyllite, Pollucite (fluorescent), Purpurite, Pyrite, Quartz, Reddingite, Rhodochrosite, Rockbridgeite, Roscherite, Rutherfordine (fluorescent), Siderite, Sphalerite, Spodumene, Strunzite, Switzerite, Tantalite, Torbernite, black Tourmaline, Triphylite, Uralolite (fluorescent), Uraninite, Vivianite, Wadeite and Zircon; (c) the Scotty Mine—Beryl, Feldspar, Muscovite, Quartz and Spodumene; ② Plumbago Mt.: (a) area pegmatites and prospects—Beryl, Spodumene; (b) E knoll, area mines—Albite, Amblygonite, Beryllonite, Eosphorite, Herderite and Tourmaline; (c) E spur 3.9 mi. N 40° W of Rumford Point—Aquanarine 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
Beryl located a short distance from the paved rd, on lower SW slope of hill ledge rd and drive ¾ mi., park on right at entrance to old quarry rd, the prospect dumps are 117-119 for 0.35 mi., turn left, stay on Rte. 117 and continue 1.05 mi., turn left onto Hooper Tourmalines Mine—Muscovite, Pollucite—Garnet—Microlite (fluorescent), Uraniuite—Hisingerite—becomes impassable, park and continue N along old rd. for 300' to where rd. forks, keep left and continue on left side of wall to a swampy area (350' from rd.), follow stone wall to left, and proceed on woods rd. 2,200', until reaching point where stone wall on right side of rd., Schorl occurs in ledge 50' left (S of wall), walk S along ridge for 400' to Chrysoberyl site—Almandite garnet, Autunite, Chrysoberyl, Feldspar, Gahnite, Muscovite, Quartz, Schorl, Sillimanite, Torbernite and Zircon.

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

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

PERU (Twp.): ① Hedgehog Hill Mine, from 4 way intersection on Rte. 108 in West Peru (east of Rumford), drive 3.05 mi. S on Dickvale rd., turn left onto Mineral Springs rd. and continue for 0.95 mi. to intersection, turn right onto Paradise rd. (gravel) and drive 1.05 mi. to abandoned cabin on left, park and continue on main rd. about 150' to quarry rd. on right, follow this woods rd. 270' to fork, keep left at fork, continue 675' to next fork, keep right another 390' to stone wall, follow rd. through wall and go another 150' to end of obvious rd, continue straight ahead on steep downgrade, follow trail for 360' to quarry—Almandite garnet, gem Beryl (golden, Pink), Biotite, Chrysoberyl, Fluorapatite, Muscovite, Quartz and Schorl; ② Lobikis Mine, from 4 way intersection on Rte. 108 in West Peru (east of Rumford), drive 3.05 mi. S on Dickvale rd., turn right (W) at Dickvale and drive uphill ½ mi. to owner's house at end of paved rd, continue W on dirt rd. 0.1 mi. to where mine rd. branches left, park and walk 1,650' to where old house ruins are seen in bushes on right side of rd., continue about 900' west to dumps and quarry pit, located on hillside to right of rd.—Almandite garnet, Beryl, Biotite, Fluorapatite, Heterosite, Muscovite,
Pyrrhotite, Quartz, Torbernite, Triphylite and Vivianite; \( \textcircled{3} \) Perry prospect—Autunite, Spodumene and Triphylite.

ROXBURY: \( \textcircled{1} \) Binford prospect—Muscovite mica; \( \textcircled{2} \) Partridge Peak Mine—Scheelite.

RUMFORD (Twp.): \( \textcircled{1} \) area: (a) Black Mt., N on Hwy. 120 10 mi. to Roxbury Notch, turn Left on dirt rd. 2 mi. to mine rd. to Left., area quarries—Almandite garnet, Autunite, Beryl, Beryllonite, Cassiterite, Columbite, Cookeite, Dickinsonite, Elbaite, Eosphorite, Fairfieldite, Feldspar, Fluorapatite, Goyazite, Muskite, Gummite, Herderite, Heterosite, Hornblende, Hurlbutite, Laueite, Lepidolite, Magnetite, Microlite, Mitridatite, Montebraisite, Muscovite, Pollucite, Purpurite, Pyrite, Quartz crystals, Rhodochrosite, Rockbridgeite, Roscherite, Schorl, Siderite, Sphalerite, Sphene, Spodumene, Strunzite, Tantalite, Torbernite, Triphylite, Uraninite, Uranophane, Vivianite, Whitlockite and Zircon; (b) Whitecap Mt., area mines and prospects—Apatite, Feldspar, Garnet, Muscovite, Quartz crystals and Tourmaline; \( \textcircled{2} \) Regional mines and prospects: (a) Beliveau prospect—Feldspar, Muscovite, Quartz crystals; (b) Black Mt. Mica Mine—Spodumene; (c) Brown-Thurston prospect—Beryl, Muscovite, Feldspar and rose Quartz; (d) Carver prospect—Beryl, Feldspar and Purpurite; (e) Elliot Mine—Tourmaline; (f) Leach Quartz prospect—Quartz crystals; (g) Red Hill Mine, W on US 2 to the village of Rumford Center, N onto Andover rd. and go 1.95 mi., turn right onto Kimball rd. for 0.6 mi. till pavement ends, take gravel rd. to right at Kimball farm and proceed \( \frac{3}{4} \) mi. to house on left, park and get permission, continue on woods rd., keeping to right just past the house uphill (NE) to old house on left, turn right onto quarry rd., follow generally uphill to S, keeping to right until reaching the N most quarry—Almandite garnet, Beryl (white, pale green), Columbite, Elbaite, Eosphorite, Fairfieldite, Feldspar, Fluorapatite, Heterosite, Lusilamite, Muscovite, Pyrite, Quartz (including rose crystals), Schorl, Siderite, Sphalerite, Strunzite, Triphylite, Uraninite, Vivianite; (h) Goddard Ledge (Roy Ledge, Ford Hill, Paint Mine Ledge, Penley Ledge, Roy Quarry, Silver Ledge), from jct. of US 2 and Rte. 5 (near Rumford point) drive N on Rte. 5 for 2.9 mi., turn right crossing Ellis R., and drive 0.35 mi. to jct. with another rd., go straight (SW) on Andover rd. for \( \frac{1}{4} \) mi. and park, walk from NE side of rd. uphill to the NE, following the rise 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 pt on top of a cliff—Beryl (golden, S quarry also greenish-white), Columbite, Corundum, Feldspar, Fluorapatite, Goyazite, Montebraisite, Muscovite, Pyrite, Pyrrhotite, Quartz (milky, smoky), Schorl, Siderite, Sphalerite, Triphylite, Zircon; (i) Whitehall prospect—Beryl.

STONEHAM (Twp.): \( \textcircled{1} \) area of Butters Mt., mines and prospects—Golden Beryl and Garnet; \( \textcircled{2} \) area mines and prospects: (a) Aldrich prospect—Beryl, Feldspar, Muscovite, Pyrite and serpentine; (b) Andres Ledge—Beryl, Muscovite; (c) Foster Hill prospect—Feldspar, Muscovite; (d) Lord's Hill mine (on Lord's Hill \( \frac{3}{4} \) mi. SE of Harndon Hill), Hwy. 5 N to Kezar Lake, then W through Narrows and N 1.6 mi., take Left fork and go 2 mi.—Almandite garnet, Autunite, Beraunite, Beryllonite, Bertrandite, Beryl, Cassiterite, Chalcopyrite, Columbite, Eosphorite, Feldspar, Fluorapatite, Fluorite, Garnite, Goethite, Goyazite, Herderite, Heterosite, Hureaulite, Microlite, Mitridatite, Montebraisite, Muscovite, Ollenite-Elbaite, Phenakite, Purpurite, Pyrite, Pyrrhotite, Quartz crystals, Siderite, Strunzite, Topaz, Torbernite, Triphylite, Uraninite, Uranophane, Vivianite, Zircon; (e) Melsore prospect—Bertrandite, Aquamarine, Beryllonite; (f) Styles Mt. prospect—Beryl; (g) Willis Warren Quarry—Apatite, Beryl, Feldspar, Garnet, Muscovite and Tourmaline; \( \textcircled{3} \) WSW in area of North Lovell: (a) Chapman Hill, 3 mi. N, mine—gem blue Beryl; (b) Durgin My. (inquire locally), 4 mi. N 30° W, on E side, mines—gem Beryl (various colors); (c) WNW 2/4 mi., at base of McKean Mts., mines—Apatite, Beryl, Beryllonite, Cassiterite, Feldspar, Muscovite, Quartz (smoky) and Triplite; (d) N 5 mi., mine on Speckled Mt.—Golden Beryl; (e) Sugar Hill prospects—Aquamarine, Beryl and Beryllonite; (f)
Cole Quarry, from North Lovell go NW on Stoneham rd. which leads to Evergreen Valley recreational area, drive 1.9 mi. then turn right onto Adams rd. and continue approx. 2 mi. to ski lift area on W side of Evergreen Valley, park and walk steeply uphill along the path of the main ski lift and proceed 5,000' to end of lift on summit of Adams Mt., from the end of lift walk SSE across open ledges for about 22' to edge of low cliff, pit located in cliff face with dump on steep hillsides below—Alamandine garnet, Beryl, Biotite, Columbite, Eosphorite, Fairfieldite, Feldspar, Fluorapatite, Heterosite, Ludlamite, 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, 4½ mi. N of Stow or 1½ 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—Alamandine garnet, Amethyst, Beryl, Columbite, Fluorapatite, Muscovite, Pyrite, and other Quartz crystals (milky, smoky).

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

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

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

PENOBSCOT COUNTY

CARMEL, the Carmel Antimony Mine—Stibnite.

CORINNA, the Dearborn Mine—argentiferous Galena.

EXETER, area mine—Galena and some Gold.

GARLAND, area mine—Chalcopyrite and Galena.

GREENFIELD, the Cemetery Hill Mine—Iron and Manganese.

HAMPDEN: ① the Hampden Consolidated Mine—Lead, Copper and Silver; ② Latreence 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—sulfur-est of Antimony, Gold and Silver; ② Vinegar Hill Mine—Arsenopyrite, Chalcopyrite and Pyrite.

SAGADAHOC COUNTY

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

BOWDIONHAM: ① the Booker prospect—Feldspar; ② Consolidated Quarry—Feldspar, mica (Biotite, Muscovite), Quartz; ③ Dunn prospect—Feldspar; ④ Harriman Mine—Feldspar and Quartz; ⑤ Lang Mine—Feldspar; ⑥ McFee Mine—Feldspar.
GEORGETOWN: ○ 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; ○ Cunningham Mine—Feldspar; ○ 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 ½ 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 seaway to right and uphill from first pit—Calcite, Clinozoisite, deep reddish-orange crystals of Grossular garnet, Meionite (scapolite gr.), Pargasite, Quartz, Sheeelite 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, mica (Biotite, Muscovite), Quartz crystals, Topaz, Torbernite and Tourmaline; (b) Porcupine Hill Quarry, from overpass where Rte. 196 crosses I-95, drive W 0.8 mi. on Rte. 196, turn right on Adrea St., drive 0.15 mi. continuing past end of Andrea St., park in small dirt lot and follow faint trail SE along powerlines, trail shortly enters woods on left, becoming a broad distinct path, at about 350 paces from lot there is a trail intersection, continue straight ahead for about 300 paces to another intersection, quarry straight ahead 100’ more—Almandite garnet, Beryl, Biotite, CHRYSOBERYL, Columbite, Elbaite (green), Fluorapatite, Muscovite, Quartz and Schorl; (c) Standpipe Hill, drive W on Winter St. 0.45 mi. to Bridge St., turn left onto Bridge St. and proceed 0.4 mi., turn right on Oak St. and drive 0.1 mi. to end of st., park and walk to rear of standpipe, trail leads 75’ to site—Bertrandite, Beryl (green, yellow), Biotite, Bismuthinite, Bismutite, Columbite, Ilmenite, Magnetite, Microcline, Muscovite, Pyrite, Quartz, Samarskite; ○ Trenton Quarry (G.D Willes Quarry, Consolidated No. 4 Quarry), E then NE on Rte. 24 for 2.6 mi., turn left onto Cathance rd. and proceed N 2.55 mi., turn left onto School Crossing rd., park walk 0.3 mi. to woods rd. on left.
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(often 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; ① Square Pit Quarry, from Trenton Quarry, follow woods rd. to jct. SE of Trenton Quarry, continue SE crossing powerline for about 2,010' to next major rd., take sharp right turn onto this rd. and walk SW about 2,800' to quarry with dump on right—Almandite garnet, Beryl (aquamarine, and excellent golden), Biotite, Elbaite, Fluorapatite, Molybdenite, Muscovite, Quartz (milky, smoky) and Schorl; ② Fisher Quarry—Beryl, Columbite, Feldspar, Muscovite, Quartz crystals, Topaz and Tourmaline;

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

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

SOMERSET COUNTY

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

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

WALDOW COUNTY

KNOX, the Stone Mine—Gold and Silver.

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

WASHINGTON COUNTY

CHERRYFIELD: ① the Britton Mine—Galena; ② Cherryfield Mine—Chalcopyrite, Galena, Gold quartz, Pyrrhotite, Silver sulphurates 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: ① the Big Hill Mine—Chalcopyrite, Galena, Pyrite, Pyrrhotite and Sphalerite; ② Pembroke Mine—Azurite, Bornite, Chalcopyrite, Galena and Sphalerite; ③ Young's Point Mine—argentiferous Galena; ④ at Gleason Cove—jasper.

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

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

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

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 serpentis 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 magnesian silicate), with apple green Genthite representing a nickel replacement of magnesium.

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

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

**ALLEGANY COUNTY**

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

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

**ANNE ARUNDEL COUNTY**

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

RIVIERA BEACH (S of Baltimore and NW of Annapolis): ① Magothy R.: (a) area exposures of the Magothy fm.—Pyrite. (Deposits of this pyrite were mined and the mineral roasted for the manufacture of $\text{H}_2\text{SO}_4$.) (b) Area of North Ferry Point, in river bank lignite seams—Amber and fossil material; ② Lignite seams along the Severn R., especially at Sullivan Cove—Amber.

**ANNE ARUNDEL and PRINCE GEORGES COUNTIES**

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

**BALTIMORE COUNTY**

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

BUTLER, area mines, prospects—serpentine and Williamsite.  
CATONSVILLE, area old prospects, in quartz veins—Gold.  
COCKEYSVILLE: ① area quarries—very fine grained white marble; ② H. T. Campbell Quarry, take Padonia exit of I-83 N of I-695—Marble, Quartz and Tourmaline. (Collecting only on Sat. with advanced permission.)  
DELIGHT, old chrome mines in Soldier’s Delight area—Feldspar, metamorphic minerals, Quartz, Chromite, Magnesite, etc.  
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—Galena.  
HOLLOFIELD: ① area pegmatite quarries—Copper minerals, massive Quartz, Garnet and Tourmaline; ② S ½ mi. on old Frederick rd., quarry—serpentine.  
JONES FALLS, area quarries, as traces—Galena.  
MARRIOTTSVILLE, area quarries—Quartz crystals.  
REISTERSTOWN: ① area quarries —serpentine; ② area chrome mines—Chromite, Feldspar, metamorphic minerals, and Quartz.  
TEXAS: ① area quarries—very fine grained white marble; ② the Campbell Quarry—Tourmaline.  
WHITE HALL, SE 1 mi. and 2½ mi. NE, area mines—Magnetite.  
WHITE MARSH, area exposures of pegmatite—Amethyst.  

BALTIMORE, CARROLL, FREDERICK & HOWARD COUNTIES  
AREA, the Blue Ridge district, regional exposures of crystalline rocks, as veinlets, stringers, discolorations, etc.—Malachite.  

BALTIMORE and HARFORD COUNTIES  
AREA, quarries in inferior deposits of fibrous serpentine—Chrysotile asbestos.  

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

CARROLL COUNTY  
AREA, W part of Co. and E part of Frederick Co., in limestone exposures—Galena.  
ELDERSBURG, N 1½ mi.: ① at the Monroe prospect dumps—Azurite and Malachite; ② 1 mi. E of Monroe prospect, on both sides of Rte. 32, the Beasman prospect, abundant—Pyrite.  
FINKSBURG: ① E 1 mi., on both sides of US 140 and Rte. 526: (a) the Patapsco Mines—Cobalt and Nickel minerals; (b) 200 yds. S of Rte. 526, the Wildesen Mine—
**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**, **Calamite**, **Malachite**, **Smithsonite** and **Spalerite**.

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 ¼ mi.: (a) the Springfield Mine—**Copper** and **Iron** minerals; ③ across Piney Run to the NE, the Carroll Mine—some **Copper**, **Epidote**, **Garnet**, **Specularite** and **Iron** minerals.

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

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

**CECIL COUNTY**

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

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

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

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

Rock Springs Crossroads, N ¼ 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 ¼ mi. S of Rte. 26 on both sides of Dollyhyde 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 ⅓ mi. W of Rte. 75 on S side of Gold Mine rd., many open cut mines and pits—Azurite, Barite, Bornite, Calcite, Chalcopyrite, 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 ¼ 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.
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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.

MARRIOTTTSVILLE: 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.

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

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

MONTGOMRY COUNTY

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

BROOKFIELD, area abandoned mines—Pyrolusite.

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

ETCHISON, area mines—chrome Tourmaline.

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

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

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

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

PRINCE GEORGES COUNTY

AREA, exposures of the Potomac fm.—petrified wood.
BELTSVILLE, (a) old area mine dumps; and (b) in stream beds to N—Hyalite opal, Quartz crystals and silicified wood.
OXEN HILL, area old mines—Pyrite.

WASHINGTON COUNTY
CAVETOWN, Cavetown Quarry, N on Rte. 66 to RR crossing, park and walk W along tracks to trail NW to Quarry—Calcite, Onyx.
HANCOCK: ① area quarries—fossils and Quartz crystals; ② S on Hwy. 522 to Pennsylvania Sand Corp. pit—Quartz.
HARPERS FERRY (Jefferson Co.), N 3 mi. on N shore of the Potomac R.—Pyrolusite.

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

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

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

BARNSTABLE COUNTY

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

BERKSHIRE COUNTY

DALTON, area mines, quarries—asbestos and talc.
HOOSAC TUNNEL, area mines—talc.
WILLIAMSTOWN, area deposits, once mined—ocher and sienna.
WINDSOR, area quarries—soapstone.

DUKES COUNTY (Martha’s Vineyard Island)

AREA, various exposures and deposits scattered over the island—alum.
GRAY HEAD: (a) in area exposures of lignite clays, and (b) on shore eroded from green-sand deposit—alum and Amber.

ESSEX COUNTY

GLOUCESTER, in Pomroy Quarry—Smoky Quartz and Amazonite.
NEWBURYPORT: ① area lead mines (make inquiry) —Chalcopyrite, Galena, Pyrite, Sphalerite, Siderite and Tetrahedrite; ② S, in area quarries (first rd. Left for 2 mi., park walk to Devil’s Den, in mine dump)—noble serpentine and Verde Antique.
PITTSFIELD, in SE part of town—green Quartz.
ROCKPORT: ① (a) area pegmatite exposures; and (b) in Cape Ann Granite Quarry—Amazonite.
ROWLEY, area fields, cuts and excavations—jasper.
STOCKBRIDGE, on Monument Mt. 3 mi. S via US 7—Smoky Quartz.

FRANKLIN COUNTY

BERNARDSTON, area mines—Hematite.
CONWAY: ① area gravel pits—agate; ② area exposures of quartz veins (once mined)—Psilomelane and Pyrolusite; ③ area quarries—Fluorite; ④ (a) in Deerfield R., and (b) in breccia in SE part of town—jasper.
DEERFIELD: ① area basalt sills—agate nodules; ② area quarries—Fluorite; ③ gravel beds of the Deerfield R.—agate and chalcedony.
EAST DEERFIELD, the Cheapside Quarry—Amethyst, chalcedony geodes and Prehnite.
GREENFIELD, area mines—Chalcopyrite.
LEVERETT, area mines—Chalcopyrite.
MONTAGUE, area mines—Chalcopyrite, Hematite.
NORTHFIELD: ① area quarries—Fluorite; ② area pegmatite exposures (mines, prospects, pits) —Garnet and Golden Beryl; Northfield Mt., area deposits, material suitable for cutting—Garnet.
ROWE: ① area mines and mills—Talc; ② the Davis Mine—Chalcopyrite and cupriferous Pyrite.
WARWICK, area mines—Hematite.
ZOAR, area mines and mills—Talc.

HAMPDEN COUNTY
BLANDFORD, area pegmatites and quarries—Beryl and Feldspar.
CHESTER: ① area deposits—Garnets (fine crystals); ② area old emery mines—Diaspore, emery (impure corundum), jasper and Pyrrhotite; ③ three area outcrops of serpentine—Chromite; ④ in W branch of Westfield R.—jasper.
MONTGOMERY, area mines—Galena.
NORWICH, area pegmatite outcrops (quarries, prospects) —gem Beryl.
RUSSELL, area deposits—Garnets (as fine crystals).
SPRINGFIELD, W on US 20, between town of Westfield, the Lane Quarry—Amethyst, Datolite and Prehnite.
WESTFIELD, Atwater Quarry—serpentine

HAMPSHIRE COUNTY
AMHERST: ① area gravel pits—agate; ② Lane Trap Rock Quarry on Hwy. 116—Amethyst, Prehnite and Datolite.
CHESTERFIELD: ① area deposits, pegmatites and quarries—gem Beryl, Kyanite and Staurolite; ② N of meetinghouse 1 mi. on old Searle farm—Rhodonite and Kyanite.
CUMMINGTON: ① area mine in Silurian schist exposure, as fine gemstone material long mined for ornaments—Rhodonite; ② Forge Hill, S 6 mi., area—Ankerite, Garnet, Quartz crystals, Rhodochrosite and Rhodonite.
GOSHEN: ① area pegmatite outcrops—gem Beryl; ② N 80° W 1½ mi., a pegmatite dike 300 yds. N of the N end of Lily Pond—Emerald, Goshenite (colorless beryl), Smoky Quartz crystals and Tourmaline.
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.
NORTHAMPTON, 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).
Massachusetts

PLYMOUTH COUNTY
  MARSHFIELD, on beach—jasper pebbles.
  MIDDLEBORO, in vein running N from Rochester to Middleboro and SW to Fairhaven—agate and chalcedony.

WORCESTER COUNTY
  BOLTON: ☺ E 2 mi., a limestone quarry—Scapolite (crystals, massive, pink); ○ E 2¼ mi. in dump of Bolton Lime Quarry (fee)—Scapolite.
  FITCHBURG, in pegmatite in W side of Rollstone Hill—Beryl.
  HUBBARDSTON, area mines (for copperas)—Pyrite.
  ROYALSTON, N 68° E 2½ mi., at Beryl Hill, the Reynolds Mine (most productive locality in state for blue and yellow gem quality material)—Beryl, Smoky Quartz crystals and Muscovite mica.
  STERLING, area exposures of micaceous slates—Chalcopyrite and Siderite.
  STURBRIDGE, area mines in gneiss—graphite.
MICHIGAN

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

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

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

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

The agates are generally small but richly banded and quite colorful. An occasional large nodule may be found, as witness the 17 lbs. prize reported from Keweenaw Point. They represent a subvariety of the Lake Superior type agates and 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.

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*.

GOGBIC COUNTY

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

HOUGHTON COUNTY

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

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

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

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

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

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

HOUGHTON & KEWEENAW COUNTIES

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

HURON COUNTY

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

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

SEBEWAING, area coal mines—*Marcasite*.

IOSCO COUNTY

ALABASTER, area quarries—*alabaster, Gypsum*.

NATIONAL CITY, area quarries—*alabaster*.

TAWA CITY, N, in gravel pits, finest in state—*Quartz* crystals.
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, Adularia, chalcedony, chert, jasper, Thomsonite.
   MOHAWK, area Copper mines—Azurite, Algodonite, Bornite, Chlorastrolite, Chrysocolla, Domeykite, native Copper, Malachite.

KEWEENAW, HOUGHTON & ONTONAGON COUNTIES
   KEWEENAW PENINSULA AREA, all regional Copper mine dumps (very many)—Ankerite, Calcite, Chlorastrolite, native Copper, Silver and Copper-Silver, Datolite, Domeykite, Epidote, Laumontite, Prehnite, Quartz crystals, Tenorite with Chrysocolla.
MACKINAC COUNTY
ST. IGNACE, NW 10 mi., at Pointe Aux Chenes, area quarries—**Gypsum.**

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

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

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

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

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

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

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

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

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

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

ONTONAGON COUNTY
AREA, S and SW part of Co. adjoining Houghton Co., as a southward extending mineral belt, such mines as the Lake, Mass, Adventure, Michigan and Victoria—**Copper minerals,** native **Copper & Silver:** ① Lake and Algohah 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 ¼” to 2” in dia. (with an occasional nodule weighting several pounds) and containing high grade gem quality throughout. Three forms are recognized: eye agates, an onyx-like banded agate, and fortification agate that resembles the famed Fairburn agates of South Dakota. Practically every glacial moraine of drift deposit, every gravel bank and stream bar, every lake beach, quarry, excavation, and gravel pit in the entire state yields up a surprising abundance of these eagerly sought after gemstone.

BLUE EARTH COUNTY

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

CARLTON COUNTY

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

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

CHIPPEWA COUNTY

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

COOK COUNTY

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

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

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

CROW WING COUNTY

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

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

FARIBAULT COUNTY

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

FILLMORE COUNTY

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

GOODHUE COUNTY

RED WING, area and regional quarries, gravel pits, stream beds, 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 ½ mi. to the dam parking area), best under RR bridge in schist outcrops—Garnets, Staurolites; ④ Charles Lindbergh State Park, in area stream sands—Staurolites.
ROYALTON: ① W 3 mi., along both sides of the Mississippi R. (W side reached from Bowlus and Royalton)—Staurolites.

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

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

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

REDWOOD COUNTY
REDWOOD FALLS, area deposits and pits, as kaolinitized gneiss and granite—ocher.

ST. LOUIS COUNTY
BIWABIK: ① W 1 mi., the Mary Ellen Mine; ② W 2 mi., the Corsica Mine; ③ all in-between stream gravels, rd. cuts and cut banks, and all abandoned mine waste dumps—Lake Superior agates, Iron minerals, Mary Ellen jasper and other jaspers. These minerals are found in all regional outcrops of the Mesabi Range Sudan formation.
ELY, SW, Vermillion Range regional creeks, washes, breaks, etc.—gem jasper, Quartz crystals, chalcedony.
EVELETH, entire region WSW for 50 mi. to Grand Rapids in Itasca Co., mainly along US 169 but including side rds. all mine dumps—Lake Superior agates, Iron minerals, jasper.
FLOODWOOD, area mine dumps—Lake Superior agates, Garnets, Greenalite, Magnetite, Marcasite, Minnesotaitae, 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 gravelly shores of a boat harbor (on Mississippi R.) just behind the Northwestern shops—agates; ⑥ the Bronk quarry, from Hwy. 14 & 61, 2 mi. W on Hwy. 14—dog-tooth Calcite, Dolomite, Goethite, Hematite, Marcasite, Pyrite.
MISSISSIPPI

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

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

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

BENTON, LAFAYETTE, MARSHALL, 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).
PA DEN, area exposures of the Tuscaloosa formation—Amber.
WAYNE COUNTY

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

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

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. Francois 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 bronzey cockcomb Marcasite, delicately curved flesh-pink colored Dolomite, honey-colored Calcite, and the ever-popular deep ruby-red massed crystals of
Missouri

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

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

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

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

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

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

**BENTON COUNTY**
LINCOLN, ⊙ area quarries, rd. cuts, gravel pits, etc.—chalcedony, gemmy chert (Mozarkite), jasper; ⊙ 4 mi. E—Galena.
WARSAW: ⊙ all area of low hills along the W edge of the Ozark Uplift, and ⊙ 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, Melanerite.
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, Melanerite, Pyrite; ③ N at Finger Lake State Park (a former strip mine) Aragonite, Copiapite, Gypsum, Halotrichite, Marcasite, Melanerite, 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, Glaucnoite, Limonite, Marcasite, Microcline, Muscovite, Opal, Plagioclase, Pyrite, Sphalerite, Tourmaline, Tridymite.

CAPE GIRARDEAU COUNTY

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

CARROL COUNTY

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

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

CHARITON COUNTY

DALTON, extensive area quarries—tripoli.
SALISBURY, in numerous exposures of coal measures—Gypsum.

CLARK COUNTY

ALEXANDRIA, WAYLAND, regional Cr. and river banks—St. Francisville geodes. FOX CITY: ½ mi. N of the Old Iron Bridge on the NE bluff of the river—large Quartz geodes, pink and black dog tooth Calcite geodes (see map next page).
KAHOKA: ① area shale outcrops along Fox R., abundant—geodes; ② in banks of all tributary streams—geodes.
ST. FRANCISVILLE: ① base of all bluffs along the Fox R.—gemmy chert, Quartz crystal geodes; ② in banks of Weaver’s Branch, abundant—geodes (and lined with brilliant crystals of Aragonite, Barite, pink Calcite, Chalcopyrite, Dolomite, Fluorite, Goethite, Honessite, Malachite, Marcasite, Millerite, Pyrite, Pyrolusite, Quartz, Smithsonite, Siderite and Sphalerite) see map next page.
COLE COUNTY

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

COOPER COUNTY

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

CRAWFORD COUNTY

BOURBON: ① 10 mi. SE, the Bleeding Hill mine (1.4 mi. NW of the Hinch mine)—Copper, Cuprite, Goethite, Pyrite; ② the Hinch mine, a filled sink iron mine 10 mi. SE—Copper, Cuprite, Limonite, Hematite, Malachite, Marcasite; ③ the Hobo mine, a filled sink iron mine 5.5 mi. SE—Asbolane, Chalcanthite, Chalcopyrite, Hematite, Malachite, Marcasite, Melanoterite, 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, Chalcopyrite, Goethite, Metatorbernite (as thin plates on joint surfaces in the fire clay).
LESLIE, area mines, the Leslie mine, 2.5 mi. SW—Ankerite, Calcite, Chalcanthite, Goethite, Hematite, Marcasite, Pyrite, Quartz (colorless & Amethyst).
MORRELTON, ST. CLAIR, area mines—Barite.

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

STANTON:
① the Ruepple Iron Mine, 2 mi. NW—Amethyst, Copiapite, Goethite, Hematite, Marcasite, Melanerite, 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, Melanerite, Pisane, Pyrite and Quartz; ③ the Kelsey mine (Anaconda, Beulah and Pickles shafts), an iron filled sink mine 2 mi. NE—Barite, Goethite, Marcasite, Pyrite.

SULLIVAN:
① area mines, (a) Copper Hollow mine, 3 mi. NE—Azurite, Chalcocite, Chalcopyrite, Chalcotrichite, native Copper, Cuprite, Hematite, Malachite, Pyrite; (b) the Silver Hollow mine, 4.5 mi. E—Hematite, Malachite, Quartz; ② especially Pea Ridge Iron Ore Mine, in several ore zones—Most common Actinolite, Apatite, Bornite, Chalcopyrite, Chlorite, Hematite, Magnetite, Monzonite, Pyrite, Quartz; Less common massive Barite, Biotite, Calcite, Epidote, Fluorite, Muscovite, Orthoclase, Sandine, 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: ① area rd. cuts, banks, excavations—chalcedony, gemmy chert; ② the Peterson mine, between Hermitage and Preston—Galena, Sphalerite.
PITTSBURG, the Dist. 2 mi. S, includes Big Ten and Little Bachelor mines—Sphalerite.

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

IRON COUNTY
ANNAPOLIS: ① the Annapolis mine, 1.4 mi. E—Galena; ② Annapolis Roofing Granule Plant, 0.7 mi. S, in rhyolite porphyry—Feldspar, Quartz, Piemontite (as radiating sprays of needles in joints).
GRANITEVILLE: ① Sheahan Quarry, 0.5 mi. W—Actinolite, Apatite, Beryl (common blue), Fluorite, Galena, Hematite, Magnetite, Molybdenite, Orthoclase, Pyrite, smoky Quartz, Rutile, Topaz, Zircon; ② Schnider’ granite quarry, I mi. NE, in granite pegmatite—Anglesite, Barite, Chlorite, Fluorite, Hematite, Galena, Gypsum, Goethite, Melanterite, Pyrite, Saponite.
IRONTON: ① Cuthbertson Mt.: (a) regional mines—Hematite and other Iron minerals, Pyrolusite, Psilomelane; (b) small abandoned mines and prospects—Braunite, Hematite, Psilomelane; ② S near Ketcherside Gap and Copper Garnet prospect—Chalcopyrite, Copper, Epidote, Andradite Garnet, Malachite; ③ Crane Mountain South, along SW face in cliffs in Precambrian trachyte porphyry as vein fillings—Chlorite, Clinozoisite, Epidote, Hematite, Quartz and Sericite.
PILOT KNOB: ① surface mine 1 mi. E on top of Pilot Knob Mt.—Actinolite, Barite, Calcite (fluorescent), Epidote, Feldspar, Fluorite, specular Hematite, Lazulite (as microscopic crystals in serpentine), Molybdenite, Titanite, Zoisite; ② the Pilot Knob mine, just west of the surface outcrop, at the foot of Pilot Knob Mt. (an underground mine closed in 1980)—Baddeleyite (fluorescent – green), Barite, Calcite (fluorescent - red),
Chalcopyrite, Chondrodite (fluorescent - yellow), Dolomite, Fluorite, Galena, Goethite, Hematite, Lazulite, Magnetite, Pyrite, Quartz, serpentine, Talc; 3 Shephard Mountain, just W—Fluorite, crystals, Hematite, Magnetite, Quartz in cavities.

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

JASPER COUNTY

JOPLIN DISTRICT (Tri-State Dist. MO mining towns of Alba, Carterville, Carthage, Duenweg, Joplin, Neck, Reeds, Sarcoxie, Thoms Station, Webb City), all great regional mines—Allophane, Aluminite, Anglesite, Apatite, Aragonite, Aurichalcite, Azurite, Barite, Bornite, Calcite, Caledonite, Cerussite, Chalcocite, Chalcopyrite, Chrysocolla, Copiapite, Covellite, Cuprite, Diadochite, Dolomite, Enargite, Epsomite, Galena, Glaucodot, Goslarite garnet, Greenockite, Gypsum, Hematite, Hemimorphite, Hydrozincite, Jarosite, Lanarkite, Leadhillite (fluorescent), Linarite, Luzonite, Malachite, Marcasite, Melanterite, 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, Dolomite, 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 Watson quarry, N of town—Calcite, Chalcopyrite, Malachite, Millerite, Pyrite, Quartz, Sphalerite.

MACON COUNTY

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


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, Chalcopryrite, 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—Chalcopryrite, 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, Chalcopryrite, 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, Chalcopryrite, 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.
GRADOIS 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.
GRANOBY (8 mi. NE of Neosho): ① area mines—Anglesite, Aurichalcite, Calcite, Cerussite, chert, Covellite, Dolomite crystals, Calamine, Enargite, Galena, Goslarite garnet, Greenockite, Hematite, Hemimorphite (as the principal ore), Hydrozincite, Leadhillite, Malachite, Marcasite, Mimetite, Pyrite, Pyrolusite, Pyromorphite, Quartz crystals, Siderite, Smithsonite (as a principal ore, some fluorescent), Sphalerite; ② the Beer Cellar Mine, in cavities in Galena—also Leadhillite (fluorescent).
RACINE, SENECA, extensive area quarries—tripoli.
WENTWORTH, area mine dumps—Lead-Zinc minerals, Pyrite, Sphalerite.

NODAWAY COUNTY
AREA, along the Dog Creek in Calcite veins in limestone—Calcite and Sphalerite enclosed in Calcite.

OSAGE COUNTY
AREA, in diaspore clay deposits—Diaspore, Gibbsite, native Copper.
META, in a filled sink iron deposit 1 mi. SW—Calcite, Hematite, Quartz (Amethyst and colorless), Sphalerite.
Missouri

OZARK COUNTY
ELIJAH, the Alice Zinc mine, 5 mi. N of Bakersfield and 2 mi. SE of Elijah—Dolomite, Greenockite, Pyrite, Quartz, Smithsonite, Sphalerite.
GAINESVILLE, N on Rte. 5 to Timbered Knob, area—gemmy chert (white with yellow bands).

PERRY COUNTY
HIGDON, Higdon mine, at the Madison-Perry Co. line, 1.5 mi. NE, a partially developed outlying deposit of the Old Lead Belt (a Doe Run mine)—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.

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.
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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.: ➊ S on KK from Bixby, Iron Co. Brushy Creek Mine and farther S Fletcher Mine; ➋ from jct. of Hwy. 72 and B, S on B, Sweetwater Mine (see p. 222)—*Bornite, Bravoite, Chalcocite, Chalcopyrite, Covellite, Enargite, Galena, Malachite, Marcasite, Millerite, Polydymite, Pyrite, Siegenite, Sphalerite, Wurtzite.*

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

SHANNON COUNTY
  EMINENCE: ➊ 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*; ➋ 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, Siegenite, Sphalerite, Smithsonite**.

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

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

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

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

**ST. LOUIS COUNTY**

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

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

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

LEMAY, Ruprecht quarry, on Mt. Olive—**Barite, Calcite, chalcedony, Dolomite, Fluorite, Millerite, Pyrite, Sphalerite**.

**STE. GENEVIEVE COUNTY**

AVON: ① Avon mines, about 0.5 mi. NE—**Barite, Calcite, Galena, Goethite**; ② the Avon diatreme (and other area diatremes), about 80 ultramafic diatreme within a 75 sq. mi. area in the SW part of the Co., type location is on Hwy. 32, 1.2 mi. E of Rte. AA—**Apatite, Augite, Biotite, Calcite, Chalcopyrite, Chlorite, Chromite, Epidote, Galena, Garnet, Hornblende, Magnetite, Marcasite, Melilite, Olivine, Perovskite, Phlogopite, Pyrite**, smoky **Quartz, Siderite, Marcasite, Xonotlite**.

CORNWALL, area mines—**Azurite, Bornite, Calcite, Chalcocite, Cuprite, Malachite**.

MILLER: ① the Dobschuetz deposit (1.5 mi. SE), and ② the Pratte deposit 1 mi. E of the Dobschuetz—**Orthoclase**.

STE. GENEVIEVE, area Cornwall copper mines—**Bornite, Calcite, Cerussite, Chalcocanthite, Chalcocite, Chalcopyrite, Chrysocolla, Cuprite** (as red massive tile ore), **Dolomite, Enargite, Fluorite, Galena, Goethite, Gypsum, Malachite, Marcasite, Quartz, Pyrite, Smithsonite, Sphalerite, Tenorite**.
STODDARD & DUNKLIN COUNTIES
DEXTER, S along both sides of Rte. 25 to Malden in Dunklin Co., and in all regional gravel pits and stream beds—

chert, fortification agate (blue, gray, pink, white).

SULLIVAN COUNTY
MILAN, in limestone—Barite crystals.

TEXAS COUNTY
HOUSTON, the Murphy barite mine, W of town—Barite crystals (white, blue), Calcite, Limonite.

WASHINGTON COUNTY
COUTOIS, the Palmer mines, also to the E and NW—Anglesite, Barite, Calcite, Cerussite, Dolomite, Galena, Hemimorphite, Pyrite, Quartz and Sphalerite.
OLD MINES (village 7 mi. N of Potosi on Rte. 21), area mine dumps—Barite, Calcite, Galena, Goethite, Malachite, Marcasite, Pyrite, chert and drusy Quartz crystals.
POTOSI, the Potosi Barite dist., area deposits, pits, mines—agate, Barite crystals (there are numerous old Barite mines around such unmapped centers as Barytes, Cadet, Fertile, etc. in this Co.), Cerussite, Galena, Goethite, Pyrite, Quartz, Smithsonite, Sphalerite.
RICHWOODS, area old mines—Barite, Galena, Goethite, drusy Quartz.

WAYNE COUNTY
AREA, at Granite Knob—abundant Pyrite (in granite), Copiapite, Hyalite opal, Voltaite.
PIEDMONT, at Iron Knob, 4.7 mi. NE—Hematite.
SHOOK, the Shook Stone quarry (SE of Greenville) —Calcite, Dolomite, Limonite, Quartz.

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

MONTANA

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

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

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

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

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

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

BEAVERHEAD COUNTY

ARGENTA: 0, area mines—Lead-Silver minerals; 0 NE ½ mi., mine—Pyrophyllite.

ARMSTEAD, SW, the Anderson deposit—Chrysotile asbestos.

BANNACK, area placer mine—Gold.

DILLON: 0 area NW: (a) Frying Pan Basin, and (b) Camp Cr., regional gravel surfaces, etc.—Corundum, opalized and silicified wood; 0 NW 27 mi., the Rothschild Mine—Vanadinite; 0 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
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Mine—Talc; ① E 14 mi., in Sec. 3 & 4, T. 7 S, R. 6 W, area outcrops—Dumortierite; ② 18 mi. SW in Sweatwater Cr. on Rebish ranch—star Corundum; ③ E 13 mi. at Christenson ranch—Sillimanite.

GLEN, NW 6 mi., at Brown’s Lake, abundant mine ores—Scheelite.

HECIA (Bryant), area placers and lode deposits—Gold, Lead, Silver.

POLARIS, S toward Bannack, in gravels of Grasshopper Cr., rare—Diamond.

BIG HORN COUNTY

HARDIN, SW about 50 mi. via dirt rds. to Dryhead (cattle ranch above the Big Horn Canyon on slopes of the Pryor Mts.), a considerable area of exposures of the Jurassic Chugwater Red Beds (sandstone): ① many regional prospects—Uranium minerals; ② all area surfaces, especially along the canyon rim—agate, chalcedony, jasper, sandstone concretions, silicified coral, fossils.

BROADWATER COUNTY

AREA (old ghost mining camps): ① Confederate Gulch, placer and lode mines—Gold; ② Park (Hassel, Indian Cr.), area mines—Gold; ③ White Creek, area mines—Copper minerals.

RADERSBURG: ① area mines—Gold (veins in andesite flow), Silver (in sediments); ② the Keating Mine—Gold, Silver, Tetradymite.

WINSTON (Beaver Creek), area mines—Lead, Silver, Zinc.

CARBON COUNTY

FROMBERG, W 1 mi., coal mine—coal, Pyrite.

RED LODGE, two area mined deposits, podiform—Chromite.

WARREN, N and E in the Pryor Mts. toward Big Horn Canyon, very many scattered prospects, claims, and mines—Uranium minerals, fossils, Quartz family gemstones.

CARTER COUNTY

ALZADA, area of the Black hills, 9 good deposits—Bentonite.

CASCADE COUNTY

AREA, Narrow Gauge Gulch, a mine—Pyromorphite.

MONARCH, area pegmatite outcrops—Beryl.

NEIHART: ① area dist. mines—Galena, Polybasite, native Silver, Sphalerite; ② Big Bend deposit—Molybdenite; ③ the Hartley Mine, gemmy—green Sphalerite; ④ area S in Little Belt Mts., placers and lode veins in gneiss and diorite—Gold, Silver.

VAUGHN, area surfaces—black silicified wood, Teredo wood (filled with chalcedony).

