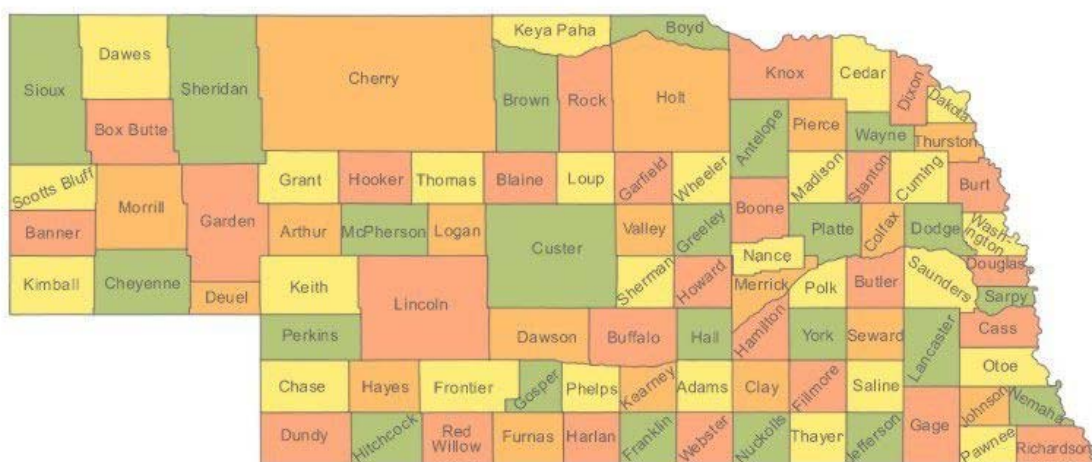


NEBRASKA

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



Nebraska County Map

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

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

An extensive collecting region of agatized and opalized wood for high gem quality is the Sandhills country around Valentine in Cherry Co., extending along the Niobrara River eastward into Brown Co. The Sandhills Museum in town is well worth the rock hunter's visit. Draws, cuts and breaks in the hills along the Minnechaduzza Creek and the Niobrara, as well as all tributary canyons, creeks, and washes, reveal an abundance of gem quality

Nebraska

petrified wood, often occurring as huge stone logs lying on the surface of the ground. A great deal of **agatized** and **opalized mastodon ivory** in pastel colors weathers from the same regional formations.

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

BUFFALO COUNTY

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

CASS COUNTY

WEeping WATER, SE, on rd. to Nehawka, in the Snyderville Quarry—**chalcedony**, **jasper**, **fossils**.

CHERRY COUNTY

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

CHEYENNE, DEUEL, GARDEN & KEITH COUNTIES

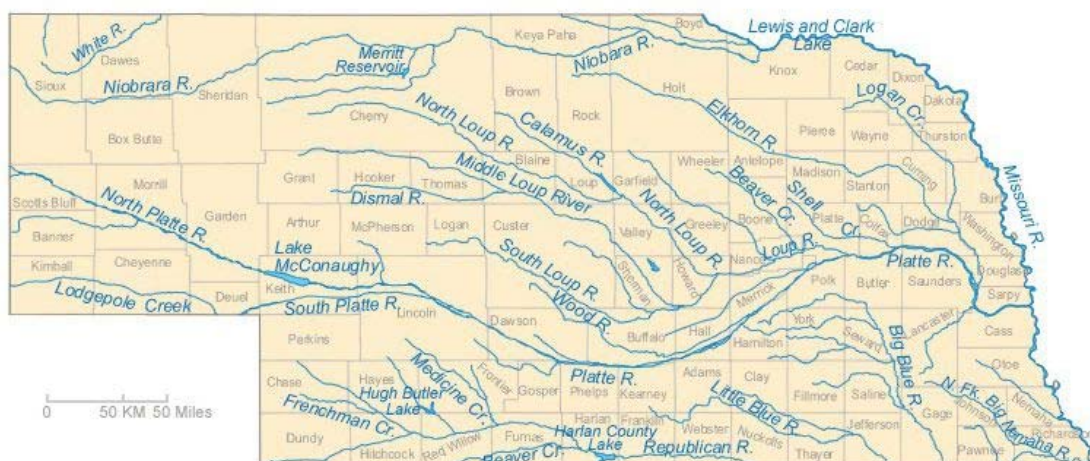
AREA, between North and South Platte rivers and in all tributary branches and creeks: ① especially along Lodgepole Cr., ② all region S of Sidney to Ogalla, ③ along banks of the South Platte R., ④ south banks of the North Platte R., in regional sand pits, breaks, rd. cuts, etc. gem quality—**agatized**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

DAWES COUNTY

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

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

A Location Guide for Rock Hounds in the United States



Rivers & Lakes of Nebraska

DAWES & SIOUX COUNTIES

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

DAWSON COUNTY

GOTHENBURG, in sand pits—**petrified palm wood**.

DEUEL COUNTY

CHAPPELL, all regional surfaces, breaks, etc.—*Fairburn* **agates**, **jasper**, **chalcedony**, **opalized** and **agatized wood**.

DOUGLAS COUNTY

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

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**.

Nebraska

GAGE COUNTY

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

JEFFERSON COUNTY

FAIRBURY, regional gravel pits and stream gravels—**agate**, **chalcedony**, **jasper**, **petrified wood**.

STEELE CITY, area gravel pits, quarries, and stream gravels—**agate**, **chalcedony**, **jasper**, **petrified wood**.

MORRIL COUNTY

ANGORA, 2 mi. E of Angora Hill on ranch rd., abandoned mine dump—fluorescent **moss opal** nodules (in limestone coated with white Calcite), **opal arrowheads**.

BAYARD: ① area gravel pits, sandhills, stream gravels, etc.—**agate**, **chalcedony**, **chert**, **flint**, **fossils**; ② in gravel beds along the N side of the Platte R. all the way to lake Guernsey, WY—**agate**, **petrified wood**.

NANCE COUNTY

FULLERTON, in local gravel pits—**agate**, **petrified wood**.

NEMAHA COUNTY

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

OTOE COUNTY

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

PLATTE COUNTY

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

RED WILLOW COUNTY

McCOOK, in Republican R. basin as far E as Franklin—pastel **jasper**.

RICHARDSON COUNTY

HUMBOLDT, along Nemaha R.—**agate**.

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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.

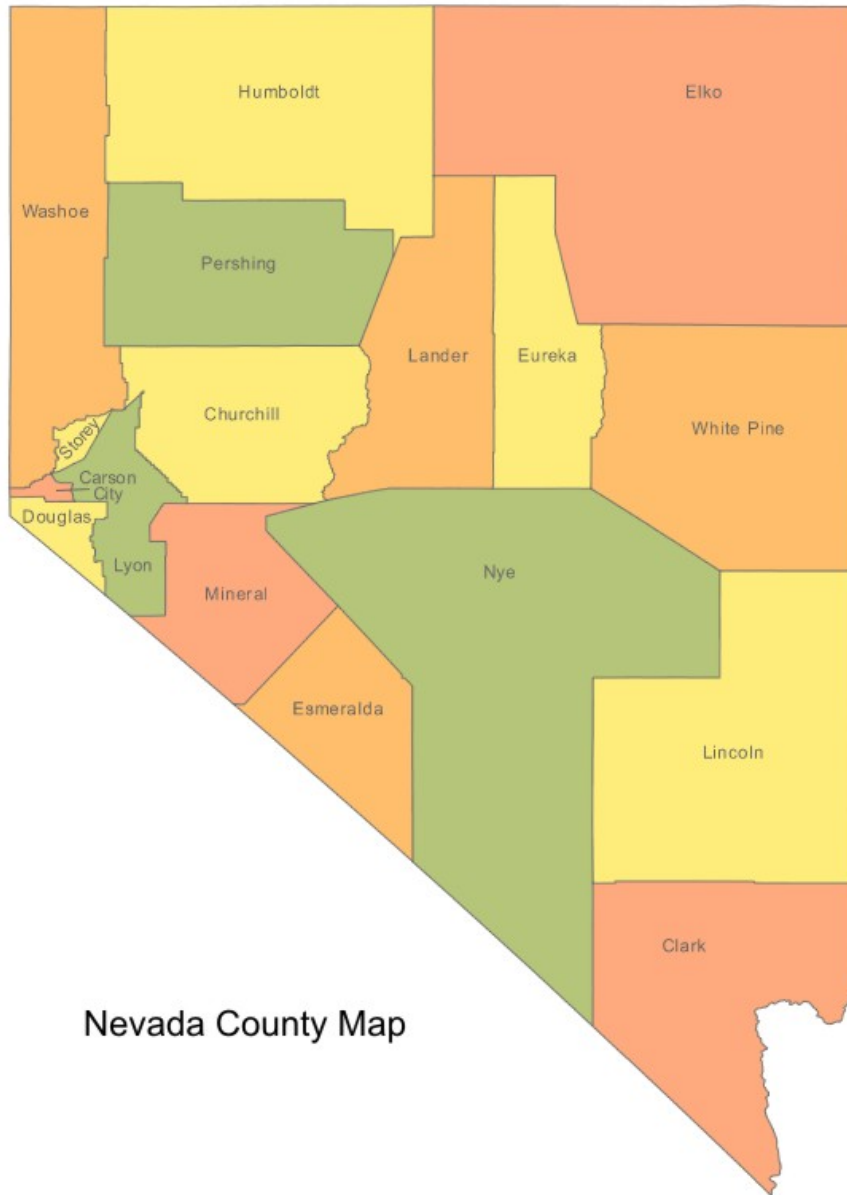
AGATE (20 mi. S of Harrison, the Agate Fossil Beds National Monument, area outside—**agates, jasper, chalcedony, opalized and agatized wood., fossils,** etc.

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

The enormously rich **Silver** mines of Virginia City and later Aurora (in present day Mineral Co. - originally part of Esmeralda Co.) not only added hundreds of millions of dollars in raw wealth to the American economy of the 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.

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-lathite 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

Nevada

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 S about 15 mi., mining dist. of St. Thomas, area mines—**Copper, Silver**; ③ S about 30 mi. on dirt rds., Gold Butte, area mines with replacement veins in Precambrian complex—**Copper, Gold, Silver and Zinc** minerals.

HENDERSON: ① S 1¼ mi. then 4½ mi. W to range of low hills, area surfaces—**chalcedony, jasper, onyx**; ② E past manganese plant a scant ¼ mi., then NE 6 mi., park and walk to hill on N—green **jasper**.

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

A Location Guide for Rock Hounds in the United States

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

NELSON (≈ 20 mi. NNE of Searchlight or 22 mi. S of Boulder City via US 95 and Rte. 60): ① E 7 mi. on Rte. 60 to Eldorado Canyon Camp, area gravel beds of the Black Canyon of the Colorado R.—**Almandite** garnet; ② the Eldorado and Colorado mines (in the Opal Hills), veins in Precambrian granite and gneiss cut by acidic intrusives—**Copper, Gold, Lead** and **Silver** minerals.

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

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

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

DOUGLAS COUNTY

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

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

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

ELKO COUNTY

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

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

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

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

Nevada

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

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

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

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

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

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

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

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

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

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

MIDAS (W side of Co. on Rte. 18): ① 10 mi. distant at the Rand Mine—common **opal**; ② SW, the Gold Circle and Summit mines, replacement veins in Tertiary volcanics—**Gold, Mercury** and **Silver** minerals; ③ SE about 30 mi. by rough rds., old camp of Ivanhoe, veins in rhyolite flow breccia—**Mercury** minerals.

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

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

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

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

TUSCARORA (W central part of Co. on Rte. 18 about 42 mi. E of Midas): ① area mines with veins and placers in Tertiary volcanics—**Gold, Lead, Platinum and Silver** minerals; ② area gravels, surfaces and outcrops—**Citrine, Rose Quartz, wonderstone**; ③ NW 8 mi., to divide at head of Dry Cr., area mines and prospects—**Gold, Silver**.

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

ESMERALDA COUNTY

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

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

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

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

DYER (23 mi. S of Coaldale on Rte. 3A): ① area lode mines—**Gold, Lead and Silver** minerals; ② S and E about 15 mi. to old camp of Good Hope (7 mi. S of Piper Peak on W flank of the Silver Peak Range), veins in Ordovician slates—**Silver**; ③ E, in Fish Lake Valley, and, ④ along flank of the White Mts. near the CA line, regional mines and prospects—**Cinnabar, opalite**.

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

Nevada

minerals; ⑥ SW 25 mi. (via dirt rd. that turns W from US 95 just S of Goldfield Summit 6 mi. S of town): (a) old camp of Hornsilver (Lime Point), veins in Cambrian limestones and shales—**Copper, Gold, Lead, Silver** and **Zinc** minerals; (b) Railroad Springs, lode mines—**Copper, Gold, Silver**.

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

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

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

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

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

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

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

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

WEEPAH (see Blair Junction).

EUREKA COUNTY

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

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

EUREKA: ① area, including Pinto, Prospect, Ruby Hill, Secret Canyon, Silverado and Spring Valley; replacement veins in Paleozoic sediments, granite, porphyry, rhyolite and basalt (according to the particular dist., and mine) —**Arsenic, Copper, Gold, Lead, Silver** and **Zinc** minerals; ② Ruby Hill dist., area mines—**Azurite, Malachite**, etc.; ③ NNE about

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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.



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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, \approx 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 \approx 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 Pershing Co. line)—**Copper**, **Gold**, **Lead** and **Silver** minerals; ⑤ NE 20 mi. on Rte 18: (a) turn S 6 mi. on dirt rd., the Red House Mine—**Gold**, **Silver**, etc.; (b) turn N 10 mi. on dirt rd., the Getchell Mine—**Copper**, **Gold**, **Silver**, etc.

McDERMITT (\approx 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 \approx 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.

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

LANDER COUNTY

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

AUSTIN (also under Nye Co. for access to localities in that adjacent Co.): ① NW 9 mi., the Skookum Mine, contact metamorphic veins—**Gold, Silver**; ② W 16 mi. on US 50, the NW 11 mi. by dirt rd., the New Pass Dist., veins in limestone—**Gold**; ③ NNW 20 mi. (7 mi. W of the silver Cr. Siding on the N.C. RR), the Ravenswood (Shoshone) Mine, veins in Cambrian shales—**Copper, Gold, Lead** and **Silver** minerals; ④ NE on Rte. 21, old camp of Spencer, veins in Paleozoic sediments—**Antimony, Gold** and **Silver** minerals; ⑤ S 10 mi., Big Creek mines, veins in sedimentaries—**Copper, Gold, Molybdenum** and **Silver** minerals; ⑥ S 24 mi. (via 2 mi. W on US 50, 8 mi. SW on Rte. 2, 5 mi. on dirt Rte. 21, turn S on rough rd.), the Kingston Dist. (Bunker Hill, Santa Fe, Summit, Victorine mines), veins in limestone—**Gold, Silver**; ⑦ SW 36 mi. via Rte. 2 to the Campbell Cr. Ranch, the Gold Basin Dist. (under Eastgate in Churchill Co.), old camp of Carroll on the Co. line, area mines—**Gold, Silver**, with traces of **Copper** and **Lead** minerals.