CHOUTEAU COUNTY

WARRICK, area of the Bearpaw Mts., the Black Diamond prospect—Apatite, Augite, Magnetite.
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, Chalcopyrite, 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
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Sapphire gulches and along all tributary draws—Quartz crystals, Sapphires; ② from jct. of Hwy. 26A and Hwy. 28, right 17 mi. on Hwy. 28 to Chaussee Sapphire mine (fee) —Sapphire; Black Pine Mine—Pyromorphite, Scheelite, Stolzite (all fluorescent).

HILL COUNTY
ROCK BOY, Bearpaw Mts., in exposures of carbonate rocks—Columbite.

JEFFERSON COUNTY
BASIN, the Boulder Basin Dist.: ① regional placer and lode mines along (a) Basin, Cataract, and Lowland creeks, and (b) the upper Boulder R.—Silver, Gold (as by-product); ② N 7 mi., on Jack Cr. in Sec. 7, T. 7 N, R. 6 W—Dumortierite; ③ Mill Canyon, pegmatite outcrops—Tourmaline.
CORBIN, area mines—Arsenopyrite, Cerussite.
ELKHORN (Dist.): ① area contact metamorphic deposits—auriferous Silver-Lead replacements, Gold sulfides, Arsenopyrite, Cerussite; ② Elkhorn Peak, area mines—Hematite, Magnetite.
PIPESTONE: ① N to I-90 then W 7 mi. (to milepost 19 out of Butte), turn N for 5 mi. to (a) Homestake mining dist., area mine dumps; (b) W side of Rider Cr.—Amethyst, Quartz crystals; ② the Pohndorf Amethyst Mine (2 mi. NE of Toll Mt. picnic grounds and 2 mi. N of US 10)—Amethyst, Feldspar, Muscovite, Smoky Quartz crystals, Schorl.
WHITEHALL (Cardwell): ① area mines in Quartz veins—Galena, Gold, Pyrite, Sphalerite; ② 18 mi. NW in Hay Canyon at the Gem Queen claim—Sphene, Smoky Quartz.
WICKES, CLANCY, COLORADO (including Warm Springs and Clancy creeks and Lump Gulch): ① area placers and mines—Arsenopyrite, Cerussite, Gold; the Wilson Mine—Meta-uranocircite, Meta-zeunerite (fluorescent).

JUDITH BASIN COUNTY
UTICA, SW 15 mi., in Yogo Gulch (at foot of Little Belt Mts.), occurring in area igneous dikes intruded into limestone outcroppings on hills above the gulch—Gold, Ruby, Sapphire.

LEWIS and CLARK COUNTY
CANYON FERRY DAM, at Magpie Gulch, 1 mi. above Missouri R.—green Sapphire.
GARDINER, area mines—Arsenopyrite (with Gold).
HELENA (Last Chance Mining Dist.): ① area mines along the N contact of the Boulder batholith—Gold; ② Golden Messenger Mine (on W side of Big Belt Mts.), operated until 1942—Gold; ③ McClellan Cr., area placers—Gold; ④ Missouri R. - York (Trout Cr.) Dist., area Quartz mines, in replacements—Gold; ⑤ Sevenmile-Scratchgravel Dist., early placers with some renewed activity in the 1930's, panning for colors a seasonal hobby—Gold; ⑥ Stemple (Gould) - Virginia Cr. Dist., area mines with veins in sediments —Gold; ⑦ American Bar (long noted occurrence of gem Sapphire) —Cassiterite, chalcedony, Garnet, Gold, Kyanite, Limonite, Sapphires, Topaz; ⑧ N and SE, all gravel bars along Missouri R.—Cassiterite, chalcedony, Garnet, Gold, Kyanite, Limonite, Sapphires, Topaz; ⑨ Prickly pear Cr. in lower end of magpie Gulch: (a) Emerald Bar—Cassiterite, chalcedony, Garnet, Gold, Kyanite, Limonite, Sapphires,
Topaz; (b) the Metropolitan Bar, and (c) Spokane Bar—Gold, Sapphires;  @ NE 12 mi., the Eldorado Bar:  (a) area gravels; (b) SE 6 mi., at French Bar—Cassiterite, chalcedony, Garnet, Gold, Kyanite, Limonite, Sapphires, Topaz;  @ very many other gravel bars, benchlands, and tributary draws and streams—Cassiterite, chalcedony, Garnet, Gold, Kyanite, Limonite, Sapphires, Topaz.

LINCOLN, area placers and some lode mines—Gold.
MARYSVILLE (Ottowa) - Silver Cr. (includes Bald Butte S of the main part of the dist., the Drumlummom Mine as main producers)—Gold, Silver.
RIMINI-TENMILE Dist., area mines—Lead, Silver, Zinc.

LINCOLN COUNTY
LIBBY (Snowshoe):  ① SW 4 mi., the Rainy Cr. Dist., mines in Quartz veins associated with Iron and Copper sulfides—Aegirite, Tremolite, asbestos, Vermiculite;  ② S 20 mi., a small area containing mines and prospects in veins—Gold;  ③ SE 35 mi., mines in massive vein cutting Belt argillites—Barite. (All mines and prospects around Libby yield Gold, Lead and Silver also).
Sylvanite-YaaK, area mines and prospects along the Yaak R. and surrounding tributaries—Gold, Pyrite, etc.

MADISON COUNTY
AREA:  ① Cow Camp, Elk Mt., Finnegans 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—Amandrite 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
CARBELL, 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.
GOLD CREEK, 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, Ancylite, Fergusonite (with Euxenite and Fersmite), Monazite.

HAMILTON, W in pegmatite outcrops of the Bitterroot Mts.—Fergusonite.

SULA: ① area pegmatite outcrops; and ② N 2 mi., pegmatites—Beryl (green, prisms to 3" long).

SILVER BOW COUNTY

AREA: ① Brown's Gulch, alluvial gravels—Sapphires; ② Highland Dist. (ghost town of old placers, Veins, chimneys, and contact metamorphic deposits) —Gold.

BUTTE: ① dumps and underground workings that are open to visitors of the Alice, Allie Brown, Lexington, Rainbow, and other city mines—Bornite, Pisanite, Rhodochrosite, Rhodonite. The city mines, many reaching the 4,000' level, are interlaced with more than 3,000 miles of tunnels on +100' levels so that visitors and miners may travel from one part of the city to another entirely underground, entering and exiting via scores of shafts. The products produced were primarily Copper, with by-products of Lead, Gold, Silver and Zinc. ② the Emma Mine, massive—Rhodochrosite; ③ E, along the foothills of East Ridge, numerous mines—Chrysocolla and other Copper minerals; ④ S, in the Gravelly Range, deposits—silicified rhyolite (onyx); ⑤ Summit Valley, area placers and complex veins in Quartz monzonite—Gold.

MELROSE-GREGSON, extreme SW corner of Co., area mines—Bentonite.

WALKERVILLE, upper 4 mi. of Dry Cottonwood Cr. starting 12 mi. NW of Butte, area stream gravels—Gold, Sapphires.

STILLWATER COUNTY

COLUMBUS, SW 42 mi., the Mouat Mine—Lead, Silver.

YELLOWSTONE COUNTY

BILLINGS to CUSTER, all gravel bars of the Yellowstone R. (including to W boundary of Co. W of Laurel)—Montana moss agate, chalcedony, chert, jasper.
NEBRASKA

This rectangular Great Plains state rises 4,460’ east to west, from 840’ to 5,300’, yet so imperceptibly. The highest elevation, 5,424’, almost straddles the extreme southwestern corner of Kimball Co. where it overlooks both Colorado and Wyoming. The subsurface rock strata of the entire state are all undisturbed sedimentaries: sandstone, limestone, shale and clay, with the oldest formation lying in the southeastern corner where Pennsylvanian rocks crop out. These formations resulted from Tertiary erosional debris spreading out from the Rocky Mountains as they rose during the Laramide revolution of 100 million years ago that closed the Mesozoic era. Thus, as one travels westward across Nebraska they find successively younger formations appearing in cut banks, in draws and breaks along regional rivers, and outcroppings through the Quaternary gravel surfaces.

Greatly eroded sandhills fan out across the west and northwest counties, while the farthest west reaches rise to the high, arid sagebrush plains of eastern Wyoming, disclosing spectacular bedrock formations. Northwestern Nebraska contains most of the gem fields in the state, inasmuch as both the Black Hills of South Dakota and the scenic Badlands thrust long spurs into this part of the state. In this rough, uncurried region are found the famed Fairburn agates, brilliantly fluorescent chalcedonies and jaspers that rival the color of the rainbow.

The western Nebraska-South Dakota borderland from Sheridan Co. to the Wyoming line is good rock hunting country, especially along the southern slopes and ridges of the Pine Ridge Escarpment and along Whiteclay Creek near the Sioux Indian community of the same name in Sheridan Co. The extreme northwestern counties of Sioux and Dawes have many localities for fascinating things to hunt for such as: concretions, Barite and Celestite crystals, chalcedony rosettes, agates, jasper, fossil plants and vertebrate remains. The breaks of the White River north of Crawford in Dawes Co. and the rather extensive rock beds east of the Orella railroad sta. ranks among the finest collecting grounds in the Midwest for gemstone materials.

An extensive collecting region of agatized and opalized wood for high gem quality is the Sandhills country around Valentine in Cherry Co., extending along the Niobrara River eastward into Brown Co. The Sandhills Museum in town is well worth the rock hunter’s visit. Draws, cuts and breaks in the hills along the Minnechaduza Creek and the Niobrara, as well as all tributary canyons, creeks, and washes, reveal an abundance of gem quality petrified wood, often occurring as huge stone logs lying on the surface of the ground. A great deal of agatized and opalized mastodon ivory in pastel colors weathers from the same regional formations.

Eastern Nebraska has few gemstone localities, but quarries, gravel pits and other excavations throughout the more settled counties will pay to investigate for geodes, chert nodules, fossils, Calcite crystals, Marcasite and Pyrite cubes. The area around the confluence of the Loup River with the Platte River in Platte Co. is well known for its agates, chalcedony, jasper and gem petrified wood.

BUFFALO COUNTY

KEARNEY, area gravel bars and pits along the Platte R., especially to the W of town—agate, chalcedony, jasper, petrified wood.

CASS COUNTY

WEENING WATER, SE, on rd. to Nehawka, in the Snyderville Quarry—chalcedony, jasper, fossils.
CHERRY COUNTY

VALENTINE, in the Sandhills county along the Niobrara R. and Minnechaduza Cr.: ① regional cuts, draws, hillside surfaces—\textit{agatized} and \textit{opalized wood}, \textit{agate}, \textit{jasper}; ② in draws and washes and gravel beds of Spring Cr. and the Keya Paha R. —\textit{agatized} and \textit{opalized wood}, \textit{silicified mastodon tusks}, \textit{arrowheads}, \textit{flaked points} (of gem \textit{agatized wood}).

CHEYENNE, DEUEL, GARDEN & KEITH COUNTIES

AREA, between North and South Platte rivers and in all tributary branches and creeks: ① especially along Lodgepole Cr., ② all region S of Sidney to Ogalla, ③ along banks of the South Platte R., ④ south banks of the North Platte R., in regional sand pits, breaks, rd. cuts, etc. gem quality—\textit{agatized} and \textit{opalized wood}.

DAWES COUNTY

CHADRON, in N part of Co. and as far W as Crawford and Harrison—\textit{chalcedony} (some blue).

CRAWFORD: ① N, in breaks of the White R. reached by numerous ranch rds., choice—\textit{Fairburn agates}; ② all regional Federal grazing lands—\textit{Fairburn agates}, \textit{jasper}, \textit{petrified wood}, etc.; ③ NW on Rte. 2 to the Orella RR Sta.: (a) N 1 mi., turn E on ranch rd. and NW 2 mi. to a lone butte, one of the best collecting area in the Midwest states—\textit{Fairburn agates}, \textit{jasper}, \textit{carnelian}, \textit{chalcedony nodules} (many fluorescent), \textit{opalized} and \textit{agatized wood}, \textit{silicified fern fossil} etc.; (b) S from Orella ½ mi., turn W across RR tracks on ranch rd. for 3 mi. into steep breaks—\textit{Fairburn agates}, \textit{jasper}, \textit{petrified wood}, etc.; ④ N 20 mi., all area of the Little Bad lands—\textit{vertebrate fossil} remains; ⑤ Pine Ridge, area—\textit{Quartz} concretions, \textit{agates}, \textit{petrified wood}, \textit{fossils}, etc.

DAWES & SIOUX COUNTIES

AREA, the entire region embraced by these two adjoining NW Cos., in gravel cuts, cut banks, breaks, draws and washes, gullies, hill slopes, etc.—\textit{chalcedony roses}, \textit{Celestite} crystals, \textit{fossils} (plant & animal), \textit{concretions}, \textit{agatized} and \textit{opalized woods}, etc.

DAWSON COUNTY

GOTHENBURG, in sand pits—\textit{petrified palm wood}.

DEUEL COUNTY

CHAPPELL, all regional surfaces, breaks, etc.—\textit{Fairburn agates}, \textit{jasper}, \textit{chalcedony}, \textit{opalized} and \textit{agatized wood}.

DOUGLAS COUNTY

AREA, Platte R. gravels and all regional gravel pits—\textit{agate} (banded, moss), \textit{chalcedony}, \textit{chert}, \textit{flint}, \textit{moss opal}, \textit{agatized} and \textit{opalized wood}. 

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OMAHA, W to the Platte R., then S and E to Plattsmouth in Cass Co., both sides of the Platte R. for about 75 mi., very many locations with abundant specimen in gravel pits and bars along the river—agates (banded, moss), gemmy chert, jasper, petrified wood. WATERLOO, in Lyman-Ritchie gravel pit to SW—agate.

FURNAS COUNTY
BEAVER CITY, red and green material in the Niobrara chalk deposit—chert.

GAGE COUNTY
WYMORE (and Blue Springs): ① all regional gravel pits and quarries—Calcite, Quartz crystals; ② SE 3 mi., quarry on E bank of the Blue R.—geodes (lined with Quartz or rare blue Celestite); SW of Holmesville, quarry on the Blue R.—geodes, flint, fossils.

JEFFERSON COUNTY
FAIRBURY, regional gravel pits and stream gravels—agate, chalcedony, jasper, petrified wood. STEELE CITY, area gravel pits, quarries, and stream gravels—agate, chalcedony, jasper, petrified wood.

MORRIL COUNTY
ANGORA, 2 mi. E of Angora Hill on ranch rd., abandoned mine dump—fluorescent moss opal nodules (in limestone coated with white Calcite), opal arrowheads. BAYARD: ① area gravel pits, sandhills, stream gravels, etc.—agate, chalcedony, chert, flint, fossils; ② in gravel beds along the N side of the Platte R. all the way to lake Guernsey, WY—agate, petrified wood.

NANCE COUNTY
FULLERTON, in local gravel pits—agate, petrified wood.

NEMAH COUNTY
AUBURN, gravel beds of the Little Nemaha R.—agate (common, moss), chalcedony, jasper, petrified wood (cycads).

OTOE COUNTY
PALMYRA, in gravel pits here and at Dunbar—moss agate.

PLATTE COUNTY
PLATTE CENTER, in gravels and pits surrounding the confluence of the Loup and Platte rivers—agate, chalcedony, jasper, silicified wood.
Nebraska

RED WILLOW COUNTY
McCOOK, in Republican R. basin as far E as Franklin—pastel jasper.

RICHARDSON COUNTY
HUMBOLDT, along Nemaha R.—agate.

SAUNDERS COUNTY
ASHLAND, in sand pits along Platte R. and downstream to Louisville and Laplatte—agate, petrified wood.

SCOTTS BLUFF COUNTY
SCOTTSBLUFF: ① N 8 mi., in rd. cut on Hwy. 87, gemmy—petrified wood (opal replacement, fluorescent); ② S, in Scottsbluff Badlands—concretions, fossils.

SHERIDAN COUNTY
HAT SPRINGS, area gravels, cut banks, breaks, etc.—agate, chalcedony, jasper, petrified wood.
WHITECLAY: ① area gravel bars, along Whiteclay Cr.—Fairburn agates, petrified wood; ② entire region W to the WY line (on both sides of the NB-SD border), all breaks, badlands, cut banks, erosional features—Fairburn agates, jasper, chalcedony, opalized and agatized wood., fossils.

SIOUX COUNTY
AREA, NE corner of Co., take W trending rd. 3 mi. S of Ardmore, SD, turn S and W for 9 mi. to area of Montrose on Hat Cr., area gravel beds, cut banks, etc.—agates, jasper, fossils, etc.
AGATE (20 mi. S of Harrison, the Agate Fossil Beds National Monument, area outside—agates, jasper, chalcedony, opalized and agatized wood., fossils, etc.
HARRISON, E about 18 mi. toward Crawford on US 20 (about halfway to the Dawes Co. line), in extensive sandy rd. cut—sand spikes.
ORELLA, N 5 mi. in Waldron Hills—agate.
NEVADA

This large semi-triangular state, lying entirely within the Great Basin of interior drainage, is cut off from the moisture of the Pacific Coast by California’s Sierra Nevada Range. Nevada’s watercourses are few and dust-dry. The state itself is extremely arid. It is characterized by scores of short high, greatly eroded Paleozoic mountain ranges that mostly trend north-south. Precambrian and Cambrian crystalline rocks dominate the state’s formations and contain extraordinary concentrations of most of the commercially Salable metallic and nonmetallic ore minerals.

The mining of ore minerals and gemstones in Nevada began during pre-American times, when primitive Uto-Aztecan Indians fist dug for Turquoise, later followed by Mexican Indians and early Spaniards seeking Gold. Ever since the first California bound pioneers struggled across the state’s barren wastes and threaded their way through arid valleys, alkali sinks and around the ragged ranges, Nevada has been dominated by its ores: Antimony, Arsenic, Copper, Gold, Iron, Lead, Magnesium, Mercury, Molybdenum, Silver, Tungsten and many others. Nevada’s fame was guaranteed by such great strikes as Virginia City’s Big Bonanza that enriched the Silver Kings; the 1900 discovery of the rich Silver veins at Tonopah; the lucky find of Gold at Goldfield in 1902 that made the city the richest gold camp on earth; and the enormous open-pit concentrations of Copper excavated from Ely and Ruby in White Pine Co. after 1868.

The enormously rich Silver mines of Virginia City and later Aurora (in present day Mineral Co. - originally part of Esmeralda Co.) not only added hundreds of millions of dollars in raw wealth to the American economy of the 19th century but paid for much of the Union’s expenses for the Civil War, as well as resurrecting San Francisco after the earthquake and fire of 1906. Goldfield’s tremendous outpouring of Gold between 1902 and 1912 caused the world’s financiers to fear for the Gold Standard, because the yellow metal was seemingly to become as common as Iron.

Although Nevada’s focus is still basically on commercial ore minerals, there are almost numberless tapped and untapped sources for gems and gemstones: quartz family minerals, pegmatite crystals, Turquoise, agatized and opalized wood, and some of the world’s most valued opal. In the following list of gem and mineral localities, commercial ore minerals are not generally named, only the metals constituents. Few unusual, rare, or exotic ores are found; the collector who is at all familiar with metallic ores, especially of the base metals, will have little difficulty in recognizing the individual mineral species on the old mine dumps from the names of their principal metals. Thus when Copper is listed, one would expect to find such minerals as Azurite, Bornite, Chrysocolla, Malachite, and so on along with interesting gangue minerals, Marcasite, Pyrite, Quartz and the usual assortment of associated minerals.

As a personal note of interest, this is the state where my wife and I were married.

CHURCHILL COUNTY

AREA: ① far E part of Co.: (a) Dry Lake area, on slopes of the Clan Alpine Mts., old camp of Alpine (Clan Alpine = 79 mi. E of Fallon), veins and shear zones in Tertiary volcanics—Gold, Molybdenum and Silver minerals; (b) old camp of Bernice, veins in sedimentaries—Gold and Silver minerals; ② extreme N central part of Co., at Mineral Basin (= 25 mi. SE of Lovelock in Pershing Co.), area mines—Iron and Mercury minerals; ③ far NW part of Co., reached N from Fernley in Lyon Co.: (a) NE 15 mi., old camp of Leete, veins in rhyolite, dacite and andesite—Gold, Lead and Silver minerals; (b) NE 23 mi., old camp of Fireball—Gold.

DIXIE VALLEY (≈ 37 air mi. NE of Fallon reached via dirt rds. from Frenchman on US 50): ① NW to old camp of Buena Vista, mines in Triassic sedimentaries cut by granite
intrusives—Iron minerals; ② old camp of White Cloud (Coppereid), replacement and contact metamorphic veins in Triassic sedimentaries cut by granite and diorite—Copper, Iron, Silver and Zinc minerals.

EASTGATE (on Rte. 2, 5 mi. E of US 50 and about 60 mi. E of Fallon): ① area mines with veins in broken Quartz and Talc—Gold, Lead and Silver minerals; ② NE, in Desatoya Mts., old camp of I.X.L. (Silver Hill), veins in granite and slate—Copper, Gold, Lead and Silver minerals; ③ SSW 18 mi. (via Rte. 23), the Gold Basin Dist., area mines with veins in Tertiary volcanics (quartz-latite predominating)—Gold.

FALLON: ① quarry 14 mi. out—wonderstone; ② E about 25 mi. on W slope of the Stillwater Range in Grimes Canyon, old camp of Copper Kettle with veins in diorite overlain by altered porphyry—Copper minerals; ③ E 30 mi., Mountain Wells (La Plata), area mines—Silver; ④ N 26 mi. on US 95, turn E on dirt rd. for 23 mi., then N to area of Pershing Co. line, mining dist. E of Humboldt Lake on W flank of Humboldt Lake Range (extending into Pershing Co.), lodes in Jurassic shales—Antimony, Lead and Silver minerals.

FRENCHMAN (on US 50 about 34 mi. SE of Fallon; a considerable mining region 20 to 30 mi. S via Rte. 31 adjoining Mineral Co. and SE via Rte. 23 in Mineral and Nye counties): ① E 11 mi. and S on Rte. 33: (a) old camp of Fairview, veins in Mesozoic sediments—Copper, Gold, Lead and Silver minerals; (b) 7 mi. S of Fairview to old camp of South Fairview, veins in Tertiary volcanics—Gold, Silver; ② E, to Chalk Mt., area mines with vein replacements in Triassic limestones—Lead and Silver minerals; ③ E 6 mi. to N trending dirt rd. (to Dixie Valley): (a) NE 3 mi. to 5-way crossroads, take NE trending dirt rd. 11 mi. to old camp of Wonder (Hercules), veins in Tertiary volcanics and lake sediments—Copper, Gold, Silver and Zinc minerals; (b) NE 3 mi. to Crossroads, then N on improved dirt rd. for 12 to 20 mi., area of old mining camps around Table Mt. (Boyer, Cottonwood, Canyon, Bolivia), veins in Triassic sediment cut by diorite—Antimony, Cobalt, Copper, Gold, Lead and Silver minerals; ④ S about 20 mi. on Rte. 31 to Shad Run, veins in quartzite—Gold, Silver, Lead.

JESSUP (on US 95 Alt., 10 mi. NW Huxley RR Sta. (White Plains) and about 35 SW of Lovelock in Pershing Co.), area mines—Gold.

LAHONTAN: ① W end of Lahontan Dam, and ② along NE shore of the Lahontan Reservoir, area surfaces—agate, chalcedony, jasper, petrified wood.

SALT WELLS (15 mi. SE of Fallon), area deposits—Halite.

SAND SPRINGS (23 mi. SE of Fallon on US 50), area mines in Tertiary volcanics intruding Triassic and Jurassic sediments—Gold, Silver.

TOY (Browns), 2 mi. S of RR section house, mine with veins in contact metamorphic zone of sediments cut by granite—Tungsten.

WHITE PLAINS (Huxley Sta.), SW 8 mi., Desert (White Plains) Mine, rich ore—Gold in Hematite gangue.

CLARK COUNTY

AREA (old mining camps not shown on contemporary maps, but on Co. topo. map: ① Bullion dist., area mines—Azurite, Chrysocolla, Malachite; ② Dike, N 1 mi., veins in Paleozoic limestones—Lead minerals; ③ Sutor, W 2 mi., mines with veins in sandstones underlying Permian limestone and on fractures and joints as patches—Carnotite, Radium oxide; ④ White Basin, area deposit, fibrous—Ulexite.

ALUNITE (Railroad Pass, Vincent; about 19 mi. SE of Vas Vegas via US 93): ① area mines with veins and stringers in igneous rocks—Gold; ② SW to Black Mt., area mines—Iron and Manganese minerals.

BUNKERVILLE (5 mi. SW of Mesquite on side rd. S of US 91): ① the Copper King Dist. (Bunkerville, Great Eastern, key West mines), veins in Precambrian gneiss intruded by basic dikes—Cobalt, Copper, Gold, Nickel, Platinum, Silver and Tungsten minerals; ②
A Location Guide for Rock Hounds in the United States

S about 15 mi., mining dist. of St. Thomas, area mines—Copper, Silver; S about 30 mi. on dirt rds., Gold Butte, area mines with replacement veins in Precambrian complex—Copper, Gold, Silver and Zinc minerals.

HENDERSON: ① S 1¾ mi. then 4⅛ mi. W to range of low hills, area surfaces—chalcedony, jasper, onyx; ② E past manganese plant a scant ¼ mi., then NE 6 mi., park and walk to hill on N—green jasper.

JEAN: ① NW 8 mi. on Rte. 53, the Yellow Pine Dist. (Goodsprings, Potosi), area mines with veins as replacements in Paleozoic sediments cut by dikes—Hydrozincite (fluorescent), Antimony, Cobalt, Copper, Gold, Lead, Nickel, Palladium, Platinum, Radium, Silver and Zinc minerals; ② SE 15 mi. to Sunset (Lyons), veins in granite—Gold.

LAS VEGAS: ① area gravels in Las Vegas Wash—Amethyst; ② SE 16 mi. via US 93 to Las Vegas Mining Dist., area mines with replacement veins in Tertiary volcanics—Manganese minerals; ③ NW 35 mi., old mining camp of Charleston, area mines—Lead, Silver and Zinc minerals.

NORTH LAS VEGAS, N 18 mi. to Gas Peak (elev. 6,943’), area mines with veins in Paleozoic limestones—Gold, Silver and Zinc minerals.

SEARCHLIGHT: ① area mines, with veins in Precambrian complex cut by quartz monazite—Copper, Gold, Lead and Silver minerals; ② W about 10 mi. on Rte. 68 to Crescent (about 6 mi. E of Nipton, CA), then 3 mi. ESE and just S of Crescent Peak, mines and prospects—Turquoise, Copper, Gold, Lead, Molybdenum, Silver and Vanadium minerals.

SLOAN (17 mi. S of Las Vegas and 2 mi. W of I-15), S 2 mi., a Tertiary rhyolite flow, coating the walls of joints—Radium oxides.

DOUGLAS COUNTY

AREA: ① extreme E side of Co.: (a) Buckskin (adjoins the W side of the Yerington mining dist. of Lyon Co. and extends SW across Pine Nut Mts. to the Mt. Siegel mining dist., best reached N from Wellington in Lyon Co.), area mines with contact metamorphic veins and placers (Triassic sediments cut by granite) —Copper, Gold, Iron and Palladium minerals; (b) toward S end of the Pine Nut Mts., area pegmatite outcrops—Thulite (pink Zoisite), Topaz; ② extreme SE corner of Co.: (a) old camp of Silver Glance (W side of the Wellington, Lyon Co. mining dist.), veins in quartz monzonite of probable Cretaceous age—Copper, Gold, Silver; (b) Topaz Lake area of S end of Pine Nut Mts., practically on CA boundary, old camp of Mountain Home (Holbrook, Pine Nut), area mines—Gold, Silver. A rough dirt rd. runs along the entire E boundary of the county along the east side of the Pine Nut Mts. Best access is from Wellington in Lyon Co.

GARDNERVILLE: ① Eagle mining dist., area mines with veins in diorite, Tertiary volcanics, and lake sediments—Gold, Copper, Silver; ② SE 4 mi., in Red Canyon (Silver Lake camp), contact metamorphic veins in Triassic sediments cut by quartz monzonite—Gold, Lead and Silver minerals; ③ ESE about 18 mi., Mt. Siegel (elev. 9,450’), area placers—Gold, Platinum.

GENOA, W, on E slope of Seirra Nevada Range, veins, replacements, placers in Triassic sediments intruded by Cretaceous granite—Copper, Gold, Silver, Platinum.
ELKO COUNTY

CARLIN: ① area pegmatite outcrops in surrounding hills—Rose Quartz; ② nearby, at the Carlin Mine (opened in 1965)—Gold; ③ NW 10 mi. at Copper King mine in Tuscarora Mts.—Turquoise (var. green Faustite).

CATLIN STATION, veins and replacements in Paleozoic sediments cut and capped by Tertiary volcanics—Gold, Silver.

CHARLESTON (95 mi. NNE of Elko via dirt rds., reached from North Fork on Rte. 51), the Copper Mt. and Cornwall mines, contact metamorphic replacement veins, placers in Paleozoic sediments cut by granite—Gold, Copper, Lead, Antimony, Platinum, Silver.

COBRE (NE corner of Co. 4 mi. SW of Loray, off Rte. 30), E, veins in quartzites and limestones (not a mining dist.)—Copper, Lead, Iron.

CONTACT (NE corner of Co. on US 93 S of ID line), area mines (Kit Carson, Porter, Salmon River), contact metamorphic replacement veins in sediments cut by granite—Azurite, Malachite and other Copper minerals, Gold and Silver.

CURRIE (SE part of Co. on US 95): ① SE 8 mi., old camp of Kinsley, contact metamorphic veins—Copper, Lead and Silver minerals; ② NE 25 mi., old camps of Delker and Dolly Varden (Mizpah, Granite mines), contact metamorphic veins—Copper, Gold, Lead and Silver minerals; ③ WSW 40 mi., Mud (Medicine) Springs, replacement veins in Permian limestones, shales and quartzites—Barite, Lead, Silver and Zinc minerals.

DEEP CREEK (68 mi. NNW of Elko on Rte. 11): ① old camp of Cornucopia, veins in Tertiary volcanics—Gold, Silver; ② area of Bull Run and Centennial Mts., old camp of Aura (Bull Run, Columbia mines), veins and placers in Paleozoic sediments cut by granodiorite—Gold, Lead, Platinum, Silver and Zinc minerals; ③ area of Lime Mt. (80 mi. N of Elko), contact metamorphic veins—Copper, Gold, Silver.

DELANO MINES (Delano, Delno), in extreme NE corner of Co. reached via dirt rds. N 34 mi. from Montello: ① area mines—Gold, Lead, Platinum, Silver and Zinc minerals; ② Elk Mt. (≈ 90 mi. SSE of Twin Falls, ID), area contact metamorphic veins—Antimony, Copper, Gold and Silver minerals.

ELKO: ① NW 5 mi., old camp of Good Hope: (a) area veins in Tertiary volcanics—Gold, Silver; (b) W 10 mi., old camp of Burner in the Burner Hills, veins in andesite—Lead and Silver minerals; ② SSW 27 mi. (12 mi. SE of Palisade) via rough dirt rd., replacement contact metamorphic veins in Ordovician limestone—Copper, Gold, Lead, Silver and Zinc minerals; ③ SE 28 mi., old camp of Lee (on the Te-Moak Indian Res.), area mines—Copper minerals; ④ NW 28 mi. via poor dirt rds., old camp of Merrimac (Lone Mt.)—Copper, Gold, Lead and Silver minerals.

FERGUSON (far E part of Co. 20 mi. SSW of Eastline on US 50 Alt.), ① SW to old camp of White Horse on SW flank of Mt. Pisgah, veins in quartz monzonite—Copper and Lead minerals; ② W to Ferguson Springs (Alleghany) on W side of the Toana Range, replacement veins in Paleozoic limestones—Copper and Lead minerals; ③ S about 20 mi. to old camp of Ferber (40 mi. S of Wendover, UT, and in extreme SE Dorner of Co.), contact metamorphic veins—Copper, Gold, Lead and Silver minerals.

HALLECK (20 mi. NE of Elko on I-80 and just S of Hwy. on Rte. 11), veins in fossiliferous limestone and shale—Lead and Zinc minerals.

JARBRIDGE (well known ghost town on dirt rd. halfway between Mountain City and Contact, and about 95 mi. S of Twin Falls, ID), area mines—Gold, Silver.

JENKINS (on rough rd. about 38 mi. SW of Tuscarora), area Rock Cr. mines—Lead and Silver minerals.

LORAY (13 mi. SW of Montello on Rte. 30), veins in crystalline limestone—Copper, Iron, Lead and Silver minerals.

MIDAS (W side of Co. on Rte. 18): ①10 mi. distant at the Rand Mine—common opal; ② SW, the Gold Circle and Summit mines, replacement veins in Tertiary...
volcanics—Gold, Mercury and Silver minerals; ① SE about 30 mi. by rough rds., old camp of Ivanhoe, veins in rhyolite flow breccia—Mercury minerals.

MOUNTAIN CITY (N Central part of Co. on Rte. 51 and just S of the ID line): ① area mines—Azurite, Malachite; ② Cope and Van Duzen mines, veins and placers in Paleozoic sediments—Copper, Gold, Lead, Silver and Zinc minerals; ③ Edgemont (Centennial) mines, veins in Paleozoic sediments—Gold, Lead and Silver minerals; ④ SE, to Island Mt.: (a) Gold Creek Mine, veins and placers—Gold, Platinum, Silver; (b) 8 mi. N of Gold Cr., in the Alder dist., area mines—Gold.

ROWLAND (Gold Basin dist. about 20 air mi. NE of Mountain City and 112 air mi. NW of Jarbridge, on dirt rd. 6 mi. S of ID line), area mines—Copper, Gold.

RUBY VALLEY (on rough dirt rd. about 55 air mi. SW of Wells on W side of Franklin Lake), the Smith Cr. mines with lenses in Paleozoic limestones—Lead, Silver and Zinc minerals.

TECOMA: ① S, at old camp of Lucin, replacement veins in Carboniferous sediments—Copper, Lead and Silver minerals; ② NNE 10 mi., mines with replacement veins in limestone—Copper, Gold, Lead and Silver minerals.

TUSCARORA (W central part of Co. on Rte. 18 about 18 mi. E of Midas): ① area mines with veins and placers in Tertiary volcanics—Gold, Lead, Platinum and Silver minerals; ② area gravels, surfaces and outcrops—Citrine, Rose Quartz, wonderstone; ③ NW 8 mi., to divide at head of Dry Cr., area mines and prospects—Gold, Silver.

WELLS: ① S and SW to Valley View (not a mining dist.), contact metamorphic replacement—Copper, Gold, Lead, Silver, Tungsten and Zinc minerals; ② SSE 15 mi. on poor dirt rd. to old camp of Tobar, N 4 mi., old camp of Lafayette—Lead and Silver minerals; ③ SSE about 40 mi. to Spruce Mt. (camp of Sprucemont on S side about 25 mi. S of Tobar), area mines with replacement veins in Paleozoic sediments—Copper, Gold, Lead, Manganese and Silver minerals.

ESMERALDA COUNTY

ALKALI SPRINGS (11 mi. NW of Goldfield), area thermal deposits as surface salts—Calcium and Magnesium carbonates, Halite, etc. (A truly desolate area with graded dirt rd. rounding Silver Peak Marsh en route to mining center of Silver Peak, all land surfaces below Bajadas rising to arid mts. coated with snow white salts.)

BLAIR JUNCTION: ① SW 4 to 8 mi. on dirt rd., Emigrant Peak (Emigrant Pass elev. 6,145’), area surfaces, draws, washes, etc.—silicified wood; ② N 8 mi., Castle Rock mines—Gold, Mercury and Silver minerals; ③ NE 9 to 11 mi., on E flank of Monte Cristo Range, area mines and regional float—Variscite; ④ E via rough dirt rds., to Lone Mt. (old camp of West Divide): (a) area replacement veins in Cambrian sediments—Copper, Gold, Lead, Silver and Zinc minerals; (b) old camp of Alpine, replacement veins in Paleozoic limestone—Gold; (c) S 13 mi. from US 95 by rough rd. to S flank of the Lone Mts. (Weepah)—Gold, Silver; ⑤ SW 25 mi., Windypah (Fesler), via dirt rd., area mines—Gold, Platinum, Silver.

COALDALE: ① NE 3 to 6 mi., in the Monte Cristo Range: (a) area mines—Variscite; (b) area draws, washes, surfaces—agate, chert, Hylite opal with Powellite (fluorescent), jasper, Turquoise; (c) NE 4 mi. at Bonnie Blue Mine on W side of Canyon—Turquoise, Variscite; ② SSW 10 mi., on W side of Fish Lake, area land surfaces—Apache tears; ③ SW 13 mi. and 1 mi. E of Rte. 3A, the Sump Hole, area—opalized wood; ④ Rock Hill Siding (along abandoned right of way of the Tonopah and Goldfield RR, area mines—Variscite.

COLUMBUS, NW 1½ mi., area prospects and mines—Variscite.

DYER (23 mi. S of Coaldale on Rte. 3A): ① area lode mines—Gold, Lead and Silver minerals; ② S and E about 15 mi. to old camp of Good Hope (7 mi. S of Piper Peak on W
flank of the Silver Peak Range), veins in Ordovician slates—Silver; ① E, in Fish Lake Valley, and, ② along flank of the White Mts. near the CA line, regional mines and prospects—Cinnabar, opalite.

GOLDFIELD: ① city mine dumps (very many) replacement veins in Tertiary volcanic underlain by Cambrian sediments—Alum, Pyrite, Quartz crystals, Copper, Gold, Lead, Manganese, Silver and Zinc minerals; ② W 3 mi., past the city dump, an outcrop, massive—opalite; ③ W and SW 7 mi. by various jeep mine rds. crossing the Malapai, large regional surrounding and embracing Montezuma Mt.: (a) very many old mines and prospects with replacement veins in Cambrian sediments—Copper, Gold, Lead and Silver minerals; (b) all regional surfaces—chalcedony, chert, jasper, Quartz crystals, obsidian, opalized wood; ④ E on various dirt rds. (many used by local stockmen) into the Ralston Desert of Nye Co., area land surfaces—chert; ⑤ S 14 mi., old vanished camp of Cuprite, replacement veins in Cambrian sediments—Copper, Gold, Lead, Mercury and Silver minerals; ⑥ SW 25 mi. (via dirt rd. that turns W from US 95 just S of Goldfield Summit 6 mi. S of town): (a) old camp of Hornsilver (Lime Point), veins in Cambrian limestones and shales—Copper, Gold, Lead, Silver and Zinc minerals; (b) Railroad Springs, lode mines—Copper, Gold, Silver.

GOLD POINT (14 mi. by dirt rd. SW of Stonewall and US 95), area mines—Copper, Gold, Silver.

LIDA (19 mi. W of US 95 from Stonewall via Rte. 3), veins and impregnations, placers in Cambrian sediments—Copper, Gold, Lead, Platinum and Silver minerals.

MILLERS (15 mi. W of Tonopah in Nye Co. and 1 mi. S of US 695), NW 11 mi. to Crow Springs: ① area mines with veins in Tertiary volcanics—Copper, Gold, Lead and Silver minerals; ② W another 2 mi. to old camp of Gilbert (Desert), lode mines—Copper, Gold, Lead and Silver minerals; ③ : (a) Myers & Bona Mine, 13 mi. NW on W slope of Monte Cristo Mt., (b) at Perry Mine, 11 mi. NW in foothills of Monte Cristo Mt.; and (c) Royal Blue Mine, 12 mi. NW on E edge of Plateau—Turquoise.

NIVLOC (8 mi. SW of Silver Peak), the Nivloc (Red Mt.) Mine—Gold, Lead and Silver minerals.

PALMETTO (11.7 mi. W of Lida, on Rte. 3, or 13.2 mi. E of jct. of CA Rte. 168 with NV Rte. at Oasis, CA): ① Palmetto Canyon, area surfaces—Citrine, Quartz crystals, agate, chert, jasper; ② N 5 mi., the Palmetto Mine, veins in Paleozoic sediments intruded by granite producing contact metamorphic replacement deposits—Gold, Lead, Silver; ③ Regional placers in Paleozoic sediments—Gold, Lead, Platinum, Silver; ④ S on rough rd. to Sylvania (Green Mt.) in the Sylvania Mts. (12 mi. E of Oasis, CA) and near the state line, veins in limestone—Lead and Silver minerals.

SILVER PEAK (Mineral Ridge, Red Mt.; 20 mi. S of Blair Junction): ① major area mines active until the 1950’s—Gold, Lead, Silver; ② area rock outcrops—Rose Quartz. This mining dist. was located with primarily silver ores found on Red Mt. the Silver Peak Marsh to the NE is a large sink encrusted with sodium-magnesium salts; hot saline springs bubble up on the NE fringe.

TOKOP (old Gold Mt., Oriental Wash; 15 mi. W of Bonnie Clair in Nye Co.): ① area mines and placers—Copper, Gold, Lead, Platinum and Silver minerals; ② area slopes of Gold Mt. (elev. 8,139’)—Citrine, Quartz crystals.

TONOPAH: ① S 7 mi., Divide (Gold Mt.), veins in Tertiary volcanic—Gold, Lead, Silver; ② SW 12 mi., the Dolly Mine, veins in Tertiary volcanic—Gold, Lead, Silver; ③ S 14 mi., Klondyke and South Klondyke (about halfway to Goldfield and W of US 95), lode veins, placers—Copper, Gold, Platinum and Silver minerals.

WEEPAH (see Blair Junction).
EUREKA COUNTY

AREA: ① old abandoned mining camps not on maps: (a) Alpha, E 5 mi., sheeted zones and replacements in Devonian limestone—Lead and Silver minerals; (b) Mineral, SE 5 mi., Mineral Hill, replacement veins in Paleozoic sediments—Copper, Lead, Silver and Zinc minerals; (c) Mt. Hope Station, W 2 mi., area mines—Lead, Silver and Zinc minerals; ② Extreme N part of Co. (reached via dirt rds. from Carlin in Elko Co.): (a) NW 9 to 15 mi. the Maggie Creek Dist (Schroeder), area mines, especially the Copper King Mine, replacement veins—Faustite, Turquoise, Antimony, Copper, Gold, Lead, Silver and clay minerals; (b) NW 20 mi., veins and placers in the Tuscarora Mts.—Gold, Platinum.

BEOWAWE (W side of Co. on Rte. 21 about 6 mi. S of I-80), area mines and prospects—Cinnabar.

EUREKA: ① area, including Pinto, Prospect, Ruby Hill, Secret Canyon, Silverado and Spring Valley; replacement veins in Paleozoic sediments, granite, porphyry, rhyolite and basalt (according to the particular dist., and mine)—Arsenic, Copper, Gold, Lead, Silver and Zinc minerals; ② Ruby Hill dist., area mines—Azurite, Malachite, etc.; ③ NNE about 25 mi. via dirt Rte. 46, old camp of Diamond, veins in limestone—Lead and Silver minerals; ④ N 27 mi. on Rte. 51, then SW on dirt rd. to old camp of Roberts, veins in syenite and limestone—Lead, Silver and Zinc minerals; ⑤ SW about 25 air mi. to extreme SW corner of Co., old camp of Antelope—Copper, Lead and Silver minerals.

PALISADE (9 mi. SW of Carlin in Elko Co.): ① W 6 mi. old camp of Safford (Barth, Palisade), veins in Tertiary volcanics—Copper, Gold, Lead and Silver minerals; ② SSW 35 mi., Buckhorn (Mill Canyon), area mines—Gold, Lead and Silver minerals.