BATTLE MOUNTAIN: ① area SW, the Reese R. Dist. (Amador, Austin, Yankee Blade mines), veins in Paleozoic sediments—**Arsenic, Copper, Gold, Lead, Silver** and **Zinc** minerals; ② W, in the Galena Range near the Humboldt Co. line, the Buffalo Valley mines (17 mi. S of Valmy in Humboldt Co.), replacement veins in limestone—**Gold**; ③ SW 8 to 20 mi., the Copper Basin Dist.: (a) Bannock, Copper Basin, Copper Canyon, Cottonwood Creek, Rocky Canyon, Galena mines; replacement veins and contact metamorphic—**Antimony, Arsenic, Copper, Gold, Lead, Platinum, Silver** and **Zinc** minerals; (b) the Blue Turquoise Mine—**Turquoise**; ④ SE 14 mi., the Lewis Dist. (Dean, Mud Springs, Pittsburg mines), veins in Paleozoic sediments—**Gold, Silver**; ⑤ SE 18 mi., the Hilltop Dist. (Kimberly, Mayesville mines), veins—**Copper, Gold, Lead** and **Silver** minerals; ⑥ SE 20 to 50 mi. (best reached from Beowawe in Eureka Co. via Rte. 21), the Bullion Dist.: (a) the Campbell, Lander, Cortez, Mt. Tenabo mines, replacement veins and placers in Paleozoic sediments—**Arsenic, Copper, Gold, Lead, Platinum, Silver** and **Zinc** minerals; (b) the Pedro Claim (off of Hwy. 8A); (c) the Fox Turquoise Mine; (d) Smith Mine; and (e) White Horse Mine—**Turquoise**; ⑦ SSW 30 mi., the McCoy and Horse Canyon mines, veins in diorite and limestone—**Gold**; ⑧ S 35 mi., the Hot Springs Dist., area mines and projects, especially at Blue Matrix Mine—**Turquoise**; ⑨ SSE 40 mi., Gold Acres (best reached via paved Rte. 21 SW 29 mi. from Beowawe in Eureka Co.) area mines—**Copper, Gold, Silver** minerals; ⑩ NE 30 mi., the Lynn Dist. area mines and prospects, especially No. 8 mine—**Turquoise**; ⑪ NE 45 mi., the Ivanhoe Dist. (over line in Elko Co.)—**opalite** and other minerals; ⑫ N across Southern Pacific RR tracks, continue 18 mi. to windmill, take E fork to bridge over Rock Cr., in creek beds—**chalcedony, petrified wood**; and ⑬ continue 7 mi. further, take left fork N for Cinnabar in chert in washes and at dumps of Silver Cloud mercury mine—**Cinnabar**.

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LINCOLN COUNTY

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

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

HIKO: ① the Pahrangat 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; ⑤ E 15 mi., old camp of Ursine: (a) area mines—**Gold, Lead, Silver**; (b) S 2 mi. on dirt rd., the Eagle Valley Dist. (Fay, State Line mines), veins in Tertiary volcanics—**Gold, Lead** and **Silver** minerals; ⑥ W 16 mi., the Lone Mountain Mine, replacement veins—**Lead** and **Silver** minerals; ⑦ N 28 mi. on US 93, then NE 21 mi. on dirt rd., the Atlanta Dist.: (a) area land surfaces—**chalcedony, chert, flint**; (b) area mines (Silver Park, Silver Springs), veins in quartzites and limestones—**Copper, Gold, Lead, Radium** and **Silver** minerals; ⑧ N 52 mi. on US 93, turn W 11 mi. over Patterson pass (elev. 7,400'), the Patterson Dist. (Cave Valley, Geyser mines) at S end of the Shell Cr. Mts., replacement veins—**Gold, Lead** minerals; ⑨ W 75 mi., the Worthington (Freiberg) Mine, best reached via dirt rds. from Rte. 25 near the Nye Co. line, veins in rhyolite—**Gold, Silver**.

LYON COUNTY

DAYTON: ① S 10 mi., old camp of Como (Palmyra, Indian Springs) —**Gold, Silver**; ② NE 17 mi. (into Storey Co.), Red Mt. area mines, contact metamorphic veins—**Iron** minerals.

FERNLEY: ① S 5½ mi., area on w flank of hills—**agate, chert, jasper**; ② S 14 mi., the Talapoosa Mine, veins in Tertiary volcanics—**Copper, Gold** and **Silver** minerals.

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

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

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

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

YERINGTON: ① area, W, in the Singatse Mts., mines—**Chalcanthite** (*Bluestone*); ② NNW 1½ mi., area mines and prospects—**Turquoise**; ③ W 2 mi., the Mason and Ludwig mines, contact metamorphic, placers—**Copper, Gold, Lead, Platinum** and **Silver** minerals; ④ the Ludwig Mine—**Thulite**; ⑤ WNW 8 mi., mines and prospects—**Turquoise**; ⑥ S 11 mi. on Rte. 3, turn SSE on dirt rd. for 14 mi.: (a) W 5 mi. on rough rd., the Pine Grove Mine; and (b) S 5 mi., the Rockland Mine—**Gold, Platinum, Silver**; ⑦ S 15.6 mi., Wilson Canyon (noted collecting area) —**agate, chalcedony, chert, jasper, silicified wood, Turquoise**; ⑧ S 30 mi., old camp of Washington—**Copper, Gold, Silver**.

MINERAL COUNTY

AREA: ① extreme NE wedge of Co. immediately S of the Churchill Co. line and 16 mi. S of US 50 via Rte. 23, Broken Hills (with the Quartz Mt. mining dist. to S just over the Nye Co. line), area old mines—**Gold, Lead, Silver**, etc.; ② old camp of Acme (Fitting), replacement veins in Tertiary volcanics and placers in Triassic sediments—**Copper, Gold, Lead** and **Silver** minerals.

BABBITT: ① NE 5 mi. to Thorne: (a) area mines—**Gold, Lead, Silver**; (b) SE 5 mi., Ryan Canyon, area mines—**Gold, Lead, Silver, Thulite**; ② N on US 95: (a) along the shores of Walker Lake, and (b) area land surfaces back of the lake—**agate, chalcedony, fossils, petrified wood, Turquoise**.

BASALT (extreme SE corner of CO. on US 95): ① SW 5 mi., summit of Montgomery Pass (elev. 7,167'), area of Queen Mt.—**obsidian**; ② SW 10 mi., the Buena Vista Dist. (Basalt, Mt. Montgomery, Oneota mines), veins in Tertiary volcanics—**Copper, Gold, Lead, Silver** and **Zinc** minerals; ③ N 17 mi. on rte. 10 and E 8 mi. on rough rd., old camp of Candelaria (Belleville, Columbus), replacement veins: (a) area mines—**Copper, Gold, Lead, Nickel** and **Silver** minerals; (b) S 1 mi., in E foothills of the Candelaria Mts. and 1 mi. W of the Mt. Diablo Silver Mine, claims, pits, prospects, etc.—**Variscite**; (c) the Mt. Diablo Silver Mine—**Lead** and **Silver** minerals; (d) the Reik Mine—**Turquoise**.

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

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

MINA (10 mi. S of Luning on US 95): ① area contiguous mines, including Gold Range—**Copper, Gold, Lead, Magnesium, Silver** and **Tungsten** minerals; ② SW 8 mi. in E end of the Excelsior Mts., area—**wonderstone, Turquoise, Variscite**; ③ SW 26 mi. by

Nevada

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 sedimentaries—**Gold, Lead** and **Silver** minerals.

CURRENT (NE part of Co. at jct. of US 6 with Rte. 20): ① E, in the Grant Range, area mines with veins in limestone—**Copper, Gold, Lead**; ② S 30 mi., Troy Peal (elev.

10,280'), old camp of Troy at base (Irwin Canyon, Nyala mines), veins in sedimentary—**Gold, Lead** and **Silver** minerals.

GABBS: ① E 3 mi., the Stokes Iron Mine—**Iron** minerals; ② E 16 mi. to dirt crossrds.: (a) E 4 mi., old camp of Grantsville, area mines—**Copper, Gold, Silver**. (A short distance NE lies the Ichthyosaur Paleontologic State Monument, where the fossil bones of Mesozoic dinosaurs are exposed.); (b) N 4 mi., turn E on old rd. to ghost camp of Berlin (Union Mine), and (c) N 7 mi. to old camp of Ione, veins in Tertiary volcanics and placer in Carboniferous sediments—**Copper, Gold, Lead, Mercury** and **Silver** minerals; (d) old camp of Bruner near Ione, the Phonolite Mine, veins in andesite and rhyolite—**Gold, Silver**; ③ N 3 mi., turn NE on dirt rd. from Rte. 23 to old camp of Downieville, area mines—**Copper, Gold, Silver**; ④ N 12 mi. on Rte. 23, turn right dirt rd. to old camp of Quartz Mt.: (a) area mines; and (b) nearby old camp of Westgate—**Gold, Lead** and **Silver** minerals; (c) NW 3 to 4 mi., old mining dist. of Broken Hills in Mineral Co. and straddling Co. line) —**Gold, Lead** and **Silver** minerals; (d) old camp of Lodi (Ellsworth, Mammoth, marble mines), veins in granite and limestone—**Copper, Gold, Lead, Silver** and **Tungsten** minerals; ⑤ SSE 10 mi., old camp of Golddyke, and ⑥ 8 mi. farther S, the Warrior Mine—**Gold, Lead** and **Silver** minerals; ⑦ SSE 14 mi., the Fairplay and Atwood mines (at or near Golddyke), veins in granite—**Copper, Gold, Lead, Silver** and **Tungsten** minerals.

GOLDFIELD (Esmeralda Co.), access to Ralston Desert to E in Nye Co. (Nearly all the region for 70 to 80 mi. E of US 95 and extending 70 to 80 air mi. S of Tonopah constitutes the highly restricted area of Nellis Air Force bombing range and the Atomic Energy Commission nuclear testing site. No travel is currently allowed on the region's rough dirt access rds., except by regional cattle ranchers.) ① NE ≈ 12 mi., Cactus Peak area prospects and pits—**Turquoise**; ② E 24 mi., in NW end of the Cactus Range, old camp of Cactus Springs, replacement veins in Tertiary volcanics—**Gold, Silver**; ③ SE 27 mi., Gold Crater Mine—**Gold, Silver**; ④ E 35 mi., Swab Mt., on S side of the Cactus Range, area surfaces—**jasper, petrified wood**; ⑤ ESE 30 mi., the Antelope Mine—**Gold, Silver**; ⑥ ESE 38 mi., old camp of Wilson, veins in Tertiary volcanics—**Gold, Silver**; ⑦ ESE 40 mi., the Trappmans Mine, veins in granite—**Gold, Silver**; ⑧ SE 46 mi., the Silverbow Mine—**Gold, Silver**; ⑨ E 54 mi., the Kawich (Gold Reed) dist., veins in monzonite porphyry, rhyolite—**Gold, Mercury** minerals.

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

POTTS (44 mi., SE of Austin in Lander Co. and just S of the Nye Co. line): ① area old camps of Jackson (Gold Park), overlapping into Lander Co., veins in Paleozoic sediments, granite porphyry, and Tertiary volcanics—**Copper, Gold, Lead** and **Silver** minerals; ② SE on rough rd. into the Monitor Range, old camp of Danville, veins in limestone—**Gold, Silver**.

SCOTTYS JUNCTION (35 mi. S of Goldfield on US 95 and entrances into N end of Death Valley): ① S 6 mi. and ½ mi. E of US 95, area—**arrowheads** and cores of **obsidian**, obsidian float; ② ESE ≈ 10 mi., old camp of Tolicha (20 mi. E of Bonnie Clair) and Monte Cristo Mine, veins in Tertiary rhyolite—**Gold, Silver**.

STONEWALL (16 mi. S of Goldfield on US 95 and 1 mi. E of jct. with Rte. 3): ① area mines, veins in Paleozoic sediments—**Gold, Mercury** (some), **Silver**; ② E 20 mi., old camp of Wellington (O'Briens), veins in Tertiary volcanics—**Gold, Silver**.

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

TONOPAH: ① area mines in town and on adjoining hills, replacement veins in Tertiary volcanics—**Copper, Gold, Lead, Silver** and **Tungsten** minerals; ② E a few mi., old camp of Ellendale, veins and stringers in Tertiary volcanics—**Copper, Gold, Silver** minerals; ③ E 10 to 12 mi., area—**petrified algae, Jade**; ④ E 20 mi., the Hannapah dist. (Silverzone, Volcano mines), veins in Tertiary volcanics—**Gold, Mercury** and **Silver** minerals; ⑤ N 10 to 15 mi. in the San Antinio Mts., area—**Jade, petrified wood, wonderstone**; ⑥ NW 20 to 25 mi., in the San Antinio Mts., old San Antone dist. (San

Nevada

Antonio, Royston mines), veins in Tertiary volcanics—**Copper, Gold, Lead** and **Silver** minerals; ⑦ N 42 mi. via Rtes. 8A and 82, turn SW on Manhattan-Belmont dirt rd.: (a) old camp of Spanish Belt (Barcelona Mine), veins in granite and shale—**Mercury** and **Silver** minerals; (b) nearby old camp of Arrowhead, replacement veins—**Gold, Silver**; ⑧ NW 42 mi. via Rte. 89: (a) Cloverdale dist. (Republic, Golden mines), lodes and placers—**Copper, Gold, Lead, Platinum** and **Silver** minerals; (b) N 12 to 15 mi. from Cloverdale on rough rd., old camp of Jett, mines in limestone and slate—**Lead, Silver** and **Zinc** minerals; ⑨ N 40 mi. on Rte. 8A, turn E 7 mi. on Rte. 92, old semi-ghost town of Manhattan, replacement veins and placers in Paleozoic sediments—**Arsenic, Gold, Platinum** and **Silver** minerals; ⑩ NNE 46 mi. via Rtes. 8A and 82, old ghost town of Belmont: (a) the Philadelphia, Silver Bend mines, veins in Paleozoic sediments—**Copper, Gold, Lead, Mercury** and **Silver** minerals; (b) N 18 mi. Then W, old Jefferson Canyon dist. (Concordia, Green Isle mines)—**Gold, Silver**; ⑪ N 52 mi. on Rte. 8A, turn E 3 mi. to ghost town of Round Mt., veins and placers—**Gold, Lead, Platinum** and **Tungsten** minerals; ⑫ N ≈ 57 mi. on Rte. 8A, the Jackson (Gold Park) dist., about 44 mi. S of Austin in Lander Co., area mines—**Gold**; ⑬ N 66 mi. via Rtes. 8A and 82 to area of turnoff W to the Northumberland Caves (recreation area), old camp of Northumberland in the Toquima Range, veins in granite porphyry—**Silver**.

WARM SPRINGS (49 mi. E of Tonopah on US 6): ① the Bellehelen Mine—**Gold, Silver**; ② E about 6 mi., the Eden (Gold Belt) mines, veins in Tertiary volcanics—**Gold, Silver**; ③ E about 20 mi., old camp of Beveille—**Copper, Lead** and **Silver** minerals; ④ NE 8 mi. on US 6, turn NW 4 mi. on dirt rd. to crossrds.: (a) W 4 mi., old camp of Tybo, replacement veins in Paleozoic sediments; and (b) N 12 mi., old camp of Hot Creek—**Antimony, Copper, Gold, Lead, Manganese** and **Silver** minerals; ⑤ SE 40 mi. on Rte. 25, the Willow Creek dist. at S end of Railroad Valley, replacement veins in Paleozoic sediments and Tertiary eruptives—**Copper, Gold, Silver**; ⑥ SE on Hwy. 25 for 58½ mi. to rd. to Tempiute, follow it to building by dry lake for a mi., then S on dirt rd. into mining camp in mountains—**Thulite, Zoisite**.

ORMSBY COUNTY

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

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

PERSHING COUNTY

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

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

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

IMLAY (4 mi. W of Mill City, on I-80): ① S 6 mi. and 4 mi. E of the Humboldt R., the Prince Royal, Humboldt and Eldorado mines, replacement veins in Jurassic sediments—**Copper, Gold, Lead, Mercury** and **Silver** minerals; ② W 23 mi. on dirt rd to crossrds.,

then N 6 mi. on rough rd., the Haystack Mine (7 mi. S of Jungo in Humboldt Co.), veins in granite and quartzite—**Gold**; ③ W 29 mi. via dirt rds.: (a) the Rosebud Mine; and (b) another 4 mi., the Rabbithole Mine; with (c) other area mines such as the Scossa and Placeritas to the S and E—**Antimony, Copper, Mercury, Gold, Lead and Silver** minerals.