HUMBOLDT COUNTY

The whole western two-thirds of this county is virtually uninhabited desert, requiring safety precautions for visitors and their vehicles. Roads are generally rough dirt, and few are on standard maps. Nearly all roads end in a mining area or connect old abandoned mining camps in a crosshatch of ancient wagon freight tracks difficult for modern automobiles to traverse. Here the finest opals in the world are found, as well as most of the county’s supply of other gemstones.

AREA, the Virgin Valley, ≈ 37 air mi. SW of Denio, at the end of a rd. that turns S from Rte. 8A a few miles E of the Summit Lake Indian Res. (also reached W via dirt rd. from Quinn River Crossing 26 mi. S of Denio on Rte. 140, or E 60 to 70 mi. from Cedarville, CA). This remote, waterless, arid region provides no supplies, sources for help, or accommodations. Collecting requires several days minimum time, and the collector must be prepared for extremely hot weather in summer, the only months in which travel or camping is feasible.

① W side of valley; with the exception of the Green Fire Mine, below, all opal locations are on the W side of the Virgin Valley: (a) many area prospect, pits, etc.; and (b) the Rainbow Ridge Mine—Opal (precious, black fire, common), opalized wood, Rhodonite. ② E side of Valley: (a) regional land surfaces—agate, chalcedony, chert, flint, jasper, opal, silicified lignite, opalized and petrified wood; (b) the Green Fire Mine, as irregular seams and masses—gem Opal (black, fire), common opal in various colors.

DENIO, W ≈ 25 air mi., the Warm Springs Dist. (Vicksburg, Ashdown, Pueblo mines), ores in a quartz gangue—Copper, Gold, Lead and Silver minerals.

GOLCONDA: ① ESE 3 mi., mines with bedded lenses in Tertiary sediments and volcanics—Copper, Gold, Iron, Lead, Manganese, Tungsten and Zinc minerals; ② E 5 mi., the Preble (Potosi) Mine—Gold, Silver; ③ S 15 mi. the Gold Run (Adelaide) Mine, replacement veins, contact metamorphic deposits, placers in Triassic sediments—Copper, Gold, Lead, Platinum and Silver minerals; ④ S 22 mi., the Black Diablo Mine (just over
Nevada

Pershing Co. line) — **Copper, Gold, Lead** and **Silver** minerals; ② NE 20 mi. on Rte 18: (a) turn S 6 mi. on dirt rd., the Red House Mine—**Gold, Silver**, etc.; (b) turn N 10 mi. on dirt rd., the Getchell Mine—**Copper, Gold, Silver**, etc.

**McDERMITT** (≈ 73 mi. N of Winnemucca on US 95 and just S of the ID line): ① general area; inquire locally: (a) old camp of National, veins in Tertiary volcanics—**Antimony, Gold** and **Silver** minerals; (b) W, old Jackson Creek Dist., contact metamorphic veins—**Copper, Lead** and **Silver** minerals; (c) W, old camp of Disaster, veins and placers—**Gold, Platinum**; ② SW 11 mi., the Cordero Mine—**Copper, Gold, Lead** and **Silver** minerals; ③ 4 mi. W on Cordero mine rd., collect in gravel pit—purple sagenitic agate.

**OROVADA** (on US 95 about 43 mi. N of Winnemucca): ① N 11 mi., the Rebel Creek Dist. (New Goldfields, Willow Creek), veins and placers—**Gold, Platinum, Silver**; ② WNW ≈ 30 mi. and W of the Kings R. Valley by rough dirt rds., Agate Point, area surfaces—**agate, chalcedony, chert, flint, jasper**, etc.

**PARADISE VALLEY** (44 mi. NNE of Winnemucca via US 95 and Rte. 8B), the Mt. Rose and Spring City mines, veins, placers in Mesozoic metamorphic slates—**Gold, Platinum, Silver**.

**SULPHUR** (60 mi. W of Winnemucca on Rte. 49), N, in the Black Rock Desert, area surfaces—**opalized and petrified wood**; ② NW a short distance, the Red Butte Mine—**Antimony, Copper** and **Mercury** minerals; ③ The Black Rock Mine—**Gold, Lead** and **Silver** minerals; ④ S into Pershing Co. 12 mi., the Rabbithole Mine, veins in Tertiary rhyolite and water-laid tuffs—**Mercury** and **Silver** minerals; ⑤ Scossa Placeritas (10 to 15 mi. SW of Sulphur) and the Poker Brown Mine 25 mi. SE of Rabbithole—**Gold, Lead, Silver** and **Zinc** minerals.

**WINNEMUCCA**: ① SE 5 mi., the Sonoma Mt. (Harmony) Mine—**Copper, Gold, Silver** and **Zinc** minerals; ② WNW 5 mi., the Winnemucca (Barrett Springs) Mine, veins, placers in metamorphosed slates, diorite—**Copper, Gold, Lead, Platinum** and **Silver** minerals; ③ NW 10 mi., the Ten Mile Mine—**Gold, Silver**; ④ W on Rte. 49: (a) 17 mi. to Pronto, area mines; and (b) another 17 mi. to Jungo, area mines—**Gold, Lead, Silver**, etc.; ⑤ NNE 20 mi., the Willow Point Mine—**Copper** and **Silver** minerals; ⑥ N 23 mi., the Sherman Mine—**Gold**; ⑦ W 25 mi., the New Central Mine—**Gold, Lead** and **Silver** minerals; ⑧ S 26 mi. (into Pershing Co.), old camp of Grandpap—**Gold, Silver**; ⑨ N 28 mi., the Shone Mine, in veins of granite—**Gold, Silver**; ⑩ NW 30 mi., old camp of Amos (Awakening, Slumbering Hills mines), veins, placers—**Gold, Silver, Platinum**.

**LANDER COUNTY**

AREA, general prospecting along any Co. rd. in washes, draws, and regional land surfaces in productive of some type of gemstone—**chalcedony, jasper, opal, opalite**, etc. Make local inquiry in regional rock shops along main highway.

**AUSTIN** (also under Nye Co. for access to localities in that adjacent Co.): ① NW 9 mi., the Skookum Mine, contact metamorphic veins—**Gold, Silver**; ② W 16 mi. on US 50, the NW 11 mi. by dirt rd., the New Pass Dist., veins in limestone—**Gold**; ③ NNW 20 mi. (7 mi. W of the silver Cr. Siding on the N.C. RR), the Ravenswood (Shoshone) Mine, veins in Cambrian shales—**Copper, Gold, Lead** and **Silver** minerals; ④ NE on Rte. 21, old camp of Spencer, veins in Paleozoic sediments—**Antimony, Gold** and **Silver** minerals; ⑤ S 10 mi., Big Creek mines, veins in sedimentaries—**Copper, Gold, Molybdenum** and **Silver** minerals; ⑥ S 24 mi. (via 2 mi. W on US 50, 8 mi. SW on Rte. 2, 5 mi. on dirt Rte. 21, turn S on rough rd.), the Kingston Dist. (Bunker Hill, Santa Fe, Summit, Victorine mines), veins in limestone—**Gold, Silver**; ⑦ SW 36 mi. via Rte. 2 to the Campbell Cr. Ranch, the Gold Basin Dist. (under Eastgate in Churchill Co.), old camp of Carroll on the Co. line, area mines—**Gold, Silver**, with traces of **Copper and Lead** minerals.
BATTLE MOUNTAIN: ① area SW, the Reese R. Dist. (Amador, Austin, Yankee Blade mines), veins in Paleozoic sediments—Arsenic, Copper, Gold, Lead, Silver and Zinc minerals; ② W, in the Galena Range near the Humbold Co. line, the Buffalo Valley mines (17 mi. S of Valmy in Humboldt Co.), replacement veins in limestone—Gold; ③ SW 8 to 20 mi., the Copper Basin Dist.: (a) Bannock, Copper Basin, Copper Canyon, Cottonwood Creek, Rocky Canyon, Galena mines; replacement veins and contact metamorphic—Antimony, Arsenic, Copper, Gold, Lead, Platinum, Silver and Zinc minerals; (b) the Blue Turquoise Mine—Turquoise; ④ SE 14 mi., the Lewis Dist. (Dean, Mud Springs, Pittsburg mines), veins in Paleozoic sediments—Gold, Silver; ⑤ SE 18 mi., the Hilltop Dist. (Kimberly, Mayesville mines), veins—Copper, Gold, Lead and Silver minerals; ⑥ SE 20 to 50 mi. (best reached from Beowawe in Eureka Co. via Rte. 21), the Bullion Dist.: (a) the Campbell, Lander, Cortez, Mt. Tenabo mines, replacement veins and placers in Paleozoic sediments—Arsenic, Copper, Gold, Lead, Platinum, Silver and Zinc minerals; (b) the Pedro Claim (off of Hwy. 8A); (c) the Fox Turquoise Mine; (d) Smith Mine; and (e) White Horse Mine—Turquoise; ⑦ S 35 mi., the Hot Springs Dist., area mines and projects, especially at Blue Matrix Mine—Turquoise; ⑧ SSE 40 mi., Gold Acres (best reached via paved Rte. 21 SW 29 mi. from Beowawe in Eureka Co.) area mines—Copper, Gold, Silver minerals; ⑨ NE 30 mi., the Lynn Dist. area mines and prospects, especially No. 8 mine—Turquoise; ⑩ NE 45 mi., the Ivanhoe Dist. (over line in Elko Co.)—opalite and other minerals; ⑪ N across Southern Pacific RR tracks, continue 18 mi. to windmill, take E fork to bridge over Rock Cr., in creek beds—chalcedony, petrified wood; and ⑫ continue 7 mi. further, take left fork N for Cinnabar in chert in washes and at dumps of Silver Cloud mercury mine—Cinnabar.

LINCOLN COUNTY

AREA: ① Sugar Loaf Peak, area surfaces surrounding base and numerous prospecting pits—Turquoise; ② W edge of Co., old camp of Tem Piute in the Timpahute Mts., lode veins—Copper, Gold, Silver and Zinc minerals.

CALIENTE: ① W 16 mi. on US 93, turn onto SW trending dirt rd. for 6 mi., then branch left for 6 mi. to old camp of Delmar—Gold, Silver; ② S 43 mi. on dirt rd., old camp of Carp: (a) SE ¼ mi., the Viola Mine in the Mormon Mts.—Copper, Lead, Silver and Zinc minerals; (b) S 21 mi. by rough dirt rd., old camp of Rox or Vigo, then 24 mi. E into Mormon Mts., a mine—Manganese minerals; ③ NW 8 mi. in the Chief Range, the Chief (Caliente) Mine, veins in Paleozoic sediments—Copper, Gold, Lead and Silver minerals; ④ WNW 30 mi., the Ferguson (Delmar) Mine, replacement veins in Paleozoic quartzite—Gold, Silver.

HIKO: ① the Pahranagat Mine, veins in Paleozoic sediments—Copper, Lead and Silver minerals; ② SW 18 mi. on Rte. 25, turn SW 24 mi. on rough dirt rd. to old camp of Groom, veins in limestones and shales—Lead and Silver minerals.

PANACA, E 8 mi. on paved Rte. 25: ① SW 10 mi. on dirt rd., old camp of Crestline; and ② 13 mi. farther S, old Acoma Dist., area mines—Copper, Gold, Lead and Silver minerals; prospecting the general surrounding land surfaces—chalcedony, chert, flint, etc.

PIOCHE: ① area mines, replacement veins in Paleozoic sediments—Copper, Gold, Lead, Manganese, Silver, Tungsten and Zinc minerals; ② NW 3 mi. on US 93, turn W on dirt rds.: (a) 4 mi. to old camp of Mendha, and (b) 11 mi. to Comet (Mill), area mines in replacement veins—Copper, Gold, Lead, Silver, Tungsten and Zinc minerals; ③ WNW 7 mi., the Highland Mine, replacement veins—Copper, Gold, Lead and Silver minerals; ④ NW 12 mi. on US 95, turn W on dirt rd. 10 mi.: (a) the Bristol (Jack Rabbit) Silver Mine, replacement veins—Copper (Azurite, Malachite, Chrysocolla), Gold, Lead, Manganese and Silver minerals; (b) the Silverhorn Mine, replacement veins in limestone—Nickel and
Silver minerals; © E 15 mi., old camp of Ursine: (a) area mines—Gold, Lead, Silver; (b) S 2 mi. on dirt rd., the Eagle Valley Dist. (Fay, State Line mines), veins in Tertiary volcanics—Gold, Lead and Silver minerals; © W 16 mi., the Lone Mountain Mine, replacement veins—Lead and Silver minerals; © N 28 mi. on US 93, then NE 21 mi. on dirt rd., the Atlanta Dist.: (a) area land surfaces—chalcedony, chert, flint; (b) area mines (Silver Park, Silver Springs), veins in quartzites and limestones—Copper, Gold, Lead, Radium and Silver minerals; © N 52 mi. on US 93, turn W 11 mi. over Patterson pass (elev. 7,400'), the Patterson Dist. (Cave Valley, Geyser mines) at S end of the Shell Cr. Mts., replacement veins—Gold, Lead minerals; © W 75 mi., the Worthington (Freiberg) Mine, best reached via dirt rds. from Rte. 25 near the Nye Co. line, veins in rhyolite—Gold, Silver.

LYON COUNTY

DAYTON: © S 10 mi., old camp of Como (Palmyra, Indian Springs)—Gold, Silver; © NE 17 mi. (into Storey Co.), Red Mt. area mines, contact metamorphic veins—Iron minerals.

FERNLEY: © S 5½ mi., area on w flank of hills—agate, chert, jasper; © S 14 mi., the Talapoosa Mine, veins in Tertiary volcanics—Copper, Gold and Silver minerals.

FT. CHURCHILL (old adobe ruins military post, now a state historical monument), N a few mi., in basin on SE slope of Churchill butte, a mine—Tungsten minerals.

SILVER CITY (5 mi. S of Virginia City in Storey Co.), the Chinatown, Dayton, Devils Gate, Gold Canyon mines; veins, placers, in Tertiary volcanics—Gold, Iron, Platinum and Silver minerals.

SILVER SPRINGS (16 mi. S of Fernley), NW a few mi., old camp of Ramsey, veins—native Gold, Silver.

WELLINGTON, N along the Pine Nut Mts. (straddling the Co. line, not a mining dist.), lode mines, placers—Copper, Gold, Iron, Lead, Platinum and Silver minerals.

YERINGON: © area, W, in the Singatse Mts., mines—Chalcantite (Bluestone); © NNW 1½ mi., area mines and prospects—Turquoise; © W 2 mi., the Mason and Ludwig mines, contact metamorphic, placers—Copper, Gold, Lead, Platinum and Silver minerals; © the Ludwig Mine—Thulite; © WNW 8 mi., mines and prospects—Turquoise; © S 11 mi. on Rte. 3, turn SSE on dirt rd. for 14 mi.: (a) W 5 mi. on rough rd., the Pine Grove Mine; and (b) S 5 mi., the Rockland Mine—Gold, Platinum, Silver; © S 15.6 mi., Wilson Canyon (noted collecting area)—agate, chalcedony, chert, jasper, silicified wood, Turquoise; © S 30 mi., old camp of Washington—Copper, Gold, Silver.

MINERAL COUNTY

AREA: © extreme NE wedge of Co. immediately S of the Churchill Co. line and 16 mi. S of US 50 via Rte. 23, Broken Hills (with the Quartz Mt. mining dist. to S just over the Nye Co. line), area old mines—Gold, Lead, Silver, etc.; © old camp of Acme (Fitting), replacement veins in Tertiary volcanics and placers in Triassic sediments—Copper, Gold, Lead and Silver minerals.

BABBITT: © NE 5 mi. to Thorne: (a) area mines—Gold, Lead, Silver; (b) SE 5 mi., Ryan Canyon, area mines—Gold, Lead, Silver, Thulite; © N on US 95: (a) along the shores of Walker Lake, and (b) area lands surfaces back of the lake—agate, chalcedony, fossils, petrified wood, Turquoise.

BASALT (extreme SE corner of CO. on US 95): © SW 5 mi., summit of Montgomery Pass (elev. 7,167), area of Queen Mt.—obsidian; © SW 10 mi., the Buena Vista Dist. (Balsalt, Mt. Montgomery, Oneota mines), veins in Tertiary volcanics—Copper, Gold, Lead, Silver and Zinc minerals; © N 17 mi. on rte. 10 and E 8 mi. on rough rd., old camp of Candelaria (Belleville, Columbus), replacement veins: (a) area mines—Copper, Gold,
Lead, Nickel and Silver minerals; (b) S 1 mi., in E foothills of the Candelaria Mts. and 1 mi. W of the Mt. Diablo Silver Mine, claims, pits, prospects, etc.—Variscite; (c) the Mt. Diablo Silver Mine—Lead and Silver minerals; (d) the Reik Mine—Turquoise.

HAWTHORNE: ① Lucky Boy, Palmo mines, veins in Cambrian sediments—Copper, Gold, Lead, Silver and Tungsten minerals; ② NW 10 to 15 mi.: (a) the Walker Lake Dist. (Buckley, Cat Creek mines), W of Walker Lake on E slope of the Wassuk (Walker River) Range, veins in granodiorite—Copper, Gold, Silver; (b) the West Walker Dist., on W slope of the Wassuk Range, area mines—Gold, Silver; ③ SE 16 mi., the Whiskey Flat Mine, veins in granite-limestone contact—Copper, Gold, Silver; ④ SE 18 mi., the Sulphide Mine—Gold, Tungsten minerals; ⑤ SW 30 mi. via rough rds., old and famed ghost town of Aurora (Cambridge, Esmeralda), usually reached 8 mi. E from Bodie (historic mining camp state monument), CA: (a) area draws, washes, steep hillsides in town—jasper, Quartz crystals; (b) many area mines, inside and outside of town, veins in Tertiary volcanic—Gold, Silver.

LUNING: ① area mines—Axinite (plum colored), Gold, Silver; ② E, the Santa Fe Dist. (Luning, Kincaid mines), contact metamorphic veins—Antimony, Copper, Gold, Lead, Magnesium and Silver minerals; ③ S 13 mi. on US 95, then SE to Sodaville and E 18 mi. to Pilot Mt. mines, contact metamorphic veins and placers—Gold, Lead, Mercury, Platinum, Silver and Tungsten minerals; ④ Hwy. 23 N almost to bridge, take left fork 34 mi. to Rawhide, then 6 mi. farther to ravine—pink Thulite, Howardite, opalized wood.

MINA (10 mi. S of Luning on US 95): ① area contiguous mines, including Gold Range—Copper, Gold, Lead, Magnesium, Silver and Tungsten minerals; ② SW 8 mi. in E end of the Excelsior Mts., area—wonderstone, Turquoise, Variscite; ③ SW 26 mi. by rough rds., the Marietta and Black Mt. mines, contact metamorphic veins—Copper, Gold, Lead, Magnesium, Silver and Tungsten minerals; ④ NW 15 mi., the Garfield Mine, veins in limestone—Copper, Gold, Lead and Silver minerals; ⑤ NW 20 mi., old camp of Marble, area mines—Gold, Lead and Silver minerals; ⑥ NE 23 mi. by rough rds., the Cedar Mt. Dist. (Simon, Bell, Omco mines), veins in Triassic limestones—Gold, Lead, Silver and Zinc minerals; ⑦ NE 30 mi. (over the Nye Co. line), the Athena Mine, veins in Tertiary eruptives and lake beds—Gold, Silver; ⑧ Nevada Turquoise Co. Mine—Turquoise; ⑨ 1 mi. S of Candelaria and on E side of hill in Candelaria Mts.—Variscite; ⑩ in dumps of Wilson Mine near Candelaria—Copper minerals.

RAWHIDE (24 mi. S of Frenchman in Churchill Co. via Rte. 31 and 5 mi. on dirt rd. S and W from Nevada Scheelite Mill): ① area, the Regent Mine—Copper, Gold, Lead, Platinum, Silver and Tungsten minerals; ② N 6 mi. and 2 mi. W on dirt rd., area close to Churchill Co. line—opalized wood; ③ SE 11 mi. on rough rd., Hot Spring, on E side of Alkali Flat (can also be reached via rough rd. 34 mi. N of Luning, or 23 mi. W from Gabbs in Nye Co.), area mines in volcanic tuffs—Barite, Gold, Silver; ④ SE, the King Mine, veins in Tertiary volcanics—Gold, Lead and Silver minerals; ⑤ S 18 mi., the Rand Mine—Turquoise; ⑥ SE 14 mi. on rough rd., Hot Springs (Sunnyside Mine), veins in Quartz and diorite—Gold, Silver.

SCHURZ: ① W 8 mi., the Granite Mt. Dist. (Mountain View, Reservation mines), veins in granite—Copper, Gold, Lead and Silver minerals; ② N 9 mi., the Benway Mine, veins in granite—Gold, Silver; ③ NE 12 mi., old camp of Holy Cross (Fallon, Terrell mines), veins and replacement in Tertiary volcanics—Gold, Manganese and Silver minerals; ④ E 28 mi., the Bovard Dist. (Copper Mt., Rand, Rawhide mines), replacement veins in Tertiary volcanics—Copper, Gold, Lead, Manganese and Silver minerals.

NYE COUNTY

AREA: ① NW corner of Co.: (a) 28 mi. SSW of Austin in Landers Co., old camp of Washington, veins in Paleozoic sediments—Lead and Silver minerals; (b) old Westgate
dist. (42 to 54 mi. ESE of Fallon in Churchill Co.), veins in Jurassic limestone—Gold, Lead
and Silver minerals; (c) 45 mi. S of Lander, old dist. of Millett (North Twin River), pockets
in limestone and slate—Copper, Gold, Lead and Silver minerals; (d) 50 mi. S of Lander,
the Twin River dist., veins in slate—Silver.

BEATTY: ① area mine dumps in and around town—Cinnabar, opalite; ② NW 4
mi., ghost town of Rhyolite: (a) area mines—Copper, Gold, Silver; (b) nearby old site of
Pioneer, veins in Tertiary volcanics—Copper, Gold, Lead, Mercury and Silver minerals;
(c) W 8 mi., old site of Bullfrog, area mines in Tertiary volcanics—Azurite, Amethyst,
Gold, Malachite; ③ E 6 mi., old site of Fluorine (Bare Mt., Telluride mine)—Gold,
Mercury, Silver; ④ S 8 mi. on US 95, site of ghost town of Carrara, area old mines—Gold;
⑤ NE 15 to 18 mi., Yucca Mts., area surfaces—geodes, gemmy nodules; ⑥ NE old camp
of Johnie (25 mi. NE of Death Valley and 14 mi. SSE of Amargosa in the NW end of the
Spring Mts.), lodes, placers—Gold, Lead, Platinum, Silver; ⑦ WNW 22 mi., old camp of
Grapevine, veins in rhyolite—Gold; ⑧ E 30 mi., old Wahmonie Mine—Gold, Silver.

BONNIE CLAIR (old camp and mill on Rte. 72 into N end of Death Valley, 6 mi. W of
Scotty’s Jct. on US 95), area mines—Copper, Gold, Silver minerals.

CLARK STATION (33 mi. E of Tonopah on US 6): ① the Clifford Mine, veins in
Tertiary volcanics—Gold, Silver; ② the old Blake Camp (32 mi. ENE of Tonopah), the
Golden Arrow Mine, contact metamorphic—Gold, Silver; ③ N 48 mi. on dirt rd. to Crockers
Ranch (or old stop of Morey), then W in the Hot Creek Range, area mines with veins in
sedimentary—Gold, Lead and Silver minerals.

CURRANT (NE part of Co. at jct. of US 6 with Rte. 20): ① E, in the Grant Range,
area mines with veins in limestone—Copper, Gold, Lead; ② S 30 mi., Troy Peal (elev.
10,280’), old camp of Troy at base (Irwin Canyon, Nyala mines), veins in sedimentary—
Gold, Lead and Silver minerals.

GABBS: ① E 3 mi., the Stokes Iron Mine—Iron minerals; ② E 16 mi. to dirt
crossrds.: (a) E 4 mi., old camp of Grantsville, area mines—Copper, Gold, Silver. (A short
distance NE lies the Ichthyosaur Paleontologic State Monument, where the fossil bones of
Mesoic dinosaurs are exposed.); (b) N 4 mi., turn E on old rd. to ghost camp of Berlin
(Union Mine), and (c) N 7 mi. to old camp of Ione, veins in Tertiary volcanics and placer in
Carboniferous sediments—Copper, Gold, Lead, Mercury and Silver minerals; (d) old
camp of Bruner near Ione, the Phonolite Mine, veins in andesite and rhyolite—Gold, Silver;
③ N 3 mi., turn NE on dirt rd. from Rte. 23 to old camp of Downieville, area
mines—Copper, Gold, Silver; ④ N 12 mi. on Rte. 23, turn right dirt rd. to old camp of
Quartz Mt.: (a) area mines; and (b) nearby old camp of Westgate—Gold, Lead and Silver
minerals; (c) NW 3 to 4 mi., old mining dist. of Broken Hills in Mineral Co. and straddling
Co. line) —Gold, Lead and Silver minerals; (d) old camp of Lodi (Ellsworth, Mammoth,
marble mines), veins in granite and limestone—Copper, Gold, Lead and Tungsten
minerals; ③ SSE 10 mi., old camp of Golddyke, and ④ 8 mi. farther S, the Warrior
Mine—Gold, Lead and Silver minerals; ⑤ SSE 14 mi., the Fairplay and Atwood mines (at
or near Golddyke), veins in granite—Copper, Gold, Lead, Silver and Tungsten minerals.

GOLDFIELD (Esmeralda Co.), access to Ralston Desert to E in Nye Co. (Nearly all
the area for 70 to 80 mi. E of US 95 and extending 70 to 80 air mi. S of Tonopah constitutes
the highly restricted area of Nellis Air Force bombing range and the Atomic Energy
Commission nuclear testing site. No travel is currently allowed on the region’s rough dirt
access rds., except by regional cattle ranchers.) ① NE 12 mi., Cactus Peak area prospects
and pits—Turquoise; ② E 24 mi., in NW end of the Cactus Range, old camp of Cactus
Springs, replacement veins in Tertiary volcanics—Gold, Silver; ③ SE 27 mi., Gold Crater
Mine—Gold, Silver; ④ E 35 mi., Swab Mt., on S side of the Cactus Range, area
surfaces—jasper, petrified wood; ⑤ ESE 30 mi., the Antelope Mine—Gold, Silver; ⑥
ESE 38 mi., old camp of Wilson, veins in Tertiary volcanics—Gold, Silver; ⑦ ESE 40 mi.,
the Trappmans Mine, veins in granite—Gold, Silver; ⑧ SE 46 mi., the Silverbow Mine—
Gold, Silver; © E 54 mi., the Kawich (Gold Reed) dist., veins in monzonite porphyry, rhyolite—Gold, Mercury minerals.

LATHROP WELLS, E 26 mi. on US 95 and N on dirt rd., Mercury area mines—Cinnabar, opalite.

POTTs (44 mi., SE of Austin in Lander Co. and just S of the Nye Co. line): (a) area old camps of Jackson (Gold Park), overlapping into Lander Co., veins in Paleozoic sediments, granite porphyry, and Tertiary volcanics—Copper, Gold, Lead and Silver minerals; (b) SE on rough rd. into the Monitor Range, old camp of Danville, veins in limestone—Gold, Silver.

SCOTTY’S JUNCTION (35 mi. S of Goldfield on US 95 and entrances into N end of Death Valley): (a) S 6 mi. and ¼ mi. E of US 95, area—arrowheads and cores of obsidian, obsidian float; (b) ESE ≈ 10 mi., old camp of Tolicha (20 mi. E of Bonnie Clair) and Monte Cristo Mine, veins in Tertiary rhyolite—Gold, Silver.

STONEWALL (16 mi. S of Goldfield on US 95 and 1 mi. E of jct. with Rte. 3): (a) area old mines, veins in Paleozoic sediments—Gold, Mercury (some), Silver; (b) E 20 mi., old camp of Wellington (O’Briens), veins in Tertiary volcanics—Gold, Silver.

SUNNYSDIE (extreme E edge of Co. on Rte. 28, on E side of the Egan Range), area mines—Azurite, Malachite.

TONOPAH: (a) area mines in town and on adjoining hills, replacement veins in Tertiary volcanics—Copper, Gold, Lead, Silver and Tungsten minerals; (b) E a few mi., old camp of Ellendale, veins and stringers in Tertiary volcanics—Copper, Gold, Silver minerals; (c) E 10 to 12 mi., area—petrified algae, Jade; (d) E 20 mi., the Hannapah dist. (Silverzone, Volcano mines), veins in Tertiary volcanics—Gold, Mercury and Silver minerals; (e) N 10 to 15 mi. in the San Antonio Mts., area—Jade, petrified wood, wonderstone; (f) NW 20 to 25 mi., in the San Antonio Mts., old San Antone dist. (San Antonio, Royston mines), veins in Tertiary volcanics—Copper, Gold, Lead and Silver minerals; (g) N 42 mi. via Rtes. 8A and 82, turn SW on Manhattan-Belmont dirt rd.: (a) old camp of Spanish Belt (Barcelona Mine), veins in granite and shale—Mercury and Silver minerals; (b) nearby old camp of Arrowhead, replacement veins—Gold, Silver; (c) NW 42 mi. via Rte. 89: (a) Cloverdale dist. (Republic, Golden mines), lodes and placers—Copper, Gold, Lead, Silver and Tungsten minerals; (b) NW 12 to 15 mi. from Cloverdale on rough rd., old camp of Jett, mines in limestone and slate—Lead, Silver and Zinc minerals; (c) N 40 mi. on Rte. 8A, turn E 7 mi. on Rte. 92, old semi-ghost town of Manhattan, replacement veins and placers in Paleozoic sediments—Arsenic, Gold, Platinum and Silver minerals; (d) NNE 46 mi. via Rtes. 8A and 82, old ghost town of Belmont: (a) the Philadelphia, Silver Bend mines, veins in Paleozoic sediments—Copper, Gold, Lead, Mercury and Silver minerals; (b) N 18 mi. Then W, old Jefferson Canyon dist. (Concordia, Green Isle mines)—Gold, Silver; (c) N 52 mi. on Rte. 8A, turn E 3 mi. to ghost town of Round Mt., veins and placers—Gold, Lead, Platinum and Tungsten minerals; (d) N ≈ 57 mi. on Rte. 8A, the Jackson (Gold Park) dist., about 44 mi. S of Austin in Lander Co., area mines—Gold; (e) N 66 mi. via Rtes. 8A and 82 to area of turnoff W to the Northumberland Caves (recreation area), old camp of Northumberland in the Toquima Range, veins in granite porphyry—Silver.

WARM SPRINGS (49 mi. E of Tonopah on US 6): (a) the Bellehelen Mine—Gold, Silver; (b) E about 6 mi., the Eden (Gold Belt) mines, veins in Tertiary volcanics—Gold, Silver; (c) E about 20 mi., old camp of Bevelle—Copper, Lead and Silver minerals; (d) NE 8 mi. on US 6, turn NW 4 mi. on dirt rd. to crossrd.: (a) W 4 mi., old camp of Tybo, replacement veins in Paleozoic sediments; and (b) N 12 mi., old camp of Hot Creek—Antimony, Copper, Gold, Lead, Manganese and Silver minerals; (e) SE 40 mi. on Rte. 25, the Willow Creek dist. at S end of Railroad Valley, replacement veins in Paleozoic sediments and Tertiary eruptives—Copper, Gold, Silver; (f) SE on Hwy. 25 for 58½ mi. to rd. to Tempiute, follow it to building by dry lake for a mi., then S on dirt rd. into mining camp in mountains—Thulite, Zoisite.
Nevada

ORMSBY COUNTY

CARSON CITY: ① W, in foothills of the Sierra Nevada, the Voltaire dist. (Washoe, Eagle Valley mines), veins in Triassic schists—Gold, Silver, Platinum, Arsenic, Copper minerals; ② E 9 mi., Carson R., area mines—Arsenic, Copper, Gold, Mercury and Silver minerals.

DELWARE, the Sullivan Mine in Brunswick Canyon in E part of Co., veins in andesite—Copper, Gold, Lead and Silver minerals.

PERSHING COUNTY

AREA (far E part of Co.): ① the Iron Hat Mine (20 mi. SW by rough rd. from Valmy on US 40 in Lander Co.), veins in limestone—Copper, Lead and Silver minerals; ② the Jersey Mine (43 mi. SW of Battle Mt. In Lander Co. by rough rd. via Alkali Flat, on flank of the Augusta Mts.), veins in Quartzite and porphyry—Lead, Mercury and Silver minerals; ③ the Kennedy Mine (55 mi. S of Winnemucca in Humboldt Co. via dirt rd., on E side of Granite Mts.), veins in Triassic sediments—Gold, Lead and Silver minerals.

BLACK DIABLO MINE (22 mi. S of Golconda in Humboldt Co.) —Copper, Gold, Lead and Silver minerals.

GOLDBANKS (36 mi. S of Winnemucca in Humboldt Co. via dirt rd.), replacement veins in quartz porphyry—Gold, Mercury, Silver, Copper and Lead minerals.

IMLAY (4 mi. W of Mill City, on I-80): ① S 6 mi. and 4 mi. E of the Humboldt R., the Prince Royal, Humboldt and Eldorado mines, replacement veins in Jurassic sediments—Copper, Gold, Lead, Mercury and Silver minerals; ② W 23 mi. on dirt rd to crossrds., then N 6 mi. on rough rd., the Haystack Mine (7 mi. S of Juno in Humboldt Co.), veins in granite and quartzite—Gold; ③ W 29 mi. via dirt rds.: (a) the Rosebud Mine; and (b) another 4 mi., the Rabbit Hole Mine; with (c) other area mines such as the Scossa and Placeritas to the S and E—Antimony, Copper, Mercury, Gold, Lead and Silver minerals.

LOVELOCK: ① S a few mi., the Wild Horse Mine on E side of the Humboldt Range—Antimony, Arsenic, Copper, Lead and Silver minerals; ② S 7 mi. on Rte. 59, turn E on dirt rd., then S to lake—Antimony, Lead and Silver minerals; ③ SE a few mi., the Sacramento Mine on W flank of the Humboldt Range, placers, veins in Triassic sediments—Gold, Silver, Platinum; ④ SE 25 mi., the Mineral Basin (on the Churchill Co. line), area mines—Iron and Mercury minerals; ⑤ ESE 9 mi., the Muttleberry Mine—Copper, Lead and Silver minerals; ⑥ NE 10 mi., the Loring dist. (Loveland, Willard mines) in the Humboldt Range, contact metamorphic veins—Gold, Iron, Mercury, Silver and Tungsten minerals; ⑦ E 22 mi., Antelope Springs (Relief Mine), veins in Triassic limestone—Antimony, Gold, Mercury and Silver minerals; ⑧ NE 28 mi., the Spring Valley dist. (American Canyon, Fitting mines) on E flank of the Humboldt Range, veins and placers—Copper, Gold, Lead, Mercury, Platinum and Silver minerals; ⑨ W 10 mi., the Velvet Mine, veins in Tertiary eruptives—Gold; ⑩ NW 12 mi., then S 8 mi. W on improved rd., the Eagle Pitcher Mine—Copper, Gold, Silver and Tungsten minerals; ⑪ SW 20 mi., then NW 20 mi. (from Huxley in Churchill Co.), contact metamorphic veins in the Juniper Range—Copper, Gold, Silver and Tungsten minerals; ⑫ NW 24 mi.: (a) the Vernon Mine; and (b) 2 mi. farther N, the Seven Troughs Mine, veins in Tertiary volcanics—Copper, Gold, Lead and Silver minerals; ⑬ N 36 mi. via Rte. 48 and dirt rd. that turns N to Placeritas and large mining dist.—Antimony, Copper, Gold, Lead, Mercury, Silver, petrified and opalized wood; ⑭ NW 45 mi. (and 10 to 15 mi. E of Gerlach in Washoe Co.), the Farrell (Stone House) Mine, veins and lenses in Tertiary rhyolite—Gold.

MILL CITY: ① N 7 mi., on SE slope of the Eugene Mts.: (a) Tungsten (largest tungsten mill in America), contact metamorphic veins—Copper, Silver and Tungsten minerals; (b) 5 mi. farther N, the Keystone Mine—Lead and Silver minerals; ② S 10 mi.
on Rte. 50, the Star Creek Ranch dist:  (a) Santa Clara Mine, veins, lenses—Antimony and Silver minerals;  (b) SW to Star peak (elev. 9,835'), area on E side—gemmy geodes and nodules;  (c) S 6 mi., then 4 mi. W, the Union Vista dist. (Buena Vista Mine) on E slope of the Humboldt Range, replacement veins in Triassic sediments—Antimony, Copper, Gold, Iron, Lead and Silver minerals;  (d) 16 to 20 mi. to N end of the Humboldt Range at Black Knob, area mines with veins in Jurassic calcareous shale—Antimony;  (e) S 30 to 35 mi., the Indian Mine in Indian Canyon on E flank of the Humboldt Range, veins, placers—Gold, Silver;  ③ SE 10 mi., the Sierra dist. (Sunshine, Oro Fino mines), veins in limestone, placers—Copper, Gold, Lead, Platinum and Silver minerals;  ⑤ E via various rough dirt rds.:  (a) 8 mi. NE, the Dun Glen Mine;  (b) 11 mi. E, the Straub Mine;  and (c) 15 mi. SE, the Rockhill Mine—Copper, Gold, Lead and Silver minerals;  ⑥ W 20 mi., the Antelope (Cedar) Mine in the Antelope Range, veins—Antimony, Arsenic, Copper, Gold, Lead, Mercury, Silver and Zinc minerals.

NIGHTINGALE (extreme SW corner of Co., ≈ 40 mi. WSW of Lovelock), on E flank of the Nightingale Range:  ① contact metamorphic veins—Copper, Gold, Lead and Silver minerals;  ② area—Garnets.

OREANA (14 mi. NE of Lovelock on I-80):  ① W 5 mi., the Trinity dist. (Arabia, Oreana mines), veins in altered granodiorite—Antimony, Copper, Gold, Lead, Mercury, Silver and Tungsten;  ② N 6 mi., Gypsy Queen Canyon, area—Dumortierite, Quartz;  ③ NE 5 to 6 mi., mines in Wrights Canyon, contact metamorphic veins—Tungsten minerals;  ④ E 9 mi., the Rochester-Lower Rochester dist.:  (a) Nenzel Mine, veins, placers—Antimony, Copper, Gold, Lead, Platinum minerals;  (b) W side of Lincoln Hill, area;  and (c) in quartz in Bullion Canyon—Dumortierite (blue);  (d) Echo (Ryepatch Mine), contact metamorphic veins—Copper, Gold, Lead, Silver and Tungsten.

ROCHESTER, at Lincoln Hill—Dumortierite (pink).

RYE PATCH DAM, W 5 mi.:  ① the Poker Brown Mine, and ② W another 4 mi., the San Jacinto Mine, veins in slate and granite—Arsenic, Lead and Silver minerals.

TOULON SIDING (on the Southern Pacific RR), W 10 mi., the Copper Valley (Ragged Top) Mine, contact metamorphic veins in limestone—Copper, Tungsten minerals.

STOREY COUNTY

VIRGINIA CITY:  ① area, including Comstock, Gold Hill, Silver Star, Flowery, etc., main veins in diorite and Tertiary volcanics—Copper, Gold, Lead, Mercury and Silver minerals.  ② N, the Castle Peak (Red Mt.) Mine—Mercury.

WASHOE COUNTY

AREA:  ① W side of Mt. Davidson, the West Comstock (Jumbo) Mine (reached from Virginia City in Storey Co.), veins in diorite—Gold, Silver;  ② Renard, W 15 mi., the Sheephead Mine—Gold;  ③ Sano, E the Cottonwood (Round Hole) Mine, veins in sedimentary rocks—Gold, Lead and Silver minerals;  ④ Steamboat Springs, impregnations in Tertiary volcanics, mines and prospects—Mercury minerals;  ⑤ far NE part of Co., High Rock Canyon (best reached from Cedarville, CA, 38 air mi. to the W by rough rds., via Vya):  (a) around headwaters of the Little High Rock Cr., area and (b) surrounding the canyon crossing of the Lost Creek Canyon rd.—obsidian nodules.

GERLACH:  ① SW in the Smoke Creek Desert, area of Deep Hole, placers—Gold;  ② N 38 mi. on Rte. 34, old ghost town of Leadville:  (a) area mines, veins in Tertiary volcanics—Gold, Lead, Silver and Zinc minerals;  (b) N 1 mi., the Donnelly (Gerlach) Mine, veins in sedimentary rocks—Gold, Silver;  (c) N 8 mi., area both sides of Rte. 34—agate, silicified wood.
RENO: ① NE 4 mi., the Wedekind Mine, replacement veins—Gold, Lead, Silver and Zinc minerals; ② NW 10 mi. on Hwy. 395, the Peavine dist. (Reno, Crystal Peak mines), (a) replacement veins, placers—Copper, Gold, Lead, Platinum, Silver and Tungsten minerals; (b) at Cold Springs Valley exit veer E onto tailing paved rd., after stop sign look slightly uphill to S of rd., mine dumps—Azurite, Brochantite, Chrysocolla (with scare Gold associated), platy Hematite in quartz, Malachite, Pseudomalachite, Schorl, rare brownish-green Spalereite and anhedral Tetrahedrite; ③ N 34 mi. via Rte. 33 and dirt rd. on W side of Pyramid Lake, (a) Pyramid Mine, veins in Tertiary volcanics; and 3 mi. W of Pyramid lake along Pyramid way, Burrus mine—Azurite, Barium-pharmacosiderite, Brochantite, Chalcanthite, green Chalcopyllite, Conichalcite, Copper minerals, Cornwallite, blue fuzzy balls of Cyanotrichite, Enargite, Gold, Lead minerals, Olivenite, Parnauite, neon blue Richelsdorfite, Silver minerals, Strashimirite, and Tyrolite.

SPARKS, area draws, washes, fields and land surfaces—agate, Garnet, Idocrase, obsidian.

VYA (extreme NW part of Co., best reached 22 mi. E of Cedarville, CA), S 30 mi. on Rte. 34, area W side of rd.—common opal.

WADSWORTH, W 9 mi., the White Horse (Olinghouse) Mine, contact veins, placers—Gold, Platinum, Silver.

WASHOE CITY (17 mi. S of Reno on US 395), N 1 mi., the Galena Mine, veins in granite—Arsenic, Copper, Gold, Lead, Silver and Zinc minerals.

WHITE PINE COUNTY

AREA, far W part of Co., Bald Mt. (about 75 mi. S of Elko and N of Pancake Summit on US 50), lode mines, placers—Copper, Mercury, Platinum, Silver, Tungsten. This Co. is a very mineral rich county.

BAKER (4 mi. W of the Utah line and 5 mi. S of US 6 / 50): ① area mines—Copper, Gold, Lead, Silver minerals; ② SE, on E flank of the Snake Range, practically on the UT border, the Snake (Bonita) Mine, veins in granite—Silver and Tungsten minerals; ③ the Eagle dist. (Kern, Pleasant Valley, Regan, Tungstonia mines), veins in sedimentary rocks—Copper, Gold, Lead, Silver, Tungsten minerals.