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

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

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

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

Nevada

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 scarce **Gold** associated), platy **Hematite** in quartz, **Malachite, Pseudomalachite, Schorl**, rare brownish-green **Sphalerite** and anhedral **Tetrahedrite**; ③ N 34 mi. via Rte. 33 and dirt rd. on W side of Pyramid Lake, (a) Pyramid Mine, veins in Tertiary volcanics; and 3 mi. W of Pyramid lake along Pyramid way, Burrus mine—**Azurite, Barium-pharmacosiderite, Brochantite, Chalcantite**, green **Chalcophyllite, 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.

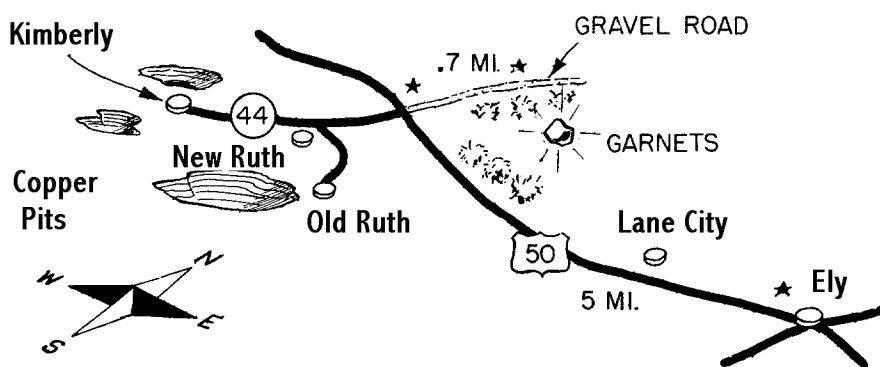
WHITE PINE COUNTY

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 (\approx 35 air mi. W of Ely and 10 mi. S from turnoff 9 mi. E of Little Antelope Summit), replacement veins in Paleozoic sediments—**Copper, Gold, Lead, Silver** and **Zinc** minerals.

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

Nevada

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**.

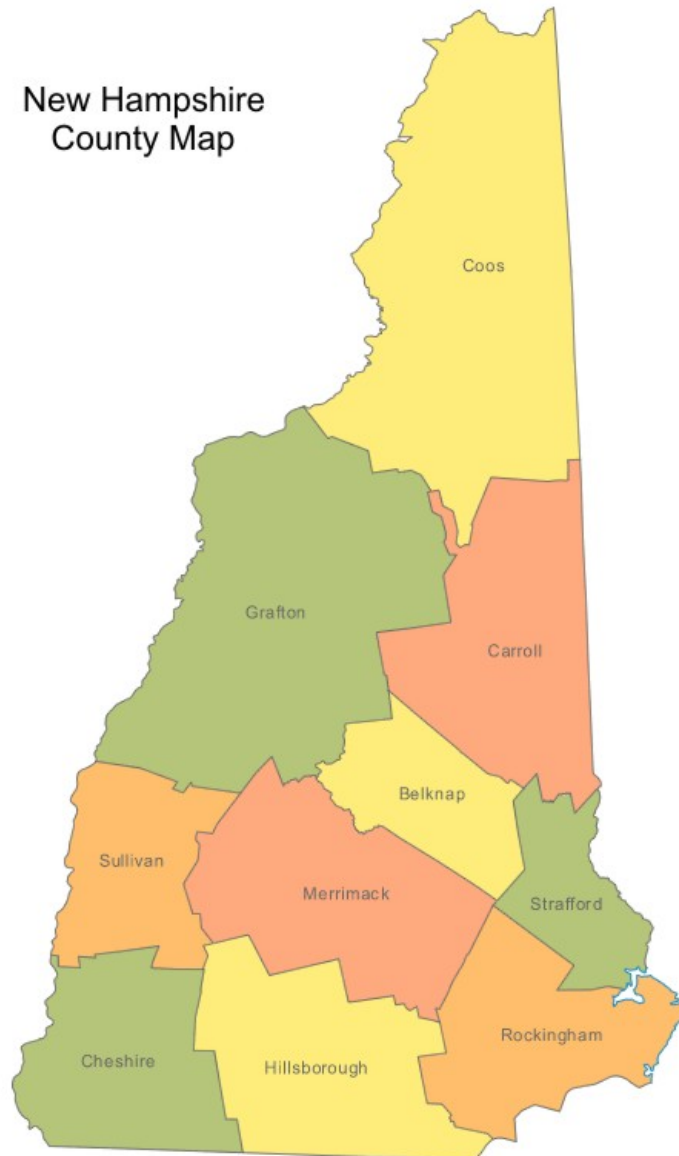
RUTH (8 mi. W of Ely), open pit operations—**Copper**.

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.



New Hampshire

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

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

BELKNAP COUNTY

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

CARROLL COUNTY

BARTLETT, Iron Mt. prospect—**Iron ore**.
CHATHAM, the Chandler mine—**Feldspar**.
CONWAY: ① NW 2½ mi., the Lovejoy Gravel Pits, Hwy., 16 N ¼ mi., then Left on Passaconaway rd., cross bridge, go 0.3 mi., then Left to gravel road and N ¼ mi.—**Microcline** feldspar, **Smoky Quartz** crystals and **Topaz**; ② White Mountain Granite Quarry, at 700 ft. level on W side of Birch Hill—**Amethyst**; ③ 2 mi. N of North Conway, then E on Hurricane Mt. rd. 3½ mi., take trail from top ¼ mi. W follow old rd. to ledges in Hurricane Mt.—**Amethyst** and **Smoky Quartz**; The Hurricane Mt. prospect—**Crocidolite**, **Adularia**.

EATON CENTER, NE 2 mi., at Randall Lead Mine—**Smoky Quartz**.

JACKSON, area mines, especially the Jackson mine—**Arsenopyrite**, **Bornite**, **Cassiterite** and **Wolframite**.

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

NORTH CHATHAM (extreme NE corner of Co., on Rte. 113), W 3½ mi., at 2,900 ft. level on E side of South Baldface Mt., area pegmatites and in pockets where pegmatites meet talus slope—**Mica** (**Biotite**, **Muscovite**), **Microcline** feldspar, **Phenakite**, **Topaz** (brown, blue) and **Smoky Quartz** crystals.

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

A Location Guide for Rock Hounds in the United States

OSSIPEE: ① (Co. seat and site of the Ossipee Summer Fish Hatchery), area mines—**Chalcopyrite**, **Lead-Silver** minerals; ② in ledge S of road at Passaconway Quarry near Albany—**Smoky Quartz**; ③ Pocket Mt. Prospect—**Gold**.

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

SANDWICH, the White Diamond prospect—**Gold**.

WAKEFIELD: ① Weeks Mine ½ mi. W of Province Lake—blue **Beryl**, **Feldspar**; ② Hamm Quarry—**Apatite** (fluorescent).

CHESHIRE COUNTY

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

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

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

GILSOM: ① area old mines producing Beryl (Nichols, Kirk No. 1 & 2, Isham, H. White, J. White) **Beryl** with either **Mica**, **Feldspar** or both; ② NNW 2¼ mi. on a connecting rd., the Island Mice Mine—**Beryl**, etc.; ③ NNW 3½ mi., Britton Mine, Pegmatite—**Beryl**, etc.; ④ N 5½ mi., the Wenham Mine, in pegmatite—rose **Quartz**.

HARRISVILLE, area old Newell Graphite mine—**Graphite**.

HINSDALE: ① area pegmatites—**Tourmaline**, etc.; ② 1 mi. SE near Ashuelot R.—pink **Rhodonite**.

KEENE: ① E 4½ mi., on S side of Horse Hill, Pegmatite outcrops—**Aquamarine**, **Beryl**, etc.; ② ENE 5 mi., Bassett Hill, area pegmatite outcrops, pits, etc.—**Beryl**; ③ Keene Granite Quarry, 3 mi. SE—**Beryl**, smoky and rose **Quartz**; ④ Will Wise Mine, Hwy. 9 W for 11 mi., pass Sherman Store, turn Right at sign saying “1st Methodist Church in New Hampshire” go ½, then Right on dirt rd. 1½ mi., then Left 3 mile, and a sharp Left onto mine road, park and walk up Bald Hill—**Fluorite**.

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

MARLOW, at Turner Mine—green **Tourmaline**.

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

RICHMOND, in Richmond Soapstone Quarry—**Cordierite**.

SURRY, the old Surry Dam mine—**Mica**, **Beryl**.

WALPOLE: ① area pegmatites—**Tourmaline**; ② at Howe Lodge on W side of Dery Hill—**Beryl**, rose **Quartz**.

WESTMORELAND: ① area old Fluorite mines (Wise, Stoddard No. 13)—**Fluorite**; ② S 3 to 5 mi.—**Fluorite**; ③ Stoddard Mine—**Amethyst** and **Quartz** crystals; ④ at Park Hill—**Staurolite**; ④ the old Lincoln mine—**Molybdenite**.

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).

New Hampshire



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 Quart** 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 Quart** crystals, **Sericite** and **Topaz**.; (b) W and 3 mi. S at 1,700 ft. level of Greens Ledge—**Amethyst** and **Topaz**.

A Location Guide for Rock Hounds in the United States

PERCY: ① NNW 1¾ mi., Victors Head area pegmatites—**Albite, Amethyst, Beryl, Chlorite, Feldspar, Fluorite, Knebelite, Limonite, Molybdenite, Muscovite, Pyrite, Smoky Quartz** crystals, **Sericite** and **Topaz**; ② on W slope of Hutchin Mt.—**Amethyst**.

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

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

STRATFORD, along rd. near Sugarloaf—**Amethyst**.

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

GRAFTON COUNTY

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

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

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

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

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

GRAFTON CENTER: ① in dumps of mines 3 mi. SW on E side of Melvin Hill—**Beryl** (blue and golden); ② Kilton Mine, via Ruggles Mine Road, crossing Manfeltree Brook, keeping R and then ¾ mi. NE—**Beryl** (blue and golden); ③ NW 1½ mi., the Ruggles Mine (a noted producer), take direct road W from Grafton Center 1½ mi. to crossroads, then across brook and up hill ¾ mi. (fee)—**Amethyst, Apatites, Autunite** (fluorescent), **Bertrandite, Beryl** (blue, golden), **Beta-uranophane, Calcite, Chrysoberyl, Clarkeite, Columbite, Compotite, Cymatolite, Kryolite, Dendrite, Feldspar, Garnet, Graftonite, Gummite, Kasolite, Lepidolite** (yellow), **Lepidomelane, Lithiophyllite, Marcasite, Micas, Molybdenite, Parsonite, Phosphyanlite, Pyrite, Psilomelane, Purpurite, Pyrrhotite, Quartz** (rose, smoky, white), **Reddingite, Soddyite** (yellow, fluorescent), **Safflorite, Sillimanite, Staurolite, Torbernite, Topaz**, black **Tourmaline, Uraninite, Uranium, Uranophane, Uranospinite, Vandendriesscheite, Vivianite, Voelerkenite, Zircon**; ④ Sargent Mine, on N end of Horse Hill, by driving to top and taking ridge trail on foot—**Beryl** (blue and golden); ⑤ Alger Mine, take rd. S where Ruggles Mine Road leaves Grafton Road, go on a mi.—blue **Beryl**, rose and smoky **Quartz**.

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

HVERHILL: 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**.

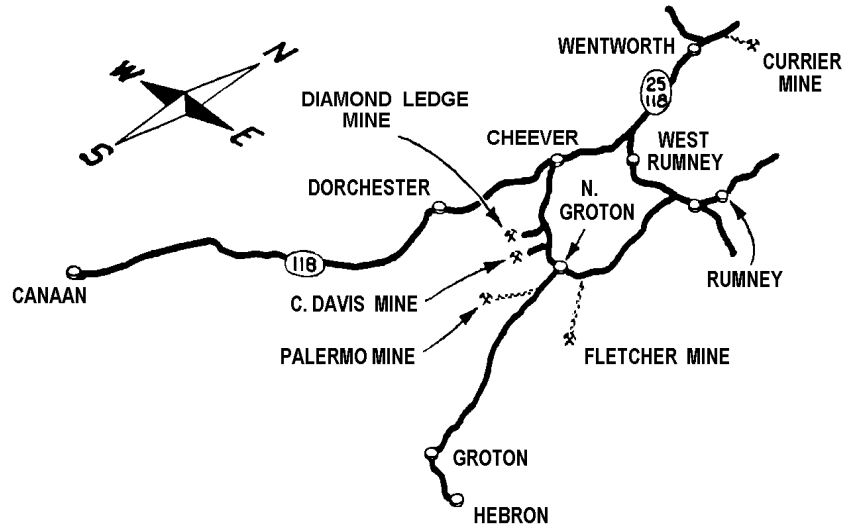
LITTLETON: ① area mines (Gardner Mt., Gregory, Quint) —**Chalcopyrite, Gold, Lead, Silver**; ② the White Mountain Mine—**Bornite, Chalcopyrite** and **Malachite**. A mineralized belt containing many mines and prospects extends SW along Rte. 10 for 12 to 15

New Hampshire

mi., including Lyman, Lisbon and Bath, and yielding specimen listed as under *area mines*.
③ on hill $\frac{3}{4}$ mi. W of Garnet Hill—**Staurolite**.

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

LYME, the old Aldrich Prospect—**Scheelite**.



NORTH GROTON: ① WSW $\frac{3}{4}$ mi., the Charles Davis Mine, ($\frac{3}{4}$ mi. W of North Groton, the dirt rd. S from the Cheever Road leads to mine) —**Aquamarine, Beryl, Brazilianite, Lazulite**; ② SW 2 mi., the Palermo Mine and quarry, (SW 1 mi., then N less than a mi.) —**Apatite, Beryl, green Quartz, Brazilianite, Lazulite** (massive); ③ Rice Mine, mi. farther from North Groton than Palermo No. 1—**Apatite, Beryl, green Quartz**; ④ Diamond Ledge Mine, reached by a road a mi. W of North Groton leading from Cheever rd.—**Apatite, Beryl, green Quartz**; ⑤ the Fletcher Mine, take Rumney Road but turn off on a side road up Fletcher Mt. and go $1\frac{1}{4}$ mi.—**Apatite, Beryl, green Quartz**; ⑥ Valencia Mine, located on next hill NW of the Fletcher Mine—**Beryl and Apatite**.

ORANGE, at Keyes Mine, N $2\frac{1}{2}$ 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 $1\frac{1}{2}$ 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 $1\frac{1}{2}$ 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 $1\frac{1}{2}$ 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 $\frac{3}{4}$ 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**.

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MILFORD, (a) in Bishop and Carlton Granite quarries 2 mi. NW; (b) Connoli Granite Quarry 3½ mi. SW; and (c) Kittridge Granite Quarry 1½ mi. SW—rutilated **Quartz**.

MERRIMACK COUNTY

CONCORD, in Crowley Granite Quarry—**Smoky Quartz**.

DANBURY: ① NW, on Co. line area about ¾ mi. SE of Grafton (in Grafton Co.), on Severance Hill, area pegmatites—**Beryl**, etc.; ② Wild Meadow mine—**Beryl**.

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

WARNER, near top of Mount Kearsarge—rose **Quartz**.

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

ROCKINGHAM COUNTY

NEWMARKET, old Newmarket mine—**Lead-Silver** minerals.

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

STRAFFORD COUNTY

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

ROCHESTER, the old Bliven prospect—**Pyrrhotite**.

SULLIVAN COUNTY

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

ALSTEAD & GILSUM: ① (N of Gilsum along W side of rd. to Mill Hollow, a group of mines whose dumps have been productive): (a) Beauregard Mine (fee); (b) Blister Mine; (c) Davis Mine, ¾ 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); ② Fitagibbon Mine—**Apatite**.

CLAREMONT, area outcrops of Micaceous slates—**Staurolites**.

CROYDON, area mines—**Chalcopyrite** and cupriferous **Pyrites**.

GRANTHAM, area Micaceous slate outcrops—**Staurolites**.

NEWPORT, ① the G.F. Smith Mica Mine at Chandler's Mill—**Augelite**, **Beryl**, **Apatite** and **Lazulite**; ② 3 mi. E at Youngs Hill (fee)—**Apatite** and **Beryl**.

SPRINGFIELD: ① NE to Robinson Corner (straddles Co. line ¾ mi. SSW of Grafton, and best reached from there), near summit of Pillsbury Ridge, the Columbia and Reynolds mines—**Aquamarine**, **Beryl**, **Amethyst**, **Smoky Quartz** etc.; ② in soil at George Hill—**Amethyst**; ③ at S end of Melvin Hill in ledge on Joe Hill farm—**Beryl** and **Spessartite** garnet; ④ Player Mine at Pillsbury Ridge—green **Beryl**; ⑤ (a) Reynolds Mine near top of NE slope of Robinson Hill; and (b) Davenport Mine just below—blue **Beryl**, **Garnet** and **Quartz** crystals; ⑥ (a) Diamond Ledges on Long Mt., and (b) SE on Hwy. 4A for 1½ mi., then N to Globe Mine—**Amethyst** and smoky **Quartz**.

New Hampshire

SUNAPEE, at Perry Sunapee quarry—rutilated **Quartz**.

UNITY: ① area mines—**Chalcopyrite** and cupriferous **Pyrites**; ② S 6 to 7 mi., various localities around Acworth and Beryl Mt., pegmatite exposures, prospects, etc.—**Beryl**, **Garnet** and **Quartz** crystals.

NEW JERSEY

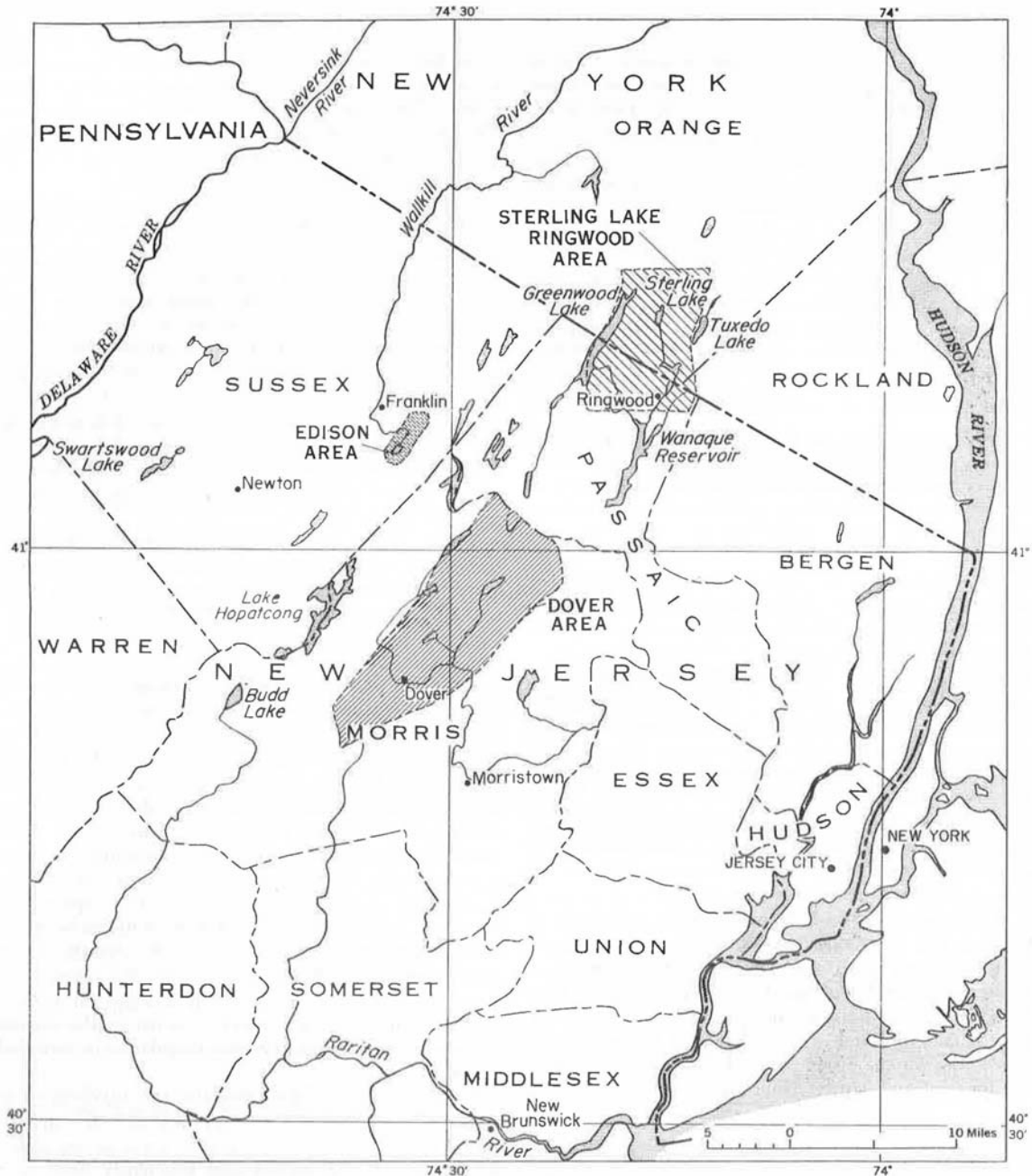
Known as the Garden State, New Jersey ranks among the world's three most noted gem and mineral producing regions. More than 200 mineral species have been named and described from a single locality and a great variety from hundreds of other places. Of these minerals, at least 40 were first identified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



New Jersey County Map

New Jersey

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

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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, Weehawen, 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 **Sphaeroiderite**), 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 Mercer counties to the Delaware R. and N to Trenton—**agate**, **Amethyst** (druses, geodes, crystals), **carnelian**, **chalcedony**, **Datolite**, **Natrolite**, and **Opal** (common, fire).

PARAMUS, at Green farm—**Garnet**.

BURLINGTON COUNTY

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

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

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

New Jersey



Rivers & Lakes of New Jersey

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**.

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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**, **Sphaerosiderite**, **Sphalerite**, **Sphene** and **talca**.

EAST BELLEVILLE, old mine—**Malachite**.

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

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**, **Sphaerosiderite**, **Sphalerite**, **Sphene** and **talca**; ② NW, the Schuyler Mine—**Allanite** (black prismatic crystals), **agate** (banded), **Albite**, **Amethyst**, **Analcime**, **Apatite**, **Apophyllite**, **Calcite** crystals, **Chabazite**, **Chalcocite**, **Datolite** (lime-green, gem), **Dolomite** crystals, **Epidote**, **Galena**, **Gmelinite**, **Heulandite**, **Laumontite**, **Malachite**, **Mesolite**, **Natrolite** crystals, **Opal** (common, fire), **Pectolite**, **Quartz** crystals, **Scolecite**, **Siderite**, **Sphaerosiderite**, **Sphalerite**, **Sphene** and **Talca**.

New Jersey

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**, **Sphaerosiderite**, **Sphalerite**, **Sphene** and **Talc**.

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

HUNTERDON COUNTY

BRYAN, area quarries—**Spinel**.

CLINTON, area old mines—**Braunite**.

FLEMINGTON, the Flemington Mine—**Chalcopyrite**.

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

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**.

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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**.

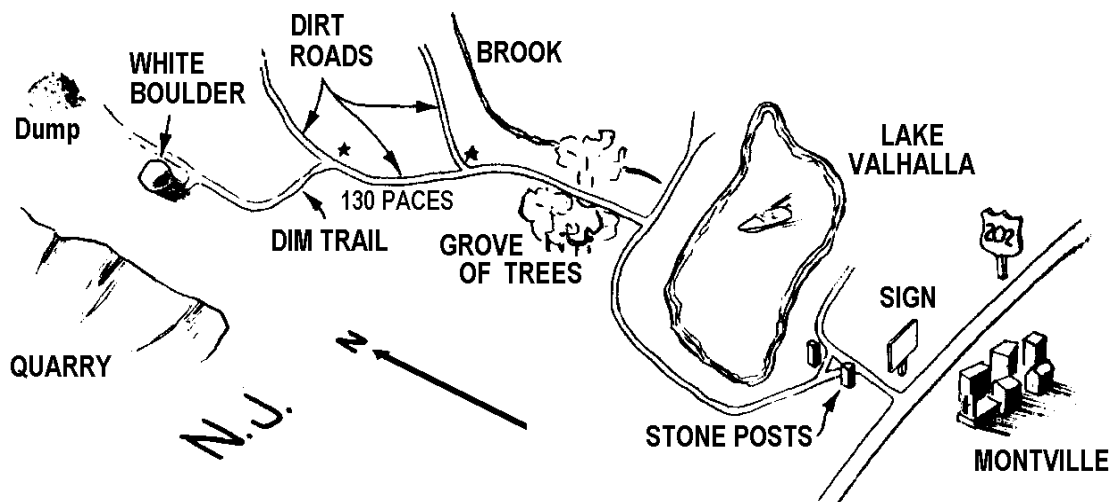
HURDTOWN, old regional mines, Old Copperas, Hibernia, Hurdtown—**Apatite** (as yellow crystals in **Pyrrhotite**, especially at Hurdtown Mine).

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.



New Jersey

MONTVILLE: ① N, on W shore of Lake Valhalla (US 202 W to sign for Valhalla Lake, turn up hill to a Left turn between stone gate posts marked *Valhalla Lake*, continue on hardtop rd. N and around lake for a mi. to a brook, park and walk up a wagon rd. parallel with brook to a fork, take Left-hand trail for 130 paces, faint trail leads to Left ¼ mi. to top of the Mt. and to a large white boulder; the dump is a few feet beyond), an abandoned quarry—gem **serpentine** (yellow and green translucent), **Diopside** (fluorescent); ② other area quarries and pits—various gems and minerals.

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

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

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

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

TAYLORVILLE, the Rockaway Valley area mines—**Magnetite**.

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

OCEAN & ATLANTIC COUNTIES

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

PASSAIC COUNTY

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

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

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

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

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

PATERSON: ① area quarries, especially the gem renowned Prospect Park Quarry (at the end of Planten Ave.)—**agate** (banded), **Amethyst**, **Anorthite** (fluorescent), **Apophyllite**, **Barite**, **Babingtonite**, **Byssolite**, **Calcite**, **Chabazite** (fluorescent), **chalcedony**, **Covellite**, **Cuprite**, **Datolite** (fluorescent), **Dolomite** crystals, **Galena**, **Goethite**, **Greenockite**, **Hematite**, **Heulandite** (fluorescent), **Leonhardite** (fluorescent), **Mesolite** (on calcite), **Opal** (Cachalong), **Prehnite**, **Quartz** (pseudomorphs after

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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**.

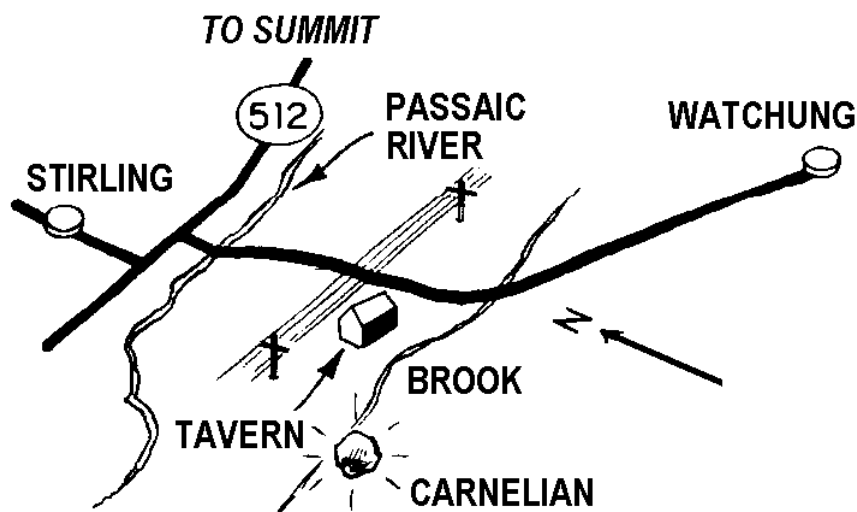
CHIMNEY ROCK, area quarries—**Bornite**, **Calcite** (fluorescent), **Chalcocite**, native **Copper** and **Silver**, **Cuprite**, **Malachite** and **Tourmaline**.

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: ① area quarries—**agate**, **Albite**, **Datolite**, native **Copper** and **Silver**, **Quartz** crystals and **serpentine**; ② N 3 mi., old copper mine on First Watchung Mt.—gem **Turquoise** and **Copper** minerals; ③ the American Copper Mine—**Chalcocite**, **Chalcopyrite**, **Malachite** and native **Copper**.



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

SUSSEX COUNTY

ANDOVER: ① area quarries—**amphibole asbestos** (blue) and **Aragonite**; ② the Old Iron Mine—**Garnet**, **Hematite**, **Limonite** and **Magnetite**; ③ the Suphur Hill Mine—**Willemite** (fluorescent).

BEEMERVILLE, area outcrops of dark nepheline syenite—**Sodalite** (fluorescent).

EDISON, the Ogden Mine Group mines—**Bustamite**, **Calcite**, **Cleiothane** (colorless Sphalerite), **Cyprine**, **Franklinite**, **Friedelite** (translucent, dark carnelian colored, resembles chalcedony, found as stringers in calcite), **Hodgkinsonite**, **Magnetite**, **Molybdenite**, **Rhodonite** (zinc), **Willemite** and **Zincite**.