CHERRY CREEK (45 mi. N of Ely on US 93, turn W 9 mi. on Rte. 35): ① area mines, veins in secondary enrichments—Copper, Gold, Lead, Manganese, Silver, Tungsten minerals; ② the Eagle Canyon Mine in the Egan Range; and ③ W 5 mi., the Gold Canyon Mine—Copper, Gold, Lead, Manganese, Silver, Tungsten minerals; ④ SE 18 to 36 mi. (area also reached NW from McGill) and 10 mi. E of old camp of Melvin, many old mines such as the Aurum (Muncy Cr.), Queen Springs, Ruby Hill, Schellbourne, Schell Cr., Siegel, Silver Canyon, Silver Mt.; contact metamorphic veins—Copper, Gold, Lead, Manganese and Silver minerals.

ELY: ① area mines, contact metamorphic veins—Copper, Gold, Lead, Manganese and Silver minerals; ② SE 10 mi., replacement veins in limestone—Manganese and Silver minerals; ③ S 19 mi., the Ward (Taylor) Mine on S side of Ward Peak (elev. 10,936), contact metamorphic veins—Copper, Gold, Lead and Silver minerals. This is the site of the Ward Charcoal Ovens Historic State Monument. ④ SE 35 mi., on US 50, turn E 4 mi. on dirt rd.: (a) old camp of Osceola, veins and placers—Gold, Lead, Platinum, Silver, Tungsten minerals; (b) the nearby Sacramento (Sacramento Pass) Mine on W flank of the Snake Range, veins in limestone and slate—Gold, Silver and Tungsten minerals; ⑤ SE 45 mi., on SW flank of the Snake Range and S of the Lehman Caves National Monument, the old Tungsten dist. (Hub, Lincoln mines), veins in quartzite and argillite—Silver and Tungsten minerals; ⑥ ESE 49 mi., the Black Horse Mine—Gold, Silver; ⑦ W 36 mi. on US 50 to Little Antelope Summit (elev. 7,433), area surfaces—wonderstone; ⑧ (a) take Hwy. 50 NW from Ely 5 mi., then right on gravel rd. 0.7 mi.
along power line into canyon, go to summit on foot; and (b) Canyons N from Lane City for a mile in either direction, in garnet-bearing rhyolite—Garnet.

HAMILTON (≈ 35 air mi. W of Ely and 10 mi. S from turnoff 9 mi. E of Little Antelope Summit), replacement veins in Paleozoic sediments—

**Copper, Gold, Lead, Silver** and **Zinc** minerals.

KIMBERLY (5 mi. NW of Ely on US 50 and 4 mi. W of Rte. 44), NW 1 mi., Robinson Canyon, area surfaces to the S—**Garnets**.

McGILL:  (1) NW 3 mi., the Duck Creek (Success) Mine, replacement veins in limestone and shale—**Copper, Gold, Lead, Silver** and **Zinc** minerals;  (2) S 3 mi. on US 93 to W trending dirt rd.: (a) NW 21 mi., old camp of Steptoe (Granite Mine), replacement veins in Paleozoic sediments—**Gold, Lead, Silver** minerals;  (b) a SW a short distance, old camp of Hunter, replacement veins in dolomitic limestone—**Copper, Lead, Silver** minerals;  (c) NW 28 mi., turn SE toward Magnusons Ranch, the Warm Springs Mine, quartz veins—**Gold, Silver**.

RUTH (8 mi. W of Ely), open pit operations—**Copper**.

SHOSHONE (48 mi. SE of Ely via 28 mi. on US 6 / 50, 3 mi. on US 93, and paved local rds., to the E and S), the Minerva and Lexington mines, veins in limestone—**Silver** and **Tungsten** minerals.

STRAWBERRY (29 mi. NE of Eureka Co. Via Newark Pass), on E slope of the Diamond Mts., the Newark Mine, veins in limestone—**Copper, Gold, Lead** and **Silver** minerals.
NEW HAMPSHIRE

New Hampshire, in the heart of New England, bears two appropriate names: the Granite State, because of its extensive bedrock exposures, and the Land of Peace and Beauty. During the Pleistocene epoch, the entire state was buried beneath a succession of glaciers estimated to have been more than two miles thick. In their original advances from the north, the great sheets of ice scraped the mountains, peneplained the upland regions, and rerouted water courses. In receding after 100,000 years or so, the last, or Wisconsin glaciation left precipitous streams, innumerable lakes, and the barren Precambrian granite over which only a relatively thin layer of soil has formed in the last 8,000 to 10,000 years.

The residual White Mountains of the northern Appalachian chain stretch across the southern part of Coos Co. Many peaks rise more than 4,000 and 5,000 ft. above sea level, culminating in Mt. Washington. At 6,288 ft., this peak is the highest mountain in the New England states. Immediately to the north, the Presidential Range lifts five other rugged peaks to near 6,000 ft. heights, and cutting through the New Hampshire mountains are many sharp notches familiar to all travelers through the northern counties. South of the mountain and lake region, the generally level uplands are noted for isolated minor peaks of resistant rock, called monadnocks.

Commercial mining for copper, gold, lead, silver and zinc, as well as feldspar, fluorspar and serpentine, at various times and places has contributed minor amounts to the state’s economic wealth. However, New Hampshire primarily interests the gem collector because of its pegmatite mines, quarries, and exposures which yield top quality gem crystals. These include Amethyst, Apatite, Aquamarine, Beryl, Garnet, rock crystal (clear, rutilated and rose), Staurolite, Topaz and Tourmaline, among others. Panning for gold is a regular summer hobby activity in the northern streams, especially around the headwaters of Indian River in the extreme northern part of Coos Co. Gold occurrences in northern New Hampshire from unknown sources seem to reflect similar occurrences in the Chaudière River watershed of southern Quebec, just across the international boundary between Canada and southwestern Maine, said to be the most important placer gold field east of the Rocky Mountains. An excellent reference with a nice location map of old mines and prospect can be acquired from the New Hampshire Department of Resources, titled The Geology of New Hampshire, Part III Mineral and Mines.

BELKNAP COUNTY
ALTON, area mines—Arsenopyrite and Pyrite.
GILMANTON, area fields, roadcuts, etc.—jasper.
NEW HAMPTON, the Storer prospect—Mica.

CARROLL COUNTY
BARTLETT, Iron Mt. prospect—Iron ore.
CHATHAM, the Chandler mine—Feldspar.
CONWAY: ☿ NW 2½ mi., the Lovejoy Gravel Pits, Hwy., 16 N ¼ mi., then Left on Passaconaway rd., cross bridge, go 0.3 mi., then Left to gravel road and N ¼ mi.—Microcline feldspar, Smoky Quartz crystals and Topaz; ☿ White Mountain Granite Quarry, at 700 ft. level on W side of Birch Hill—Amethyst; ☿ 2 mi. N of North Conway, then E on Hurricane Mt. rd. 3½ mi., take trail from top ¼ mi. W follow old rd. to ledges in Hurricane Mt.—Amethyst and Smoky Quartz; The Hurricane Mt. prospect—Crocidolite, Adularia.
EATON CENTER, NE 2 mi., at Randall Lead Mine—Smoky Quartz.
JACKSON, area mines, especially the Jackson mine—Arsenopyrite, Bornite, Cassiterite and Wolframite.

MADISON, area mines (Burke, Banks, Hoyt, Madison) — Galena, Silver and Sphalerite.

NORTH CHATHAM (extreme NE corner of Co., on Rte. 113), W ¾ mi., at 2,900 ft. level on E side of South Baldface Mt., area pegmatites and in pockets where pegmatites meet talus slope—Mica (Biotite, Muscovite), Microcline feldspar, Phenakite, Topaz (brown, blue) and Smoky Quartz crystals.

NORTH CONWAY, take rd. W to Echo Lake, then jeep road W to Camp Albite, park and walk ¾ mile W to dig in Moat Mt. There is also collecting at South Moat and the Hogback E of Middle Moat (fee)—Topaz, Amazonite and Smoky Quartz.

OSSIPEE: c (Co. seat and site of the Ossipee Summer Fish Hatchery), area mines—Chalcopyrite, Lead-Silver minerals; d in ledge S of road at Passaconway Quarry near Albany—Smoky Quartz; e Pocket Mt. Prospect—Gold.

REDSTONE (Conway Twp.), the Redstone Red Quarry, between Conway and North Conway E of Hwy. 302—Amethyst, Apatite, Quartz crystals (clear, smoky) and Topaz.

SANDWICH, the White Diamond prospect—Topaz.

CHESHIRE COUNTY

ALSTEAD: c Area old mines producing Beryl (Colony, Allen, Lyman, Fitzgibbon, Porter, Big, Tripp No. 1, Island, Blister, Burroughs Prospect, French, Beauregard, Osborne, Eames)—Beryl with either Mica, Feldspar or both.

CHESTERFIELD, N 2 to 4 mi. on Rte. 63, on W side of Spofford Lake and just W of the Hwy., area mines (Springer, Pierce)—Fluorite.

FITZWILLIAM, at Victoria White and Webb-Fitzwilliam granite quarries—rutilated Quartz.

GILSOM: c area old mines producing Beryl (Nichols, Kirk No. 1 & 2, Isham, H. White, J. White) Beryl with either Mica, Feldspar or both; d NNW 2¼ mi. on a connecting rd., the Island Mice Mine—Beryl, etc.; e NNW 3¼ mi., Britton Mine, Pegmatite—Beryl, etc.; f N 5¼ mi., the Wenham Mine, in pegmatite—rose Quartz.

HARRISVILLE, area old Newell Graphite mine—Graphite.

HINSDALE: c area pegmatites—Tourmaline, etc.; d 1 mi. SE near Ashuelot R.—pink Rhodonite.

KEENE: c E ¾ mi., on S side of Horse Hill, Pegmatite outcrops—Aquamarine, Beryl, etc.; d ENE 5 mi., Bassett Hill, area pegmatite outcrops, pits, etc.—Beryl; e Keene Granite Quarry, 3 mi. SE—Beryl, smoky and rose Quartz; f Will Wise Mine, Hwy. 9 W for 11 mi., pass Sherman Store, turn Right at sign saying “1st Methodist Church in New Hampshire” go ½, then Right on dirt rd. 1½ mi., then Left 3 mile, and a sharp Left onto mine road, park and walk up Bald Hill—Fluorite.

MARLBORO, mi. S at Webb Granite Quarry—Almandite garnet.

MARLOW, at Turner Mine—green Tourmaline.

NELSON, area old mines (Osgood, Lead)—Graphite.

RICHMOND, in Richmond Soapstone Quarry—Cordierite.

SURY, the old Surry Dam mine—Mica, Beryl.

WALPOLE: c tourmalines—Tourmaline; d at Howe Lodge on W side of Dery Hill—Beryl, rose Quartz.

WESTMORELAND: c area old Fluorite mines (Wise, Stoddard No. 13)—Fluorite; d S 3 to 5 mi.—Fluorite; e Stoddard Mine—Amethyst and Quartz crystals; f at Park Hill—Staurolite; g the old Lincoln mine—Molybdenite.
WINCHESTER: ① area pegmatite exposures, pits, etc.—Tourmaline; ② near top of Stony Mt.—Rhodonite.

COOS COUNTY

AREA: ① in the topsoil of the regional mountain ridges surrounding the communities of Berlin, Dummer, Lancaster, Milan, Northumberland and Stratford—Amethyst and Quartz crystals; ② Indian Stream (extreme NW part of both Co. and State), headwater branches, numerous regional placers—Gold (colors, nuggets).

BERLIN: ① (a) at cave W of trail and (b) at 1,200 ft. level on S side of Jasper Mt.—jasper; ② the old Howard prospect—Copper; ③ the J. Gagne property—Feldspar, Mica.

DALTON, the old Dalton prospect—Gold.

GORHAM: ① area mines—Chalcopyrite; the old Mascot Mine—Lead.

MILAN: ① all area pegmatite exposures—Albite, Amethyst, Beryl, Chlorite, Feldspar, Fluorite, Knebelite, Limonite, Molybdenite, Muscovite, Pyrite, Smoky Quartz crystals, Sericite and Topaz; ② area mines—Bornite, Chalcocite (with Gold and Silver), Chalcopyrite, Galena, Pyrite and Sphalerite; ③ (a) Greens Ledge, area pegmatite exposures—Albite, Amethyst, Beryl, Chlorite, Feldspar, Fluorite, Knebelite, Limonite, Molybdenite, Muscovite, Pyrite, Smoky Quartz crystals, Sericite and Topaz.; (b) W and 3 mi. S at 1,700 ft. level of Greens Ledge—Amethyst and Topaz.

PERCY: ① NNW 1½ mi., Victors Head area pegmatites—Albite, Amethyst, Beryl, Chlorite, Feldspar, Fluorite, Knebelite, Limonite, Molybdenite, Muscovite, Pyrite, Smoky Quartz crystals, Sericite and Topaz; ② on W slope of Hutchin Mt.—Amethyst.

SHELBURNE: ① area copper and zinc mines—Bornite and some Sphalerite; ② area lead-silver mines—Lead-Silver minerals and Pyrite.

STARK: ① all regional pegmatite exposures—Albite, Amethyst, Beryl, Chlorite, Feldspar, Fluorite, Knebelite, Limonite, Molybdenite, Muscovite, Pyrite, Smoky Quartz crystals, Sericite and Topaz; ② (a) N 5 to 6 mi., Percy Peak, pegmatites exposed on Diamond Ledge, and (b) Hutchins Mt., area pegmatites—Albite, Amethyst, Beryl, Chlorite, Feldspar, Fluorite, Knebelite, Limonite, Molybdenite, Muscovite, Pyrite, Smoky Quartz crystals, Sericite and Topaz.

STRATFORD, along rd. near Sugarloaf—Amethyst.

WEST MILAN, the Milan Mine—Pyrite and Silver minerals.

GRAFTON COUNTY

AREA, in soils and gravels around shores of Mink Pond—Staurolites.

ALEXANDRIA, in mine dump at 2,000 ft. level on N side of Hutchins Hill—Beryl.

BATH, area mines (Lang, Stevens, Forsaith) —Chalcopyrite, Gold, Lead and Silver.

ENFIELD, at Shaker Hill Granite Quarry—Quartz crystals with Epidote inclusions.

FRANCONIA: ① area mines—Malachite and Essonite garnet; ② area ridges, hillsides and fields, in topsoil—Andradite garnets; ③ in Ammonoosuc R.—jasper.

GRAFTON CENTER: ① in dumps of mines 3 mi. SW on E side of Melvin Hill—Beryl (blue and golden); ② Kilton Mine, via Ruggles Mine Road, crossing Manfeltree Brook, keeping R and then ¾ mi. NE—Beryl (blue and golden); ③ NW 1½ mi., the Ruggles Mine (a noted producer), take direct road W from Grafton Center 1½ mi. to crossroads, then across brook and up hill ¼ mi. (fee)—Amethyst, Apatites, Autunite (fluorescent), Bertrandite, Beryl (blue, golden), Beta-uranophane, Calcite, Chrysoberyl, Clarkeite, Columbite, Compotite, Cymatolite, Kryolite, Dendrite, Feldspar, Garnet.
Graftonite, Gummite, Kasolite, Lepidolite (yellow), Lepidomelane, Lithiophyllite, Marcasite, Micas, Molybdenite, Parsonite, Phosphanylite, Pyrite, Psilomelane, Purpurite, Pyrrhotite, Quartz (rose, smoky, white), Reddingite, Soddyite (yellow, fluorescent), Safflorite, Sillimanite, Staurolite, Torbernite, Topaz, black Tourmaline, Uraninite, Uranium, Uranophane, Uranospinite, Vandendriesscheite, Vivianite, Voelerkenite, Zircon; ① Sargent Mine, on N end of Horse Hill, by driving to top and taking ridge trail on foot—Beryl (blue and golden); ② Alger Mine, take rd. S where Ruggles Mine Road leaves Grafton Road, go on a mi.—blue Beryl, rose and smoky Quartz.

HANOVER: ① area gravels, pits and surface—jasper, rutilated Quartz crystals; ② area mines—Malachite; ③ at Moose Mt.—rutilated Quartz.

HAVERHILL: ① area mines—Arsenopyrite; ② a nearby large deposit, mined—soapstone; ③ in Limonite at Black Mt.—Quartz crystals.

HEBRON, SW 2 mi. at mine dump on E side of Hobart Hill—Beryl and Lepidolite.

LANDAFF, the old Allen prospect—Gold.

LEBANON, area mines—Arsenopyrite.

LINCOLN, on upper slopes of Mt. Nancy—Amethyst.

LISBON: ① area mines—Magnetite, Copper, Gold, Lead, Silver and Pyrite; ② area ridges, hillsides and fields, in topsoil—Staurolites.

LITTLETON: ① area mines (Gardner Mt., Gregory, Quint)—Chalcopyrite, Gold, Lead, Silver; ② the White Mountain Mine—Bornite, Chalcopyrite and Malachite. A mineralized belt containing many mines and prospects extends SW along Rte. 10 for 12 to 15 mi., including Lyman, Lisbon and Bath, and yielding specimen listed as under area mines. ③ on hill ¾ mi. W of Garnet Hill—Staurolite.

LYMAN: ① many area mines—Arsenopyrite, Chalcopyrite, Gold, Lead, Silver; ② the Dodge Mine—native Gold. From the Dodge Mine some $70,000 in gold was taken between 1865 and 1875. A quartz mill was constructed in Lisbon to process the ore. The veins pinched out into unproductive slate at a depth of about 100 ft.

LYME, the old Aldrich Prospect—Scheelite.

NORTH GROTON: ① WSW ¾ mi., the Charles Davis Mine, (¾ mi. W of North Groton, the dirt rd. S from the Cheever Road leads to mine)—Aquamarine, Beryl, Brazilianite, Lazulite; ② SW 2 mi., the Palermo Mine and quarry, (SW 1 mi., then N less then a mi.)—Apatite, Beryl, green Quartz, Brazilianite, Lazulite (massive); ③ Rice Mine, mi. farther from North Groton than Palermo No. 1—Apatite, Beryl, green Quartz; ④ Diamond Ledge Mine, reached by a road a mi. W of North Groton leading from Cheever rd.—Apatite, Beryl, green Quartz; ⑤ the Fletcher Mine, take Rumney Road but turn off
New Hampshire

on a side road up Fletcher Mt. and go 1¼ mi.—Apatite, Beryl, green Quartz; Valencia Mine, located on next hill NW of the Fletcher Mine—Beryl and Apatite.

ORANGE, at Keyes Mine, N 2¼ mi. on dirt rd.—Beryl.

ORFORD: ① area mines—Copper minerals and Pyrite; ② on Strawberry and Blackberry Hills—Staurolite.

RUMNEY, at Belden Mine—Beryl.

SUGAR HILL: ① S 1½ mi., on S side of Ore Hill, area surfaces, in topsoil—Amethyst and rock crystal; ② summit of Ore Hill, in topsoil—Staurolites; ③ S 1½ mi. at Franconia Iron Mine—green Quartz.

TINKERVALE, NW, on Gardner’s Mt. (elev. 2,330’), area mines—Chalcopyrite, Gold, Lead, Pyrite and Silver.

WARREN: ① area mines, especially the Warren Mine—Chalcopyrite and Essonite garnet: ② SW 1½ mi. on SW side of Beech Hill—golden Beryl and Quartz crystals.

WENTWORTH, Currier Mine, take Hwy. 25 N past railroad tracks, then first dirt rd. Right ¾ mi., park ask permission at house, take road through fields to mine—Beryl.

WOODSTOCK, area mines—Sphalerite.

HILLSBOROUGH COUNTY

FRANCESTOWN, general area land surfaces, gravel pits, etc.—jasper.

MILFORD, ① in Bishop and Carlton Granite quarries 2 mi. NW; ② Connoli Granite Quarry 3½ mi. SW; and ③ Kittridge Granite Quarry 1½ mi. SW—rutilated Quartz.

MERRIMACK COUNTY

CONCORD, in Crowley Granite Quarry—Smoky Quartz.

DANBURY: ① NW, on Co. line area about 3¼ mi. SE of Grafton (in Grafton Co.), on Severance Hill, area pegmatites—Beryl, etc.; ② Wild Meadow mine—Beryl.

PITTSFIELD, the Silverdale Mine—Chalcopyrite, Pyrite and Galena.

WARNER, near top of Mount Kearsarge—rose Quartz.

WILMOT: ① N, a mine long worked for abrasives—Garnet; ② in mine dumps at Stuart Hill—Beryl.

ROCKINGHAM COUNTY

NEWMARKET, old Newmarket mine—Lead-Silver minerals.

RAYMOND: ① take Old Manchester Road W, then Lane Road a total of 2 mi. to the (a) Chandler Feldspar Mine, (b) Smith Mine, (c) Welch Mine, and (d) Blake Mine—Feldspar Beryl, Garnet, rose Quartz and Spodumene; ② in boulders on ridge just N of Raymond-Nottingham town line and W of rd.—Quartz crystals.

STRAFFORD COUNTY

CENTER STRAFFORD, Foss Mica Mine about mi. NW. Go 2.3 mi. on Hwy. 9, then mine road to Right to Parker Mt. Mine on Blue Hill—Eucryptite (fluorescent), blue Beryl and Apatite (fluorescent).

ROCHESTER, the old Bliven prospect—Pyrrhotite.
SULLIVAN COUNTY

ACWORTH, less than 2 mi. S at mine dump on W side of Beryl Mt.—Beryl and rose Quartz, Ruthefordine (fluorescent).

ALSTEAD & GILSUM: (a) Beauregard Mine (fee); (b) Blister Mine; (c) Davis Mine, ¼ mi. N of Mica Mine School; (d) Island Mica Mine, 2½ mi. N of Gilsum, 400 yds. E of Hwy. 10 and W of school on knoll between swamp and pond; (e) Big Mine, N of school; (f) Golding-Keene Mine, NW of big Mine; and (g) S of Gilsum on E side of Hwy. 10 at the J. White mine—Beryl (golden, blue); Fitagibbon Mine—Apatite.

CLAREMONT, area outcrops of Micaceous slates—Staurolites.

CROYDON, area mines—Chalcopyrite and cupriferous Pyrites.

GRANTHAM, area Micaceous slate outcrops—Staurolites.

NEWPORT, the G.F. Smith Mica Mine at Chandler's Mill—Augelite, Beryl, Apatite and Lazulite; 3 mi. E at Youngs Hill (fee)—Apatite and Beryl.

SPRINGFIELD: (a) NE to Robinson Corner (straddles Co. line 2¼ mi. SSW of Grafton, and best reached from there), near summit of Pillsbury Ridge, the Columbia and Reynolds mines—Aquamarine, Beryl, Amethyst, Smoky Quartz etc.; (b) in soil at George Hill—Amethyst; (c) at S end of Melvin Hill in ledge on Joe Hill farm—Beryl and Spessartite garnet; (d) Player Mine at Pillsbury Ridge—green Beryl; (e) (a) Reynolds Mine near top of NE slope of Robinson Hill; and (b) Davenport Mine just below—blue Beryl, Garnet and Quartz crystals; (f) (a) Diamond Ledges on Long Mt., and (b) SE on Hwy. 4A for 1½ mi., then N to Globe Mine—Amethyst and smoky Quartz.

SUNAPEE, at Perry Sunapee quarry—rutilated Quartz.

UNITY: (a) area mines—Chalcopyrite and cupriferous Pyrites; (b) S 6 to 7 mi., various localities around Acworth and Beryl Mt., pegmatite exposures, prospects, etc.—Beryl, Garnet and Quartz crystals.
NEW JERSEY

Known as the Garden State, New Jersey ranks among the world’s three most noted gem and mineral producing regions. More than 200 mineral species have been named and described from a single locality and a great variety from hundreds of other places. Of these minerals, at least 40 were first identified in this state, and many of these have thus far never been found elsewhere.

In this 160 by 60 mile state sandwiched between the Hudson and the Delaware Rivers, the geology of New England merges with the geology of the Appalachian Highlands. The Northern one-third of the state lies within the mountain provinces, culminating in 1,803 ft. High Point on Kittatinny Ridge in High Point Park of northwest Sussex Co. The rock formations of this region are mainly folded and faulted limestones, sandstones, and shales of mid Paleozoic age, although three-fifths of New Jersey constitutes the Atlantic Coastal Plain, separated from the Highlands by the Triassic aged Piedmont.

New Jersey has always ranked high in its production of such industrial minerals as limestone, sandstone, serpentine and commercial clays. Iron mining began around 1710 and continues to this day from Limonite, Magnetite, and bog iron ores. The initial production of Zinc first opened the astonishing gemstone quarries at Franklin in Sussex Co. Although Zinc is no longer mined, the production of gems and gemstones through collector activities continues at a great rate. Here, most of the 200 mineral species are concentrated in a geographically very small area, unmatched anywhere else on earth.

While the Franklin deposit may be considered a gem Mecca for mineral collectors, the state’s traprock quarries are of almost equal interest. Not only do the New Jersey quarries lead the world in the production of road ballast, but the gemstones found in cavities in the basalt or diabase lavas are a never-ending source of excitement to the discriminating collectors. The most gem abundant quarries occur in the Palisades of the Hudson River in Bergen Co., the Watchung Mountain basalts of Somerset Co., and the diabase intrusions exposed between the Delaware and Raritan rivers across the center of the state.

Quarries are not the only excavations that uncover traprock. Railroad tunnels, road cuts, and building excavations of every description also produce high quality gems. Perhaps the most famous collecting area is from Bergen Hill in Hudson Co., which is part of the Palisades basalt sill that extends from Bergen Point to Edgewater. Another high, narrow crescent of gem rich diabase parallels the Hudson River from above Haverstraw, NY to below Jersey City, NJ. Cavities in these lavas contain abundant banded agate and opal (common, fire), Amethyst, clear and smoky Quartz crystals, and clear, pastel lime-green Datolite. Such cavities may also contain gem Apatite and Malachite, needlelike Natrolite crystals, and such Zeolites and associated gemstones as Analcime, Apophyllite, Chabazite, Gmelinite, Heulandite, Laumontite, Mesolite, Pectolite and Scolecite. The railroad tunnels and cuts in Bergen Hill may be reached from the cities of Edgewater, Guttenburg, Weehawken, Union City, Hoboken, Jersey City and Bayonne.

Nearby in Snake (Laurel) Hill, just east of the Hackensack River off the New Jersey Turnpike two miles west of Jersey City, excavations in both Bergen and Snake Hills have produced some of the most spectacular minerals ever found, when zeolite species occur in the contrasting matrix of Calcite, Dolomite and Quartz, or other base minerals. These two hills continue to yield magnificent specimen of Albite, Epidote, Galena, Siderite (both rhombohedral crystals and Spherosiderite), and fine talc pseudomorphs after Pectolite.

Of all the localities to be found in America, New Jersey produces the most and finest Amber, mainly from counties where exposures of Cretaceous marl sand occur. The best collecting localities are in marl, clay, sand, and gravel pits scattered over the state. In addition, the copper deposits of the Watchung Mountains yield excellent gem Turquoise. In several counties Amethyst, agate, and jadelike serpentine occur along with a wide variety of
gemstones rare in most of the rest of America and the world. For instance, **Prehnite**, one of the most beautiful and valued of lapidary gemstones, is practically a New Jersey *state* stone.

**BERGEN COUNTY**

AREA, every basalt and diabase outcrop exposed in rd. cuts, railroad tunnels, building excavations, or other across the entire state, including adjoining Passaic, Hudson, Morris, Somerset, Union, Essex, Hunterdon and Herce counties to the Delaware R. and N to Trenton—**agate, Amethyst** (druses, geodes, crystals), **carnelian, chalcedony, Datolite, Natrolite**, and **Opal** (common, fire).

PARAMUS, at Green farm—**Garnet**.

**BURLINGTON COUNTY**

AREA, extreme NW corner of Co., at Crosswicks Cr. (4 mi. S of Trenton in Mercer Co.), area marl and sand pits—**Amber**.

BURLINGTON, HAINSEPORT, RIVERSIDE, RIVERTON, regional sand and gravel pits—**Amber**. (Amber occurs in the sands and gravels all the way SW through Salem Co. adjoining upper Delaware Bay, in greater quantity and quality than anywhere else in America.)

VINCENTOWN, area sand and gravel pits—**Amber**.

**BURLINGTON, CAMDEN COUNTIES**

AREA, all the W part of New Jersey along the Delaware R., especially between Trenton in SW Mercer Co. (30 mi. N of Philadelphia, PA) to Penns Grove (20 mi. S of Philadelphia, PA), in any sand or gravel pit in or near any community—**jasper**, striped clear **agate** and **Amber**.

**CAPE MAY COUNTY**

CAPE MAY, area ocean beach sands and gravels—**Cape May Diamonds**, water polished clear and opaque **quartz** crystals and **chalcedony** (pebbles in all colors from colorless to smoky, including apricotine).

**ESSEX COUNTY**

BELLEVILLE, BLOOMFIELD, area old mines—**Malachite**.

SUMMIT, in Houdaille Construction Materials Quarry—**agate, Prehnite** and **Amethyst**.

**GLOUCESTER COUNTY**

AUSTINVILLE, BRIDGEPORT, GIBBSTOWN, regional sand pits—**Amber**.

HARRISONVILLE (E of Rte. 45 and N of US 40), at Oldmans Cr., a marl pit—**Amber** (large sized chunks).

MULLICA HILL, area marl and sand pits—**Amber, fossils**.

SEWELL: ① sand and gravels of nearby tributary of Mantua Cr.—**Amber**; ② the Inversand Co. greensand marl pit—**Amber**.
HUDSON COUNTY

AREA: ① the Arlington Mine—Chalcopyrite; ② Bergen Hill (reached from Edgewater, Guttenberg, Weehawken, Union, Hoboken, Jersey City and Bayonne), all area RR cuts, tunnels, etc., between Edgewater and Bergen Point along the Hudson R., including regional quarries in the diabase substratum, and ③ Snake Hill, just off the New Jersey Turnpike E of the Hackensack R. 2 mi. E of Jersey City—agate (banded), Albite, Amethyst, Analcime, Apatite, Apophyllite, Calcite crystals, Chabazite, Datolite (lime green, gem), Dolomite crystals, Epidote, Galena, Gmelinite, Heulandite, Laumontite, Malachite, Mesolite, Natrolite crystals, Opal (common, fire), Pectolite, Quartz crystals, Scolecite, Siderite, Spherosiderite, Sphalerite, Sphene and talc.

EAST BELLEVILLE, old mine—Malachite.

EDGEGATER, GUTTENBERG, BAYONNE, area RR and Rd. cuts—agate (banded), Albite, Amethyst, Analcime, Apatite, Apophyllite, Calcite crystals, Chabazite, Datolite (lime green, gem), Dolomite crystals, Epidote, Galena, Gmelinite, Heulandite, Laumontite, Malachite, Mesolite, Natrolite crystals, Opal (common, fire), Pectolite, Quartz crystals, Scolecite, Siderite, Spherosiderite, Sphalerite, Sphene and talc.

HOBOKEN: ① area basalt exposures, in cavities—agate, Amethyst and Opal (common, fire); ② area serpentine outcrops—Magnesite, and serpentine; ③ Castle Point, area quarries in serpentine—Brucite, Dolomite crystals, Magnesite and Hydromagnesite.

JERSEY CITY: ① W 2 mi. at Snake Hill—agate (banded), Albite, Amethyst, Analcime, Apatite, Apophyllite, Calcite crystals, Chabazite, Datolite (lime-green, gem), Dolomite crystals, Epidote, Galena, Gmelinite, Heulandite, Laumontite, Malachite, Mesolite, Natrolite crystals, Opal (common, fire), Pectolite, Quartz crystals, Scolecite, Siderite, Spherosiderite, Sphalerite, Sphene and talc; ② NW, the Schuyler Mine—Allanite (black prismatic crystals), agate (banded), Albite, Amethyst, Analcime, Apatite, Apophyllite, Calcite crystals, Chabazite, Chalcosite, Datolite (lime-green, gem), Dolomite crystals, Epidote, Galena, Gmelinite, Heulandite, Laumontite, Malachite, Mesolite, Natrolite crystals, Opal (common, fire), Pectolite, Quartz crystals, Scolecite, Siderite, Spherosiderite, Sphalerite, Sphene and Talc.

MONTVILLE, area scattered deposits in limestone—serpentine.

PALISADES (not a town but basalt cliffs fronting the Hudson R. for more than 70 Mi.), in cavities and talus debris—agate (banded), Albite, Amethyst, Analcime, Apatite, Apophyllite, Calcite crystals, Chabazite, Datolite (lime-green, gem), Dolomite crystals, Epidote, Galena, Gmelinite, Heulandite, Laumontite, Malachite, Mesolite, Natrolite crystals, Opal (common, fire), Pectolite, Quartz crystals, Scolecite, Siderite, Spherosiderite, Sphalerite, Sphene and Talc.

WEEHAWKEN, in cavities in area basalt exposures—Allophane and area minerals.

HUNTERDON COUNTY

BRYAN, area quarries—Spinel.

CLINTON, area old mines—Braunite.

FLEMINGTON, the Flemington Mine—Chalcopyrite.

LAMBERTVILLE, area quarries on the Delaware R. near the state boundary: ① area quarries—Axinite crystals (in regional traprock cavities), Tourmaline; ② S 1 mi., Goat Hill, in area veins—Pectolite and Stilpnomelane; ③ Barber and Irelands Quarry—Byssolite (locally called mountain leather); ④ the Kingston Quarry—Actinolite crystals; ⑤ the Lambertville Quarry—Prehnite (as tiny micromount, perfect crystals) and Datolite; ⑥ W, in quarries along Delaware R.; ⑦ N 2½ mi., on Mt. Gilboa; ⑧ S 2½ mi., on Belle Mt., at Moore’s Sta., all regional quarries—gem minerals typical of region.
MERCER COUNTY

HOPEWELL:  ① area quarries near the Hunterdon Co. line, and ② at NE end of Pennington Mt. — gem minerals.

MOORE:  ① the Mercer Co. Workhouse Quarry (a few mi. S of the Hunterdon Co. line), and ② a quarry on Rte. 29 between Moore and Lambertville in Hunterdon Co. — Analcime, Aurichalcite (in calcite veins as pale rosettes), Calcite crystals, Chalcopyrite, Epidote, Heulandite, Natrolite (delicate needles), Scolecite and Stibnite; ③ a quarry on Pennington Mt. just E of Rte. 69, in diabase — Analcime, Aurichalcite (in calcite veins as pale rosettes), Calcite crystals, Chalcopyrite, Epidote, Heulandite, Natrolite (delicate needles), Scolecite and Stibnite.

PRINCETON:  ① area quarries, and ② N 4 mi., the Rocky Hill Quarry — Albite, Chalcocite, Chrysocolla, Galena, Goethite, Malachite, Prehnite, Quartz gemstone (various), Stilpnomelane and Tourmaline.

TRENTON, N 9 mi. on Hwy. 29 in Delaware R. at Washington Crossing State Park — black jasper.

MIDDLESEX COUNTY

GRIGGTOWN, area mines — Chalcopyrite.

MILLTOWN, MATAWAN, PERTH, AMBOY, WOODBRIDGE, area gravel pits — varied assortment of gem minerals.

NEW BRUNSWICK:  area mines — Chalcopyrite and Chalcocite; ② East Brunswick, area gravel pits — gem minerals.

SAYREVILLE:  ① area sand and gravel pits — Marcasite (balls and rosettes), Pyrite crystals and petrified wood; ② pits between town and Middletown — Marcasite (nodules) and Pyrite.

MONMOUTH COUNTY

LONG BRANCH. area ocean beach gravels — Quartz crystals.

MANASQUAN, S, along the ocean beaches through Ocean, Atlantic, and Cape may counties (approx. 100 mi.), in beach gravels and cliff talus debris — Cape May Diamonds, water polished clear and opaque quartz crystals, fossils and petrified wood.

NEPTUNE CITY, in marl along Shark R. — Amber.

MORRIS COUNTY

DOVER:  ① area, as vein fillings in Magnetite — isopyre opal; ② nearby: (a) at Ferromonte, large deposit — Apatite (mixed with Magnetite); (b) Golden Corner Mine, as large crystals — Apatite (in Pyrite); ③ the Dell and Fichtor mines — Menaccanite (Ilmenite); ④ on Mine Hill, the Alan Wood Iron Mine (near Summit) — aventurescent Feldspar (Sunstone, bright spangles); ⑤ W 2 mi., the Scrub Oaks Iron Mine (in the Dover magnetite district and the last active iron mine in NJ): (a) on dumps — Bornite, Calcite (fluorescent), Chalcopyrite, Chlorite, Garnet, Hematite, Magnetite, Pyrite (abundant crystals), Quartz crystals (smoky, bluish rutilated), Spinel, sunstone (with copper-colored inclusions), rare-earth minerals (Thorium, Uranium) and Tremolite; (b) pegmatite exposures at the mine — Allanite, Apatite, Calcite, Chevkinite, Doverite, Hornblende, Monazite, Muscovite, Pumpellyite, Rutile, Sphene, Xenotime and Zircon.

HIBERNIA, area mines — Apatite, Pyrite and Pyrrhotite.

HOPATCONG, area gravels and surfaces at Nolands Point, around lake Hopatcong, and Ironia — Garnets.
HURDTOWN, old regional mines, Old Copperas, Hibernia, Hurdtown—Apatite (as yellow crystals in Pyrrhotite, especially at Hurdtown Mine).

JEFFERSON and Mt. Olive twps., area quarries—gem crystals.

KENVILLE, PEQUANNOCK, RIVERDALE, STANHOPE, WHIPPANY, all regional quarries and pits—Prehnite, etc.

LAKE VALHALLA, W on Turkey Mt., old quarries—Diopside, marble and serpentine.

MILLINGTON, area quarries near the Passaic R. off Rte. 512—Prehnite, etc.

MONTVILLE: Ⓐ N, on W shore of Lake Valhalla (US 202 W to sign for Valhalla Lake, turn up hill to a Left turn between stone gate posts marked Valhalla Lake, continue on hardtop rd. N and around lake for a mi. to a brook, park and walk up a wagon rd. parallel with brook to a fork, take Left-hand trail for 130 paces, faint trail leads to Left ¼ mi. to top of the Mt. and to a large white boulder; the dump is a few feet beyond), an abandoned quarry—gem serpentine (yellow and green translucent), Diopside (fluorescent); Ⓑ other area quarries and pits—various gems and minerals.

MT. FREEDOM, area pits—Allanite, Amphiboles (green and gray crystals), Augite, Chalcopyrite, Chondrodite, Coocolite (pyroxene, as blue, green and white crystals).

MT. HOPE, area quarries—Apatite, Pyrite and Pyrrhotite, etc.

MT. PLEASANT, area quarries—Apatite, Pyrite and Pyrrhotite.

STERLING, in gravels of Sterling Brook—gem carnelian. (The nodules are best found by digging 2 ft. under the silt layer overlying bedrock gravels.)

TAYLORVILLE, the Rockaway Valley area mines—Magnetite.

WARREN (Twp.), Bedrock gravels of Carnelian Brook—agate (banded, moss), chalcedony (red, green, red-orange, botryoidal), jasper, petrified wood, Quartz crystals (Amethyst, cat’s eye citrine, clear and smoky), sard and sardonyx.

OCEAN & ATLANTIC COUNTIES

AREA, entire stretch of the Atlantic Ocean beaches from the NE Co. border to Cape May Co., in beach gravels, and weathering out of the cliffs—Cape May Diamonds (Quartz).
PASSAIC COUNTY

CLIFTON: ① W 3 mi. on US 46, the Great Notch Quarry; ② the Frascinco Bros. Quarry; ③ the two quarries of Houdaille Industries adjoining the Great Notch RR Sta.; and ④ a quarry immediately SW of the Station—agate, Albite, Amethyst, Apophyllite, Calcite (snowy crystals sprinkled with dark green Babingtonite), Chrysocolla (some not gemmy), Datolite, Epidote, Natrolite, Opal (Cachalong), Pectolite, Prehnite (green crystals and globular crusts in various quarries), Quartz crystals, Scolecite, Selenite, Thaumasite and Thomsonite.

HALEDON, NORTH HALEDON, area quarries—agate, Datolite crystals, dendritic Pyrolusite and Goethite.

HAWTHORNE, the Braen’s Quarry—agate (a prime locality for this gemstone), Datolite crystals, dendritic Pyrolusite and Goethite.

LITTLE FALLS, the Great Notch Corp. quarry—agate, Albite, Amethyst, Apophyllite, Calcite (snowy crystals sprinkled with dark green Babingtonite), Chrysocolla (some not gemmy), Datolite, Epidote, Natrolite, Opal (Cachalong), Pectolite, Prehnite (green crystals and globular crusts in various quarries), Quartz crystals, Scolecite, Selenite, Thaumasite and Thomsonite.

MONTCLAIR, the Upper Montclair Quarry (on the Co. line), on Edgecliff Rd.—agate (banded), Amethyst, Anorphtite, Babingtonite, Byssolite, Calcite, Chabazite, chalcedony, Chrysocolla, Datolite, Goethite, Laumontite, Opal, Prehnite, Scolecite, Selenite and Stibnite.

PATERSON: ① area quarries, especially the gem renowned Prospect Park Quarry (at the end of Platen Ave.)—agate (banded), Amethyst, Anorthite (fluorescent), Apophyllite, Barite, Babingtonite, Byssolite, Calcite, Chabazite (fluorescent), chalcedony, Covellite, Cuprite, Datolite (fluorescent), Dolomite crystals, Galena, Goethite, Greenockite, Hematite, Heulandite (fluorescent), Leonhardite (fluorescent), Mesolite (on calcite), Opal (Cachalong), Prehnite, Quartz (pseudomorphs after Glauberite, crystals to 3” long; other quartz family gemstones), Silver (native wire), Stevensite (fluorescent) and Thaumasite (tabular crystals, fluorescent); ② W 9 mi. on US 202, quarry at Pompton Lakes—agate (banded), Amethyst, Barite, Babingtonite, Byssolite, Calcite, Chabazite (fluorescent), chalcedony, Covellite, Cuprite, Datolite (fluorescent), Dolomite crystals, Fluorapophyllite (fluorescent), Galena, Goethite, Greenockite, Hematite, Leonhardite (fluorescent), Mesolite (on calcite), Opal (Cachalong), Prehnite, Quartz (pseudomorphs after Glauberite, crystals to 3” long; other quartz family gemstones), Silver (native wire), Stevensite (fluorescent) and Thaumasite (tabular crystals, fluorescent); ③ SE, to Bergen Hill extension from Hudson Co., in all RR tunnels and cuts as fine, brilliant crystals—Analcime (fluorescent) with Datolite (fluorescent), Natrolite (fluorescent), and Stibnite.

RINGWOOD: ① gravel quarries on Rte. 511 near the Ringwood State park—many gemstones; ② the Ringwood Iron Mine—Calcite, Chalcopyrite, Crocidolite, Corundum, Epidote, Garnet, Hornblende, Limonite, Orthoclase, Pyrite, serpentine and Zircon; ③ the Hope Mine—Garnet, Magnetite.

WAYNE, area gravel quarries along the Pompton R. (on the Morris Co. line)—wide variety of gemstones.

WEST PATERSON, in the New Street quarries: ① area quarries on both sides of New Street; ② the New Street Quarry itself; ③ the Upper New Street Quarry; and ④ Burger’s Quarry—agate (banded), Amethyst, Apophyllite, Barite, Babingtonite, Byssolite, Calcite, chalcedony, Covellite, Cuprite, Datolite, Dolomite crystals, Galena, Goethite, Greenockite, Hematite, Mesolite (on calcite), Opal (Cachalong), Prehnite (exceptional green), Quartz (pseudomorphs after Glauberite, crystals to 3” long; other quartz family gemstones), Silver (native wire), Stevensite, Thaumasite and Thomsonite.
SALEM COUNTY

AREA, all Co. gravel and sand pits and stream sands—Amber.  
HARRISONVILLE, regional sand pits and river sands—Amber.

SOMERSET COUNTY

BARNARDSVILLE, the Somerset Crushed Stone Co. Quarry—agate, Quartz geodes, etc.
BELLE MEAD, the 3M Quarry—quartz family minerals.
BOUND BROOK, area quarries—agate, Prehnite and quartz gemstones.
CHIMNEY ROCK, area quarries—Bornite, Calcite (fluorescent), Chalcocite, native Copper and Silver, Cuprite, Malachite and Tourmaline.
KINGSTON, the Kingston Trap Rock Co. Quarry—agate, Prehnite and quartz gemstones.
MARTINSVILLE, the Dock Watch Quarry Co. quarry agate, Quartz family gemstones, etc.
PYSON STATION, area pits and quarries—Quartz geodes.
SOMERVILLE: ☀ area quarries—agate, Albite, Datolite, native Copper and Silver, Quartz crystals and serpentine; ☡ N 3 mi., old copper mine on First Watchung Mt.—gem Turquoise and Copper minerals; ☩ the American Copper Mine—Chalcocite, Chalcopyrite, Malachite and native Copper.

TO SUMMIT

WATCHUNG, area quarries—carnelian, Citrine, jasper and sardonyx.

SUSSEX COUNTY

ANDOVER: ☀ area quarries—amphibole asbestos (blue) and Aragonite; ☡ the Old Iron Mine—Garnet, Hematite, Limonite and Magnetite; ☩ the Suphur Hill Mine—Willemite (fluorescent).
BEEMERVILLE, area outcrops of dark nepheline syenite—Sodalite (fluorescent).
EDISON, the Ogden Mine Group mines—Bustamite, Calcite, Cleiophane (colorless Sphalerite), Cyprine, Franklinite, Friedelite (translucent, dark carnelian...
colored, resembles chalcedony, found as stringers in calcite), **Hodgkinsonite**, **Magnetite**, **Molybdenite**, **Rhodonite** (zinc), **Willemite** and **Zincite**.

**FRANKLIN**: ① area mines (See Franklin-Ogdensburg-Sterling Hill district for mineral listing); ② turn off Rte 23 at corner of Franklin Ave. to the Buckwheat Mine dumps on the Wallkill R. (fee)—approximately 200 gems and minerals (some 30 fluorescent), including **Friedelite**, **Cleiophane**, **Hodgkinsonite**, **Willemite** (rarest of the fine area gems as transparent orange and yellow crystals) and **Zincite**, etc.; ③ the Taylor Mine dumps, as purple octahedral and crystal masses in limestone—**Fluorite**; ④ N, the old Parker Mine dumps (now built over but investigation of area openings, excavations sometimes possible.) many fluorescent minerals—**Axinite**, **Apatite**, **Azurite**, **Calcium Larisenite**, **Cerussite**, **Corundum**, **Franklinite**, **Galena**, **Hardystonite**, **Hydrozincite**, **Malachite**, **Margarosanite**, **Pectolite**, **Smithsonite** and **Wollastonite**; ⑤ numerous mine dumps along Cork Hill and Taylor rds., and ⑥ the Noble and Passaic pits (mammoth size, opened in the 1879’s)—**Apatite**, **Azurite**, **Cerussite**, **Corundum**, **Franklinite**, **Galena** and fluorescent minerals; ⑦ such regional mines as: (a) the Ogden Mine, as rose colored crystals—**Fluorite**; (b) the Franklin and Williams Mine—**Apatite**; (c) Stanhope and Ahles mines—**Magnetite** and **Molybdenite**; (d) the Trotter shaft—**Amazonite**, **Garnets** (Ammonite, Spessartite, Melanite); (e) the Williams Mine, abundant—**Zircons** (in Magnetite); ⑧ S on Rte. 517 to Ogdensburg: (a) all regional limestone exposures, in contact zone with the enclosing country rock, facet quality—**Corundum**; (b) various mines and dumps of the new Jersey Zinc Co. —**Bustamite**, **Calcite**, **Cleiophane** (colorless Sphalerite), **Cyprine**, **Franklinitfe**, **Friedelte** (translucent, dark carnelian colored, resembles chalcedony, found as stringers in calcite), **Hodgkinsonite**, **Magnetite**, **Molybdenite**, **Rhodonite** (zinc), **Willemite** and **Zincite**.

THE FRANKLIN-OGDENSBURG-STERLING HILL district produces both gem quality minerals and material not useful to the lapidary. ① area mines : (a) primary ore minerals—**Franklinite**, **Tephroite**, **Willemite** (bright green fluorescent), **Zincite** (fluorescent); (b) Skarn minerals—yellow **Andradite** garnet, **Biotite**, **Bustamite** (pink fluorescent), **Calcite** (red fluorescent), **Cummingtonite**, **Diopside** (shy blue fluorescent), **Franklinite**, **Fowlerite**, **Gahnite**, **Glaucocrohite**, **Esperite** (bright yellow fluorescent), **Hardystonite** (purple fluorescent), **Hastingsite**, **Hyalophane**, **Jeffersonite**, **Magnete**, **Manganosite**, **Pargasite** (weak yellow fluorescent), **Roepperite**, **Schefferite**, **Tephroite**, **Vesuvianite**, **Willemite** (bright green fluorescent), **Wollastonite** (orange fluorescent), **Xenotite** (weak white fluorescent), **Zinc Schofferite**, **Zincite**; (c) pegmatite contact minerals—**Apatite**, **Arsenopyrite**, **Barite** (yellow fluorescent), **Barylite** (violet-blue fluorescent), **Barysilite**, **Beryl**, **Beryllium Vesuvianite**, **B ornite**, **Cahnite** (weak white fluorescent), **Calcium Larsenite**, **Chalcocite**, **Chalcopryite**, **Chloanthite**, **Clinohedrite** (orange fluorescent), **Copper**, **Corundum Cuppidine**, **Datolite**, **Fluorite** (blue fluorescent), **Franklinite**, **Galena**, **Glaucocrohite**, **Gu erinite** (weak white fluorescent), **Hancockite**, **Hedyphane** (weak yellow fluorescent), **Hodgkinsonite** (weak red fluorescent), **Johnbaumite** (dark orange fluorescent), **Kentrolite**, **Larsenite**, **Lead**, **Loellingite**, **Leucophoenicite**, **Manganaxinite** (red fluorescent), **Margarite** (weak blue-fluorescent), **Margarosanite** (bright sky blue fluorescent), **Meta-ankoleite** (green fluorescent), **Metalodevite** (green fluorescent), **Minehillite** (violet-blue fluorescent), **Nasonite** (weak fluorescent).
New Jersey

yellow fluorescent), **Niccolite**, **Pectolite** (orange fluorescent), **Phlogopite** (yellow fluorescent), **Picropharmacolite** (weak white fluorescent), **Prehnite**, **Pyrite**, **Roebelingite** (red-orange fluorescent), **Silver**, **Sphalerite** (fluorescent), **Sussextite**, **Svabite** (peach fluorescent), **Tephrinite**, **Tilasite** (pale yellow fluorescent), **Turneauireite** (orange fluorescent), **Uvite** (yellow fluorescent), **Willemite** (bright green fluorescent), **Zircon** (bright orange-yellow fluorescent); (d) Hydrothermal vein minerals—**Aragonite** (yellowish white fluorescent), **Albite**, **Allactite**, **Anhydrite**, **Apophyllite**, **Arsenopyrite**, **Arseniosiderite**, **Barite** (yellow fluorescent), **Bemente**, **Calciothomsonite**, **Calcite** (red fluorescent), **Celestite** (white fluorescent), **Chalcophanite**, **Charlesite** (weak blue fluorescent), **Chlorite**, **Chlorophoeenicite**, **Crocidolite**, **Dolomite**, **Dypingite** (lt. blue fluorescent), **Fluorinite**, **Fowlerite**, **Friedelitite**, **Gageite**, **Galena**, **Galena** (red fluorescent), **Goethite**, **Greenockite**, **Hedyphane** (fluorescent), **Hodgkinsonite** (yellow fluorescent), **Hodimorphite** (uneven green fluorescent), **Hydrohetaerolite**, **Hydrozincite** (sky blue fluorescent), **Limonite**, **Malachite**, **Neotocite**, **Psilomelane**, **Quartz**, **Smithsonite** (white fluorescent), **Uranospinite**, **Znucalite** (green fluorescent).

FRANKLIN FURNACE, area zinc mines—many minerals of which **Fluorite**, **Franklinite**, **Magnetite**, **Tephrinite**, **Willemite** and **Zincite** are the most abundant.

MCAFFEE, SIMPSON, CEDAR HILL, area mines—**Hematite**.

MINE HILL, area quarries, mines—**Axinite**.

NEWTON: ① area limestone quarries—**Corundum** (blue, pink) and **Ruby**; ② SE 4 mi., the Andover Group mines—**Magnetite**.

OGDENSBURG, across from Wallkill River Valley at Sterling Hill—approximately 200 gems and minerals (some 30 fluorescent), including **Amphibole**, **Apatite**, **Augite** (pyroxene), **Calamine**, **Hemimorphite**), **Chalcophanite**, **Chalcopyrite**, **Cleiohpane**, **Fowlerite** (Rhodonite), **Franklinite** (crystals to 8” on a side), **Friedelitite**, **Gahnite**, **Hodgkinsonite**, **Tephrinite**, **Willemite** (as transparent orange and yellow crystals) and **Zincite**, etc.

ROSEVILLE, area mines—blue **amphibole asbestos**.

SPARTA: ① area quarries (in limestone) —**Chondrodite**, **Corundum** (blue, pink) and **Ruby**, **Diopside**, **Edenite**, **Magnesio-hornblende**, **Meionite**, **Microcline**, **Norbergite**, **Pargasite**, **Phlogopite**, **Tremolite** (all fluorescent); ② SE 3½ mi., the Ford Mine—**Magnetite**; ③ Limecrest Quarry—**Albite**, **Corundum** (both fluorescent).

SPARTA JUCTION, area limestone quarries—**Actinolite**, **Barite**, **Biotite**, **Fluorite**, **Pyrite**, **Quartz** crystals, **Rhodonite**, **Rutile**, **Sphene**, **Spinel** and **Tourmaline**.

UNION COUNTY

MOUNTAINSIDE, area quarries in the Watchung Mt. traprock the underlies the region E and NE of the First and Second Watchung Mts.—**agate** (banded, neutral, pastel), **Albite**, **Apophyllite** (green crystals), **Bornite**, **chalcedony** (vari-colored), **Chrysocolla** (only specimen material), **Datolite**, **Galena**, **Hematite**, **Opal** (common, fire), **Orthoclase** (pink crystals), **Pumpylite** (dark green crusts).

the Wilson's Quarry—Albite (pink), Datolite, Malachite, native Silver and Zeolites (Analcime, Gmelinite, Natrolite).

SCOTCH PLAINS, area quarries—agate, Albite, Apophyllite, Bornite, chalcedony, Chrysocolla, Datolite, Galena, Hematite, Opal, Orthoclase, Pumpylite.

SUMMIT, area traprock quarries—agate, Albite, Apophyllite, Bornite, chalcedony, Chrysocolla, Datolite, Galena, Hematite, Opal, Orthoclase, Pectolite and Pumpylite.

WARREN COUNTY

AREA: ① the Cummings Iron Mine—Garnet, Hematite and Magnetite; ② the Taylor Mine—Algerite (altered scapolite).

HARMONY: ① the Franklin and Marble Hill Quarry—Actinolite; ② the Marble Mt. Mine—Hematite.

OXFORD, the Oxford Furnace Mine—Magnetite.

PHILLIPSBURG, area quarries—serpentine and soapstone.
NEW MEXICO

Often called the land of Enchantment, New Mexico straddles the Continental Divide and has a mean elevation of 5,500’ above sea level. The state, which is roughly bisected by the Rio Grande, exposes an array of Paleozoic rock formations in its usually isolated and remote semiarid mountains and plateaus. Topographically, New Mexico is noted for its spacious grasslands, wide sweeping deserts, broken mesas, volcanic necks, and densely pine forested mountains marked by high, barren peaks.

Not only does New Mexico contain a very considerable wealth in Copper, Gold, Iron, Lead, Manganese, Molybdenum (one of the largest Molybdenum mines in America) and Zinc, but empty reaches are especially enchanting to the gem and mineral collector because vast areas are public domain and therefore open to collecting. Much of the grazing land is leased to ranchers and farmers, and there are many mining claims. Courtesy requires permission to collect, almost always hospitably given.

The US Geological Survey reports that from 1848 through 1965 New Mexico produced 2,267,000 ounces of Gold. Also, many rich Silver and Lead-Silver discoveries were made in rapid succession in the 1870’s. The major Gold districts are Elizabethtown-Baldy, Mogollon and Lordsburg.

Both native Silver and Turquoise were mined rather extensively by pre-historic Indians, and many Turquoise deposits are active today. Potash is mined from one of the world’s largest deposits, but the enormous coal beds remain almost untouched because of the long hauling distance to any substantial manufacturing center. Few roads penetrate the back-country, and those that do are mostly rough dirt roads used by stock ranchers, miners and Indians. Therefore caution is urged for all adventurous rock collectors bent on exploring the hinterlands. They are blistering hot in summer and bitterly cold in winter and always deficient in water.

BERNALILLO COUNTY

AREA, W SIDE OF Co. but E of the Continental Divide, the Rio Puerco Valley, all area gravels, surfaces, draws, washes, etc.—agate, chalcedony, jasper, opalized and agatized wood.

ALBUQUERQUE: ① WNW, on N side of the new freeway, in area sand dunes—agate, chalcedony, jasper, opalized and agatized wood; ② W 11 mi. on US 66 to Tepeee Service Sta., turn S ¼ mi. on dirt rd. (making only right turns for ⅔ mi.): (a) in banks of arroyos leading toward the river and on all adjacent ridges—agate, chalcedony, jasper; (b) along E side of range of low hills all the way to the Isleta Indian Res., in sandy arroyos and erosional breaks in the grazing lands—agate, chalcedony.

ISLETA PUEBLO (on E side of the Rio Grange across from Isleta), E into the Isleta Indian Res., all area surfaces, draws, washes, etc.—opal, opalized and agatized wood.

TIJERAS, the Tijeras Canyon in the Sandia Mts., area mines—Fluorite.

CATRON COUNTY

AREA, SE corner of Co., the Taylor Cr. Dist. (extending into Sierra Co.), area mines and deposits—Fluorite, colorless Topaz. (see following page)

APACHE CREEK, NW 5 mi. on Rte. 32 to national Forest boundary, park on N side, on left across Apache Cr., N to S the Lee Russell and Kerr canyons, hike 4 mi. up Lee Russell (take drinking water): ① along way, area surfaces—agate; ② into Turkey Flat and Elk Horn Park—gem agate.
HORSE SPRINGS, S, in the widespread Plains of San Augustine, in exposures of volcanic tuffs—**moss agate, jasper**.

LUNA: ① W 2 mi. on US 180, surface of ridge N of hwy.—Amethyst crystal geodes; ② W 4.3 mi. on US 180 to the San Francisco R. bridge, area N side of hwy.—gem banded **agate**; ③ S on US 180 to W trending logging rd. into the San Francisco Mts., area along both sides of rd.—**agate**; ④ SE 10 mi. on US 180, on N side of hwy.—**agate, Amethyst, Quartz** crystal (clusters); ⑤ many other regional localities—**agate, chalcedony, jasper, Quartz** crystals, etc.

MOGOLLON (Dist.), area mines and surfaces—**agate, chalcedony, jasper, Fluorite**.

QUEMADO: ① area (many localities) —**agate, chalcedony, jasper, agatized wood**; ② N about 12 mi. on Rte. 117 to E trending dirt side rd., then E on this rd. ¼ mi., broad area of diggings—**agatized wood**; ③ N to end of pavement, turn NE on old rd. to Horse Camp, area draws, washes, surfaces, etc.—**agatized wood**.

CHAVES COUNTY

LAKEARTHUR, E 16 mi., along Eddy Co. line, area—**Aragonite** crystals.

ROSWELL, E to the Pecos R., entire area on both sides of the river: ① 80 mi. N to Fort Sumner in De Baca Co., and ② S 70 mi. to Carlsbad in Eddy Co., in river bed gravels and regional benchland gravels—**Quartz** crystals (clear black, clear red, red, white, etc.)

COLFAX COUNTY

AREA, Moreno and Ute creeks—**Chalcopryite, Gold, Pyrite, Pyrrhotite**, etc.

EAGLE NEST, take US 64 to Mexican Gulch, which is first side canyon from Palisades and on right side of Cimarron Canyon—**Agate, Apatite**.

POINT OF ROCKS, a number of rare minerals—**Searlesite, Villiaumite** (both fluorescent).

RATON, the Sugarite Mine in the area coal fields—**Amber**.
DE BACA COUNTY

FORT SUMNER: ① S, along both sides of the Pecos R. all the way to Carlsbad in Eddy Co. (about 150 mi.), in river gravels and benchland surfaces—Pecos diamonds (Quartz crystals - clear, rose, red, smoky); ② W about 28 mi. along US 60 (about halfway to Vaugh in Guadalupe Co.), in bench terrace, and gravel beds of all tributaries to the Pecos R. —Pecos diamonds.

DONA ANA COUNTY

AREA: ① many Co. deposits and Fluorspar mines (check topographic maps)—Fluorite; ② Black Mt., placer sands of Texas Cr.—Gold.

HATCH, NE on dirt rd. into the Caballo Mts.: ① regional mt. Breaks, draws, washes, etc., especially along the Sierra Co. line—agate, chalcedony, jasp-agate, jasper, Quartz crystals; ② many area old mines (dumps good collecting localities)—Goethite, Fluorite, Quartz crystals; ③ S of cattle pens (passed en route to mining area), area washes, loose in soil—Quartz crystals.

KILBOURNE HOLE (extinct volcano), best reached W on Rte. 273 out of El Paso, TX, WNW on turnoff from Rte. 273 (1 mi. N of jct. With Rte. 260), cross RR after 5 mi. to Strauss, then NW 5 mi. to Vevay, turn W about 13 mi. to N - S crossrd., then N to Hunts Hole and the volcano (about 5 mi., all very sandy desert, so be prepared): ① in sands around rim of volcano, and ② in crater bottom, weathered out of basalts—Augite, Peridot crystals (gemmy, to 1” dia.).

LAS CRUCES: ① S, along both sides of US 80, and ② W 5 mi. on side rd. to Mesilla, all area—obsidian.
ORGAN (Dist.): ① area mines—Brochantite, Cerargyrite, Cerussite, Chalcopyrite, Molybdenite; ② the Quicksilver Mine, on dumps—Chrysocolla, onyx, rock crystal (with Chlorite inclusions).

EDDY COUNTY

ARTESIA, E on US 82, cross Pecos R., then E ½ mi., turn S on ranch rd. to range of low hills near the river, all area draws, washes, surfaces, etc.—Pecos diamonds.

WHITE CITY (entrance to Carlsbad Caverns National Park), area limestones—onyx (outside park boundaries).

GRANT COUNTY

AREA: ① Bullards Peak dist., area mines—Pyrargyrite; ② many regional mines (Black Hawk, Chloride Flat, Kimball, Lone Mt., Steeplerock, Pyramid, etc.)—Argentite.

CENTRAL (Dist.) 40% of all fluorspar mined in the state comes from this county: ① Burro Mt.: (a) area mines—Azurite, Chalcocite, Chalcopyrite, Cerargyrite, Chrysocolla, Fluorite, Galena, Malachite, Pyrite, onyx; (b) Cap Rock Mt., and (c) Mimbres Mt., W slopes—agate, chalcedony, chert, Chrysocolla, jasp-agate, jasper, Fluorite, rock crystal; ② Sylvanite Dist., the Wood Mine—Pyrolusite (with Hematite and Limonite) coatings on Quartz. Cliff, THE Gila R., both sides in Sec. 19, 20, 29 & 30, T. 13 S, R. 13 W, in area mines, outcrops, etc.—Alunogen, Halotrichite.

PIERRO-HANOVER, JUNIPER, MEERS CHAUM dists., area surfaces—chert (various colors).

FORT BAYARD, area surfaces—opal (common, fire).

GEORGETOWN, the Commercial Mine—Argentite, Descloizite.

GRANITE GAP, the Hanover Mines—Argentite, Cerussite, Cuprite, Sphalerite, etc.

HACHITA (Dist.): ① area mines—Cerussite, Silver, Stilbite, Wolframite; ② the American Mine—Cerussite, Silver, Stilbite, Wolframite; ③ W 2 blocks, then S on ranch rd. 1.6 mi., passing cemetery to an E trending dirt rd. (dim, very rough), then S about 4½ mi. to the old Apache Mine, dump No. 2—Calcite (stained green), Chrysocolla, Malachite, Turquoise; ④ SW on Rte. 81 into Hidalgo Co., the Little Hachita Mts., many area mines and dumps—moonstone.

MULE CREEK (far NW corner of Co.): ① area surfaces along the AR state boundary fence, high gem quality—Apache tears; ② S, in the old Carlisle mining dist.—Amethyst.

PINOS ALTOS, E, into the Black Mts.: ① the Great Republic Mine, and ② all W side slopes, draws, etc.—Albite, Amethyst, Biotite, Sanidine, Sphene; ③ N 28 mi. on Rte. 15: (a) Sapillo Cr., area gravels, and (b) Alum Peak, area surfaces—banded agate geodes, carnelian.

REDROCK, NE 6 mi., in Ricolite Gulch, area—ricolite (gemmy banded serpentine).

SANTA RITE (Dist.), area mine dumps—Copper minerals, Cuprite, Molybdenite.

SILVER CITY: ① Gold Hill, large mine dumps—Argentite, Pyrrargyrite, native Silver, Sphalerite; ② SW 10 mi. (1½ mi. N of Tyrone): (a) the Azure Mine (especially the Elizabeth Pocket); (b) in all regional pre-historic Indian excavations; (c) SE ¼ mi., the Parker Mine; and (d) many other area mine dumps—Halloysite, Quartz crystals, Turquoise; ③ W 12 mi., and 24 mi. N, area pits and prospects—meerschaum; ④ N 15 mi., on both sides of the Gila R., large deposit—alum.

SYLVANIA (Dist.), the Golden Eagle and Handcar mines—Tetradymite (containing Gold).
Fluorspar mines in Grant County
GUADALUPE COUNTY

SANTA ROSA, are coal mines, on dumps—jet.

HIDALGO COUNTY

AREA, NE corner of Co. (best reached from Hachita in Grant Co.): 1) Playas Dry lake, and 2) Hatchet Mt., area surfaces—agate, moss opal; 3) area fluor spar mines and prospect—Fluorite. (see map of Fluorite mines and prospects to left).

LORDSBURG: 1) area mines (Pinos Altos, Santa Rita, Steeple Rock, Sylvanite, etc.)—Bornite, Cerussite, Chalcopyrite, Gold; 2) S 2 mi. to rd. fork: (a) W fork to ghost town of Shakespeare (the town too mean to live); (b) SE, around cemetery about 1 mi., turn W to base of chain of low mts., many area pits and dumps—Azurite, Bornite, Galena, Limonite, etc.; (c) S through Pyramid Mts., some 85 old mines (the Atwood, Manner, Silver & Gold, etc.)—Copper, Gold and Silver minerals; 3) area deposits—onyx.

LINCOLN COUNTY

ANCHO area draws, washes, land surfaces—jasper.

HIDALGO (Dist.), area mines and prospects—Fluorite.

JICARILLA, NOGAL, WHITE OAKS: 1) area mines—Gold, Huebnerite; 2) area deposits—onyx.

LUNA COUNTY

AREA, the Jackson Tunnel—Smithsonite (fluorescent).

COLUMBUS: 1) W 4 mi., area—onyx; 2) NW 12 mi., the Tres Hermanas Mts., area mines—Dumortierite, Hydrozincite, Pyrolusite, Quartz crystals, Smithsonite, Willemite (fluorescent).
DEMING: ① area:  (a) all draws, washes, surfaces for miles around—agate, chalcedony, chert, jasper, etc.;  (b) regional flourspar mines—Calcite (fluorescent).
Fluorite; ② NE 5.1 mi. on Rte 26 to N trending ranch rd., then 5 to 6 mi. on dirt rd. toward Masacre Peak (elev. 5,600'), center of rich rock hunting area about 15 by 25 mi., scattered over entire area but excluding some hills—carnelian, deep red jasper; ③ S 8 mi. on Rte. 11, then W and S by turns for 16 mi. to famed Big Diggins, the Westmoreland claims (open to gemstone collectors on a fee basis, as deposits are bulldozed out commercially): (a) the Big Diggins—agate (high grade, vein type, bordered with sagenite, clear with red and black banding, to 50 lbs. Chunks); (b) several other nearby claims—agate; ④ E 7 mi. on I-10, the S 5 mi. to noted Spanish Stirrup Guest Ranch: (a) all surrounding ranch lands—agate, geodes crystal lines; (b) low saddle of the Little Florida Mts.—agate (sagenitic), blue chalcedony, jasper. The nearby Rockhound State Park is equipped with picnic and camping facilities geared to the gem and mineral collector. ⑤ SW 27 mi., area ranch lands open for a fee—agate; ⑥ SW 38 mi., toward Hermanas (20 mi. S from Big Diggins), the W via fence gate and crooked rough rd., several well known area nodule beds—agate nodules, agate geodes (containing brown to clear Quartz crystals), Amethyst, opal.

FREMONT, area mines—Azurite, Bismuth, Chalcopyrite, Galena, Malchite.
NUTT, SW to Cooks peak (elev. 8,408‘): ① area mines—Anglesite, Cerussite, Galena, Plumbojarosite; ② area on and surrounding the peak embracing ≈ 20 sq. mi., mostly flats and low hills covered with gemstone float—agate, carnelian, chalcedony, jaspagate, jasper, Fluorite, etc.

VICTORIA (Dist.), area mines—Anglesite, Cerussite, Galena, Plumbojarosite.

McKINLEY COUNTY

AREA, E slopes of Furry Mt.—Garnets.

BUELL PARK, (garnet area extending into three states, Garnet Ridge lies close to the UT border and a few mi. W of Mexican Water, Apache Co., AZ), 10 mi. W of Mexican Water, in San Juan Co., UT, the Moses Rock field—Pyrope garnet, Peridot.

McGAFFEY, E, in the Zuni Mts. (extending SE into Valencia Co.), area surfaces—agate, chalcedony, jasper, petrified wood.

SAN MATEO, NE, at Willow Springs, area—agate, jasper, petrified wood.

THOREAU, SE 12 mi.: ① area coal mines—Amber (Wheelerite); ② in coal seams S of Devil’s Pass and regional outcrops—Amber.
OTERO COUNTY

OROGRANDE, N ½ mi. on US 54, turn W on ranch rd. around the Jarila Mts.: ① low range of hills immediately W of the turn-off from US 54 (SW of the Jarila Mts.), area—Garnets; ② N to the Jarila mining dist., park car at old mine dumps and prospect to W and S: (a) area mines—Chalcocite, Chalcopyrite, Chrysocolla, Galena, Gypsum, Jarosite, Limonite, Malachite, Turquoise; (b) contact zone between exposed area beds of limestone and Quartz monzonite—Orthoclase feldspar crystals (often rose colored, to 2" long, twinning).

TULAROSA, S 1½ mi. to Bent, area—Mexican onyx.

RIO ARRIBA COUNTY

AREA, outcrops of the Globe pegmatite—Fluorite (fluorescent).

ABiquiu (Dist.): ① area mines—Copper minerals; ② area basalt outcrops—Labradorite; ③ E on US 84 to jct. With Rte. 96, turn N 3.8 mi. to Carson national Forest marker, turn W opposite the marker to gate in fence with arroyo on S and steep climb to ancient pueblo ruins on mesa top, many mines in the arroyo—Fluorite.

COYOTE, area mines—Azurite, Malachite.

DIXON, E 6½ mi. (into Taos Co.): ① N to old Calcite Mine—Calcite; ② S 0.6 mi. to rd. jct., then W and S to the Harding Mine—blue Apatite (fluorescent), Bitylite (fluorescent), Eucryptite (fluorescent), purple Lepidolite, rose Muscovite, Quartz crystals, Spodumene (fluorescent), green Tourmaline.

GHOST RANCH MUSEUM (and recreation park, on US 84 on N side of a lake): ① area—agate; ② W 2.1 mi. on Rte. 96 (S side of lake), area of a low saddle in the hills, abundant—agate; ③ W 6 mi. from US 84 toward Youngsville on Rte. 96, to schoolhouse ruins, then S about 3 mi., all area benchlands to Pedernal Peak—agate, chalcedony, chert, jasper.

HERMOSA, area prospects—Chalcocite.

HOPEWELL, area mines—Chalcopyrite (minor ore), Gold.

LA MADERA, E 1½ mi. (across a bridge) on Rte. 519 to an abandoned mine between survey posts 7500 and 7600: ① on mine dumps—book Mica; ② area hillsides above mine—Calcite crystals, Limonite crystals on Calcite, crystal lined geodes; ③ N another 0.9 mi., canyon area—geodes lined with crystal; ④ N another 13 mi., turn E toward a dry wash, area on both sides—Calcite crystals, crystal lined geodes.

LAS TABLAS, SW 1½ mi. and ¾ mi. SE of Persimmon Peak, the Canary Bird Mine—Tourmaline.

PETACA (13 mi. N of Ojo Caliente on Rte. 519): ① area prospect—Amazonite, Fluorite, Mica; ② 3½ mi. SW of South Petaca, above Alamos Canyon, the Sunnyside Mine (W of the Globe rd.), in pegmatite—Aquamarine, Beryl; ③ W on mt. Rd. toward Vallecitos: (a) W 1 mi. on S side of rough rd., a mine dump—pink Feldspar, pink book Mica, Quartz; (b) W another 3 mi., all area along route—pink Feldspar, Mica; (c) all area mine dumps (easily reached) —Feldspar, Mica, black Columbite, green Beryl, green Amazonite, Pitchblende; ④ from Cerro Pedernal to W side of San Pedro Mt., especially ½ mi. SE of La Madera—Dumortierite, Specularite, Pedernal chert (gem quality).

YOUNGSVILLE, area around store, abundant—gem agate.

SANDOVAL COUNTY

AREA: ① SE part of Co., the Jemex Mts. (from Rte. 44 on W to US 85 on E, 60 mi. across), along Rte. 22 SW of Los Alamos (beginning with San Ysidro on Rte. 4 NE, around mts. To Santo Domingo Pueblo): (a) very many collecting localities, so prospect anywhere—agate nodules, Apache tears, jasper, obsidian; (b) La Jara Canyon, in first small tributary
A Location Guide for Rock Hounds in the United States

canyon to left of entrance, area surfaces—gem jasper; ② Nacimiento Mts., regional draws, washes, etc.—agate, Azurite, chalcedony, Chrysocolla, Malachite.

CABEZON, the regional Rio Puerco coal fields, area mine dumps—Wheelerite.

COCHITI: ① area mines—Gold; ② area of Upper Percha Cr.—common opal.

COOPER MINERAL HILL, TECOLOTE, area mines—Copper minerals.

CUBA: ① area mines—Copper minerals; ② SE about 10 mi. to cattle guard (logging area), turn N ⅔ into old mining dist. (Blue Bird, Eureka, etc., mines), on all old dumps—Copper minerals, gemmy Chrysocolla conglomerate.

JEMEZ (Dist.): ① area lava outcrops, in cavities—moonstone; ② area small scale mines—Sulfur; ③ the Sulfur Dist., at Battleship Rock, area surfaces—obsidian, opalized wood (in volcanic tuffs); ④ the Rio Puerco Valley, area both sides—agate, chalcedony, jasper, quartzite, silicified wood.

NACIMENTO (Dist.), area mines—Chalcocite (principal ore of the red beds), Chrysocolla.

PLACITAS (Dist.): ① area mines—Copper minerals; ② area limestone outcrops, in caves—cave onyx.

SAN JUAN COUNTY

AREA: ① regional coal mines (Durango, CO, to Gallup in McKinley Co.), on dumps—jet; ② W part of Co., region bounded by the San Juan R. and its Chaco R. tributary, numerous exposures of the Ojo Alamo Formation (as shown on area geological maps)—chert, Garnet, jasper, quartzite, petrified wood.

BLANCO TRADING PORT (on Rte. 44, 28 mi. S of Bloomfield), S on Rte. 57 to the Chaco Canyon National Monument, along both sides of rd. entire distance—chalcedony.

FARMINGTON, S 27 mi. to the Bisti Trading Port, broad area of strange geological formations—agatized Dinosaur bones, gemmy carbonized wood, silicified mudballs.

SAN JUAN-McKINLEY COUNTIES

NAVAJO INDIAN RESERVATION, numerous locations (inquire at trading port)—Pyrope garnet (Arizona rubies).

SAN MIGUAL COUNTY

LAS VEGAS, N, general area—petrified wood.

PECOS, N along the Pecos R. canyon on old rd. 14 mi. to the Terrero Store, turn E around store (1 mi. uphill), long mine dump extending to Willow Cr. (campground)—Actinolite, Garnets, Lepidolite, Mica, Bornite, Pyrite, Tourmaline.

ROCIADA, TECOLOTE, area mines—Chalcocite, Copper minerals, and Molybdenite.

SANTA FE COUNTY

AREA: ① regional Copper mines (located on topographic maps) —Bornite, Chalcopyrite, Galena, Malchite, Pyrite, etc.; ② the New Ortiz Gold mine—Gold, Scheelite (fluorescent).

CERRILLOS: ① area prospects—some Chalcopyrite; ② park car E of Tongue Wash and power line: (a) N, a sandy mt., area—carbonized fossil wood; (b) big wash on S, all contributing arroyos—red jasper; (c) numerous adjoining localities in general vicinity—agate, chalcedony, chert, jasper, etc.; ③ NNE 6 mi. on Rte. 14 (30 mi. SSW of Santa Fe):
(a) Turquoise Hill (3 mi. from Mt. Chalchihuitl in the Cerrillos Hills), and (b) area slopes and
draws on Mt. Chalchihuitl—agate, chalcedony, petrified wood, Turquoise.
GOLDEN, SE, the San Pedro Mts.: ① area placer mines—Gold; ② area hard rock
mines—Chalcopryite, some Chalcocite.

SIERRA COUNTY
AREA: ① Mud Springs Mt., NE flanks—agate, opalized and silicified wood,
petrified palm; ② extreme NW corner of Co., on W side of the Continental Divide, the
Taylor Cr. Dist.—Fluorite; ③ in contact metamorphic at Iron Mt.—Calcite, Scheelite,
Willemite (all fluorescent).

CABALLO, E, in the Caballo Mts., area mines—Azurite, Chalcocite,
Chalcopryite, Fluorite, Malachite.
CHLORIDE, the Apache and Phillipsburg mines—Chalcopryite, Cerussite,
Bornite (containing Silver), etc.
CUTTER, area opposite the Aleman Ranch—gem jasper.
DERRY, area washes, draws, etc.—chert (colorful).
ENGLE: ① area—agate, chert; ② along both sides of rd. to Elephant Butte—
agate, chert, chalcedony, jasper; ③ E to the San Andreas Mts., W side of Mockingbird
Gap, area—dendritic jasper.
HILLSBORO (Fremont): ① area mines and prospects—Cerussite (rich in Silver), Gold, Willemite (fluorescent); ② W, toward Kingston, a high cliff just before reaching an iron bridge across Percha Cr., in talus—flowering rhyolite.

KINGSTON (Dist.): ① area mines—Proustite (in Silver ore), Pyrargyrite; ② the Comstock Mine—massive Rhodonite; ③ on W side of town turn N on old mine rd., cross cr. And on for about 1 mi. to a gate, park car, small mt. On the E, area—Quartz crystals (unusual clusters, double terminated); ④ E 9 mi. on Rte. 20, cross Percha Cr. On iron bridge, in talus—flowering rhyolite.

LAKE VALLEY (Dist.): ① area washes, draws, etc.—chert (colorful); ② area mines and dumps—Dolomite, (massive, pinkish), Magnetite, Psilomelane, Pyrolusite crystals; ③ the Apache, Bella, Grande mines—Idocrasite (with Vanadinite), Manganoanite, Cerussite (rich in Silver), native Silver, Embolite, Endlichite; ④ both sides of loop rd. NW of the old town—agate, Calcite crystals, jasper.

TIERRA BLANCA (Dist.), area mines—Bromyrite, Gold, Silver.

TRUTH OR CONSEQUENCES: ① N, on W side of the Fra Cristobal Mts., area—agate, jasper; ② E 13 mi., Hot Springs (in the Jornada Valley), area—agate, chalcedony, elixirite, jasper, petrified wood; ③ Ne 38 mi. to abandoned Ft. Craig, take canal rd. S 11½ mi. to mile port 1170, park car, cross old river bed to hills on E, in all sandy outcrops, excellent black—opalized wood; ④ E on Rte. 52 to Engle, the S on ranch rd. paralleling the RR for 13 mi. to a ranch, turn W through ranch, cross RR tracks into low hills (a spur of the Caballo Mts.) for 2 mi., all along both sides of rd.—carnelian agate.

SOCORRO COUNTY

AREA: ① Area Barite mines (see above map); ② SE corner of Co.: (a) the Sierra Oscura Mts., regional prospects and mines—abundant Chrysocolla, some Chalcocite; (b) the Joita Hills, and (c) regional washes, draws, surfaces, etc.—agate, chalcedony, jasper.
Quartz crystals, quartzite (colorful), petrified wood; the Mogollon Mts., area mines—Bornite, Chalcolite, Chalcopyrite, native Silver.

BINGHAM, E ½ mi. on US 380, then S several mi. to the famed Blanchard Mine (claims) in the Sierra Oscura Mts. (fee) —Atacamite, Azurite, Barite (fluorescent), Brochantite, Celestite, Cerussite (fluorescent), Cyanotrichite, Dolomite crystals, Fluorite (fluorescent), Galena, Limonite, Linarite, Malachite, Murdocite, Otavite (fluorescent), Plattnerite, Quartz crystals, Spangolite.

COONEY (Mogollon; dist includes Mill Canyon, Silver Mt., and Rosedale), area mines—Bornite, Chalcolite, Chalcopyrite, Gold.

HANSONBURG (San Andreas, San Lorenzo): area mines—Copper minerals; Grandview Canyon, area mines—Fluorite.

LAVA (straddles Sierra-Socorro Co., line at end of rd. N from Engle in Sierra Co.): the Fra Cristobal Range, N end and NE side of Elephant Butte Reservoir; and S of the E end of Bernado Bridge over the Rio Grande, area—opalized wood.

MAGDALENA: area mines—Anglesite, Cerussite, Chalcophanite, Cuprite, Galena, Hydrozincite, Smithsonite, Sphalerite; SE 3 mi. to ghost town of Kelly, on all old mine dumps—gem quality Smithsonite (blue green), Zinc minerals in Quartz, fossils; W, at Silver Hill, on WSW side—Garnets; N 16 mi. on gravel rd. to jct. (Riley, 4 mi.), turn W on dim ranch rd. for 5 mi., area surfaces—agatized Picture Wood, petrified cycad and palm; at the Kelly Mine—Calcite crystal (fluorescent).

SOCORRO: NW 4 mi., and on E side of Strawberry peak, area—Satin Spar.

TAOS COUNTY

AREA, outcrops of the Harding Pegmatite—Apatite, Bityite, Eucryptite (all fluorescent).

GLENWOODY, area gravels—Staurolite.

MOLYBDENUM, area mines—Molybdenum minerals.

PICURIS: area mines—Chalcocite, Chrysocolla, Cuprite; area gravels, slopes, washes, etc.—Staurolite.

PILAR: area mine dumps between mts. and US 64—gem quality Lepidolite and Sericite; both sides of rd. to Velarde—Garnets, Staurolites; in pegmatite just S of Pilar on E bank of Rio Grande—Thulite.

RED RIVER, area mines—Fluorite, Gold. (Wheeler peak, Elev. 13,161; to the S)

TRESPIEDRAS, W on Rte. 519 (see La Madera in Rio Arriba Co. and reverse order of localities).

TWINING, area mines—Copper minerals.
TORRANCE COUNTY

ESTANCIA, the area surrounding the Estancia Lake—Epsomite, Glauberite.
MANZANO, TORREON, TAJIQUE (adjoining towns on Rte. 14 N of Mountain Air), W, in the Monzano Mts., area schistose outcrops—Staurolites.

UNION COUNTY

AREA, extreme NE corner of Co.: ① the Tri-State Marker (NM, CO & OK): (a) area, extending into OK to Kenton, Cimarron Co.—petrified wood; (b) a hill near the marker, area surfaces—rose colored agate; ② Ute Cr., deposit—alum.

VALENCIA COUNTY

AREA: ① regional coal mine dumps and seam exposures—jet; ② NW part of Co., in the Zuni Mts.: (a) area mines of the Copper Hiss Dist. in the Red Beds—Azurite, Chalcocite, Malachite; (b) regional slopes, draws, washes, etc.—agate, chalcedony, jasper, petrified wood.
BELEN, N to Los Lunas, area surfaces, draws, washes, etc.—gem agate.
GRANTS, the Grants Uranium Dist., very many mines and exposures of radioactive rocks—Andersonite (fluorescent), Autunite, Boyleite, Carnotite, Ilsmanite, Liebigite, Meta-Autunite, Metatyuyamunite, Montroseite, Pascoite, Sphäroöschingerite (fluorescent, at Homestake Claims), Thenardite, Thermonatrite, Todorokite, Tyyumunite, Uranopilite, Zellerite, Zippeite. Associated with these radioactive minerals (many fluorescent) are often Barite, Calcite, Coffinite, Jordisite, Marcasite, Pyrite, gray Selenite and Gypsum. This large area of radioactivity extends from Gallup in McKinley Co. on the west to the western edge of the Rio Grande trough on the east ≈ 110 mi. long by 20 mi. wide. The principle mining areas revolve around ① Gallup, ② Church Rock, ③ Smith Lake, ④ Ambrosia Lake—also Andersonite (fluorescent), ⑤ Grants, ⑥ Pagoue or Jackpile—also Becquerelite (fluorescent). These area are grouped into three major mining dists.: Gallup, Grants, and Laguna. It was Paddy Martinez who
first discovery of **Tyuyamunite** in a Todilto Limestone outcrop in Sec. 19, T. 13 N, R. 10 W at the base of Hatstack Butte in 1950.

LAGUNA, area surfaces—**agate, jasper**.

LOS LUNAS, W 6 mi. on Rte. 6, then S on dirt rd. to Dalies (water tank and cattle pen) on the RR, continue S into low hills (taking right forks en route), area of arroyos and breaks leading to the Rio Puerco, abundant—**agate** (red, banded), *Apache tears*, **agatized wood, obsidian**.
NEW YORK

Called the Empire State, New York is irregularly shaped, not only from a geographical standpoint but in its varied rock formations. The eastern part of the state is dominated by the great valley of the Hudson River and Lake Champlain, while the rolling hills of the northern (Upstate) New York rise from the Mohawk River to the rugged Adirondack Mountains. Here in 1892, the state legislature established a wilderness preserve, the Adirondack Park, larger than any other national or state park in America. Its 8,895 sq. miles makes it greater in area than the state of Massachusetts. Western New York is a rolling, hilly region extending to Lakes Erie and Ontario, cupping many sapphire blue lakes in the folds and wrinkles of a thoroughly glaciated terrain. Most of the southern counties belong to the Allegheny Plateau that culminates in the Catskill Mountains.