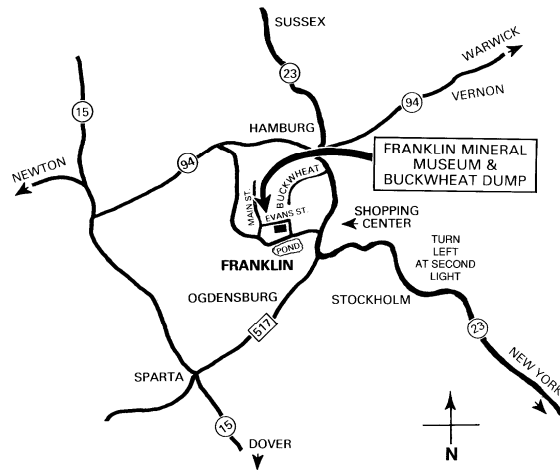
FRANKLIN: ① area mines (See Franklin-Ogdensburg-Sterling Hill district for mineral listing); ② turn off Rte 23 at corner of Franklin Ave. to the Buckwheat Mine dumps on the Wallkill R. (fee)—approximately 200 gems and minerals (some 30 fluorescent), including **Friedelite**, **Cleiothane**, **Hodgkinsonite**,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

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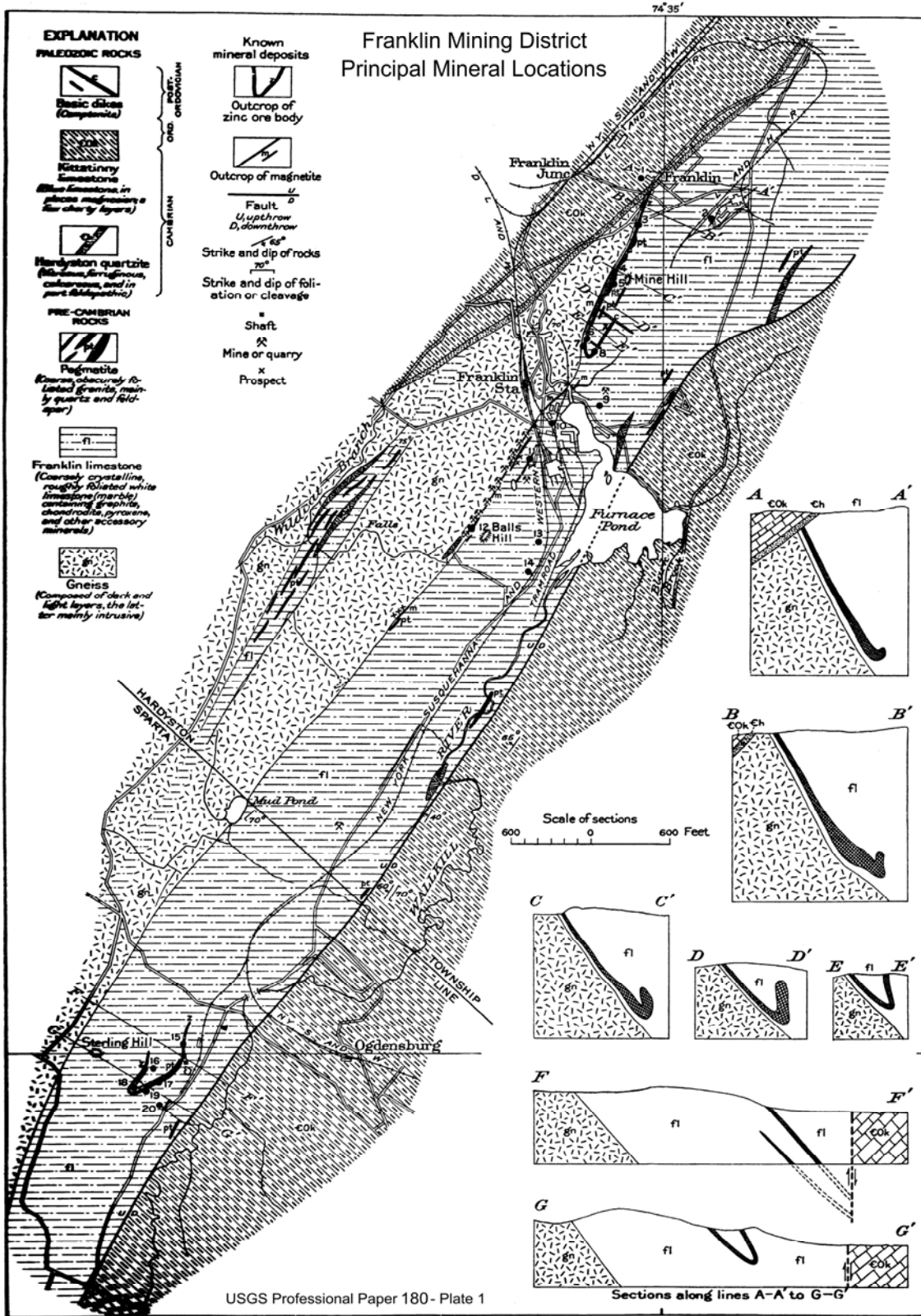
resembles chalcedony, found as stringers in calcite), **Hodgkinsonite**, **Magnetite**, **Molybdenite**, **Rhodonite** (zinc), **Willemite** and **Zincite**.

THE FRANKLIN-OGDENSBURG-STERLING HILL district produces both gem quality minerals and material not useful to the lapidary. ① area mines :

(a) primary ore minerals—**Franklinite**, **Tephroite**, **Willemite** (bright green fluorescent), **Zincite** (fluorescent); (b) Skarn minerals—yellow **Andradite** garnet, **Biotite**, **Bustamite** (pink fluorescent), **Calcite** (red fluorescent), **Cumingtonite**, **Diopside** (shy blue fluorescent), **Franklinite**, **Fowlerite**, **Gahnite**, **Glaucochroite**, **Esperite** (bright yellow fluorescent), **Hardystonite** (purple fluorescent), **Hastingsite**, **Hyalophane**, **Jeffersonite**, **Magnetite**, **Manganosite**, **Pargasite** (weak yellow fluorescent), **Roeppeite**, **Schefferite**, **Tephroite**, **Vesuvianite**,



Willemite (bright green fluorescent), **Wollastonite** (orange fluorescent), **Xonotlite** (weak white fluorescent), **Zinc Schefferite**, **Zincite**; (c) pegmatite contact minerals—**Apatite**, **Arsenopyrite**, **Barite** (yellow fluorescent), **Barylite** (violet-blue fluorescent), **Barysillite**, **Beryl**, **Beryllium Vesuvianite**, **Bornite**, **Cahnite** (weak white fluorescent), **Calcium Larsenite**, **Chalcocite**, **Chalcopyrite**, **Chloanthite**, **Clinohedrite** (orange fluorescent), **Copper**, **Corundum Cuspidine**, **Datolite**, **Fluorite** (blue fluorescent), **Franklinite**, **Galena**, **Glaucochroite**, **Guerinite** (weak white fluorescent), **Hancockite**, **Hedyphane** (weak yellow fluorescent), **Hodgkinsonite** (weak red fluorescent), **Johnbaumite** (dark orange fluorescent), **Kentrolite**, **Larsenite**, **Lead**, **Loellingite**, **Leucophoenicite**, **Manganaxinite** (red fluorescent), **Margarite** (weak blue-white fluorescent), **Margarosanite** (bright sky blue fluorescent), **Meta-ankoleite** (green fluorescent), **Metaldevite** (green fluorescent), **Minehillite** (violet-blue fluorescent), **Nasonite** (weak yellow fluorescent), **Nicolite**, **Pectolite** (orange fluorescent), **Phlogopite** (yellow fluorescent), **Picropharmacolite** (weak white fluorescent), **Prehnite**, **Pyrite**, **Roebbingite** (red-orange fluorescent), **Silver**, **Sphalerite** (fluorescent), **Sussexite**, **Svabite** (peach fluorescent), **Tephroite**, **Tilasite** (pale yellow fluorescent), **Turneaureite** (orange fluorescent), **Uvite** (yellow fluorescent), **Willemite** (bright green fluorescent), **Zircon** (bright orange-yellow fluorescent); (d) Hydrothermal vein minerals—**Aragonite** (yellowish white fluorescent), **Albite**, **Allactite**, **Anhydrite**, **Apophyllite**, **Arsenopyrite**, **Arseniosiderite**, **Barite** (yellow fluorescent), **Bementite**, **Calciethomsonite**, **Calcite** (red fluorescent), **Celestite** (white fluorescent), **Chalcophanite**, **Charlesite** (weak blue fluorescent), **Chlorite**, **Chlorophoenicite**, **Crocidolite**, **Dolomite**, **Dypingite** (lt. blue fluorescent), **Fluoborite**, **Fowlerite**, **Friedelite**, **Gageite**, **Galena**, **Ganophyllite**, **Goethite**, **Greenockite**, **Hedyphane** (weak yellow fluorescent), **Hematite**, **Hetaerolite**, **Heulandite**, **Hodgkinsonite** (weak red fluorescent), **Holdenite**, **Leucophoenicite**, **Loseyite**, **Manganbrucite**, **Manganite**, **Marcasite**, **McGovernite**, **Millerite**, **Mooreite**, **Powellite** (yellow fluorescent), **Pyrite**, **Pyrochlore**, **Quartz**, **Rhodochrosite**, **Schallerite**, **Scheelite** (yellow fluorescent), **Siderite**, **Smithsonite** (white fluorescent), **Sphalerite** (fluorescent), **Stilbite**, **Sussexite**, **Talc**, **Tennantite**, **Tremolite** (bluish or yellowish white fluorescent), **Willemite** (bright green fluorescent), **Zincite**; (e) Surface oxidation minerals—**Anglesite**, **Aurichalcite**, **Azurite**, **Calamine**, **Cerussite** (yellow fluorescent), **Chalcophanite**, **Cuprite**, **Desaulesite**, **Descloizite**, **Gypsum**, **Halloysite**, **Hematite**, **Hemimorphite** (uneven green fluorescent), **Hydrohetaerolite**, **Hydrozincite** (sky blue)



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Paragenetic Table of the Minerals of the Franklin Area (USGS PP 180)

PRIMARY ORE MINERALS	PEGMATITE CONTACT MINERALS	HYDROTHERMAL VEIN MINERALS	HYDROTHERMAL VEIN MINERALS
Franklinite Zincite Willemite Tephroite	<i>Pneumatolytic Products</i> Margarosanite Pectolite Willemite Barylite Nasonite Barysilitite Glaucochroite Tephroite Larsenite Ca Larsenite Be Vesuvianite Roebingite Hancockite Prenite Leucophoenicite Clinohedrite Hodgkinsonite Datolite Cahnite Sussexite Manganoaxinite Cuspidine Apatite Hedyphane Svabite Franklinite Fluorite Barite Silver Copper Lead Galena Chalcocite Niccolite Chloanthite Sphalerite Chalcopyrite Bornite Pyrite Lollingite Arsenopyrite Kentrolite	Albite Fowlerite Tremolite Crocidlite Willemite Friedelite Schallerite Mcgovernite Leucophoenicite Gageite Hodgkinsonite Ganophyllite Apophyllite Calciothomsonite Stilbite Heulandite Chlorite Mn Serpentine Bementite Talc Fluoborite Mooreite Delta-Mooreite Aragonite Dolomite Siderite Rhodochrosite Smithsonite Loseyite Quartz Zincite Hematite Hetaerolite Goethite Manganite Pyrochroite Manganbrucite Chalcophanite Hedyphane Arsenosiderite Allactite Chlorophoenicite Mg Chlorophoenicite Holdenite Sussexite	Barite Celestite Anhydrite Galena Sphalerite Greenockite Pyrite Marcasite Millerite Tennantite
PEGMATITE CONTACT MINERALS			
<i>Skarn</i> Hyalophane Diopside Jeffersonite Scheffurite Zinc Schefferite Forlerite Bustamite Zn-Mn Cummingtonite Hastingsite Pargasite Andradite Hardystonite Tephrolite Roepperite Glaucochroite Vesuvianite Xonotlite Biotite Gahnite Magnetite			
<i>Recrystallization Products</i> Franklinite Zincite Manganosite Hematite Willemite Tephroite			
			SURFACE OXIDATION PRODUCTS Calamine Halloyaite Neotocite Mn Serpentine Desaulesite Quartz Cuprite Hematite Hydrohetaerolite Limonite Chalcophanite Psilomelane Cercusite Malachite Azzurite Aurichalcite Hydrozincite Smithsonite Descloizite Anglesite Gypsum

New Jersey

fluorescent), **Limonite**, **Malachite**, **Neotocite**, **Psilomelane**, **Quartz**, **Smithsonite** (white fluorescent), **Uranospinite**, **Znucalite** (green fluorescent).

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

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

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

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

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

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

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

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

UNION COUNTY

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

PLAINFIELD: ① area quarries—**agate**, **Albite**, **Apophyllite**, **Bornite**, **chalcedony**, **Chrysocolla**, **Datolite**, **Galena**, **Hematite**, **Opal**, **Orthoclase**, **Pumpylite**; ② the Wilson's Quarry—**Albite** (pink), **Datolite**, **Malachite**, native **Silver** and **Zeolites** (**Analcime**, **Gmelinite**, **Natrolite**).

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

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

WARREN COUNTY

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

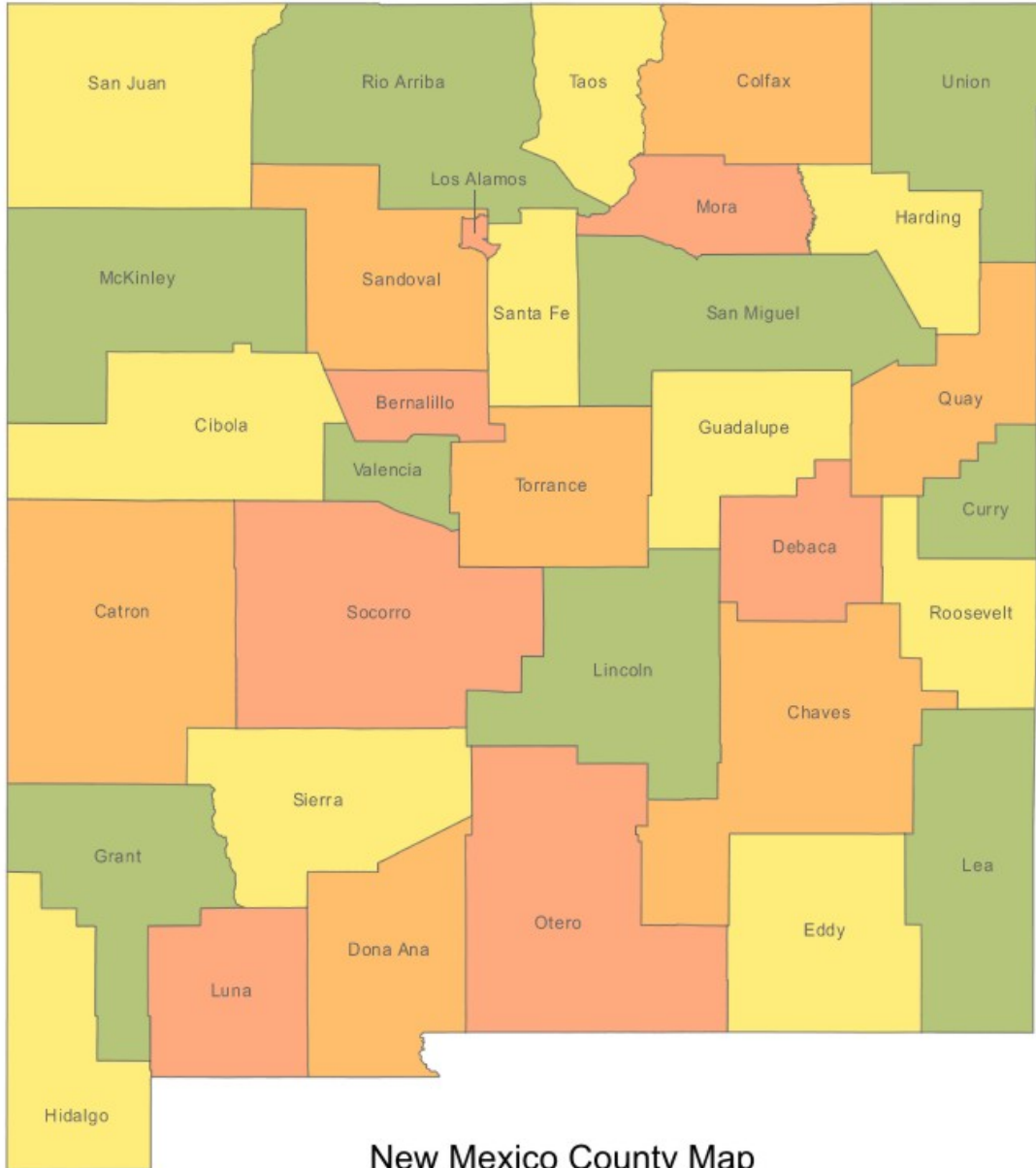
HARMONY: ① the Franklin and Marble Hill Quarry—**Actinolite**; ② the Marble Mt. Mine—**Hematite**.

OXFORD, the Oxford Furnace Mine—**Magnetite**.

PHILLIPSBURG, area quarries—**serpentine** and **soapstone**.

NEW MEXICO

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



New Mexico

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

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

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

BERNALILLO COUNTY

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

ALBUQUERQUE: ① WNW, on N side of the new freeway, in area sand dunes—**agatized wood**; ② W 11 mi. on US 66 to Tepee Service Sta., turn S ½ mi. on dirt rd. (making only right turns for ¼ mi.): (a) in banks of arroyos leading toward the river and on all adjacent ridges—**agatized wood, agate, jasper**; (b) along E side of range of low hills all the way to the Isleta Indian Res., in sandy arroyos and erosional breaks in the grazing lands—**agatized wood**.