Pleistocene glaciers covered all parts of New York State. Geologists think that at least 1,000 ft. of ice once lay over the top of what is now New York City and Long Island and that 2,500 ft. of ice buried the Catskills. The outer (Ronkonkoma) and inner (Harbor Hill) moraines on Long Island are notable examples of glacial termination, while Central Park in New York City exposes many glaciated boulders still clearly showing the scratch marks (striations) made on them thousands of years ago by the moving ice sheets.

More noted for their fossil content than for commercial minerals, gems, and gemstones, the state’s rock formations represent almost every class of deep seated igneous rocks and nearly all the important sedimentary groups from the earliest Cambrian to the most recent periods. The state depends primarily on the importation of raw materials to supply its great industries, but does have some mineral resources, such as Iron, Lead, Oil, Natural Gas, Salt, Gypsum, Cement and Limestone.

CAYUGA COUNTY

AUBURN, sparingly in area (inquire locally), old pits—Fluorite.

CLINTON COUNTY

AREA, the Palmer Hiss Mine and Finch ore bed, abundant—Fluorite.
ARNOLD HILL (just NW of Clintonville), area mines and workable ore bodies—Magnetite.
CLINTONVILLE, on Harkness rd. across first RR tracks, just before reaching second tracks turn left up steep hill to Arnold mine, in dump—jasper, Martite.
KEESEVILLE, at Buttermilk Falls—serpentine.
LYON MOUNTAIN, area mines—Aegirine, Albite, Apatite, Augite, Biotite, Byssolite, Calcite, Chlorite, Epidote, Hematite, Ilmenite, Magnetite, Molybdenite, Orthoclase, Perdite, Pyrite, Quartz, Stilbite, Wernerite, and Zircon.

COLUMBIA COUNTY

ANCRAM, area mines—Barite, Galena and Sphalerite.

DUTCHESS COUNTY

AREA, NE corner of Co., various old mines—Galena.
ERIE COUNTY

BUFFALO: ① E 2½ mi., the Fogelsanger Quarry—Calcite, Favosites and other fossil coral; ② Eighteen Mile Cr., area deposits—Pyrite.

ESSEX COUNTY

AREA, the Opalescent R., gravel beds, bars—Labradorite.  
BURTON HILL, area mines—Fluorite and Magnetite.  
CASCADE (Lakes), area gravels, outcrops—Labradorite.  
CROWN POINT: ① area outcrops and gravels—sunstone; ② SW 7½ mi., old mine—Feldspar, Graphite and Mica.  
INDIAN LAKE, SE on Rte. 28 to within 5 mi. of North River in Warren Co., the Crehore Mine—Garnet (crystals to 8” dia.) and Hornblende.  
IRONVILLE, area mines—Hematite and Magnetite.  
KEESEVILLE: ① area quarries—Labradorite; ② area mines on Mt. Bigelow—Garnet (commerical abrasive).  
LEAD HILL, area mines—Graphite.  
LEWIS, area mines—Arsenopyrite and Rhodonite.  
MINEVILLE: ① area high grade iron mines, abundant minerals—Apatite, Fluorite, Hematite, Magnetite and Pyrite; ② at Fisher Hill Mine—sunstone.  
NEWCOMB, E 1 mi., Lake Harris, area outcrops—Albite, Amphiboles (various), Apatite, Diopside (fluorescent), graphite, Muscovite, Phlogopite (fluorescent), Pyrite, Pyroxene, Smoky Quartz crystals, Scapolite, brown Tourmaline and Tremolite.  
NORTH CREEK, S 4 mi., on Oven Mt., old mines—Garnets.  
OLMSTEADVILLE, W 1 mi. on Rte to Minerva, area—Idocrase, gem Microcline crystals and Scapolite.  
PORT HENRY, NW 6 mi.—Rose Quartz.  
PORT KENT, along shore to S—Labradorite.  
TAHAWUS, area iron mines—Hematite, Magnetite and Titanium.

FRANKLIN COUNTY

DAUNE, large area bed, mined—Pyrite.  
MALONE, take rd. SE to Owl’s Head Village, trail up Mt. to iron mine, in dump—sunstone.  
SARANAC LAKE, take Hwy. 3 N for 4 mi. to Leib’s rock shop, drive up hill and park, take trail to moonstone mine (fee)—moonstone.

HAMILTON COUNTY

WELLS, in anorthosite boulders to N along Hwy. 8 in E branch of Sacandaga R.—Labradorite.

HERKIMER COUNTY

FAIRFIELD, area quarries—Barite.  
MIDDLEVILLE, area sandstone exposures—Herkimer Diamonds (usually water clear quartz, perfectly terminated), found principally: ① on N side of rd. to Newport along a NW belt; ② E 1 mi. toward the N side of the Fairfield hwy. (Rte 29); and ③ from town 3 mi. S, most prolific on top of hill between town and Herkimer; ④ the Ace of Diamonds collecting
area is within the village limits on Hwy. 28, and a mile S on Hwy. 28 is the Atty area known as the Herkimer Diamond Grounds.

**JEFFERSON COUNTY**
- ALEXANDER BAY, area mines—*Galena*.
- PHILADELPHIA, area serpentine outcrops—*Hematite*, *Pyrite* and *Siderite*.
- PILLAR POINT, area quarries—*Barite* crystals.
- THERESA, Muscalonge Lake: ① area quarries—*Fluorite*; ② NE shore of lake mines—*Fluorite*.

**LEWIS COUNTY**
- LOWVILLE, area mines—*Fluorite*.
- MARTINSBURG, area lead mines—*Galena*.
- NATURAL BRIDGE, NE 3 mi., a quarry—*serpentine* and *Talc*.

**LIVINGSTON COUNTY**
- GENESCO, 3 mi. N in banks and bed gravels of a Cr.—*silicified coral*.

**MADISON COUNTY**
- CAZENOVIA & CHITTENANGO FALLS, area quarries—*Celestite* (fluorescent).
MONROE COUNTY

ROCHESTER: ① regional quarries—**Fluorite**; ② in limestone along E bank of Genesee R. near Norton St. and past Ave. E—**agate**.

MONTGOMERY COUNTY

FONDA, several collecting sites near Fonda: ① take Exit 28 from the NY State Freeway at Fultonville, cross bridge to Fonda, continue to creek and beyond it, take first rd. right, Hickory Hill rd., go right to Martin rd. to Stone Aradia rd. at left, cross England rd. and the Diamond Acres mine is at left (fee); ② S of Fonda at Exit 28, take Hwy. 55 SW to Sprakers (fee); ③ 1 mi. E of Sprakers on the S side of Hwy. 55 on the crest of a hill known as Little Nose—**Quartz** (*Herkimer Diamonds*).

ST. JOHNSVILLE, at Crystal Grove campsite take Division St., go 4½ mi. to Crystal Grove, take right fork to Lassallsville and to picnic grove (fee) —**Quartz** (*Herkimer Diamonds*).

NIAGARA COUNTY

LOCKPORT, area limestone quarries—**Fluorite**.

ONONDAGA COUNTY

FAYETTEVILLE, area quarries—**Fluorite**.

MANLIUS, area quarries—**Fluorite**.

SYRACUSE, area peridotite outcrops—**peridotite**.

ONTARIO COUNTY

CANADICE, on E side of Canadice Lake and 2 mi. W of Honeoye Lake—**Labradorite**.

ORANGE COUNTY

AMITY, area limestone outcrops—**Corundum** (blue, white) and **Fluorite**.

BLOOMING GROVE, along the Hudson R., area—**bloodstone** and **jasper**.

CRAIGSVILLE, on Hwy. 94—**bloodstone**.
EDENVILLE:  ◊ area mines, and ◊ between town and Mt. Adam, mines—Arsenopyrite, Leucopyrite and Scorodite.
MONROE, near Lake Mombasha, pegmatite outcrop—Phlogopite Mica (greenish).
OTISVILLE, the Phoenix Mine—Galena and Sphalerite.

OTSEGO COUNTY
TODDSVILLE, area gravel pits, stream beds—Sapphire.

PUTNAM COUNTY
BREWSTER, NW 6 mi., the Tilly Foster Iron Mine—Actinolite, Albite, Ankerite, Antigorite, Apatite, Apophyllite, Arsenopyrite, Augite, Autunite, Barite, Biotite, Bronzite, Brucite¹ (fluorescent), Byssolite, Calcite¹, Chalcopyrite, Chondrodite², Chrysocolla, Chrysoberyl, Chrysoceolite, Clinohumite, Cocolite, Crocidolite, Datolite, Diallage, Diopside¹, Dipyre, Dolomite¹, Enstatite¹, Fluorite, Garnet (Grossularite, Uvarovite), Gypsum, Hematite, Heulandite, Hisingerite, Hornblende, Humite, Hydromagnesite, Hydrotalcite, Ilmenite, Laumontite, Limonite, Magnesite, Magnetite², Malachite, Marcasite, Microcline¹, Molybdenite, Muscovite, Natrolite, Oligoclase, Olivine, Opal, Pargasite, Phlogopite, Prochlorite, Pyrite, Pyrolusite, Pyrite, Pyrrhotite, Quartz (milky¹,rose, smoky), Riebeckite, Scapolite, serpentine¹, Siderite, Sphene², Spinel, Talc, Thomsonite, Tourmaline, Tremolite and Zircon² (1 Common, 2 Very Common).
COLD SPRINGS, just E, a mine—Chrysotile asbestos.
KENT CLIFFS, in the Highlands near Pine Pond, a mine—Arsenopyrite, asbestos, Leucopyrite (Iron di-arsenide) and Pyrite.
WEST POINT, S 3½ mi., on bank of the Hudson R., a quarry—Chrysotile asbestos.

RICHMOND COUNTY (Boro on New York City)
TOPKINSVILLE, area quarries—asbestos.
TOTENVILLE, SW tip of Staten Island, the Androvette Clay Pits (near Kreischerville on the shore of Arthur Kill)—Artinite (fluorescent), serpentine.

SARATOGA COUNTY
BATCHELLERVILLE:  ◊ area quarries, in pegmatites—Feldspar and Muscovite Mica; ◊ N 12½ mi., at Overlook area—Rose Quartz.
SARATOGA SPRINGS:  ◊ intersection of Rte. 9 with the Twp. rd., W ½ mi., pegmatite outcrop—Chrysoberyl; ◊ in Maple Ave. (Gailor) quarry on W side of Hwy. 9 on N edge of city—Quartz crystals.

SCHOHARIE COUNTY
AREA, numerous exposures of sedimentary rocks—silicified coral.
SCHOHARIE:  ◊ area exposures of the Brayamn shales and the Roundout Waterline—Barite crystals, Celestite (as nodular aggregates of delicate crystals); ◊ town courthouse, vicinity exposures of water limestones—Barite crystals (associated with Strontianite); ◊ N 2 mi., on face of Terrace Hill (within sight of rd. to Schoharie Jct.), an old mine—Strontianite
ST. LAWRENCE COUNTY


BALMAT: ① at Gouverneur Talc Mine—Anthophyllite, Apatite, Talc, Tremolite (all fluorescent); ② Arnold Open Pit mine—Anthophyllite, Tremolite (both fluorescent); ③ in the Zinc mine—Anhydrite, Anthophyllite, Sphalerite, Tremolite (all fluorescent); ④ Balmat No. 4 mine—Anthophyllite, Forsterite, Tremolite, Turneaureite (all fluorescent).

BRASHER IRON WORKS, area mines—Iron minerals.
CANTON, the High Falls Mine—Pyrrhotite.
DEKALB: ① area quarries—Barite and Fluorite; ② in old marble quarries and to S at Richville and also 5 mi. SE at former Mitchell farm in talc—moonstone, Diopside, brown Tourmaline (fluorescent).

EDWARDS: ① area mines, and ② area quarries—Barite, Galena, Gypsum (fluorescent), Sphalerite and Fluorite; ③ in pockets in St. Joe Minerals Corp. Mine—Haüynite, Scapolite and Spinel (both fluorescent).

FOWLER: ① area quarries—Barite and Fluorite; ② area Sedimentary exposures, streambeds and banks—geodes containing Barite and Hematite; ③ NW on Rte. 58, the Loomis Talc Mine—Talc and Tremolite.

FULLERVILLE IRONWORKS, area mines—Iron minerals and Pyrite.
GOVERNEUR: ① area quarries, especially Rylestone Quarry—Barite, Calcite (fluorescent), and Fluorite; ② area mines—Garnet (abrasive); ③ N 3 mi., as a body of rock—Garnets (crystals to ¼” dia.); ④ various outcrops along the Oswegatchie R. —serpentine; ⑤ area old quarries—brown Tourmaline, red and brown Apatite.

HAILSBORO, area limestone quarries—Apatite.
HAMMOND, area quarries—Barite and Fluorite.
HERMON, area mines—Pyrite.
MACOMB, area mines—Barite (gangue), Fluorite and Galena.
OSWEGATCHIE, area pegmatite mines, pits—Muscovite Mica.
PIERREPONT: ① area pegmatite exposures—Tourmaline; ② at Powers Tourmaline Diggings ½ mi. W on Hwy. 68 (fee); ③ at West Pierrepont—Apatite, black Tourmaline.

PYRITES, area mines—Pyrite.
RICHVILLE: ① area of the Reese Farm, in pegmatites—Pyroxene, Tourmaline (white Dravite) and Tremolite; ② N 5 mi. and 3 mi. NE, various area outcrops of pegmatites—Achromite, Diopside, Dravite.
ROSSIE, area mines—Barite (gangue) and Galena.
SOMERVILLE, N 2 mi., as good crystals—Phlogopite Mica.

STAR LAKE: ① area open pit iron mine—Magnetite; ② in Benson Mines to E —Sillimanite. More than 200 iron mines have been worked in the Adirondacks in St. Lawrence, Franklin and Essex Co. In addition to iron and titanium, the mines also produce abrasive Garnet, Talc, Graphite and Zinc minerals.

TALCVILLE, area quarries, especially U.S Talc Company—Anhydrite, Anthophyllite (fluorescent), Apatite, Braunite, Calcite, Chlorite, Chromian Tremolite, Dolomite, Groutite, Hexagonite, Quartz, serpentine, Sphene, Talc (fluorescent), Tirodite (fluorescent), Tremolite (fluorescent), Tourmaline, Uvite.

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SULLIVAN COUNTY

SUMMITVILLE, area mines—Sphalerite.

SULLIVAN & ULSTER COUNTIES

AREA, the Shawangunk Mts., many regional mines—Sphalerite.

ULSTER COUNTY

ELLENVILLE, area mines—Sphalerite.

NAPANOCH, area mines—Siderite.

WARREN COUNTY

BRANT LAKE (Horicon), NE to Brant Lake: ① S shore, in rd. cut through pegmatite—Apatite, Calcite, Diopside, Graphite, Muscovite, Pyrite, Rutile, Tourmaline; ② N shore, a deposit—asbestos.

GRAPHITE, area mines—Graphite.

JOHNSBURG, in asbestos mine to SW at Garnet Lake—serpentine.

NORTH CREEK: ① WSW 4 mi., mines around Gore Mt.; ② W, mines on Ruby Mt.; ③ S, mines on Oven Mt.; ④ Hwy. 28 N 4 mi., turn at Barton Mines sign, go 5 mi. up Gore Mt. to shop—Almandite garnet.

NORTH RIVER, W, into extreme NW corner of Co., the Thirteenth Lake, SW 6½ mi. from S end of lake, at Humphrey Mt., area mines—Almandite garnet.

WEVERTOWN, area quarry—Garnet.

WASHINGTON COUNTY

DRESDEN STATION, area South Bay mines—Graphite.

WESTCHESTER COUNTY

BEDFORD (Twp.): ① area quarries—Allanite, Almandite, Apatite, Autunite, Beryl (Aquamarine, Golden, Yellow), Clevelandite, Columbite, Cyrtolite zircon, Graphite, Gummite, Hyalite opal, Ilmenite, Kryolite, Limonite, Magnetite, Menaccanite, Muscovite, Pyrite, Pyrolusite, Quartz (all types), Rutile, Sphene, Torbernite, Tourmaline (green, black), and Uranophane; ② SE ⅓ mi., the Kinkel Quarry: (a) this quarry; (b) ½ mi. W, the Baylis Quarry; (c) 1½ mi. SE, along the Mianus R. in North Castle, the Hobby Quarry—golden Beryl, Citrine, Quartz crystals (rose with asterism, smoky); ③ Hwy. 22 S, turn off on rd. to Greenwich, Ct., take first dirt rd. N and follow around old quarry to dump and mill ruins—asteriated Rose Quartz.

PEEKSKILL: ① area—sunstone; ② SE, an area of igneous rocks known as the Cortlandt series (7 mi. E to W by 5 mi. N to S), regional deposits and mines—emery, Spinel, Thomsonite.

PLEASANTVILLE, area mines—Muscovite Mica.

RYE, area serpentine bosses (constituting about 15 sq. mi.)—asbestos (Amphibole, Chrysotile).
NORTH CAROLINA

With more than 300 species of gems, gemstones and minerals, this remarkable state is geared for rock collecting as few other states are. Blessed with extraordinary scenic beauty, North Carolina has a gem history equaled nowhere else in North America and innumerable tales of discoveries of Amethyst, Aquamarine, Bronzite, Diamond (first found abundantly in the Gold placers in the middle 1850’s), Golden Beryl, Rubies, Sapphires, and Topaz. Moreover, North Carolina has the only true Emerald mines in America, discovered about 1875. To these gems can be added the clear emerald green Spodumene crystals called Hiddenite after William Hidden, supervisor of one of the larger Emerald mines. This new gem was discovered and identified late in the nineteenth century, along with a second new gem, Rhodolite garnet, a rose pink crystal found in Cowee Creek near Franklin, Macon Co., about the same time.

Mining history really began in North Carolina in 1799, when a twelve-year-old boy unearthed a 17 lbs. Gold nugget on his father’s plantation in Cabarrus Co. Young Reed sold his nugget to a local jeweler for the unheard of price of $3.50. Eventually, millions of dollars in gold began coming from other parts of the state as intensive prospecting for Gold and Silver got under way. It was in the placer gravels that incidental discoveries of many species of gem crystals, especially Diamonds, were made.

Gold was subsequently found throughout a multi-state region east of the Appalachian Mountains, about 700 miles long by 150 miles wide. North Carolina became the principal producer, inasmuch as the noble metal was found to occur almost universally wherever the rocks were not covered by drift, both free and in association with Chalcopyrite, Iron and Pyrite. In order of decreasing production, the other states in this region are South Carolina, Georgia, Virginia and Alabama. In North Carolina, certainly, the seasonal Gold panner will find literally hundreds of profitable stream gravel bars in which to wield pick, shovel and pan.

The sharply defined provinces of North Carolina constitute part of the Atlantic seaboard between the Atlantic Ocean and the Appalachian Mountains. From the tidewater swamps of the coast, the land rises to an elevation of 500’ along the western edge of the upper Coastal Plain before beginning the rolling hill country of the Piedmont, with its many swift, gem rich Fall Line streams descending eastward. On the west, the land juts abruptly into the Blue Ridge, 3,000’ to 4,000’ high, then dips sharply to the broad Carolina Highlands backed up against the Great Smoky Mts. Here, in Yancey Co., Mt. Mitchell, at 6,684’ is the highest peak in America east of the South Dakota Black Hills.

The Mountain and Piedmont regions expose rocks from Precambrian to Carboniferous ages, enormously folded, faulted, broken and crushed by diastrophic forces. The older rocks were repeatedly intruded by granites and diorites, and the entire region is blanketed with metamorphic schists, gneisses, quartzites and slates. The igneous rocks produce a great abundance of commerical minerals, and this state leads the Nation in its production of Feldspar, Kaolin, Mica and Pyrophyllite. It stands high in production of asbestos, crushed and dimension stone, granite, marble, Olivine and Vermiculite. The mining of Copper and Tungsten is also a major contributor to the state’s economy. At least 50 species of minerals are mined today, not counting the scores of gem crystals most sought after by rock collectors, while another 20 or so have economic potential.

Gems and gemstones occur in almost every county, but most abundantly in Alexander, Mitchell, Yancey, Macon and Cleveland counties. Easy access to the main gem producing districts is from the 470 mi. long Blue Ridge Parkway that follows the spectacular crest of the Appalachian Mts. Not only do many old mines allow gem collecting on a fee basis, but throughout the Mountain and Piedmont regions sparkling streams yield up a never-ending supply of alluvial Gold, Diamonds, Rubies and Sapphires. The state’s
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Pegmatites, mined mainly for Feldspar, Mica and Quartz are rich in the usually associated gems: Amethyst, Aquamarine, Golden Beryl, Corundum, Garnet, moonstone, Quartz, Spodumene and Topaz. Granite outcrops provide an abundance of the state stone Unakite, named after the Unaka Mts., as well as the unusual leopardite. Petrified wood is found in the alluvial gravels of many counties, particularly Anson, Cumberland, Moore, Montgomery and Wayne. Public and private campgrounds, many with trailer hook-ups abound throughout the gem producing regions. Many fee gem mines offer camping facilities.

ALAMANCE COUNTY

Area: ① general countywide surfaces, as float—serpentine; ② area mines: (a) Dixon’s Mine (on both sides of the Haw R.), placers; (b) the Holt Mine; (c) the Anthony Mine; (d) Newlin’s Mine—Gold; ⑤ Buck Hill, area, massive and opaque—Quartz.

BURLINGTON: ① area fields, streams, cuts, etc.—Quartz crystals, red gemmy quartzite, serpentine; ② the Superior Stone Quarry—Copper and Iron minerals; ③ on a farm ½ mi. from quarry, loose in soil—Limonite (pseudomorph after Siderite), Quartz crystals.

ALEXANDER COUNTY

Area, Poplar Springs, area—Rutile crystals (geniculate, acicular in Limonite and Quartz), Spodumene.

ELLENDALE, All Healing Springs (W part of Co. N of Rte. 90): ① near Lambert Cr., pegmatite—Beryl (golden, green, yellow); ② near Little R. Church, pegmatite—Beryl (pale green, yellow).

HIDDENITE: ① area: (a) in loose soils surrounding town—Emeralds; (b) in the Mertie Pegmatite—Quartz crystals (champagne color, clear, smoky, amber); (c) many are old mines and dumps—Aquamarine, Beryl, Quartz and Rutile crystals; (d) the old Ellis Mine (¼ mi. N of the old Hiddenite School, near a creek) —Emeralds, blue Beryl, Rose Quartz, Rutile; (e) just S of town, in rd. cuts, massive—Smoky Quartz; (f) The Rist Mine and Museum, take Hwy. 1001 N from Hwy. 90, then right on Hwy. 1498 then left on Hwy. 1508 and follow signs to mine on old American Gems, Inc. digging (pay fee at office)—Emerald (crystals and in matrix), Quartz, Hiddenite, etc.; ② E ¼ mi., old mine—Aquamarine, Calcite, Chalcopyrite, Dolomite, crystals, Emeralds, Hiddenite, Monazite, Muscovite, Quartz, Rutile crystals, black Tourmaline; ③ E 1½ mi., on ridge between Davis Cr. And the Little Yadkin R., pegmatite exposures—Aquamarine, Beryl, Quartz, Rutile crystals; ④ W ½ mi., mine—Aquamarine, Calcite, Chalcopyrite, Dolomite, crystals, Emeralds, Hiddenite, Monazite, Muscovite, Quartz, Rutile crystals, black Tourmaline; ⑤ SW 1 mi., old Beryl prospect on the Charles Payne farm—Beryl, Mica, etc.; ⑥ SW 2 mi., the Gwaltney prospects—Garnet, Feldspar, Quartz crystals, Beryl, Tourmaline; ⑦ SW 3½ mi., the Dagenhart Mine—Beryl, Feldspar, Garnet, Quartz crystals, massive Smoky Quartz, Tourmaline; ⑧ S 6 mi., the Hammer prospects—rutilated Quartz crystals; ⑨ N 1 mi.: (a)
the Warren Farm (near Salem Church and 300 yds. From Rte. 90); (b) NW 1,000', the Osborne-Lackey farm—Albite, Amphibole, Ankerite, Apatite, Aquamarine, Arsenopyrite, Beryl, Calcite, Chlorite, Emerald, Feldspar, Hiddenite, Muscovite, Pyrite, Quartz and Rutile crystals, black Tourmaline, Siderite, Spodumene; @ NE 1.2 mi., the old Revis Farm—Quartz (rose, rutilated); @ NE 2 mi. on rd. to Smith's Store, as area float, and at the lackey farm on the same rd.—rutilated Quartz crystals; @ N 3.2 mi., pegmatite dikes along the south Yadkin R.—Quartz (smoky, rutilated).

STONY POINT: ① area—Chlorite, Goethite, Monazite (fine crystals), Quartz crystals (rutilated and with Byssolite inclusions), Spodumene (fine transparent green crystals); ② the Hiddenite Mine: (a) mine dumps—Emeralds, Smoky Quartz crystals, Rutile crystals, black Tourmaline; (b) just S of the mine, pegmatite outcrop—rutilated Quartz crystals (with inclusions of Goethite, Diorite, Tourmaline, Byssolite).

TAYLORSVILLE: ① area: (a) mine dumps—Beryl, Columbite, Quartz crystals, (rose, smoky), Rutile crystals, Scorodite, Tourmaline; (b) N several mi., in the Brushy Mts. (on the Wilkes Co. line), area mines—asbestos, Chalcopyrite, Graphite, tabular Quartz crystals; ② SE, at headwaters of the South Yadkin R. (¾ mi. SE of Hiddenite), the O.F. Patterson Mica Mine—gem Beryl, Muscovite; ③ SE 2 mi., near Paynes Store on the Kever farm (exposed pegmatites extend ½ mi. NE to the Payne place), several types of —Quartz crystals; ④ SW 5 mi., the Blankenship prospect—Muscovite, asteriated Quartz, moonstone.

WHITE PLAINS: ① area mines—Beryl, Columbite, Quartz crystals, (rose, smoky), Rutile crystals, Scorodite, Tourmaline; ② Liberty church, near Millholland's Mill—Rutile crystals.

ALLEGHANY COUNTY

AREA, Bullhead Mt., area mines—Garnet, gem Kyanite, Magnetite.

DOUGHTON PARK, N 2½ mi., area of Air Bellows Gap in sandstone schists—fine Iron Garnets.

GLADE VALLEY, the Monroe Holloway farm—showy Magnetite crystals, Talc.

ENNICE, several outcrops along the New R., showy—Magnetite crystals.

ROARING GAP, area mine—auriferous Chalcopyrite, Bornite.

SPARTA, NE 3 mi. on Rte. 18, turn W 1 mi. on unmarked rd., the Crouse Manganese Mine (S of Bald Knob)—Alleghanyite, Galaxite, Garnet (massive Spessartite), Rhodonite, Tephroite.

STRATFORD, W near Elk Cr., the Peach Bottom Mine dumps—Chalcopyrite, Cuprite, Galena, Malachite, Molybdenite, Pyrite, native Silver, Sphalerite (red).

TWIN OAKS, NE, and 1½ mi. S of the state line (7 mi. SE of Independence, VA), below Bald Knob, mine—Spessartite garnet, Pyrolusite, Rhodonite.

ANSON COUNTY

WADWSBORO: ① the Jesse Cox Mine—Gold; ② SE 2 mi., the Hamilton (Bailey) Mine, in quartz veins—Gold; ③ S 2 mi., a vein—Gold; ④ SW 2 mi., in small patch of crystalline rocks on S side of the Triassic sandstone belt—Gold.

ANSON-UNION COUNTIES

AREA, stream gravels—placer Gold.

ANSONVILLE, FAIRVIEW, regional stream gravels and mines—Calcite, Garnet, Galena, Gold, Pyrite, Siderite, Rutile, Sphalerite.
PEE DEE, in gravels of the Pee Dee R. and its tributaries, as float—agatized wood, chalcedony, jasper, etc.

ASHE COUNTY

AREA: ① Helton Cr., near mouth—Magnetite; ② Horse Cr., area—Epidote, Manganese Garnet, Magnetite; ③ S part of Co.: (a) near headwaters of the New R., the Copper Knob (Gap Creek) Mine—Bornite, Chalcocite, Chalcopyrite, Chrysocolla, Gold, Epidote, Hematite, Malachite, native Silver; (b) S Fork, near mouth—Chalcopyrite, Chrysolite, Magnetite.

BEAVER CREEK: ① SW 1½ mi., the South Hardin Mica Mine—Aquamarine, Golden Beryl (crystals to 8’ long), Muscovite.

CHESTNUT HILL (Twp.): ① area—rock crystal; ② area farms on Chestnut Mt. along Long Shoal Cr., weathering out of decomposed granite outcrops—rock crystal (very large sized finds).

CRUMPLER, E ½ mi., on N Fork of the New R., in outcrops of Biotite-muscovite gneiss—Staurolites.

ELK (Crossroads), NW 2 mi., the Walnut Knob Mine (¾ mi. S of Black Mt.) —Aquamarine.

JEFFERSON: ① S, at Blue Ridge, pegmatites—Muscovite, black Tourmaline; ② E 3 mi., at Mulatto Mts., area mines—Chalcopyrite; ③ 2 to 6 mi. distant, mines—Chalcopyrite, Pyrite.

ORE KNOB, N on Rte. 88, the Ore Knob Mine—Apophyllite, Arsenopyrite, Calcite, Chalcocite, Chalcopyrite, native Copper, Cuprite, Epidote, Malachite, Pyrite, Stilbite, Thomsonite.

PINEY CREEK: ① area granite exposures, fields, cuts, etc.—rock crystal (some with inclusions of Chlorite, Manganese or Rutile); ② N Fork, area stream gravels—rock crystal.

WEST JEFFERSON: ① area old Mica mines—Aquamarine, Beryl; ② SW 1.2 mi., the Duncan Mica Mine—Beryl, Muscovite.

AVERY COUNTY

CRANBERRY: ① area RR cut banks, and ② SW 1 mi. on dumps of the Cranberry Iron Mine—gem Epidote, Garnets, Hematite, gem Kyanite, Unakite. (see Mitchell Co. mine location map)

ELK PARK, ¼ mi. up Roaring Cr. From hwy., the Bill Burleson farm, (fee) —gem moonstone.

PLUMTREE: ① area pits, rd. cuts, gravels—gem Feldspar crystals, Melanite garnets; ② NE 0.8 mi., the Plumtree Mine—moonstone, Oligoclase crystals; ③ NE 1 mi. and about ¼ mi. off US 19E, the Meadows Mine—moonstone, Oligoclase crystals; ④ N, on Lick Log Cr., the old Elk Mine—Garnets; ⑤ 2 mi. E at dumps of Elk Mica Mine and Slippery Elm mine on Plumtree Cr.—Garnets; ⑥ SE 2 mi., the Johnson Mine—Garnets.

SPEAR, W 2½ mi. and just off US 19E, the Birch Mine—Epidote, soda Feldspar crystals.

BUNCOMBE COUNTY

AREA: ① Cane Cr., in gravels—Calcite, Gold, Hematite, Limonite; ② Ivy R., area—Chrysolite, Genthite, hornstone, Talc, Tremolite, asbestos; ③ Reams Cr., as large crystals—Garnets; ④ Pisgah Mt., area—Chrysoprase.
North Carolina

ASHEVILLE, E and S along the Blue Ridge Parkway: ① Potato Gap; ② NE of the Craggy Gardens picnic area—Almandite garnets; ③ Balsam Gap, ¼ mi. N of the Parkway, the Balsam Gap Mine—Albite, Allanite, green Beryl, Columbite, Corundum, black Garnet, Margarodite, Biotite and Muscovite mica, Saphires (opaque, muted).

BALSAM GAP, S on Hwy. 276 to Balsam Gap, the 1½ mi. SE, also at Lookout Mt.—Kyanite.

BLACK MT.: ① Black Mt. Sta., mine near the Blue Ridge Parkway—Aquamarine, gem Kyanite; ② just N (and 1.4 mi. SE of Balsam Gap); ③ Lookout Mt., area—Kyanite crystals; ④ NE 2 mi., the J.C. Dude Ranch—Corundum, Saphires.

CANTON, AT Pressley Corundum Mine, take Main St. to Newfound St., turn left across I-40, left again at first rd. past church, and left again on first gravel rd. Pay fee at second house on left, mine is at end of next rd. on left (see map)—Corundum.

DEMOCRAT (N central part of Co.):
① area mines—Nickel minerals; ② W on Rte. 197 for ½ mi., turn N 0.2 mi. on secondary rd., the Goldsmith Mine (see map next page)—chalcedony, Feldspar crystals, gem Garnets, moonstone, Olivine crystals, Vermiculite.

SWANNANOA GAP: ① area pegmatite outcrops—Corundum (in Kyanite), Damourite; ② S, at Ridgecrest—gem Corundum; ③ SW 2 mi., old mine—Limonite.

BURKE COUNTY

AREA: ① in the Gold placers of the Co. (many) also occur—Anatase, Brookite, Chromite, Corundum, Epidote, Fibrolite, Hematite, Limonite, Magnetite, Menaccanite, Monazite, Palladium, Pyrope garnet, Rutile crystals, Tourmaline (black, green), Wolframite, Xenotime, Zircon; ② SW corner of Co., near Bee Bridge: (a) Brindleton Cr., numerous area mines and prospect; (b) gravels of Hall and Silver creek—Corundum, Diamonds, Pyrope garnets, Rutile crystals, Tourmaline; ③ Brown Mt., mine—Albite, Fluorite, Gold, some Platinum; ④ Linville Mt., mines—Actinolite, Itacolumite, Graphite, Menaccanite, Pyrophyllite; ⑤ High Peak, N 0.3 mi., area—Garnets; ⑥ Scott’s Hill, area mines—Cerargyrite, Gold, Psilomelane, Pyrite, native Silver, Zircon; ⑦ South Mt., area mines—Garnets, Graphite, Quartz crystals; ⑧ Sugar
Mt., area mines—asbestos, Beryl, Gold, Magnetite, Quartz (doubly terminated), Rutile;  
③ Tremont Mt., area mines—chrysoprase.

BRIDGEWATER, area mines—Garnet, Gold, Manganese minerals.

BRINDLE TOWN, area mines—Actinolite, Anatase, asbestos, Beryl, Brookite, Chromite, Columbite, Corundum, Epidote, Fergusomite, Fibrolite, Gold, Graphite, Hematite, Kyanite, Limonite, Magnetite, Menacanite, Monazite, Montanite, Pyrope garnet, Rutile, Smarskite, Smoky Quartz, Talc, Tellurium, Tetradyomite, Tourmaline, Tremolite, Xenotime, Zircon.

BURKE CHAPEL (SE part of Co.):  ① S ½ mi. on gravel rd., turn right on dirt rd. for 
½ mi. area S of rd. extending N about 0.3 mi. to N side of rd.—Quartz crystals (clear, smoky, rutilated);  ② go 4 mi. on unnumbered rd. to Rte. 18, then right for 4 mi.:  (a) area on N side of rd—Quartz crystals;  ③ go 4 mi. on unnumbered rd. to Rte. 18, then right for 4 mi.:  (a) area on N side of rd—Quartz crystals;  ④ N 0.3 mi., in mica schist outcrop—Garnets.

BURKE, McDOWELL & RUTHERFORD COUNTIES

AREA, the Blue Ridge region in which the South Mountain Belt, comprising the South Mt. Range, forms one of the most prominent eastern outliers of the Appalachian Mt. system, constitutes the most important Gold bearing belt in NC. The auriferous region embraces from 250 to 300 sq. mi., and panning for Gold can be successfully done in practically all streams.

CABARRUS COUNTY

AREA:  (with overlap into S Rowan Co.):  ① very many old mines, going back to pre-
Civil War times (on regional topographic maps) —Azurite, Gold, Malachite, Quartz crystals, Scheelite, Sphalerite, etc.;  ② specifically:  (a) Cosby’s Mine—Cuproscheelite, Siderite, Stilpnolmene, Wolframite;  ③ Cullin’s Mine—Azurite, Cuprite (cubes), Malachite, Scheelite, Tetradyomite;  ④ Flowe’s Mine—Barite, Scheelite, Tungstate of lime (rhombic crystals), Wolframite;  ⑤ McMakin’s Mine—Argentite, Barite, Galena, Goslarite, Magnetite, Proustite, Pyromorphite, Pyrolusite, Rhodochrosite, native Silver, Sphalerite, Tetrabedrite (var. Freibergite);  ⑥ Union Copper Mine—Copper minerals, native Copper.

CONCORD:  ① area:  (a) mines—agate, Bornite, Chalcopyrite, Gold, Hyalite opal, Goethite (acicular crystals in Quartz), Malachite, Magnetite, Quartz crystals (rose, rutilated), Tourmaline;  (b) regional fields and stream gravels between town and Harrisburg—agate, carnelian, chaledony, common opal;  ② SE, the Firness Mine—Barite, Epidote, Malachite, Scheelite;  ③ SE 7 mi.:  (a) the Phoenix Mine—Gold;
(b) S 1 mi., the Tucker (California) Mine, and (c) nearby other mines and prospects—Gold; ① SE 10 mi., the Rocky River Mine—Chalcopyrite, Galena, Gold, Pyrite, Sphalerite; ② SE 11 mi., the Allen Furr Mine (23 mi. E of Charlotte)—Gold, Pyrite, Sphalerite; ③ S 13 mi., the Pioneer Mills group of mines (not worked since the Civil War) —Barnhardite, Chalcocite, Chalcopyrite, some Gold, Molybdenite, Molybdite; ④ SE 12 mi., the Rocky River Mine—Chalcopyrite, Galena, Gold, Pyrite, Sphalerite; ⑤ SE 1½ mi., the Barnhardt Mine—Gold; ⑥ NE 3 mi., the Faggart Mine—Gold.

GEORGEVILLE: ① NE 1 mi., the Buffalo Mine—auriferous Pyrite; ② SE 1½ mi., the Reed Mine—Gold; ③ N 2½ mi. the Crayton Mine—Gold (minute grains in Quartz), Pyrite.

MOUNT PLEASANT: ① SW 5 mi., the Harkey Mine, veins in diorite—Chalcopyrite, Gold, Marcasite, Pyrite; ② NW 4 mi., the Teague Farm (via Cedar Valley rd. W 1 mi., turn S for ½ mi., on country rd.)—Sillimanite nodules; ③ SW 3 ¾ mi., the Slaughter prospect—Quartz crystals.

HARTLAND, NW 1½ mi., adjoining mines (Miller, Scott Hill)—Gold.

HARTWELL, pegmatite exposures inside town limits—Beryl, Garnets.

LENOIR: ① SE 3 mi., on Hibreton Mt. (4½ mi. W of US 321), area—gemmy Feldspar; ② NW 4 mi., on NE slope of Bee Mt., the Bee Mt. Mine, in garnetiferous Mica gneiss with pegmatite intrusions—Gold; ③ E 7½ mi. on low ridge 1.3 mi. N of Rte. 90 in the Oak Hill dist.: (a) area old Mica mines—Garnets, Sillimanite, massive Quartz; (b) 2 mi. E of Oak Hill Sta. On Rte. 90, the land farm—Quartz crystals; ④ E 9 mi. (2 mi. N of Rte. 90), the Reid prospect—Feldspar and Quartz crystals, etc.

YADKIN VALLEY, area 2 mi. NW of Rte. 268 and 5 mi. E of US 321, the Broyhill Mica deposit—Beryl, Garnets.

CASWELL COUNTY AREA, the Carolina Igneous Belt (comprising Caswell Co. and parts of Person, Alamance, Guilford, Randolph, Davidson, Davie, Rowan, Cabarrus and Mecklenburg counties, and the E fringes of Lincoln and Gaston counties), the second most important Gold bearing section of NC, varying from 15 to 30 mi. wide, very many old mines—Gold.

BLANCH, area old Mica mines—Allanite, Mica.

LEASBURG, W 3 mi., area prospects—Chlorite, Epidote, Tourmaline (fibrous).

MILTON: ① area old Mica mines—Allanite, Mica; ② SW 3 ¾ mi., the Slaughter prospect—Allanite.

SEMORA, area old Mica mines—Allanite, Mica.

YARBORO, area mine dumps—Albite, Garnets, Quartz crystals.
CATAWBA COUNTY

AREA: ① extreme SW corner of Co.: (a) E of Rte. 18 and about 1 mi. E of Burke Co. line, between two tributaries of Jacob Cr., the Bessie Hudson Mine—Almandite garnets, gem Beryl; (b) the Tallent prospect (5 mi. NE of Toluca in Lincoln Co.)—Quartz crystals, Sillimanite; ② Hooper’s Quarry—Calcite, Gold, Graphite, Pyrite.

CATAWBA, 4½ mi. slightly S of E, the S Huford Mine (and Quarry) on the Southern RR, in numerous auriferous Quartz seams—Gold, with Calcite, Magnetite, Rose Quartz.

CONOVER: ① area N and W, old Mica mines: (a) 1 mi. from town, the Bowman Mine (extending 7 mi. to the Hefner Mine)—Apatite, Beryl, Feldspar crystals, Garnets, Mica, Staurolites; (b) 2½ mi. N of Wray’s Gin on Rte. 10 and 2.6 mi. NE of Co. line, the Abernathy Water Mine—Quartz crystals with inclusions; ② NW 4½ mi., the Drum Mine—Apatite, yellow Beryl, Garnets, Mica; ③ N 7 mi. on Rte. 16, turn E on dirt rd. for 0.9 mi., area on E side—Corundum.

DRUMS CROSSROADS, SE 2.3 mi., exposure—Steatite.

HICKORY: ① many area mines and prospect—Gold; ② E 6 air mi. (or Rte. 16 E for 7 mi., then S for ¼ mi. on Co. rd.), pegmatite dike—pegmatite minerals.

MAIDEN: ① many area mines and prospect—Gold; ② E 2 mi. (and N of Rte. 10), at McLin Cr., deposit—Steatite.

SOUTH CREEK, area 1 mi. NE of Rte. 16—Steatite.

CHATHAM COUNTY

AREA, Battle’s Dam, area mines—Garnets, Hematite, Manganese minerals (such as psilomelane), Rose Quartz.

BENNETT: ① area old Copper mines and prospects—chalcedony, jasper, Rose Quartz along with Copper minerals; ② SE 4½ mi.: (a) the Phillips prospect (via Rte. 22 for 2.6 mi. SE, turn E 2 mi. to crsrs., prospect on the N); and (b) the adjoining Bear Creek prospect—Azurite, Bornite, Calcite, Chalcopyrite, Cerussite, Chrysocolla, Cuprite, Galena, Pseudomalachite, Malachite, Pyrite.

PITTSBORO, N 1½ mi. on Rte. 87, in area rd. cuts—Limonite (pseudomorphs after Pyrite).

SILK HOPE, NW to Co. line area (3.3 mi. SE of Snow Camp in Alamance Co.), an old Pyrophyllite mine—gemmy chert, Quartz crystals (with Pyrite inclusions).

CHEROKEE COUNTY

AREA: ① Hanging Dog Cr., area gravels—Staurolites, Tourmaline; ② in stream gravels where Peachtree Rd. crosses Valley R.—Chloritoid (dark green mica), Ottrelite, metamorphic minerals; ③ Little Snowbird Mts.: (a) area at headwaters of Vengeance Cr.—Calcite, Garnet, Quartz crystals, Staurolites; (b) area of Vengeance Cr. to Valleytown, a distance of 12 to 15 mi. along the lower slope of the mts., many diggings in the drift—Gold, Staurolites; ④ very many countywide exposures of schists in the mountain regions—metamorphic gems and minerals, Chloritoid, Ottrelite.

ANDREWS, MARBLE, area 2 mi. from Palmer Museum, on the Bettis Bros. farm—Staurolites.
MARBLE: ① area cr. beds, dike exposures, gravel pits—Sillimanite (cat’s eye), Staurolites; ② SE 1 mi.: (a) Valley R. gravels—placer Gold; (b) between Parson’s and Brunt branches—Almandite garnets; ③ N 1.3 mi., in Hyatt Cr., Fishermare Branch and Allmon Cr. —Almandite garnets, Staurolites; ④ NW, in the Snowbird Mts., the Parker Mine—Garnets, Gold, Staurolites.

MURPHY: ① area mines—Cerussite, Dravite (brown tourmaline), Galena, Gold, Lead, Pyrolusite, Sillimanite, Silver, Talc, Tremolite asbestos; ② the No. 6 Mine—Calcite, argentiferous Galena, Gold, Tremolite asbestos; ③ N 1½ mi., the Hitchcock Mine—Dravite, Sillimanite, Steatite, Tremolite; ④ SW ½ mi., area along US 64—Calcite, argentiferous Galena, Gold, Tremolite asbestos; ⑤ N 1½ mi., the Hitchcock Mine—Dravite, Sillimanite, Steatite, Tremolite; ⑥ at Voiles Cabins off Rte. 290 on Hiwassee Dam rd.—Smoky Quartz.

UNAKA: ① area gravels, pits, etc.—Staurolites; ② E ½ mi. on rd. toward Murphy, gravels of Beaverdam Cr.—agate, Epidote, pink Feldspar, placer Gold, jasper, petrified wood, Smoky Quartz crystals, Staurolites.

CLAY COUNTY

AREA: ① East central part of Co. N of US 64, Buck Cr.: (a) area mines in peridotite-dunite—pink Corundum, Smaragdite (green amphibole), Anorthite, Olivine crystals, Spinel, Zoisite; (b) the Cullakanee Mine (6 mi. N of the GA state line and 20 mi. SW of Franklin in Macon Co., via US 64) —Braznite, Corundum, opal, Peridot; (c) the Maney Cut—pink Corundum, Smaragdite; (d) S side of US 64, area boulders—Unakite; (e) the Buck Creek Dude Ranch, SW 0.3 mi., the Herbert Mine (on Little Buck Cr.) —Corundum; (f) the Buck Creek Campground, area—serpentine; ② the Cat Eye Cut (600 ft. W of Chestnut Knob) —cat’s eye Corundum (asteriated); ③ Chestnut Knob, area—Corundum (white star); ④ Park Gap (near Chunky Gal Mt.): (a) area—Garnets; (b) on NE slope of the mt., area—Staurolites; ⑤ Red Corundum Knob, area—Actinolite, pink Corundum, gem Kyanite, Olivine crystals, Ruby, serpentine.

BRASSTOWN: ① area prospects and mines—Gold; ② W ½ mi., on N side of US 64, area Garnets; ③ E 1 mi., on Tusquitee Cr. (near Hayesville), area—Staurolites; ④ in rd. cuts along Greasy Cr.—Staurolites; ⑤ in bank along gravel rd. and nearby pastures and in matrix on mountainside (see map above) —Staurolites; ⑥ Greasy Cr. gravels—Almandite garnets, Staurolites.

HAYESVILLE: ① Corundum Knob (¼ mi. W of the Bureau of Mines Sta.), area—Corundum (two tones); ② E, on Penland Bald, area—Garnets; ③ E 12 mi., near US 64, area Amphibole exposures—Rubes, Sapphires, Smaragdite.

SHOOTING CREEK: ① area exposures and gravels—Hyalite opal geodes; ② N 1.8 mi. on US 64, near Muskrat rd., in outcrop of Mica schist—pink Corundum; ③ W, near
Spring Hollow, area—Rutile crystals; ⑦ W, at Elf: (a) area—Corundum (red, in nodules of green Amphibolite), opal, Quartz crystals, Smaragdite; (b) as float around lake Chatuge—Corundum (deep to gray blue, pink), Smaragdite; (c) area near Myers Chapel—Corundum.

Cleveland County

Casar: ① area, NE via Rte. 10 into NE corner of Co.: (a) Carpenter’s Knob, 0.3 mi. NE of rd. following E side of the hill, on W bank of a farm rd. trending NW, area—Corundum (black, blue gray) enclosed in Sillimanite; (b) 1.6 mi. W of Toluca, Lincoln Co., on SE flowing tributary of Knob Cr., the A.F. Hoyle Mine—Apatite, Autunite, Garnet, Zeolite minerals; (c) area around St. Peters Church, numerous old mines—gem crystals; (d) S, on mining area centered at Carpenter Grove Church—gem crystals; ② S, on farms reached after crossing Ward’s Cr. W of town and along W fork of the Broad R.—Quartz crystals (rutilated); ③ N, on N side of Old Sheep Knob (just N of a dirt rd.), area mines—Corundum: ④ W 2 mi., area—agate, Quartz crystals (rutilated); ⑤ SW 2½ mi., the Cooke Mine—Beryl; ⑥ SW 3½ mi., the Elliott Mine—Beryl.

Fallston: ① E 1 mi. and N 3.8 mi., the Norman Mine—Garnets, Tourmaline; ② E 1.3 mi., on S side of the main rd., the Fallston prospect—Smoky Quartz crystals; ③ SE 3 mi., the Mauney Carpenter Mine—Quartz crystals (clear, smoky).

Grover, N 2½ mi. on US 29E, then N on Co. rd., pegmatite—Aquamarine.

Hollybush, W side of Broad R., pegmatite—yellow Beryl.

Kings Mountain (major mineral dist.): ① area gravels—Diamonds; ② the Foote Mineral Co. Mine, more than 30 gems and minerals, including—Apatite, Beryl, Bikitaite, Brannockite (fluorescent), Calcite, Cassiterite, Childrenite, Eucryptite (fluorescent), Fairfielldite (as good crystals), moonstone, Purpurite, Rhodochrosite, Roscherite, Spodumene (fluorescent), black Tourmaline, Vivianite; ③ 1 mi. NW of jct. of US 74 and US 29, the Bun Patterson Mine—Beryl; ④ the Mountain Mine—Alunogen, Arsenopyrite, Galena, Garnet, Gold, Graphite, Muscovite, Melanterite, Pyrite (abundant crystals), Tourmaline and Quartz.

Lattimore: ① S ½ mi., the Jones Mine—milky Quartz crystals; ② SE 1 mi., the Hunt Mine, abundant—Quartz crystals; ③ W 1½ mi., the Joe Humphries Mine—Beryl, Feldspar crystals (penetrating massive quartz), Tourmaline; ④ the L. Yates Brooks farm, area—Anatase (blue crystals), Muscovite; ⑤ 1 mi. from the Yates farm (inquire), area—Anatase, Muscovite.

Polkville: ① NE 0.9 mi., the Getty No. 1 Mine—Muscovite, Marcasite, Quartz crystals, Spar, Sillimanite; ② NW 3½ mi. and just W of Duncan’s Cr., dumps of the Lattimore Mine, abandoned—Beryl, Quartz crystals, black Tourmaline.

Shelby: ① area mines (very many), all highly mineralized: (a) N to Union Church and Double Shoals; (b) W to Mooresboro and Lattimore—Anatase crystals, Actinolite, Beryl, Emerald, Magnetite, moonstone, Muscovite, Quartz, Tourmaline, etc.; (c) S along Rte. 18 all way to Blackburg, Cherokee Co., SC, in regional fields, streams, cat banks, etc.—gem crystals; ② S on Rtes. 18 & 150 at the forks, then W 1.8 mi. to a secondary rd., turn S ½ mi.: (a) area along the Broad R., in fields on both sides of rd., several localities—Quartz crystals; (b) Charon Church crossrd., S 1 mi., area—Quartz crystals; (c) ½ mi. due N of the Stice Dam, area—Corundum (bronze, gray), Quartz crystals; (d) 1.3 mi. due E of Earl, on tributary of Buffalo Cr., area—Aquamarine, Garnet; (e) 1¼ mi. E of the Stice Dam, the Turner Mine—Aquamarine; (f) 1 mi. NE of the dam, the Old Plantation Mine—gem Beryl; ③ N, along Little Harris Cr. Near rd. to Double Shoals, numerous Mica mines: (a) 1 to 1¼ mi. SW of Union Church, mines (especially the Spangler Mine) —Garnets, Quartz with green mica inclusions; (b) 1.1 mi. S of the church, the Weathers Mine—abundant Garnets; (c) 2½ mi. SE of Union Church, area—Garnets, Mica; (d) on N
North Carolina

side of Cr. By Double Shoals, the Bowen Mine—Garnets, Mica; (e) ¼ mi. from the Bowen Mine, at edge of woods S of Little Harris Cr., the Harris Mine—Feldspar crystals, Garnets, Smoky Quartz crystals; (f) 1½ mi. SW of Double Shoals on S side of dirt rd., the Mary Gold Mine—Sillimanite (gem); (g) NW 2.7 mi., the Niagara Mine; (h) NW 3.3 mi., the McGinnis Mine; and (i) NW 4¾ mi., the Martin Mine—crystals of Feldspar, Pyrite, Quartz; (j) SW 4¾ mi., the Allen property (and Turner Mine), area 6' thick dike—Aquamarine, Emeralds, moonstone, rutilated Quartz crystals; (k) W 6.2 mi., near Cr. ¼ mi. S of US 74, the McSwain Mine—Garnets, Sillimanite; (l) SW 6.2 mi., the Mill Race Mine, in mica schist—Garnets.

CUMBERLAND COUNTY

AREA: ① Countywide stream gravels and alluvial deposits, gravel pits, excavations, rd. cuts, etc.—agate, chalcedony, chert, jasper, common opal, agatized wood; ② Cape Fear R. and tributaries, gravel beds—agate, chalcedony, chert, jasper, common opal, agatized wood.

DAVIDSON COUNTY

AREA, very many regional mines—Chalcopyrite, Gold, arsenic Pyrite, Tetradymite.

CID: ① area mines—Chalcopyrite, Gold, arsenic Pyrite, Tetradymite; ② W, the Emmons (Davidson) Mine (12 mi. SE of Lexington)—Calcite, Chlorite, Gold, Siderite, Silver.

LEXINGTON: ① area S and E, noted old Gold-Silver belt, many abandoned mines—Gold, Silver, Marcasite, Pyrite, etc.; ② E 6 mi., the Conrad Hill Mine—Chalcopyrite, Limonite, Malachite, Silver, specular Hematite; ③ W 10 mi. and 1 mi. W of Oaks Ferry on Yadkin R. on Hairston farm—orbicular granite.

LINWOOD, NW 5 mi. and 1 mi. S of Tyro, area—Amethyst.


THOMASVILLE: ① SE 1½ mi., the Loftin Mine—Gold; ② SE 2 mi., the Lalor (Allen) Mine: (a) on old dumps—Copper Pyrites, Gold, Limonite, Hematite; (b) ½ mi. W of the Loftin Mine, the Eureka Mine—Gold.

DAVIE COUNTY

AREA, mines, including Butler, County Line, Isaac, Allen and several old mines on Callahan Mt.—Gold.

FARMINGTON, E 2 mi. to Rte. 801, turn N for 1½ mi., area pegmatite exposures—Autunite, Columbite.

OAKS FERRY, W 1 mi., near the Yadkin R. on the Hairston farm—orbicular granite.
DURHAM COUNTY

BETHESDA, W of US 70, area fields, cuts, gravels, etc. as float—silicified wood.

DURHAM: ① W, near jct. of US 75 and Rte. 98, area float—petrified wood; ② inquire in town rock shops for directions to a major quarry about 15 mi. distance—Calcite, Biotite, Kobellite (steel gray var. of Jamesonite), Siderite (gemmy olive green crystals).

WEAVER, gravels of the Eno R.—agatized wood.

FORSYTH COUNTY

KERNERSVILLE, area fields, rd. cuts, gravels, etc.—Chrysolite, Bronzite, Tourmaline.

WINSTON-SALEM: ① area quarries, pits, deposits, etc.; and ② S 4 mi., mines—Halloysite, Hematite, Magnetite, Manganese Garnet.

FRANKLIN COUNTY

AREA: ① N part of Co., many pegmatite outcrops—Beryl, Mica; ② the Portis Mine—Diamond, Gold.

CENTERVILLE: ① area: (a) the Taylor place on Rte. 561 W of the crossrd.s., outcrop—royal purple Amethyst; (b) old mine dumps near Rte. 58 on rd. to Inez—Gold; (c) near Sandy Cr., on S side of first rd. out of town leading NW from Rte. 561, the Van Alston prospect—Gold; ② NW several mi., near 58, many pegmatites—Beryl, Feldspar and Quartz crystals, Tourmaline, etc.

FRANKLINTON, W 4 mi., several pegmatite outcrops, some mined—gem minerals.

LOUISBURG: ① area gravels, fields, etc.—Amethyst; ② E 18 mi., old placers—Gold, Diamonds.

YOUNGSVILLE: ① NW 4 mi., the Mitchell Mine, and ② NW 5 mi., near rd. to Pokomoke, the Gully Mine, both in pegmatites—gem and minerals.

GASTON COUNTY

ALEXIS: ①: (a) E 1½ mi.; and (b) E 2.4 mi., in area fields as float—gem Kyanite, Lazulite, Rutile crystals; ② Chubb’s (Clubb) Dist.: (a) many area mines—blue Corundum, Dumortierite, gem Lazulite, gem Kyanite, Lithiophyllite; (b) Chubb Mt. area—Corundum (red, blue), Damourite, Gold, Manganese Garnet, Hematite, Magnetite, Margarite, gem blue Kyanite crystals, Rutile crystals, Talc, Tourmaline; (c) at the Lowe farm on Chubb Mt. On Hwy. 27 between Lincolnton and Charlotte—Rutile crystals; (d) Crowder’s Mt.—Barite, Chalcopyrite, Corundum (red, blue), Damourite, emery, argentiferous Galena, Gold, Manganese Garnet, Hematite, Limonite, Magnetite, Margarite, Menaccanite, Monazite, gem blue Kyanite crystals, Rutile crystals, Pyrite, Talc, Topaz, Tourmaline.

BESSEMER CITY: ① S, in the Devil’s Workshop area—Goethite; ② E 2.3 mi., near Long Creek Church, a pegmatite dike exposure—Apatite, Beryl, Spodumene.

CHERRYVILLE, N of Rte. 277 and E along Little Beaverdam and Beaverdam creeks: ① at confluence, pegmatite exposure—Cassiterite; ② SE 3½ mi., the Big Bess Mine—gem Apatite, Beryl, Garnet, Feldspar, Marcasite, Pyrite, Quartz (blue), Rutile crystals, Sillimanite, Tourmaline, Zircon; ③ SE 4.3 mi., the Self Mine—Feldspar crystals, Smoky Quartz, Zircon; ④ SE 5 mi., on Rte. 274, the Huskins Mine—Beryl, Garnet, Tourmaline.

CRAMERTON, S in extreme corner of Co.: ① the Oliver Mine (12 i. SW of Charlotte, Mecklenburg Co.) on W side of the Catawba R.—Galena, abundant Gold, Pyrite; ② the
Mclean or Rumfeldt Mine (15 to 16 mi. SW of Charlotte); ② the Duffie Mine (16 mi. SW of the same town); and ② the Rhodes Mine (18 mi. SW)—Gold.

CROWDERS, the King’s Mt. area, numerous mines—Altaite, Bismite, Calcite, Chalcopyrite, Galena, Gold, Magnetite, Nagyagite, Pyrrhotite, Sphalerite, Tetrahedrite.

DALLAS, NW 6 mi., the Long Creek Mine (3 veins)—Gold.

KING’S MT. STATION: ① S 1½ mi., the Catawba (King’s Mt.) Mine, in limestone—Gold; ② E side of King’s Mt. and 4 mi. E of the Catawba Mine, the Crowder’s Mt. (Caledonia) Mine—Gold.

GRANDVILLE COUNTY

AREA: ① N half (with overlap into Person Co. on W), very many regional Copper and Gold mines including: Royster (Blue Wing), Holloway, Mastodon, Buckeye, Pool, Gillis, Copper World and Yancy—Bornite, Chalcocite, native Copper, Gold, Pyrite; ② area stream gravels—Topaz; ③ area mine dumps, rock exposures, etc.—Andalusite, carnelian, Malachite; ④ Reed’s Cr. gravels—agate, jasper, jasp-agate, Quartz crystals; ⑤ Oak Hill, S, on Mountain Cr.—agate, jasper; ⑥ Long Mt., area—agate, jasper.

BULLOCK: ① E and SE, area exposures, abundant—Pyrite; ② NE 1½ mi.: (a) outcrop of metabasalt porphyry—Clinozoisite, Epidote, Labradorite, Titanite; (b) ⅛ mi. farther N—Epidote, Hornblende, Quartz crystals; ③ NW 6 mi. and ⅛ mi. from state line, area—Limonite, Hematite, Quartz crystals.

BUTNER, area—agate, Amethyst, jasper.

CREEDMORE-GRANVILLE-OXFORD, a 15 mi. long stretch along US 15 and I-85, area both sides of highways—cryptocrystalline quartz gemstones.

POCOMOKE, N 2 mi., area—Lepidolite (with Rubellite).

STEM, 2 mi. distant on Bowling Mt., deposit—Pyrophyllite.

VIRGINIA: ① area to S, many old Copper mines—Copper minerals, native Copper and Silver, Epidote, Hematite, Malachite, pink Feldspar, Pyrite, Quartz; ② S 2 mi., and 1 mi. W, the Holloway Mine—Bornite, Chalcocite, native Copper, Gold, Pyrite; ③ the Blue Wing Church: (a) N, the Blue Wing Mine—Azurite, Calcite, Argentite, Chlorite, etc.; (b) across rd. from church, prospect pits—Malachite, specular Hematite.

WILTON, E 2 mi., a granite quarry—Calcite, Epidote, Feldspar, Molybdenite, Quartz.

GUIFORD COUNTY

BIGSONVILLE, area—Quartz crystals (green, with Actinolite and asbestos inclusions).

FRIENDSHIP: N, the Tuscarora Iron Mine—Limonite, Hematite, Magnetite, Corundum; ② NE, the mine on the McCarvisten farm—Iron minerals.

GIBSONVILLE, area—green Quartz with asbestos inclusions.

GREENSBORO: ① SW 5 mi., the Fisher Hill Mine; ② SE 6 mi., the Hodges Hill Mine; ③ SSW 6 mi., the Mills Hill Mine—Chalcopyrite, Gold, Hematite, Magnetite, Menacanite, Pseudomalachite, Pyrite, Siderite; ④ SW 6 mi., the Twin Mine—Gold; ⑤ SW 8 mi., the Gardner Mine—Chrysocolla, Gold, Malachite; ⑥ S 9 mi., the North Carolina (Fentress) Mine, old, with Gold vein traced for 3 mi. along the outcrop—Copper minerals, Gold.

JAMESTOWN: ① NE 2 to 3 mi., the Gardner Hill Mine—Chrysocolla, Gold, Malachite; ② 2¼ mi., on N side of Rte. 29, the North State (McCullough) Mine—Chalcopyrite, native Copper, Cupric Pyrites (fine crystals), Cuprite, Malachite, Gold, Siderite.
HALIFAX COUNTY

AREA, all exposures of Quaternary gravels throughout Co.—**petrified wood**.
BRINCKLEYVILLE, S, on property of the Boy Scouts of America, area—**Chalcopyrite, Molybdenite, Pyrite, Sericite**.
GLENVIEW. W 1.7 mi., old mine—**Gold**.
ROANOKE RAPIDS, the Gaston Ore Banks—**Limonite, Hematite, Magnetite**.

HAYWOOD COUNTY

AREA: ① several pegmatite mines in Co. are open on a fee basis; make inquiry at any rock shop—**Tourmaline** and other gems, etc.; ② Hall’s Mine—**Chlorite, Chrysolite, Corundum, Talc, Tremolite**.
CANTON, NW 4 mi., the Presley Mine—**Albite, Amphibolite, Corundum** (blue, gray, altered into Damourite and Albite), **Damourite** (large crystals and scales), **Sapphire** (clear, color-zoned, opaque, star).
HAZELWOOD, S 21° E 3.9 air mi., on SW slope of Roberson Ridge between two unnamed branches of Deep Gap Cr., the Big Ridge Mine—**Ankerite, Apatite, Biotite, Garnets, Hedenbergite, Margarodite, Menaccanite, Muscovite, Pyrrhotite, Quartz** crystals and **Tourmaline**.

WAYNESVILLE: ① AREA, Newfound Gap, pegmatite—**Rubies**; ② N 2 mi., old mine—**Talc, Tremolite, asbestos**; ③ S 2 mi., on Richland Cr., old mine—**Damourite, Garnet, Limonite, Psilomelane**; ④ SE 6 mi., on the Pigeon R., the J.H. Edmondson property at Retreat—**Almandite** garnets, **Corundum**, gem **Kyanite**; ⑤ an outstanding locality for Rose Quartz is Shinning Rock ledge, E on Hwy. 276 for 7 mi. to Bethel, S through Sunburst to US Forest Ranger Sta., get permit and key to gate and drive 10 mi. to Shinning Rock—**Rose Quartz**.

HENDERSON COUNTY

BAT CAVE: N on Rte. 9: ① 1 mi., in gneissic outcrops—moss **Epidote**; ② ½ mi. farther, in rd. cut—**Unakite**.
ETOWAH, on SE slope of Forge Mt., the Boylston Creek Mine (12 mi. W of Hendersonville)—Gold.

MILLS RIVER, W, along the Green R. on the S side of the Blue Ridge, area—granular Calcite, Xanthitane, Zircon.

TUXEDO: ① area pegmatite mines, in a zone running NE to SW for several mi. semi-parallel with the Green R.: (a) ¼ mi. E of town the Freeman Mine; (b) 1.8 mi. SW of town, the Pace Mine; (c) ¼ mi. E, the Jones Mine; and (d) 3 mi. SW of the Freeman Mine—Apatite, Epidote, Garnet, Octahedrite, Sphene, abundant Zircon; ② W shore of Lake Summit, at W end—agate.

IREDELL COUNTY

AREA, countywide scattered outcrops of Quartz—Quartz crystals, specular Hematite.

HARMONY-TURNERSBURG, along the South Yadkin R., area—Beryl, Corundum, Tourmaline, etc.

MOORESVILLE, WNW 4 1/2 mi., area—agate, Amethyst, Quartz crystals.

NEW HOPE: ① area old Mica mines—Beryl, Garnet, Mica, Quartz crystals, Tourmaline, etc.; ② ¼ mi. S of the Post office, the McClelland prospect—Beryl, Quartz crystals; ③ SW 2 mi., the Campbell prospect—Beryl, Quartz crystals.

STATESVILLE: ① area: (a) the Statesville Quarry—Oligoclase sunstone; (b) the Cook farm, ¼ mi. W, area; (c) and 1¼ mi. S, area—agate, Amethyst, Quartz crystals; ② area fields just N of town—Amethyst; ③ N on US 21 and 1.6 mi. N of the Prison Camp—Corundum (pale blue); ④ W, at the Acme (Collins) Mine—Sapphires (in stream gravels behind a drive-in theater; old mine dumps have been built over); ⑤ S 3 mi., area—agate, Amethyst, Quartz crystals; (b) Fox Mt., area—Rutile crystals; ⑥ NW 14 mi.: (a) on farms along Rte. 115; (b) S of Rhyne’s store—Citrine, Quartz crystals (smoky, clear); (c) ¾ mi. N of Rhyne’s store, a massive outcrop—Rose Quartz.

JACKSON COUNTY

AREA: ① countywide Cr. Gravels, particularly along the S slope of the Blue Ridge, near Hogback, Chimney Top Mts. and Cashiers, placers—Gold; regional pegmatite outcrops—Golden Beryl; ③ confluence of Johns Cr. With Caney Fork, a ridge 1¼ mi. SSE, outcrop—Golden Beryl; ④ E central border, near Pinhook Gap, the McCall Mine—Feldspar, Garnets, Mica, Quartz crystal, Tourmaline, Uranium minerals; ⑤ Hall Sta., area—Almandite garnets; ⑥ the Wolf Creek Mine—Chalcocite, Chalcopyrite, Chrysocolla, native Copper, Malachite; ⑦ 1¾ mi. NE of Whiteside Cove Mine—Golden Beryl; ⑧ S of Toxaway Mt. and ¼ mi. NW of US 64, pegmatite outcrop—Beryl, Aquamarine, Garnets, black Tourmaline, etc.; ⑨ S of US 64 on Transylvania Co. line: (a) area mines, especially the Rice Mine—Aquamarine, Sapphire; (b) along S shore of Sapphire lake, the Sapphire Mining Co. Mine—Sapphires.

BALSAM, S 57° E 2 air mi., the Big Flint (grassy Ridge) Mine—Biotite, Garnets.

CASHIERS: ① E 4 ¼ mi., between Fairfield Lake and a tributary of Horse-pasture R., in peridotite exposure spanned by US 64 and extending to Little Hagback Mt. on the N—Corundum; ② Sheepcliff Mt., the Sheepcliff Mine—Aquamarine, Golden Beryl, Feldspar, Garnets (various colors), Mica, Quartz crystals, radioactive minerals; ③ Whiteside Mt., area old mines—pegmatite gems.
CULLOWHEE:  ① the Cullowhee Copper Mine—Chalcocite, Chalcopyrite, Malachite, Melanconite; ② S 41° W 3½ air mi. and 2,000’ NW of Presley Cr., on a steep E facing slope (elev. 3,000’), the Bowens Mine—rum Mica.

DILLSBORO, S 23° W 7½ air mi., the Eagle Cope Mine (above Savannah Cr. And US 23, about ¼ mi. W of the Cowee sawmill) —Biotite, Garnets, Muscovite, Pyrite, Pyrrhotite.

HOGBACK, the Hogback Mine—Chromite, Chrysolite, Corundum, Damourite, Dudelyite, Margarite, Quartz crystals (drusy), Rutile in Corundum (rare), Tourmaline.

MONTVALE:  ① area stream gravels—Rubies, Sapphires; ② the Grimshawe Mine—Aquamarine, gem Corundum.

SAPPHIRE:  ① area stream gravels along border of Transylvania Co. line; ② SSW 2 mi., the Biggerstaff place (¼ mi. N of summit of Sassafras Mt.); and ③ the Sapphire and Whitewater mines—Golden Beryl, Corundum.

WEBSTER:  ① near town, an outcrop—gem Olivine; ② area dunite outcrops—Bronzite (altered Enstatite), Websterite (Bronzite-diopside); ③ area mines—Actinolite, chaledony, Chromite, Chrysolite, Corundum, Deweylite, Enstatite, Genthite, Magnesite, Nepheline (crystalline, earthy), Marmolite, Penninite, Pyrolusite, drusy Quartz crystals, serpentine, Talc, Tremolite, Wad; ④ SE, via Rtes. 107 & 116, area deposits—Actinolite, Bronzite, Chromite, Diopside, Garnierite, Genthite, Goethite (botryoidal), drusy Quartz crystals, serpentine, Steatite, Websterite; ⑤ large pegmatite dike exposed in W central part of Co.—Gems, pegmatite minerals.

WILLETS:  ① area not far E of town and Sylvia—Rhodolite garnets; ② SE 1 mi., on Sugarloaf Mt., via US 19A and old rd., a mine—Garnets.

LINCOLN COUNTY

AREA:  ① an extensive Tin-Spodumene mining belt shared with adjoining Co.: (a) regional old mines, and (b) regional stream gravels, as float—Cassiterite nodules (pegmatites are most exposed SE of Laboratory and E of US 321); ② Pumpkin Center, SE 1 mi., old mines dating back to the Civil and Revolutionary wars—Goethite, Hematite, Tin minerals.

COTTAGE HOME, are gravels—Diamond.

DENVER:  ① S 1.3 mi., at the Forney farm—Amethyst, Quartz crystal; ② SW 1½ mi. and 2 mi. NE of Iron Station, a farm—Amethyst.

FALLSTON:  ① NE 2½ mi. and extending for some distance, series of pegmatite outcrops (some mixed) —Gem crystals and minerals; ② NE 3 mi., the Biggerstaff place (¼ mi. N of residence), the Deadman Mine—Feldspar crystals, Garnets, Hornblende, Quartz crystals, Tourmaline; ③ NE 4 mi. (on way to Flay): (a) the Brown and Carbine mines; and (b) the Foster Mines—Beryl, Garnet, blue Quartz, green Feldspar.

FLAY (near Fallston): ① area mines—Apatite, Corundum, Mica, Sillimanite (schist), black Tourmaline; ② S, at the Baxter Mine (off Rte. 274, almost on the Gaston Co. line) —Smoky Quartz crystals; ③ S 2 mi. and ½ mi. W of Rte. 274, the Eaker Mine—gem Garnets.

IRON STATION:  ① area all way to Denver, in NE part of Co., scattered localities—gem Amethysts; ② NE 1.7 mi., on the Lynch farm—Amethysts; ③ NE 2 mi., at the Randleman (Godson) farm, (fee) —museum quality Amethysts; ④ NE 4 mi., the Graham Mine—Chalcopyrite, Gold; ⑤ N on Hwy. 1314 to Hwy. 73, turn right, then right on Hwy. 1509, and right again on Hwy. 1417, pay fee and walk to digging area on Reel farm —Amethysts.

MACPELAM CHURCH, E 2 mi., old mine—Manganese Garnets, Chalcopyrite, Pyrite.
MACOM COUNTY

AREA: ⊙ Hanging Dog Cr., gravel beds, and ⊙ Persimmon Cr.—Staurolites.

BURNINGTOWN (3 mi. N of Franklin), off Rte. 28 via Co. rd., in gravels of Burningtown Cr.—Sapphires (orchid, pink).

ELLIJAY (3 mi. SE of Franklin), the Mincey Mine—Corundum (various kinds), Ruby, Sapphire (bronze, blue).

FRANKLIN (Gem Capital of the World): ① area mines, prospects and diggings—Amethyst, Bronzite, Epidote, Fibrolite, Rhodolite garnet, jasper, Kyanite, Menaccanite, Quartz crystals (dendritic), Rhodochrosite, Ruby, Rutile crystals, Sapphires, Sphalerite, Staurolites, Wad; ② E 1½ mi. at Corundum Hill in dunite and serpentine—industrial Corundum, Rubies, Sapphires (blue, green, orchid, pink, yellow; to large size), Bronzite, Chromite, Olivine crystals; ③ ESE 4½ mi., on S slope of Higdon Mt. ½ mi. N of US 64, W of Crows Branch Cr. Jct. With the Cullasaja R. (part of Corundum Hill), area outcrops (in dunite) and mines—Actinolite, Anthophyllite, Cerelite, chalcedony, Chromite, Chrysolite, Corundum, Culsageeite, Deweylite, Diaspore (rare), Enstatite, Genthite, Kerrite, Maconite, Margarite, Magnetite, Hyalite opal, Penninite, Prochlorite, drusy Quartz crystals, Ruby, Rutile (rare), Sapphire, serpentine, Spinel (crystals, granular), Tourmaline, Talc, Tremolite, Wilcoxite; ④ E 6½ mi., the Mincy Mine (also under Ellijay)—Corundum (various kinds), Ruby, Sapphire (bronze, blue); ⑤ S, along the Tennessee R., area—Columbite, Damourite, Garnets, Kyanite, Staurolites; ⑥ NW 1¼ mi. (from center of town), the Allman Cove group of Mines—Biotite, Feldspar, Muscovite, Quartz; ⑦ N 6 mi., the Cowee Valley (take Rtes. 23-141 N 3 mi. from Franklin, turn NW on Rte. 28 about 4 mi. into signposted mining dist. And up Cawee Cr. Past the Cowee Baptist Church): (a) many area mines (fee)—Garnets, Rubies, Sapphires, etc.; (b) confluence of Calor Fork and Cowee Cr., area gravels—Corundum (pink, orange, violet, white), Corundum nodules (in Saprolite); (c) turn E to the famed Cowee Creek Ruby Tract (of mines) along the Calor Fork of Cowee Cr., (Dale, Demko, Carter, Cowee Valley, Gibson; in creek flume diggings Holebrook, Rockhound Haven Gem, Shuler, etc.; fee charges at all mines)—Corundum, Garnets,
Rubies, Sapphires; (d) regional mine dumps also contain Beryl, Bronzite, Chromite, Corundum, Fibrolite, Gahnite (zinc spinel), Garnets, Gold, Hornblende, Ilmenite, Iolite (colorless), Kyanite, Monazite, Pleonaste (black spinel), Pyrite, Quartz crystals, Rubies, Rutile crystals, Sapphires, Staurolite (transparent), Tremolite and Zircon; ® N 5 mi. on Hwy. 28, right to head of valley to Masom Mt.—moonstone; ® 10 mi. E at Sheep Knob Mt.—Aquamarine; ® one of the most reliable locations for Rhodolite garnets, is a Mason Branch Mine known as the Ried Mine, Take Hwy. 28 NW from Franklin 5 mi. to Mason Branch sign pointing to mine, take rd. ¼ mi. to mine—Rhodolite garnets, Sapphires.

HIGHLANDS: ① in city limits, a pegmatite outcrop just N of US 64—Beryl; ② SW on US 64 (NW of town) and W 2 mi. to dry Falls, then take Co. rd. southerly along Turtle Pond Cr.: (a) in area gravels—Corundum, Almandite garnets, Quartz crystals, etc.; (b) an old mine in area—Beryl (common, golden), Feldspar, Muscovite, Quartz crystals, black Tourmaline; ② 3 mi. out on US 64 turn onto gravel rd. ¾ mi. to Whiteside Mt., area—Almandite garnets; ® SE 4½ mi., N of rd. just W of the Jackson Co. line, the Ammon Mine—Amethyst; ® SW 5½ mi. on Rte. 106, to Little Scaly Mt.: (a) in area rock exposures, and (b) area mines—asbestos, gem Corundum, Rutile crystals, serpentine, Vermiculite; ® 6 mi. out on Rte. 106, the Waggoner Mine (on Abe’s Cr.)—Amethyst.

OTTO (9 mi. S of Franklin): ① E 0.6 mi.: (a) a mine on Tessentee Cr.—Amethyst (in Kaolinite weathered from pegmatite); (b) area stream gravels—Amethyst, Garnets; (c) near headwaters of Tessentee Cr., old mine—Amethyst, Beryl, Corundum; ② mouth of Tessentee Cr.: (a) NE 2 mi., the Connally Mine; and (b) E 4 mi., area gravels—Amethyst, Quartz crystals.

RAINBOW SPRINGS, SW 9 mi. on Hwy. 64 to bridge where Buck Cr. Crosses hwy., turn right at bridge and go 1 mi. to another bridge, park and hike up mt. To outcrop—Pyrope garnet, Ruby in Smaragdite.

WESTSMILL (6 mi. N of Franklin via Rte. 28), S 1.6 mi. from the Wests Mill bridge to slopes of Mason Mt.: ① area stream gravels—Corundum pieces, Garnets, Hornblende and Quartz crystals; ② the Rhodolite Mine—Rhodolite garnets (abundant), Gedrite, Hypersthene, Biotite; ③ ½ mi. S of crest of Mason Mt., a quarry—Rhodolite garnets, Gedrite, Hypersthene, Kyanite, Biotite, Quartz crystals.

MADISON COUNTY

AREA: ① many rock exposures along Co. rds. and hwys.—Unakite; ② N part of Co., many localities—Essonite garnet, Vesuvianite; ③ W part of Co., in mined deposits—Ilmenite, Hematite, Magnetite, Psilomelane, Pyrolusite; ④ Bear Cr., 2 mi. above mouth, area—Calcite, Chlorite, green Coccolite, Epidote, Garnet (large crystals), gem Kyanite, Magnetite, Staurolite, Talc; ⑤ gravels of Reed’s Cr.—jasper; ⑥ Lemon Gap, S ½ mi. on East Fork Cr., area—Allanite.

BLUFF: ① area outcrops—Unakite, jasper; ② NE 1 mi., old mine—Barite crystals; ③ SW 2 mi., Roaring Fork Cr.: (a) ½ mi. W of confluence with Meadow Fork,
North Carolina

outcrop—Unakite; (b) 1 mi. N of confluence with Spring Cr. (which empties into French Broad R.)—Unakite.

DEMOCRAT, N, 1.7 mi. to first E trending rd. after passing the Pleasant Gap Methodist Church, then ½ mi. to the Carter Mine (at head of Holcombe Branch)—Beryl, Chromite, Chrysolite, Corundum (pink, white), Culsageeite, hornstone, Hyalite opal (aqua color), Menaccanite, Olivine crystals, Prochlorite, Quartz, gem serpentine, Spinel, Tremolite.

HOT SPRINGS: ① area, a new discovery—orange fluorescent Barite crystals with Spalerite; ② area gravels, float in field, rd. cuts, etc.: (a) along the French Broad R., (b) around Knapp’s store, and (c) near Reed’s Cr.—gem jasper; ③ just S and extending to Joe and E to big Lauel and Walnut creeks, the Max patch Mts., type locality, with many outcrops in a broad area along the Tennesee border—Unakite, jasper.

MARSHALL: ① area—Bornite, Calcite, Chalcopyrite, Epidote, Fluorite, Galena; ② gravel beds of Little Pine Cr.—Rhodolite garnets; ③ N 6 mi. on Redmon Dam rd, cross dam, turn right, go to forks, take left for to Lone Pine Mine (fee $2.00)—Almandite garnets.

REDMON: ① just N, above RR tracks—gem Almandite garnet; ② SW 2 mi., on Little Pine Cr., the Little Pine Garnet Mine—Almandite garnet; ③ SW, near headwaters of Paw Paw Cr., old mine—Barite.

WALNUT: ① area exposures, occasional—Staurolites (twinned crystals); ② Walnut Cr., near the French Broad R., area—green Coccolite in Calcite, Phlogopite mica.

McDOWELL COUNTY

AREA: ① stream gravels of Co.—Pyrope garnets, placer Gold; ② area Mica mines (many) —Garnets, Mica, etc.; ③ Glade Cr., North Muddy Cr., and South Muddy Cr.—Gold, Platinum, etc. ④ Hunt’s Mt., area—Gold; ⑤ Second Broad R., between Vein Mt. And Huntsville Mt., the Vein Mt. Mine—Chalcopyrite, Gold, Pyrite; ⑥ the old toll rd. to Mt. Mitchell, near Greybeard Mt. (almost on the Buncombe Co. line), pegmatite outcrop; and ⑦ many other pegmatite exposures in area—Almandite garnet, Autunite, Beryl, Columbite, Smoky Quartz crystals, Samarskite.

BRACKETTOWN, in valley of the headwaters of South Muddy Cr., the Marion Bullion Co. Mine—Chalcopyrite, Diamonds, Galena, Gold, Platinum, Pyrite, Spalerite.

DYSAWRTSVILLE: ① numerous area old era Gold mines, placers—Gold; ② South Muddy Cr. Crossing of Rte. 26: (a) in cr. gravels—Diamond, Gold; (b) nearby placer mines—Corundum, Gold, Zircons; (c) a tributary 1.2 mi. SE of town, the Mills farm—Corundum; ③ SW 2 mi., on N side of paved rd. to US 221, as float in stream gravels—Corundum.

GRAPHITEVILLE, area exposures, extending into Buncombe Co.—graphite, gem Kyanite, Quartz crystals.

MARION: ① S, in pegmatite dike exposures—gem crystals; ② Lincolnville Mt.: (a) area—Quartz crystal; (b) ½ mi. S of North Cove School, on the Gregg and Lonon farms—Psilomelane, Pyrolusite; (c) near the North Cove along Honeycutt Cr. And Tom Cr. N of US 221, in Mica prospects on the Swofford property—Mica, Uranium minerals; ③ headwaters of North Fork of the Catawba R.—Pyrite, Spalerite; ④ SW 6 mi., the Sugar Hill area, on the Charles Laney farm—Amethyst.

NEBO: ① RR and rd. cuts along Rte. 105—Quartz crystals; ② outcrops of Mica schist in the banks of Lake James, abundant—Garnets.

OLD FORT: ① W, in the Brevard Belt, area mines—Graphite; ② W 4½ mi., along Mills Cr., area mica prospects—Beryl, Mica.
WOODLAWN: ① quarry near US 221—dogtooth Calcite; ② a few hundred yds. N, area—phantom Quartz crystals.

MECKLENBURG COUNTY

AREA, Clear Cr. Twp., on a high plateau from which flow McAlpine’s Cr. to the SW, Reedy Cr. to the NE, and Clear Cr. to the SE: ① the Surface Hill Mine—Chalcopyrite, Gold; ② old mine on Clear Cr.—Diamond, Gold.

Caldwell, area float—agate, carnelian, chalcedony.

Charlotte: ① building excavations in city—jasper, leopardite; ② S ½ mi. from town center, the St. Catherine (Charlotte) Mine, and ③ S 1 mi., the Rudisil Mine—Copper minerals, Gold; ④ W 9 mi., the Stephen Wilson Mine—Gold; ⑤ NW 5½ mi., the Capps Mine (between Rossel’s Ferry and Beattie’s Ford rds.)—Copper minerals, Gold, Pyrite, Iron, massive Pyrite, Silver (traces); ⑥ W 2½ mi., the Clark Mine—Gold; ⑦ NW 11 mi., the Hopewell (Kerns) Mine, and other nearby mines and prospects—Copper minerals, Gold, Pyrite, etc.

MICHELL COUNTY

AREA: This is a generally rugged, mountainous county with so many gem mines that detailed topographic quadrangle maps, or such rockhound maps as are put out by Baker’s Motel and Tainter’s New Service in Spruce Pine are required for pin-point accuracy in locating any of the prolific collecting locations. Nearly all such locations are old or active mines, privately owner, and requiring either permission to enter or a modest fee to collect. Almost all the mines listed here are in the Spruce Pine surroundings. ① countywide stream gravels and gravel pits—agate; ② Grassy Cr.: (a) area gravels—Aquamarine, Golden Beryl; (b) the prehistoric Indian Sink Hole Mine—blue Beryl; (c) the Meadows Mine—blue Beryl; ③ the Buchanan Mine—Albite feldspar, Allantite, asbestos, Beryl, Gummite, Manganese Garnet (black Andradite), Graphite, Muscovite, Kyanite, Phosphuranylite, Yttrogummite.