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

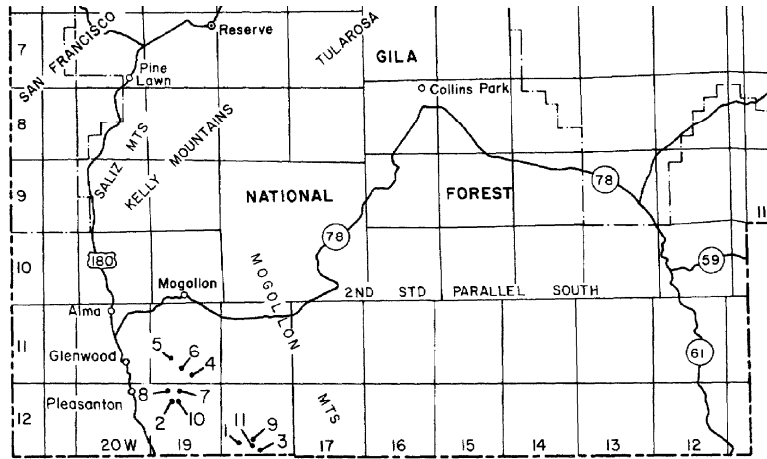
TIJERAS, the Tijeras Canyon in the Sandia Mts., area mines—**Fluorite**.

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**.

A Location Guide for Rock Hounds in the United States



- | | | |
|----------------------------|--------------------------|------------------------|
| 1. Blue Rock prospect | 6. Little Star prospects | 11. Wytcherly prospect |
| 2. Goddard Canyon prospect | 7. Morning Star prospect | |
| 3. Hightower prospect | 8. Red Shaft prospects | |
| 4. Holt Canyon prospects | 9. Sacaton mine | |
| 5. Huckleberry mine | 10. Wilcox prospects | |

Area Fluorite Mines

HORSE SPRINGS, S, in the widespread Plains of San Augustine, in exposures of volcanic tuffs—**moss agate, jasper**.

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

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

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

CHAVES COUNTY

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

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

COLFAX COUNTY

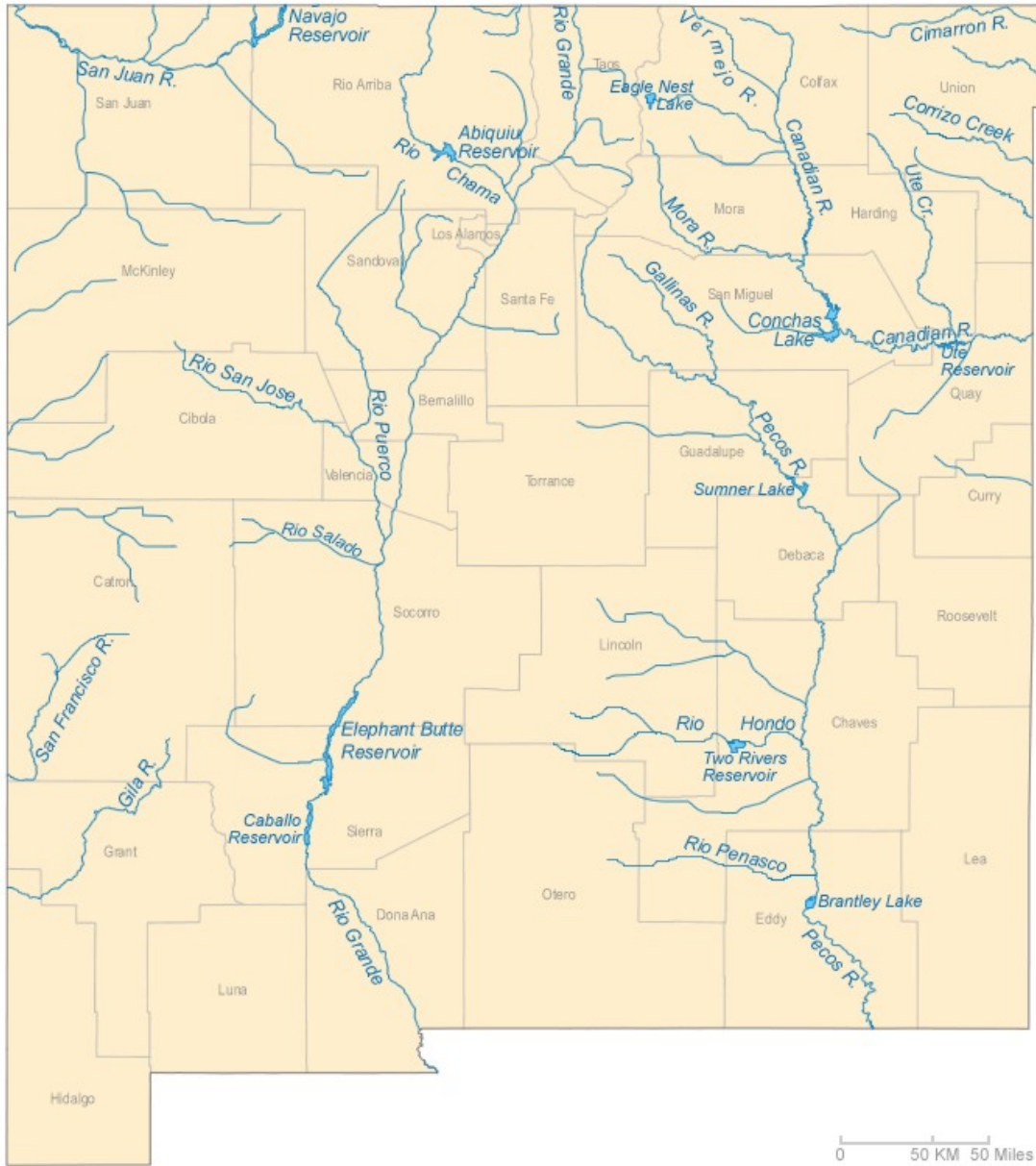
AREA, Moreno and Ute creeks—**Chalcopyrite, Gold, Pyrite, Pyrrhotite**, etc.

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

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

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

New Mexico

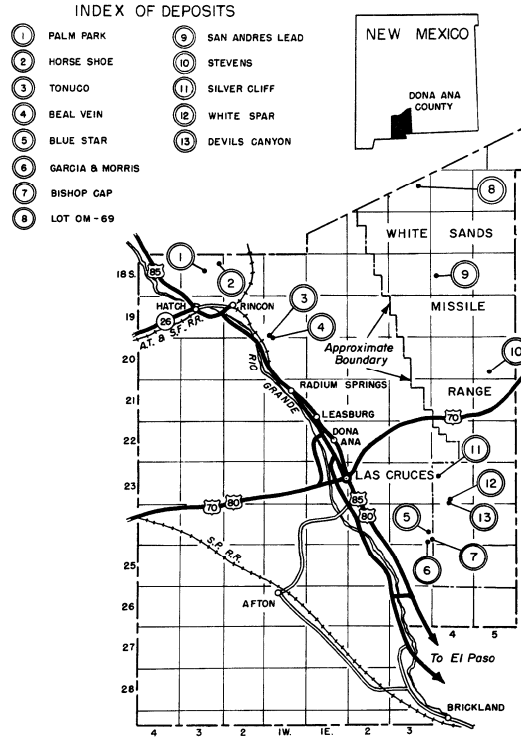


Rivers & Lakes of New Mexico

DE BACA COUNTY

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

A Location Guide for Rock Hounds in the United States



Dona Ana Co. Area Barite Prospects

DONA ANA COUNTY

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

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

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

LAS CRUCES: ① S, along both sides of US 80, and ② W 5 mi. on side rd. to Mesilla, all area—**obsidian**.

ORGAN (Dist.): ① area mines— **Brochantite, Cerargyrite, Cerussite, Chalcopryrite, 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).

New Mexico

GRANT COUNTY

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

CENTRAL (Dist.) 40% of all fluorspar mined in the state comes from this county: ① Burro Mt.: (a) area mines—**Azurite**, **Chalcocite**, **Chalcopyrite**, **Cerargyrite**, **Chrysocolla**, **Fluorite**, **Galena**, **Malachite**, **Pyrite**, **onyx**; (b) Cap Rock Mt., and (c) Mimbres Mt., W slopes—**agate**, **chalcedony**, **chert**, **Chrysocolla**, **jasp-agate**, **jasper**, **Fluorite**, **rock crystal**; ② Sylvanite Dist., the Wood Mine—**Pyrolusite** (with Hematite and Limonite) coatings on **Quartz**.

Cliff, THE Gila R., both sides in Sec. 19, 20, 29 & 30, T. 13 S, R. 13 W, in area mines, outcrops, etc.—**Alunogen**, **Halotrichite**.

FIERRO-HANOVER, JUNIPER, MEERSCHAUM dists., area surfaces—**chert** (various colors).

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

GEORGETOWN, the Commercial Mine—**Argentite**, **Descloizite**.

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

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

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

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

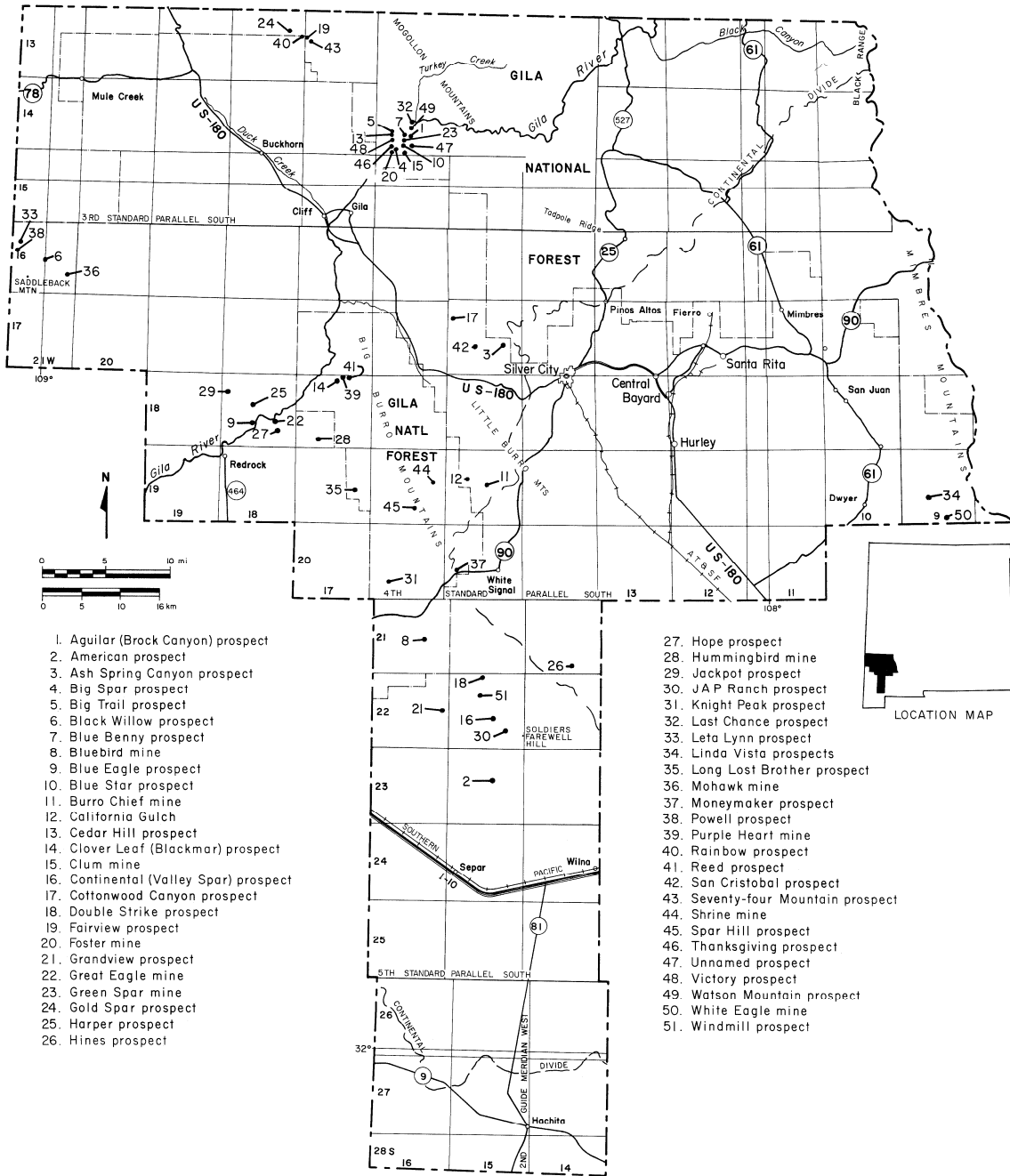
REDROCK, NE 6 mi., in Ricolite Gulch, area—**ricolite** (gemmy banded serpentine).

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

SILVER CITY: ① Gold Hill, large mine dumps—**Argentite**, **Pyrargyrite**, native **Silver**, **Sphalerite**; ② SW 10 mi. (1½ mi. N of Tyrone): (a) the Azure Mine (especially the Elizabeth Pocket); (b) in all regional pre-historic Indian excavations; (c) SE ½ mi., the Parker Mine; and (d) many other area mine dumps—**Halloysite**, **Quartz** crystals, **Turquoise**; ③ W 12 mi., and 24 mi. N, area pits and prospects—**meerschaum**; ④ N 15 mi., on both sides of the Gila R., large deposit—**alum**.

SYLVANIA (Dist.), the Golden Eagle and Handcar mines—**Tetradymite** (containing Gold).

A Location Guide for Rock Hounds in the United States



1. Aguilar (Brock Canyon) prospect
2. American prospect
3. Ash Spring Canyon prospect
4. Big Spar prospect
5. Big Trail prospect
6. Black Willow prospect
7. Blue Benny prospect
8. Bluebird mine
9. Blue Eagle prospect
10. Blue Star prospect
11. Burro Chief mine
12. California Gulch
13. Cedar Hill prospect
14. Clover Leaf (Blackmar) prospect
15. Clum mine
16. Continental (Valley Spar) prospect
17. Cottonwood Canyon prospect
18. Double Strike prospect
19. Fairview prospect
20. Foster mine
21. Grandview prospect
22. Great Eagle mine
23. Green Spar mine
24. Gold Spar prospect
25. Harper prospect
26. Hines prospect

27. Hope prospect
28. Hummingbird mine
29. Jackpot prospect
30. J A P Ranch prospect
31. Knight Peak prospect
32. Last Chance prospect
33. Leta Lynn prospect
34. Linda Vista prospects
35. Long Lost Brother prospect
36. Mohawk mine
37. Moneymaker prospect
38. Powell prospect
39. Purple Heart mine
40. Rainbow prospect
41. Reed prospect
42. San Cristobal prospect
43. Seventy-four Mountain prospect
44. Shrine mine
45. Spar Hill prospect
46. Thanksgiving prospect
47. Unnamed prospect
48. Victory prospect
49. Watson Mountain prospect
50. White Eagle mine
51. Windmill prospect

Fluorspar mines in Grant County

New Mexico

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 fluorspar mines and prospect—**Fluorite**. (see map of Fluorite mines and prospects to left).

LORDSBURG: ① area mines (Pinos Altos, Santa Rite, Steeple Rock, Sylvanite, etc.)—**Bornite, Cerussite, Chalcopyrite, Gold**; ② S 2 mi. to rd. fork: (a) W fork to ghost town of Shakespear (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, Linarite**, etc.; (c) S through Pyramid Mts., some 85 old mines (the Atwood, Manner, Silver & Gold, etc.)—**Copper, Gold and Silver** minerals; ③ Pyramid and Peloncillo Mts. (SW corner of Co.), area—**agate, chalcedony, jasp-agate, jasper**; ④ N on US 70 to jct. With Rte. 464, then N on Rte. 464 for 21 mi. to Redrock in Grant Co., E from post office to first rd. N, cross the Gila R. 3.3 mi. (keep right at all forks) to Ricolite Canyon—**ricolite** (gemmy banded serpentine).

LINCOLN COUNTY

ANCHO area draws, washes, land surfaces—**jasper**.

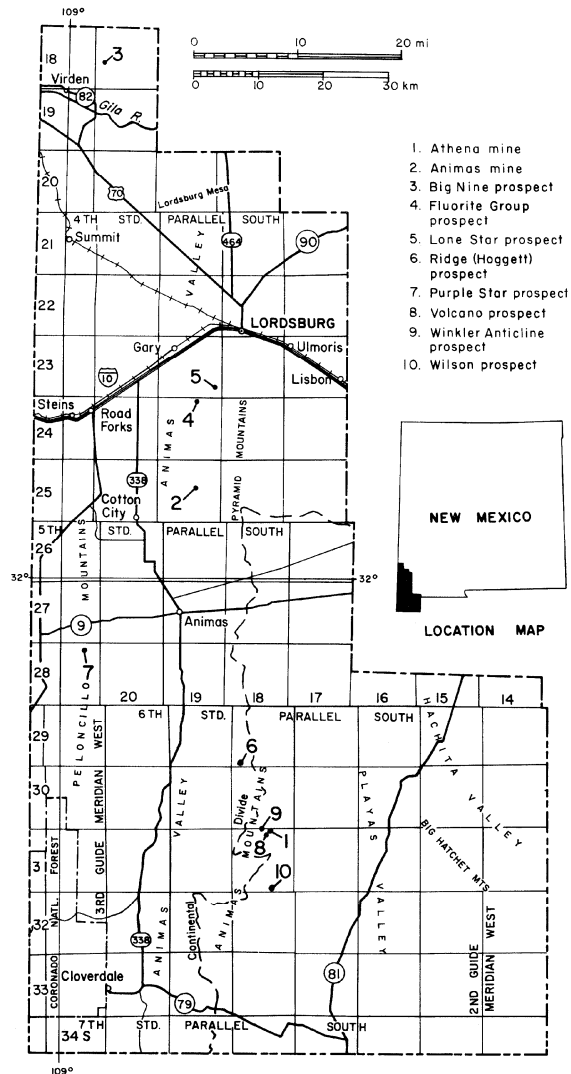
HIDALGO (Dist.), area mines and prospects—**Fluorite**.

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).

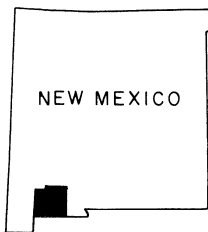
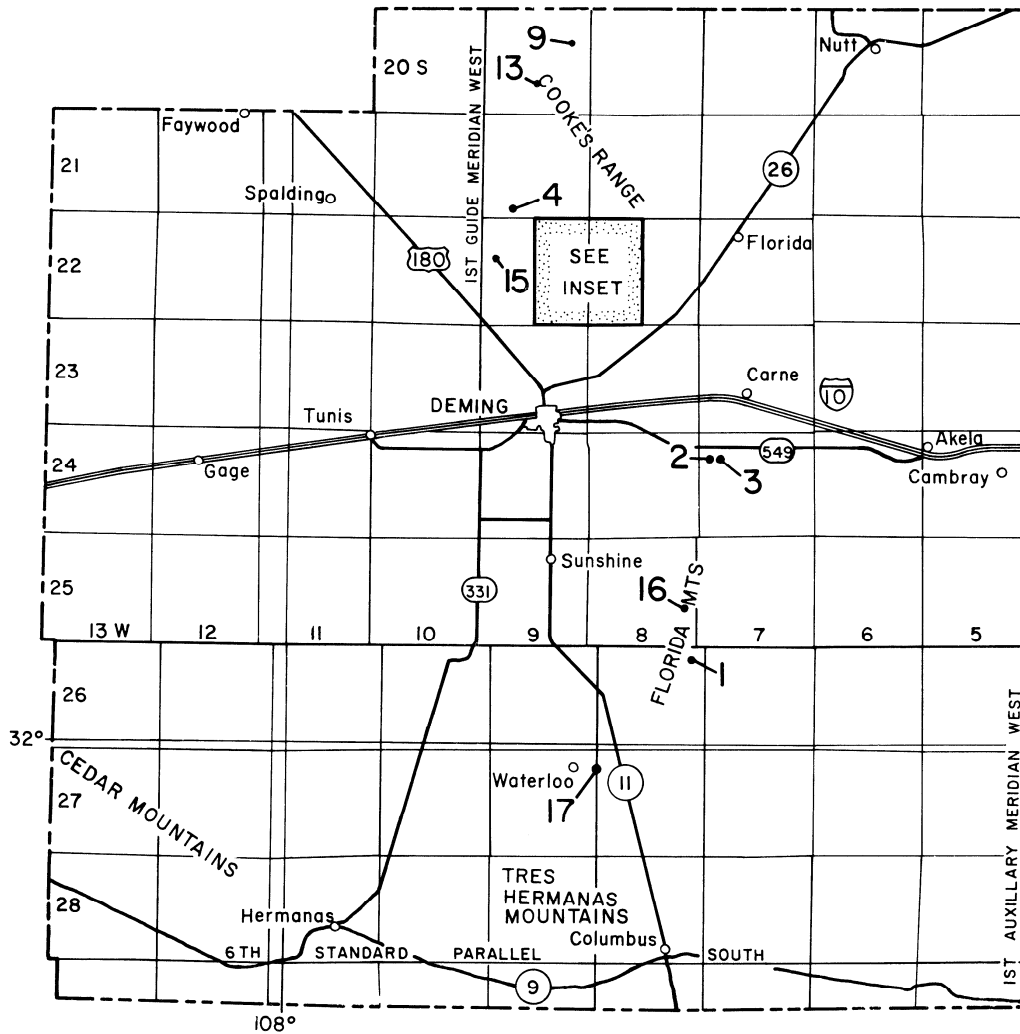


1. Athena mine
2. Animas mine
3. Big Nine prospect
4. Fluorite Group prospect
5. Lone Star prospect
6. Ridge (Hoggett) prospect
7. Purple Star prospect
8. Volcano prospect
9. Winkler Anticline prospect
10. Wilson prospect

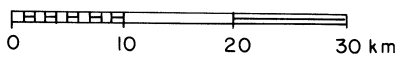
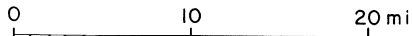
NEW MEXICO
LOCATION MAP

A Location Guide for Rock Hounds in the United States

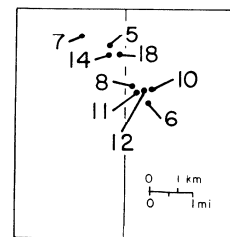
DEMING: ① area: (a) all draws, washes, surfaces for miles around—agate, chalcedony, chert, jasper, etc.; (b) regional fluorspar mines—Calcite (fluorescent),



LOCATION MAP



- 5 Grattan mine
- 6 Greenleaf mine
- 7 Greenspar mine
- 8 Hilltop prospect
- 9 Lookout prospect
- 10 Lucky mine
- 11 Sadler mine
- 12 San Juan prospect
- 13 Section 27 prospect
- 14 Tiptop prospect



INSET MAP

- 1 Anniversary prospect
- 2 Apache prospect
- 3 Florida mine
- 4 Goat Ridge prospect

- 15 Valley mine
- 16 Waddell Atir prospect
- 17 White Bluff prospect
- 18 Whitehill prospect

FLUORSPAR DEPOSITS IN LUNA COUNTY

New Mexico

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**, **Chalcopryrite**, **Galena**, **Malchite**.

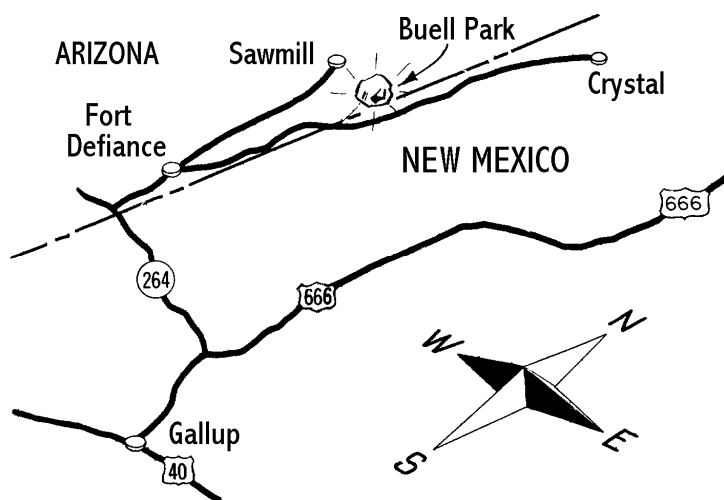
NUTT, SW to Cooks peak (elev. 8,408'): ① area mines—**Anglesite**, **Cerussite**, **Galena**, **Plumbojarosite**; ② area on and surrounding the peak embracing \approx 20 sq. mi., mostly flats and low hills covered with gemstone float—**agate**, **carnelian**, **chalcedony**, **jasp-agate**, **jasper**, **Fluorite**, etc.

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

McKINLEY COUNTY

AREA, E slopes of Furry Mt.—**Garnets**.

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



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

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

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

A Location Guide for Rock Hounds in the United States

OTERO COUNTY

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

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

RIO ARRIBA COUNTY

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

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

COYOTE, area mines—**Azurite, Malachite**.

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

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

HERMOSA, area prospects—**Chalcocite**.

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

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

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

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

YOUNGSVILLE, area around store, abundant—gem **agate**.

SANDOVAL COUNTY

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

New Mexico

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

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

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

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

CUBA: ① area mines—**Copper** minerals; ② SE about 10 mi. to cattle guard (logging area), turn N ½ into old mining dist. (Blue Bird, Eureka, etc., mines), on all old dumps—**Copper** minerals, gemmy **Chrysocolla** conglomerate.

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

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

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

SAN JAUN COUNTY

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

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

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

SAN JAUN-McKINLEY COUNTIES

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

SAN MIGUL COUNTY

LAS VEGAS, N, general area—**petrified wood**.

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

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

SANTA FE COUNTY

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

CERRILLOS: ① area prospects—some **Chalcopyrite**; ② park car E of Tongue Wash and power line: (a) N, a sandy mt., area—carbonized **fossil wood**; (b) big wash on S, all contributing arroyos—red **jasper**; (c) numerous adjoining localities in general vicinity—**agate, chalcedony, chert, jasper**, etc.; ③ NNE 6 mi. on Rte. 14 (30 mi. SSW of Santa Fe):

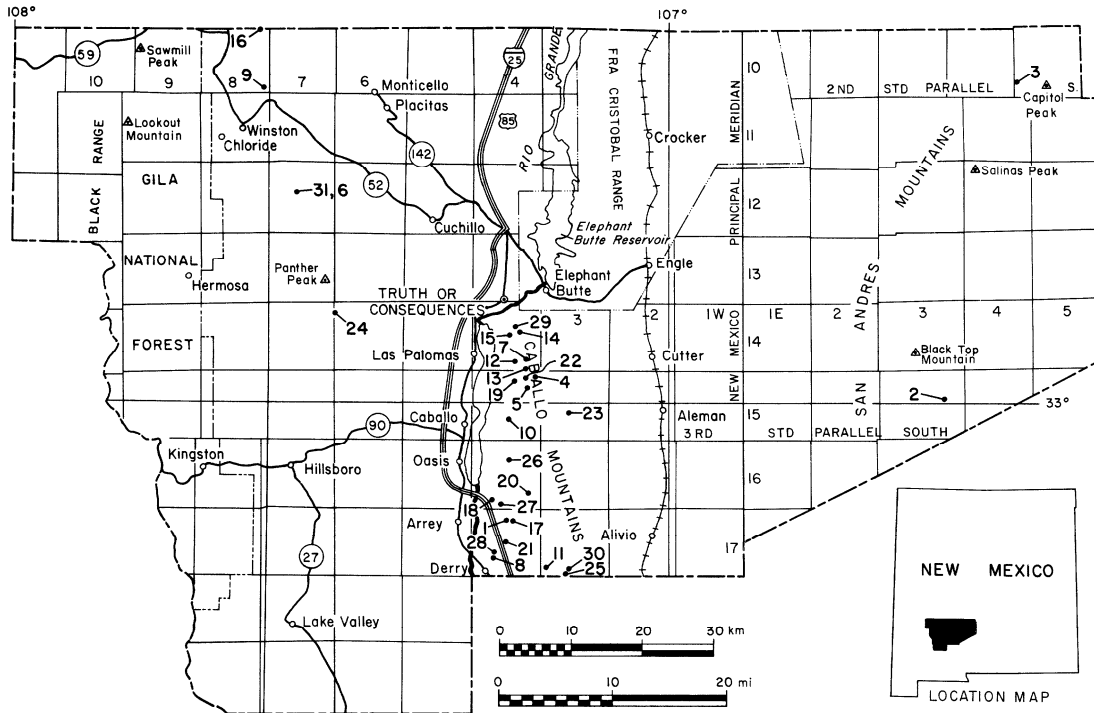
A Location Guide for Rock Hounds in the United States

(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—**Chalcopyrite**, 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).



- | | | |
|---|---|---|
| <ol style="list-style-type: none"> 1. Alvarez prospect 2. American prospects 3. Baso Four prospect 4. Carroll prospect 5. Cox mine 6. Cross Mountain prospects 7. Dewey-White Swan prospects 8. Esperanza prospect 9. Fairview prospect 10. Fluoride prospect | <ol style="list-style-type: none"> 11. Gar-Spar prospect 12. Governor (Imperial) prospects 13. Harding prospect 14. Illinois group mine 15. Independence mine 16. Iron Mountain prospects 17. Lorraine prospects 18. Lyda-K mine 19. Marian mine 20. Mary Jane prospect | <ol style="list-style-type: none"> 21. Nakaye (Alamo) prospect 22. Napoleon-Rosa Lee prospect 23. Parker prospect 24. Salado prospect 25. Section 29 prospect 26. Sunset prospect 27. Red Cloud prospect 28. Red Star prospect 29. Tingley prospect 30. Velarde prospect 31. Victorio prospect |
|---|---|---|

FLUORSPAR DEPOSITS IN SIERRA COUNTY

CABALLO, E, in the Caballo Mts., area mines—**Azurite, Chalcocite, Chalcopyrite, Fluorite, Malachite**.

CHLORIDE, the Apache and Phillipsburg mines—**Chalcopyrite, 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 Andres Mts., W side of Mockingbird Gap, area—**dendritic jasper**.

New Mexico

HILLSBORO (Fremont): ① area mines and prospects—**Cerussite** (rich in Silver), **Gold**, **Willemite** (fluorescent); ② W, toward Kingston, a high cliff just before reaching as iron bridge across Percha Cr., in talus—*flowering rhyolite*.