Bakersville: ① near the Clarence Wilson farm, exposure of a Feldspar matrix—gem Epidote crystals; ② the Kona area, exposures—Epidote; ③ Medlock Mt., area—Feldspar crystals (included with Hematite or Goethite); ④ SE 1 mi. on white Oak rd., the Pannell Mine (reached by turning left out of town on Rte, 226)—Bronzite, Corundum, Mica, Vermiculite; ⑤ SE 1.2 mi., the Pannell farm, exposures—Ruby, Sapphire; ⑥ S 2½ mi., a mine—Actinolite, Chromite, Chrysolite, Deweylite, Enstatite, Magnesite, Penninite, Quartz crystals, Rutile (in Corundum), Saponite, serpentine, Talc, Tremolite; ⑦ SE 4 mi. on Hwy. 226 in Quartz near top of Yellow Mt.—Kyanite; ⑧ E 3 mi., area—Albite, Epidote; ⑨ N 1½ mi., at base of Meadow Mt., area moonstone, Oligoclase feldspar (transparent); ⑩ NE 1½ mi., Clarence E. Wilson property—Epidote (doubly terminated crystals); ⑪ N, on McKinney Cove rd., at Lick Ridge, area—chatoyant moonstone, Epidote (dark crystals), Sphene; ⑫ N on the Roan Mt. rd. (Rte. 261) to area of scenic Roan Mt. (elev. 6,267): (a) turn W 0.3 mi. S of Carvers Gap, opposite sign Pete’s Crest Farm, a mine—Uranium minerals; (b) area outcrops on Roan Mt.—Unakite; (c) 12 mi. NW on Hwy. 261 at Roan Mt. Flower Garden—green Feldspar, Thulite; ⑬ NE 7 mi., on the Dillinger farm—gem Kyanite (bladed green crystals).
BANDANA:  ① the Sink Hole Mine—Apatite, Beryl, Apatite Garnet, Kyanite, Thulite;  ② S 3 mi., the Abernathy Mine—Apatite, Biotite, various fluorescent minerals.

CARVERS GAP:  ① W 1½ mi., on N bank of the Roan Peak rd.—Unakite, massive green Epidote;  ② S 3 mi., granite outcrops—Unakite.

CROSSNORE, N, at the Hanshaw Mine—Garnets.

FLAT ROCK:  ① area—Chrysoberyl;  ② from 4 mi. NW of Spruce Pine turn N at Lawson Jct. To Rag Branch, pegmatite mine—Hyalite opal (fluorescent), Thulite, Uranium minerals; ③ the major area mines—Albite Autunite, Epidote, Garnet, Gummite, Menaccanite, Muscovite, (pink, white), Phosphuranylite, Uraninite, Uranotile, Zircon, Zoisite (var. Thulite).

GILLESPIE GAP (on the Blue Ridge Parkway S of Spruce Pine), N 4 mi., turn E on Co. rd. 1117 (Carter Ridge rd.) for 1.2 mi., on N side of rd., the Wiseman Aquamarine Mine (no collecting on Sundays)—Aquamarine.

GLEN AYRE (NE of Spruce Pine):  the Biddix place—moonstone; ② NE 2.4 mi. (½ mi. E of Rte. 261), mine owned by Benton McKinney—Orthoclase feldspar (with sunstone sheen).

HAWK (4½ mi. ENE of Spruce Pine on Co. rd. 1211, about halfway between Rte. 226 and US 19E): ① N 1 mi., the Hawk Mine—Allanite, Apatite, Epidote, Oligoclase feldspar (water clear crystals), Pyrite, Thulite, black Tourmaline; ② E 1 mi., the Stagger Weed Mine—Feldspar and Milky Quartz; ③ the Sugar Tree Mine—Garnets (huge clear crystals); ④ S, at the Clarissa Mine—gem Garnets; ⑤ E 2.6 mi.: (a) old mine dumps—Corundum, Kyanite, Ruby, Sapphire, Tremolite; (b) the Dillinger farm—Ruby, Sapphire.

INGALLS, W on Co. rd. 1143 (area starting 3 mi. E of Spruce Pine leading from main hwy.), area fields, cuts, etc.—Actinolite crystals (in boulders), foliated Talc, Steatite.

KINGS MT., the Foote Mineral Co. Mine—Cassiterite, Spodumene.

LINVILLE FALLS, E 4 mi., at Wiseman View, area—dendritic sandstone, Quartz crystals.

LITTLE SWITZERLAND (on the Blue Ridge Parkway), NW via Co. rd. 110 and 1104 to the Crabtree Emerald Mine (map next page)—Apatite (fluorescent), Emerald, Emerald matrix.

MOUNT PLEASANT, NW 2½ mi. on rd. to Hughes, turn left on dirt rd. at Hughes, the Lieback Mica Mine—fine large red Garnets.

PENLAND: ① E 0.2 mi., in horseshoe bend of the North Toe R., the Deer Park Mine (map 5)—Autunite, Feldspar crystals, Garnet, Hyalite opal, Mica, Monazite crystals, Thulite, Torbernite, Uraninite; ② Penland Jct.: (a) in rd. cut on Rte. 226—gem Epidote; (b) N 1½ mi., Bear Cr. Gap (on Bear Cr. Rd. N of Rte. 226), area—gem Kyanite.

SPEAR, many area mines and dumps—Beryl, Garnets, Epidote crystals, Mica. Most mine rds. Require 4-wheel drive.

SPRUCE PINE. This small community in located on US 19E about 4 mi. N of the Blue Ridge Parkway, a center for a large Feldspar and Kaolin mining industry. Within a radius of 20 mi. are far too many gem and mineral mines to list other than a few of great interest. Many of the commercial mines are open to collectors on weekends only, or weekdays if no blasting is schedules. Because of the rugged terrain, it is advisable to hire a local guide with a 4-wheel drive vehicle. Mine owners usually charge a modest fee. The town itself has many rock shops through the center of town. ① Area mica and Feldspar mines (very many)—Actinolite, Amazonite, Autunite, Garnet, Hyalite opal, gem Kyanite, foliated Talc, Thulite, Tourmaline, etc.; ② the Grassy Creek Mine near town—Aquamarine; ③ E on US 19E to English Knob (0.4 mi. W of the Avery Co. line), mine on E side of hwy.—Autunite, Columbite, Cyrtolite, Gummite, Monazite, Pitchblende, Samarskite, Torbernite; ④ E on US 19E to jct. With Co. rd. 1143 (second rd. branching N), then: (a) N 1 mi., a mine—Actinolite, Talc; (b) N 1.3 mi., turn right on unmarked rd.
(leading to city dump) 0.2 mi. to the Wiseman Uranium Mine (closed weekends - map 6) and 0.9 mi. to the Pink Mine (3 mi. from town; closed on weekends) — Apatite, Garnets,

The Spruce Pine - Little Switzerland Area

Uranium minerals; (c) N 5 mi., the Spread Eagle Mine—Feldspar, Garnets, Gummite and rare Uranium minerals. Five mi. out on Co. rd. 1143 is a 3-way fork (the right fork leading to Ingalls). The center fork has two mines on a trail to the right—Smoky Quartz
crystals, radioactive minerals; the left fork leads to three mines (the most distant being 6 mi. from town) —Garnets, Hyalite opal, pegmatite minerals.© S on Rte. 226 leading toward the Blue Ridge Parkway, three major mines: (a) 1½ mi. from town, the Henry Mine—Steatite, foliated Talc; (b) ½ mi. ESE of Chalk Mt., the McHome Mine—Amazonite, Aquamarine, Golden Beryl, gem Spodumene; (c) 2½ mi. from town, the Wiseman Mine—Aquamarine (sea blue), Golden Beryl, Mica, Spar; © SE 2½ mi. (air) and SE of Brush Cr. (follow Rte. 226 to Little Switzerland 5 mi. S of Spruce Pine, turn right on Co. rd. 1100 to a church, take Co. rd. 1104 to the Crabtree Emerald Mine (elev. 5,000'), (fee)—E—Emerald, Garnets, Beryl (pale colors, yellow), Schorl; © W to jct., with Crabtree rd. (Co. rd. 1002): (a) S on Crabtree rd. to the McKinney Mine (map 4) —Amazonite, Autunite (staining feldspar), Beryl (massive opaque green or blue), Bornite, Chalcopyrite, Columbite, Covellite, Gummite, Hyalite opal (blue, translucent, brilliantly fluorescent), Malachite, Muscovite, (with brilliant Garnet inclusions), Samarskite, Sphalerite, sunstone, Torbernite, Uraninite; (b) W to next S trending rd., S to fork, turn W to the Old No. 20 Mine (5 mi. SW of Spruce Pine on W fork of Crabtree Cr.) —Beryl, Crystallite, Kryolite (amber), Feldspar, gem red Garnets, Gummite (orange), Hyalite opal, Muscovite (greenish), Thulite, Torbernite, Uraninite; (c) nearby Ray Olivine Mine—asbestos, Chlorite, Chromite, Olivine, serpentine, Talc; © W 2 mi. on US 19E, then SW 1 mi. on a mine rd., the Chalk Mt. Mine (a working mine with a sheer face of 200') —Autunite, Feldspar, Hyalite opal, Muscovite, Quartz crystals, Thulite, Torbernite; © NW 1 mi. on Rte. 226 (toward Bakersville): (a) area rd. cuts—Byssolite, gem Epidote crystals, Stilbite, Zeolites; (b) 1½ mi. up Sullins Branch rd., the Sullins Mine—Autunite, Hyalite opal, Torbernite; © NW 1.7 mi. on Rte. 226 to dirt rd. leading ½ mi. N, the Southern Branch Mine—Garnets, Hyalite opal, pink Orthoclase crystals, Unakite; © NNE 1.8 mi., the Wiseman Tract (¼ mi. SW of English Knob)—Aquamarine, Golden Beryl; © NW 2 mi. on Rte. 226 and 1½ mi. NE of Minpro on a private rd., the Pine Mt. Mine—Autunite, Hyalite opal, Torbernite; © N on Rte. 226 about 4 mi., turn NE onto first unmarked mine rd., park car and hike 2½ mi. uphill to the Chestnut Flats Mine—Garnets, Uranium minerals; © NW 5 mi., the Putnam Mine (and on dumps of adjoining Deer Flat and Pine Mt. mines)—pink Thulite; © NW 8 mi. on Rte. 226 and 2 mi. on the Slagle gravel rd., in the Snow Cr. Section, the R.B. Phillips Mine—Garnet, Mica.

MONTGOMERY COUNTY

AREA: © regional abandoned silica quarries—Quartz crystals (clear, smoky, some rutilated); © Beaver Dam Cr. Jct. With the Yadkin R., NE 2 mi., the Beaver Dam Mine—Gold, Pyrite; © regional mines, especially in the extreme NW corner of Co. (such as the Bright, Ophir, Dry Hollow, Island Cr., Deep Flat, Spanish Oak Gap, Pear Tree Hill, Tom’s Cr., Harbin’s, Bunnell Mt., Dutchman’s Cr., Worth, etc.) —Gold; © Extreme N part of Co. along the Randolph Co. line, the Uwharrie Mts., numerous mined deposits—Anatase crystals (clear blue, bi-colored, in Quartz), Limonite.

CANDOR: © W 2½ mi., the Montgomery Mine—Gold; © W 3 mi., the Iola Mine—Gold, siliceous Pyrite.

ELDORADO: © area old mines—Azurite, Calcite, Gold, Hydrozincite (strongly fluorescent), Malachite, Pyrite, Silver, Smithsonite, Sphalerite; © SE 2 mi., on E side of the Uwharrie R., a mine—Gold; © E 3 mi., the Riggon Hill Mine—Gold; © S 8 mi., the Moratock Mine—Copper minerals, Gold, Pyrite; ©N 1½ mi.: (a) the Coggins (Appalachian) Mine, in argillaceous slates and schists—Gold; (b) E, at the Eldorado Mine—Gold, Silver, Pyrite, etc.; © N 3 mi., near the Randolph Co. line, the Russell Mine in silicified slate—Calcite, Gold.

STAR, W 3 mi., the Carter Mine—Gold.
TROY: ① area stream gravels—petrified wood; ② a nearby old mine—leopardite; ③ NE 14 mi., the Black Ankle Mine—Gold.
WADEVILLE: ① W, to within e mi. of the jct. of Rtes. 24 and 27, the Sam Christian Mine—Gold nuggets; ② area abandoned silica quarries—Quartz crystals (smoky, rutilated).

MOORE COUNTY
AREA: ① mines such as the Bat Roost, Grampusville, and Shields—Gold; ② gravels of Deep Cr.—petrified wood; ③ gravels of Shut-In Cr.—jasper (gemmy, showy).
CARTHAGE: ① NW 8 mi., the Bell Mine—Gold; ② NW 11 mi., the Burns (Alfred) Mine—Gold: (a) ¾ mi. N, the Cagle Mine, and (b) ¼ mi. W of the Cagle, at the Clegg Mine—Gold.
GLENDON: ① area Pyrophyllite mine—Fluorite, Hematite, Lazulite, Pyrite; ② NE 1.6 mi. (go 1 mi. E from town, turn E 1.3 mi. on old logging rd. and take right fork to an old Copper mine on the Haw Branch rd.)—Azurite, Calcite, Malachite.
ROBBINS, SW, at confluence of Cabin and Dry creeks, on the Moore farm—Amethyst, Quartz crystal.

NASH COUNTY
AREA: ① regional mines such as Conyer’s, Nick Arrington, Thomas, Kerney, Taylor, Mann, Davis, etc.—Gold; ② Portis Mine: (a) on dumps—Gold, Iron, Manganese minerals; (b) SE 1 mi., the Arrington Mine—Gold.
ARGO (NW corner of Co. and 5 mi. SE of Ransom’s bridge), the Mann-Arrington Mine, in chloritic and porphyritic schist—Gold.

NASH & FRANKLIN COUNTIES
AREA, the N portion of these two counties plus the S sections of Warren and Hallifax counties, known as the Eastern Carolina Belt, comprises some 300 sq. mi. containing very many old mines—Gold.

ORANGE COUNTY
CHAPEL HILL: ① area woods, fields, creek gravels—moss agate, petrified wood; ② area mines—Chalcopyrite, Epidote, Hematite, Limonite, Magnetite, Pyrite, serpentine; ③ NW 12 mi., the Robeson Mine in Quartz—Gold.
HILLSBORO: ① area fields, stream gravels, rd. cuts, etc.—moss agate, sagenitic Quartz crystals (Chlorite inclusions); ② area mines—Barite, Chlorite, Epidote, Pyrite cubes, Pyrophyllite; ③ S, in abandoned Barite pit—Barite, Calcite, Celestite; ④ NE 5 mi. and just S of city, near RR crossing on Rte. 86, area—Andalusite crystals, Pyrophyllite rosettes; ⑤ at Piedmont Minerals Mine—Andalusite, Lazulite, Topaz.

PERSON COUNTY
REGION, extending SW, covering part or all of the counties of Durham, Orange, Alamance, Chatham, Randolph, Moore, Montgomery, Davidson, Stanley, Cabarrus, Anson and Union. Known as the Carolina Slate Belt, this region contains many once rich Gold mines in a zone from 15 to 50 mi. wide. The chief gangue minerals in these mines are: Bornite, Calcite, Chalcopyrite, Quartz, Rhodochrosite and Siderite.
North Carolina

ALLENSVILLE, NE ¼ mi., then N on secondary rd. 1 mi. to the old Durgy Copper Mine—Malachite.

LONGHURST, NW 2 mi. to Hager’s Mt., Quartz vein exposed between rd. and Marlowe Cr. to the W—gem Kyanite (with Pyrophyllite).

SURL: ① N 2.3 mi. on paved rd. to Mt. Tizah (S part of Co.), on W side of rd. across from a church, area fields, rd. cuts—Actinolite, Hematite, Limonite, Manganese minerals, Quartz (with Chlorite inclusions); ② 1 mi. E of Mt. Tizah along rd. to Moria, area fields and cuts—Pyrite crystals, Limonite (most cubes found ¼ mi. W of Mt. Tizah).

POLK COUNTY

AREA: ① the many regional Gold mines are in extensions of the South Mountain region and include noted old mines as the Double Branch, Red Springs, Splawn and Smith—some Chalcopyrite, Gold, Pyrite; ② regional stream gravels—Garnets, placer Gold, Rutile crystals, Staurolites, Zircons.

PEA RIDGE: ① area old mines, and ② S ½ mi., the North Star Mine—gem Feldspar and blue Quartz, Garnets, Tourmaline.

SALUDA, SE 5 mi., an old mine—Calcite, Epidote, brecciated jasper, Feldspar crystals, Pyrite, Quartz crystals.

RANDOLPH COUNTY

ASHEBORO: ① area granite outcrops—Unakite; ② W 6 mi. and N of US 64, abandoned road dept. quarry via secondary rds.—Epidote, Feldspar; ③ W to near Co. line, the Jones (Keystone) Mine (18 mi. E of, S from Lexington, Davidson Co.) —Limonite pseudomorphs after Pyrite, Gold.

FARMER: ① on S side of rd. between town and Denton, Davidson Co., at Copper Hill—Quartz crystals (with mossy green inclusions of Actinolite); ② the Hoover Hill Mine (17 mi. E of S from High Point, Guilford Co.) in quartz veins—Gold.

STALEY, W 4½ mi., the Bernhardt Pyrophyllite mines—Andalusite crystals, Barite crystals, pearly Diaspore, Fluellite (fluorescent), Lazulite (crystal, massive), Pyrophyllite (radiating green crystals, fluorescent), foliated green Ottrelite, Pyrite.

RICHMOND COUNTY

ELLBERLE, area creek gravels—petrified wood.

ROCKINGHAM COUNTY

PRICE: ① very many regional mine dumps—gems, minerals; ② W 1 mi., on state line, the Clifton Mine—Garnets, variegated Quartz; ③ SW 3¼ mi., on S side of the Price-Sandy Ridge rd., the Short Top Smith Mine, reached via VA Rte. 692 left of US 220, Rte. 691 (left of Rte. 692) to third graded Co. rd. (mine rd.), turn left ½ mi.—Allanite, Autunite, Tourmaline, Uranophane, Uraninite; ④ W and S, a broad region of rural rds. (requires topographic map): (a) SW 5 mi. (leave town on US 220, turn immediately left to reach VA Rte. 692, cross VA state line and immediately turn left on VA Rte. 691 to first ungraded rd., turn left 1 mi.), the Long Tom Smith Mine—Garnet, Quartz (clear, smoky); (b) 1 mi. farther along same rd., the Rosa Evans Mine, on steep slope—Spessartite garnet, Smoky Quartz crystals.
ROWAN COUNTY

GOLD HILL: ① area mines, numerous—Magnetite, Manganese Garnet; ② a nearby quarry—Amethyst, sunstone; ③ SW 1½ mi., the Mauney Mine—Gold; ④ E 3 mi., the New Discovery Mine—Gold; ⑤ E 3½ mi., the Dun’s Mt. Mine—Gold, Pyrite; ⑥ E 6 mi.: (a) the Reimer Mine, on the Yadkin R.—Gold; (b) 1½ mi. E of the Reimer, the Bullion Mine (little worked), in outcrops as traces—Gold; ⑦ SE 9 mi., the Gold Knob Mine—Gold; ⑧ SE 10 mi., the Dutch Creek Mine—Gold, Pyrite.

GRANITE QUARRY, area outcrops and exposures of granite—Smoky Quartz crystals.

MT. ULLA, area fields, gravel pits, etc.—Amethyst, Quartz crystals.

SALISBURY: ① area fields, gravels, rd, cuts—Amethysts; ② regional pegmatite outcrops—Tourmaline (bi-colored, pink and green, crystals area small); ③ E 3½ mi., the Dun’s Mt. Mine—Gold.

WOODLEAF, area quarry—pale green Prehnite crystals.

RUTHERFORD COUNTY

AREA: ① many old Gold mines, in quartz mostly—Gold, some Platinum; ② Sandy Level Church, area mine dumps—Gold, Platinum, Diamonds (rare); ③ the J.D. Twitty placer mine—Gold, Diamonds.

ELLENBORO: ① on outskirts of town, the Maurice Mine—Tourmaline; ② NE 3.2 mi., on W banks of Sandy Cr.: (a) the Dycus Mica Mine—Beryl, Rose Quartz; (b) farms of Martin and Toney, pegmatite outcrops—Beryl; ③ NE 5 mi., the D.G. McKinney Mica prospect—Beryl.

GILKEY, E, on W side of Blacksmith Shop rd. 1.4 mi. S of the Green Hill School, pegmatite outcrop—Corundum, Fuchsite mica.

HOLLIS, N, in area of Huckleberry Mt. and Lisenberry Mt., many old mines—Mica, Quartz crystals.

RUTHERFORDTON: ① area mines, such as the Ellwood and Leeds—Gold; ② NW 0.6 mi., in gravels of Hollands Cr.—Diamonds, Platinum nuggets, Quartz crystals (blue); ③ N on country rd. between Rtes. 221 and 64, a short distance S of the Oak Springs Baptist Church, a deposit—Corundum, Fuchsite, Sericite; ④ N 3½ mi. on US 221, near Isinglass Hill outcrop—Unakite; ⑤ NE 4 mi., the Marville Mica prospect—Mica; ⑥ N 5 mi., on divide between Cathey’s Cr. and the Broad R., the Alta (Monarch, Idler) Mine, showing 13 parallel quartz veins—Gold; ⑦ W 3½ mi., the Wilkins Mine—Mica; ⑧ W 15 mi. on US 74, pegmatite outcrops—various gems and minerals.

SUNSHINE, W, on Duncan’s Cr. Rd., the McFarland farm (2 mi. E of rd. to Sunshine), a Mica prospect—Golden Beryl, Quartz crystals (blue, star).

THERMAL CITY: ① area gravels of Stony Cr.—Garnets; ② N 1 mi., the McDaniel Mine—Garnets; ③ W 2½ mi., the Flack Mine; and ④ W 7 mi., the Kay Mine—Garnets; ⑤ the Whitehouse area, on E side of Shingle Hollow rd., 1 mi. NW of the Welcome Home Church, an old prospect—Bornite, Chalcopyrite, Galena, Marcasite, Pyrite.

WESTMINSTER: ① N 4 mi., granite outcrops on Marlin’s Knob E of US 64—Garnets, Unakite; ② outcrops and gravel along Puzzle Cr. All the way to Ellenboro—Garnets.

STANLY COUNTY

ALBEMARLE: ① NW 2½ mi., the Haithcock and Hern mines, in quartz—Gold; ② E 4 mi., the Crawford (Ingram) Mine, placer—Gold; ③ NW 7 mi., the Parker Mine, Quartz veins in greenstone—Gold nuggets.
MISENHEIMER, the Barringer Mine (4 mi. SE of Gold Hill, Rowan Co.) — **Gold**

NEW LONDON: ① W, in area stream gravels of Mountain Cr. (in Cabarrus Co.)
— **Golden Beryl, Diamonds**, placer **Gold**; ② E 1 mi., the Crowell Mine, in silicified, sericitic and chloritic schist—**Gold, Pyrite**.

STOKES COUNTY

DANBURY: ① area stream gravels—agate, carnelian, chalcedony, jasper, Hyalite opal, Hematite, Amethyst, sardonyx; ② SW 3 mi., a deposit—Itacolumbite.

DAN RIVER, area quartz outcrop—Rose Quartz (cat’s eye, star).

FRANCISCO, SE 4 mi., on N bank of Big Cr. Near confluence with the Dan R. (take dirt rd. left from Rte. 89 midway to Danbury), the Hole Mine—**Garnets**, moonstone, Quartz crystals (milky, smoky).

GAP, COFFEE GAP on Rte. 66 near Hanging Rock State Park, center of a gem and gemstone region: ① area in the Sauratown Mts., a well known Quartz outcrop—Lazulite (dark blue gem crystals, massive in quartz), Quartz crystals; ② 2 mi. SW of Gap, an excellent deposit—Itacolumbite.

SANDY RIDGE: ① W 1 mi. on Rte. 770, turn SW on Co. rd. 1½ mi. to dumps of the Hawkins Mine—**Garnet, Pyrite, Quartz** crystals; ② SW 4½ mi. (turn left off Rte. 704 1 mi. W of Oak Ridge onto unmarked rd. for 1½ mi.), the Moorefield Mine—**Quartz** and dark Tourmaline.

SURRY COUNTY

Burch Station, E 1½ mi. from Rte. 268 to the Clarence Greenwood farm—jasper, Quartz crystals.

DOBSON, N 10 mi., area mines—Actinolite, Breunnerite, Chlorite, Haussmannite, Magnetite, Magnetite, Manganese Garnet, Pyrolusite, serpentine, Steatite, Talc (green), Wad.

ELKIN, MT. AIRY: ① area outcrops—rock crystal (some with inclusions of Iron, Chlorite, Actinolite); ② Mt. Airy: (a) a nearby Feldspar quarry—Oligoclase crystals (clear); (b) NE, in large granite quarry—jasper, Quartz; ③ gravels of the Mitchell R.—yellow chalcedony, gemmy Hornblende crystals, Steatite; ④ W, on Pleasant Hill (Wilkes Co.), near Rte. 268—quartz gemstone.

PILOT MOUNTAIN: ① area—rutilated Quartz crystal; ② NE 1.3 mi., on the Phillips and Cos farms—rutilated Quartz crystal.

SWAIN COUNTY

BRYSON CITY: ① area: (a) region extending from town to the Deep Cr. Church, (b) extending to the Franklin Grove church, area—Allanite, Garnet, Magnetite, moonstone, Quartz crystals, Pyrite; (c) a few hundred yds. From the Deep Cr. Church—Allanite, Feldspar, Garnet, Magnetite, Mica, moonstone, Quartz crystals, Pyrite; ② N 1½ mi. and just N of the Deep Cr. Campground, in Graphite vein exposures—Kyanite, Staurolites; ③ 2½ mi. N of Proctor on Gold Mine Cr., mine—Copper minerals; ④ just N of Toot Hollow Branch, the Cox No. 1 Mine—Almandite garnets, Feldspar, Biotite, Pyrite.

TRANSYLVANIA COUNTY

AREA, at the end of the Blue Ridge Parkway: ① SE of the Parkway at Looking Glass Rock, just E of US 276: (a) above the Pink Beds Recreation Area—**Smoky Quartz**
crystals; (b) vein extends about 1 mi. up the mt. along old rd.—**Smoky Quartz** crystals; ② E of the mt., area of Looking Glass Falls—**Garnets**; ③ in rd. cuts along US 276 about 23 mi. S of the falls, in pine grove N of the hwy., area—**Almandite** garnets.

CEDAR MOUNTAIN, on unnumbered rd. leading E from US 276, along the Carolina Power & Light Co. line between Cedar Mt. and Blue Ridge—**Almandite** garnets, **Pyrite** crystals.

FAIRFIELD VALLEY, along Georgetown Cr., as placers—**Gold**.

MONTVALE, area mines—**Sapphires**.

OAKLAND, N, on E side of Great Hogback Mt., area old mines in peridotite—**Bronzite**, gem **Corundum**.

ROSMA: ① E, on the Tinsley farm N of the Girl Scout Camp, area—dogtooth **Calcite**; ② N off US 64: (a) 1 mi. toward Balsam Grove, the W on secondary rd. crossing North Fork, on S side of rd. W of the river, area—**Quartz** crystals; (b) 2.2 mi. SW of Balsam Grove, in pasture of the Hogsed farm (reached via rd. W from the main rd. 2 mi. S of Balsam Gap), as float—**Quartz** crystals.

WAYNESVILLE, SE, on US 276 to Bethel (first crossrd. Stop, up side rd. to recently opened cr. Bed min, fee), abundant—**Sapphires**.

UNION COUNTY

MONROE, W (including much of the W side of Co.): ① area mines, such as Lemmonds (Marion), New South, Crump, Fox Hill, Phifer, Black, Smart, Secrest, Moore Hill (group) 2 mi. S of Indian Trail—**Calcite**, **Gold**, **Pyrite**, etc.; ② N 14 mi., in extreme NW corner of Co., the Crowell Mine: (a) on dumps—**Gold**; (b) ⅛ mi. SW, the Long Mine, and (c) 3 mi. SE of Long Mine at the Moore Mine—**Calcite**, **Chalcopyrite**, **Galena**, **Pyrite**, **Siderite**, **Sphalerite**.

POTTER’S STATION, N 1½ mi., the Bonnie Belle (Washington) Mine—**Chalcopyrite**, **Gold**, **Pyrite**.

WAXHAW, E 3 mi. (22 mi. S of Charlotte, Mecklenburg Co.), the Howie Mine—**Gold**, **Pyrite**.

VANCE COUNTY

BULLOCKSVILLE: ① area along Nutbush Cr., pegmatite outcrops—gem minerals; ② SW 1.7 mi., area—**Quartz** crystals (with inclusions of Sillimanite).

GRASSY CREEK: ① W 2 mi., the Yancey farm on Jonathan Cr., area—abundant **Pyrite**; ② NW 2 mi., area outcrops—quartz minerals; ③ SW 3 mi., area—**Pyrite**; ④ the Graystone Quarry—**Hornblende** crystals, gemmy pink pegmatite.

HENDERSON: ① NE, near the Kerr Reservoir on the state line, in phyllite gneiss exposures—**Quartz** and **Rutile** crystals, **Sillimanite**; ② NW 13 mi. (9 mi. E of Clarksville, VA), center of a mining region with major deposits S of the Kerr Reservoir in drainage of Island Cr. (tributary of the Roanoke R.): (a) area surfaces, gravels, etc.—**agate**, **chalcedony**, quartz, **Tourmaline**; (b) area mines—specular **Hematite**, **Pyrite**, **Quartz** crystals; ③ N 18 mi., in the Hamme Tungsten Dist. (NE part of Co., extending into VA), between Big Island and Little Island creeks, many area mine dumps—**Apatite**, **Chalcopyrite**, **Fluorite**, **Galena**, **Hyalite** opal, **Huebnerite**, **Quartz** crystals, **Rhodochrosite**, **Scheelite**, **Sphalerite**, **Tetrahedrite**.

KITTRELL, N, along US By-pass 1, in granite outcrops—**Hyalite** opal (highly fluorescent).

TOWNSVILLE: ① W, area as float—quartz; ② E of Marrow Chapel, as float—quartz; ③ around Townsville Lake—**Quartz** crystals; ④ SW 2 mi., at the Devil’s Backbone, area—quartz gemstones.
WILLIAMSBORO, NW, as area float—quartz.

WAKE COUNTY

AREA: ① NW corner of Co., many regional deposits, mined—asbestos, Actinolite, Kyanite, serpentine, Steatite; ② Barton’s Cr., area mines—Chlorite, Hemitite pseudomorphs after Pyrite, Margarodite, Pyrite (large crystals), Tourmaline; ③ the Durham Quarry—Rosenhahnite (fluorescent).

PURNELL: ① area: (a) the Powell farm, between Newlight Cr. and Water Fork, area—Corundum; (b) Bayleaf, area contact zone exposures (take rd. W from village leading to Rte. 50, 2 mi. to Barton’s Cr. crossing; or via the Neuse R. NE of village, or go to the jct. of Buckhorn and Newlight creeks)—carvable Steatite, Actinolite; ② S 2 mi., near Horse Cr., a pegmatite outcrop on the Thompson farm—Allanite (black), Beryl (green and yellow, opaque).

RALEIGH: ① E, in area of Wilder’s Grove: (a) E½ mi. on US 64, turn N on dirt rd. 1 mi., area near the Neuse R. to the E—Amethyst (large, color zoned); (b) W 2½ mi. near US 64, area—Amethysts; (c) N 1 mi. on paved rd. the jct. with a secondary rd., then E 0.7 mi. to entrance to a dim trail S of the rd., area—Amethysts; ② N, turn off US 70 on N side of Crabtree Cr. bridge onto paved rd. 3½ mi. to Mine Cr., area exposures—gem Kyanite; ③ S 5 mi.: (a) area Mica mines in pegmatite—Feldspar crystals, Garnets; (b) ½ mi. E of US 15A, on the Coburn farm—Feldspar, Garnet, Mica, snowy Quartz; ④ NE 5 mi., area—Amethyst, Quartz crystals.

WAKE FOREST, W 3 mi. and 2 mi. S of Rte. 264, the Wakefield Mica Mine—Mica, massive Quartz (gray, pale blue).

WARREN COUNTY

INEZ: ① S 2 mi. to the Franklin Co. line, many area pegmatite exposures—gems, minerals; ② S 2½ mi., on E side of Rte. 58, pegmatite on the Fowler farm—Amethyst, Beryl, Lepidolite, Smoky Quartz crystals, Staurolites; ③ just E of the Fowler farm, on both sides of Rte. 58, the Harris deposits—Mica, Quartz crystals.

WATAUGA COUNTY

AREA, Rich Mt.: ① head of Cove Cr., area—Actinolite, Chromite, Chrysolite, Epidote, Quartz, Penninite, Tremolite; ② mouth of Squirrel Cr., area—Chrysoptile asbestos.

BLOWING ROCK, area stream gravels, placer—Gold.

BOONE: ① area stream gravels, especially Hardings Cr., placer—Gold; ② N 8 mi., at Elk Knob, area old mines—Azurite, Garnets, Epidote, Limonite, Malachite, Calcite, Cuprite, Pyrite, Pyrrhotite, etc. (mainly primary Copper minerals).

WILKES COUNTY

AREA: ① E part of Co., on Zeb Souther farm—Smoky Quartz crystals; ② Bending Rock Mt., area exposures—Itacolumbite; ③ headwaters of Honey Cr., area gravels—Amethyst, Quartz crystals (clear, smoky).

CHAMPION, area old Mica mines—Beryl, Garnet, Mica.

DEEP GAP, E 6 mi.: ① the Flint Knob Mine—Galena, some Gold, Pyrite, Silver; ② the Laurel Spur of Flint Knob, area—Calcite, Galena.

NORTH WILKESBORO, area old asbestos mine—gem serpentine.
TRAP HILL:  ① area fields, cuts, gravels, etc.—agate (silvery, mossy), brecciated jasper, chalcedony;  ② the Trap Hill Mine—auriferous Chalcopyrite, Garnet, Galena, Magnetite, Pyrrhotite, Pyrite, Rutile crystals, Tourmaline;  ③ E side of Bryan’s Knob, in quartz veins—Chalcopyrite, Pyrite, Pyrrhotite;  ④ Bryan’s Gap on E face of the Blue Ridge, a bold outcrop of Quartz (has been traced for nearly 3 mi.)—Gold, Pyrite.
WILKESBORO, N 2 mi., area—Garnet, serpentine, Talc.

YADKIN COUNTY

AREA:  ① area pegmatite outcrops, many—Beryl, Garnet;  ② area stream gravels—carnelian.
YADKINVILLE:  ① E 6 mi., on SW side of a creek, at the Hauser Mine—Feldspar crystals and Smoky Quartz crystals;  ② SE 8 mi., the Dixon Mine—Gold.

YANCEY COUNTY

AREA:  ① ON Blue Rock rd., the Spider Mine—Thulite;  ② the Guggenheim Mine—Albite, Apatite, Autunite, Halite, Manganese Garnet, Margarodite, Muscovite, Tourmaline;  ③ the Hampton’s Mining Creek Mine—Actinolite, Bronzite, Chromite, Chrysolite, Deweyl dile, Epidote (fine green crystals), Enstatite, Magnesite, Penninite, serpentine, Talc, Tremolite;  ④ the Young’s Mine—asbestos, Bronzite, Chromite, Chrysolite, Enstatite, Manganese Garnet, Muscovite, Pyrite, serpentine, Talc, Tremolite;  ⑤ the North Toe R., area gravels—Dithene (gem Kyanite crystals);  ⑥ Yellow Mt., area outcrops—Dithene.
BOWDITCH, E 1.9 mi., the Gibbs Mine on W bank of the Smith Toe R.—Oligoclase crystals (transparent, greenish).

BURNESVILLE:  ① many area mines—Garnets, Mica, Platinum, etc.;  ② E ½ mi. to trail leading S of US 19, E ½ mi. to the Doe Hill Mine—Feldspar, Garnets, Mica, Pyrite;  ③ SE 2½ mi., on Hurricane Mt.: the Ray Mica Mine (see map page 291)—Albite, Amazonite, Apatite, Aquamarine, Autunite, gem Beryl, Columbite, Emeralds,
North Carolina

Eschynite, Fluorite, Fluorite pseudomorphs after Apatite, Garnets, gem Kyanite crystals, Monazite (rare), Muscovite, gem Oligoclase crystals, Rutile crystals, Smoky Quartz crystals, sunstone, Tourmaline (black, also greenish yellow), Yttrocerite, Zircon; (b) along the right fork of the rd. to the Shanty Mine—Apatite, Garnets, Hyalite opal; ① Parrot's Ford (3 mi. distant from town), area—Tantalite, Tourmaline; ② SW 5 mi. on Rte. 197, the Ray Olivine Mine—Apatite, asbestos, Beryl, Chlorite, Chromite, Columbite, Garnets, Olivine crystals, serpentine; ③ W 6 mi. on rd. to Red Hill, on E side of rd. at Green Mt., area outcrops visible from rd.—Chromite, Olivine crystals; ④ N 6 mi., area—Labradorite, Platinum; ⑤ NW 10 mi., on W side of Sampson Mt. via US 19 to Lewisburg, turn SW along Bald Mt. Cr. (with Sampson Mt. visible 5 mi. to the S): (a) the Hayes Mine—Corundum (blue, gray, beige, white, cat's-eye); and (b) head of Bald Mt. Cr., the Cattail Branch Mine—gem Beryl, Garnets.

CELO: ① area: (a) Celo Ridge, area mine dumps—Sapphires; (b) Toe R. gravels—Corundum, Sapphires; (c) mine dumps about town—Feldspar, Garnet, gem Kyanite, Mica; ② NE 1½ mi., the Little Gibbs Mine, on the South Toe R.—gem Oligoclase crystals.

MICAVILLE: ① N 2 mi., the Presnell Mine—Apatite, Almandite garnets, Columbite, Mica; ② SE 2.7 mi.: (a) the Fanny Gorge Mine—Apatite, Columbite, Autunite, Garnets, Pitchblende, Thulite; (b) on S side at the Spec Mine—Aquamarine, Almandite garnets; ③ SE 3½ mi., the old Charles Mine—blue Apatite crystals, pink Thulite.

BERYLS

![Beryl crystals from various locations]
NORTH DAKOTA

This fertile state, geographic center of North America, is everywhere surfaced by Quaternary soils and sediments overlying rock formations of greatly varied ages. The eastern half, known as the Lowlands, once lay beneath the vanished waters of the great Pleistocene Lake Agassiz. Deeply buried beneath the lake sediments are rock formations of Mississippian, Jurassic and Cretaceous ages. The western counties exposed here and there much older formations, of Devonian age. West of the Red River Valley, abrupt escarpments rise 300’ to the glacial drift prairies of scattered lakes, occasional moraines, and extensive, rolling, grass covered hills. Along the Little Missouri River lie the strongly eroded scenic, and almost inaccessible spires and minarets of the famed Badlands, extraordinarily rich in fossils that reach back to the era of the dinosaurs.

The state’s mineral resources are limited almost exclusively to organic fuels and inorganic clays. Vast lignite beds, so close to the surface as to permit strip mining, cross the western counties, and North Dakota leads the nation in the production of this fuel. In close proximity to the lignite beds are large deposits of commercial clays in several varieties. Last, but not least, the discovery of oil in the Williston Basin some years ago has made petroleum production a prominent contributor to the state's mineral economy.

From the standpoint of the gem and mineral collector, it can truthfully be said that North Dakota really needs intensive prospecting. From east to west and north to south, the alluvial gravels underlying the topsoil are rich in Quartz family gemstones. Prospecting alluvial gravels, quarries, excavations and stream beds everywhere should be productive of more agate, chalcedony, jasper, silicified wood and Quartz crystals than would appear in the small list of known localities mentioned here. The eastern counties reveal Lake Superior type agates, while the western counties yield Fairburn and Montana type moss agates. All gemstone occurrences are products of erosion from long-gone ranges of mountains and water distribution over the state’s characteristic of Tertiary epochs.

ADAMS COUNTY

HETTINGER, N. 10 to 12 mi., NE and E, along both sides of the entire course of the Cedar R.—agatized wood.

BILLINGS COUNTY

MEDORA, area buttes and badlands formations—agate, chalcedony, silicified wood, concretions (filled with yellow Calcite, Aragonite or Siderite).

BURLEIGH COUNTY

BISMARCK, area gravel pits and alluvial beds along the Missouri R.—agate, chalcedony, silicified wood, jasper.

GOLDEN VALLEY COUNTY

SENTINEL BUTTE, area Uranium mines and prospects, especially in T. 137 N, R. 100 W (Lutheran Church) and T. 139 N, R. 104 W (Sentinel Butte)—Uranium minerals.
GRANT COUNTY

CARSON, area breaks along the entire course of the Cannonball R.—agate, chalcedony, silicified wood, jasper.

HETTINGER COUNTY

MOTT, N 11 mi., along steep hillsides on both sides of the Cannonball R.—agate, chalcedony, silicified wood, jasper, Selenite crystals.

HETTINGER & STARK COUNTIES

AREA: ⊙ from Mott to Richardton, a broad area along both sides of Rte. 8—agate, chalcedony, agatized wood, jasper, jasp-agate; ⊙ from NW of Mott 150 mi. to Williston (Williams Co.), area breaks, rd. cuts, etc.—Selenite crystals.

KIDDER COUNTY

TAPPEN, E, in regional gravel pits—agate, chalcedony, jasper, etc., fossils.

McHENRY COUNTY

DENBIGH, regional gravels of the Mouse R. SW to Velva—quartz gemstones, fossils.

McKENZIE COUNTY

AREA, gravels of the Yellowstone, Missouri and Little Missouri rivers—Montana moss agate, jasper, silicified wood, etc.

EAST FAIRVIEW, in gravel bars near confluence of the Missouri and Yellowstone rivers—Montana moss agate, jasper, silicified wood, etc., especially around Cartright just to the E on Rte. 23/200.


SEARING, broad general surrounding region—petrified wood.

MERCER COUNTY

GOLDEN VALLEY, S, the Crowley Flint Quarry (a historic site)—gem flint.

HAZEN, area mines—Uranium minerals.

MORTON COUNTY

MANDAN: ⊙ area hills, draws, washes, etc.—agate, chalcedony, chert, silicified teredo wood; ⊙ area gravel pits.—worm-bored teredo wood (borings filled with Calcite or chalcedony).
MOUNTRAIL COUNTY
STANLEY, N and W around several highly saline lakes (White Lake, Cottonwood Lake), area mine dumps, as crystals—Glauberite, Halite, Thenardite.

PEMBINA COUNTY
CONCRETE (on the Tongue R.): ① area blue-gray limestone exposures—crystals, fossils; ② regional limestone quarries—Calcite, fossils; ③ deltas of the Pembina, Elk and Sheyenne rivers—fossils, quartz gemstones, petrified wood.

RAMSEY COUNTY
DEVILS LAKE: ① area gravel pits (in bed of the prehistoric Lake Agassiz)—gem agate, jasper, etc.; ② gravel bars of all regional (countywide) streams, especially the James and Sheyenne rivers—quartz gemstones, petrified wood.

RAMSOM COUNTY
LISBON, in gravel bars along the lower Sheyenne R.—quartz gemstones, teredo wood.

ROLETTE COUNTY
DUNSIETH, on edge of the Turtle Mts.: ① a large gravel pit—quartz gemstones; ② area slopes and draws of the mountains—Manganese minerals.

STARK COUNTY
DICKINSON: ① area land surfaces—agate, chalcedony; ② N 6 mi. on Rte. 22, a large gravel pit—agate, jasper, petrified wood.

WARD COUNTY
MINOT, S, in numerous area gravel pits, great variety—quartz gemstones, fossils.

WILLIAMS COUNTY
AREA, regional stream gravels—Montana moss agate.