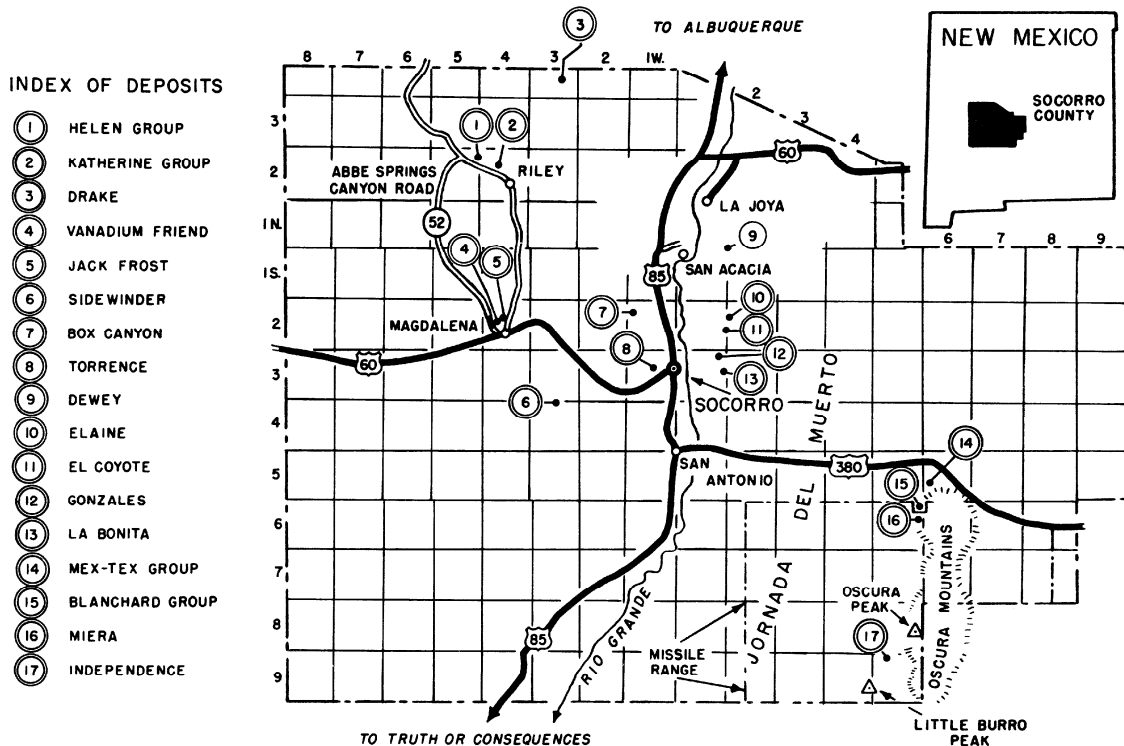
KINGSTON (Dist.): ① area mines—**Proustite** (in Silver ore), **Pyrrargyrite**; ② the Comstock Mine—massive **Rhodonite**; ③ on W side of town turn N on old mine rd., cross cr. And on for about 1 mi. to a gate, park car, small mt. On the E, area—**Quartz** crystals (unusual clusters, double terminated);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

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

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

TRUTH OR CONSEQUENCES: ① N, on W side of the Fra Cristobal Mts., area—**agate**, **jasper**; ② E 13 mi., Hot Springs (in the Jornada Valley), area—**agate**, **chalcedony**, **elixirite**, **jasper**, **petrified wood**; ③ Ne 38 mi. to abandoned Ft. Craig, take canal rd. S 11½ mi. to mile port 1370, park car, cross old river bed to hills on E, in all sandy outcrops, excellent black—**opalized wood**; ④ E on Rte. 52 to Engle, the S on ranch rd. paralleling the RR for 13 mi. to a ranch, turn W through ranch, cross RR tracks into low hills (a spur of the Caballo Mts.) for 2 mi., all along both sides of rd.—**carnelian agate**.

SOCORRO COUTNY



AREA: ① Area Barite mines (see above map); ② SE corner of Co.: (a) the Sierra Oscura Mts., regional prospects and mines—abundant **Chrysocolla**, some **Chalcocite**; (b) the Joita Hills, and (c) regional washes, draws, surfaces, etc.—**agate**, **chalcedony**, **jasper**,

A Location Guide for Rock Hounds in the United States

Quartz crystals, **quartzite** (colorful), **petrified wood**; ③ the Mogollon Mts., area mines—**Bornite**, **Chalcocite**, **Chalcopyrite**, native **Silver**.

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

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

HANSONBURG (San Andreas, San Lorenzo): ① area mines—**Copper** minerals; ② Grandview Canyon, area mines—**Fluorite**.

LAVA (straddles Sierra-Socorro Co. line at end of rd. N from Engle in Sierra Co.): ① the Fra Cristobal Range, N end and NE side of Elephant Butte Reservoir; and ② S of the E end of Bernado Bridge over the Rio Grande, area—**opalized wood**.

MAGDALENA: ① area mines—**Anglesite**, **Cerussite**, **Chalcophanite**, **Cuprite**, **Galena**, **Hydrozincite**, **Smithsonite**, **Sphalerite**; ② SE 3 mi. to ghost town of Kelly, on all old mine dumps—gem quality **Smithsonite** (blue green), **Zinc** minerals in **Quartz**, **fossils**; ③ W, at Silver Hill, on WSW side—**Garnets**; ④ N 16 mi. on gravel rd. to jct. (Riley, 4 mi.), turn W on dim ranch rd. for 5 mi., area surfaces—**agatized Picture Wood**, **petrified cycad** and **palm**; ⑤ at the Kelly Mine—**Calcite** crystal (fluorescent).

SOCORRO: ① NW 4 mi., and ② on E side of Strawberry peak, area—**Satin Spar**.

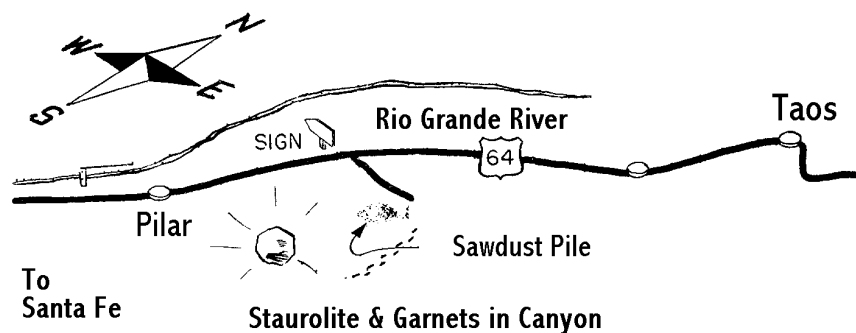
TAOS COUNTY

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

GLENWOODY, area gravels—**Staurolite**.

MOLYBDENUM, area mines—**Molybdenum** minerals.

PICURIS: ① area mines—**Chalcocite**, **Chrysocolla**, **Cuprite**; ② area gravels, slopes, washes, etc.—**Staurolite**.



PILAR: ① area mine dumps between mts. and US 64—gem quality **Lepidolite** and **Sericite**; ② both sides of rd. to Velarde—**Garnets**, **Staurolites**; ③ in pegmatite just S of Pilar on E bank of Rio Grande—**Thulite**.

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

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

TWINING, area mines—**Copper** minerals.

New Mexico

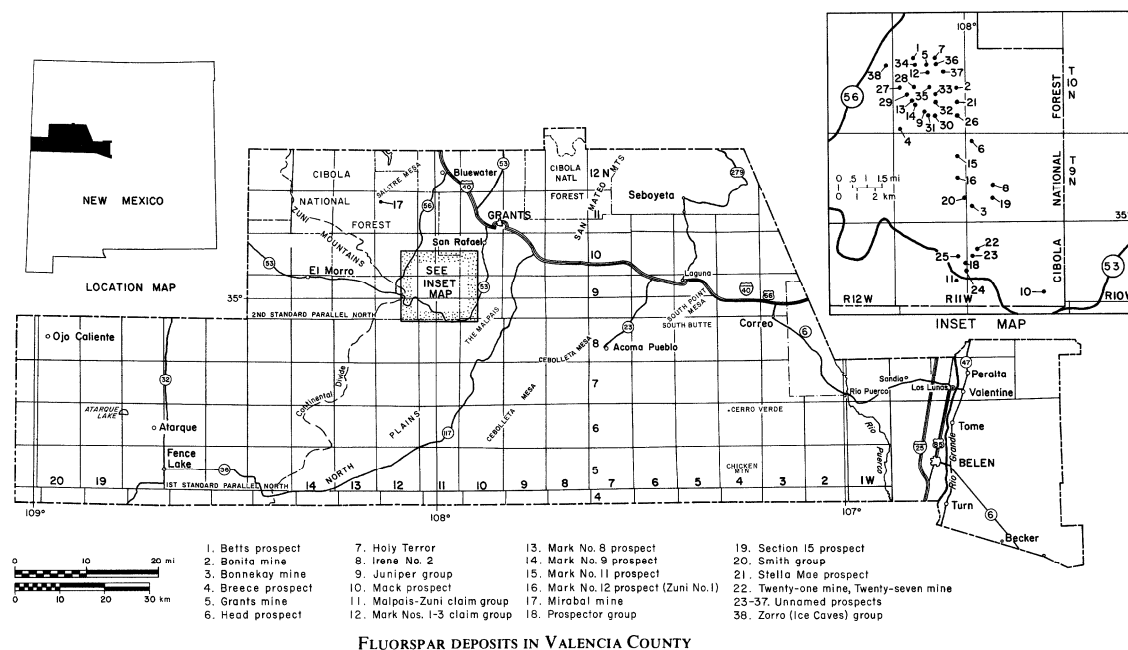
TORRANCE COUNTY

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**, **Ilsemannite**, **Liebigite**, **Meta-Autunite**, **Metatyuyamunite**, **Montroseite**, **Pascoite**, **Schröckingerite** (fluorescent, at Homestake Claims), **Thenardite**, **Thermonatrite**, **Todorokite**, **Tyuyamunite**, **Uranopilite**, **Zellerite**, **Zippeite**. Associated with these radioactive minerals (many fluorescent) are often **Barite**, **Calcite**, **Coffinite**, **Jordisite**, **Marcasite**, **Pyrite**, gray **Selenite** and **Gypsum**. This large area of radioactivity extends from Gallup in McKinley Co. on the west to the western edge of the Rio Grande trough on the east \approx 110 mi. long by 20 mi. wide. The principle mining areas revolve around ① Gallup, ② Church Rock, ③ Smith Lake, ④ Ambrosia Lake—also **Andersonite** (fluorescent), ⑤ Grants, ⑥ Paguote or Jackpile—also **Becquerelite** (fluorescent). These area are grouped into three major mining dists.: Gallup, Grants, and Laguna. It was Paddy Martinez who

A Location Guide for Rock Hounds in the United States

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.

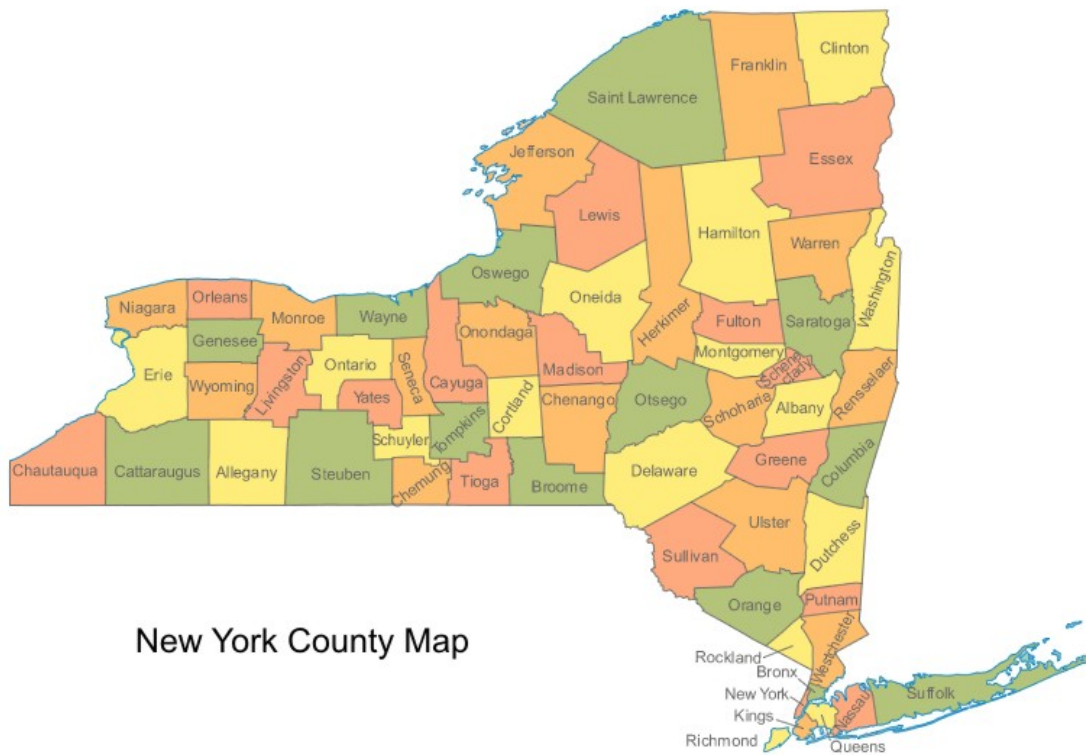
LAGUNA, area surfaces—**agate, jasper.**

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

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.



New York County Map

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.

A Location Guide for Rock Hounds in the United States

CAYUGA COUNTY

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

CLINTON COUNTY

AREA, the Palmer Hiss Mine and Finch ore bed, abundant—**Fluorite**.

ARNOLD HILL (just NW of Clintonville), area mines and workable ore bodies—**Magnetite**.

CLINTONVILLE, on Harkness rd. across first RR tracks, just before reaching second tracks turn left up steep hill to Arnold mine, in dump—**jasper, Martite**.

KEESEVILLE, at Buttermilk Falls—**serpentine**.

LYON MOUNTAIN, area mines—**Aegirine, Albite, Apatite, Augite, Biotite, Byssolite, Calcite, Chlorite, Epidote, Hematite, Ilmenite, Magnetite, Molybdenite, Orthoclase, Perthite, Pyrite, Quartz, Stilbite, Wernerite, and Zircon**.

COLUMBIA COUNTY

ANCRAM, area mines—**Barite, Galena and Sphalerite**.

DUTCHESS COUNTY

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

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**.

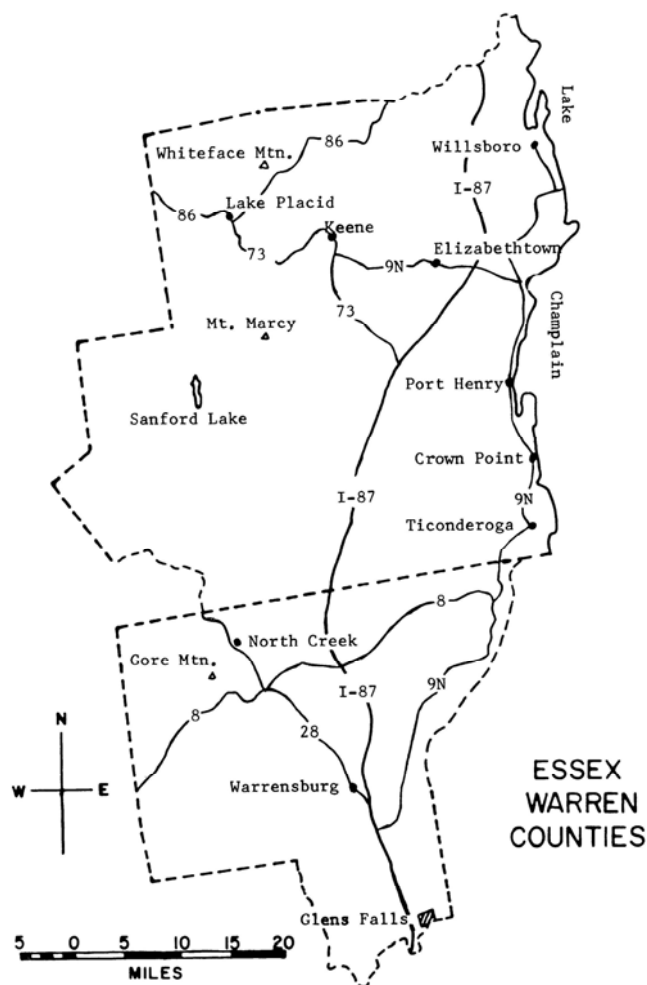
LEWIS, area mines—**Arsenopyrite and Rhodonite**.

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**.

New York



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

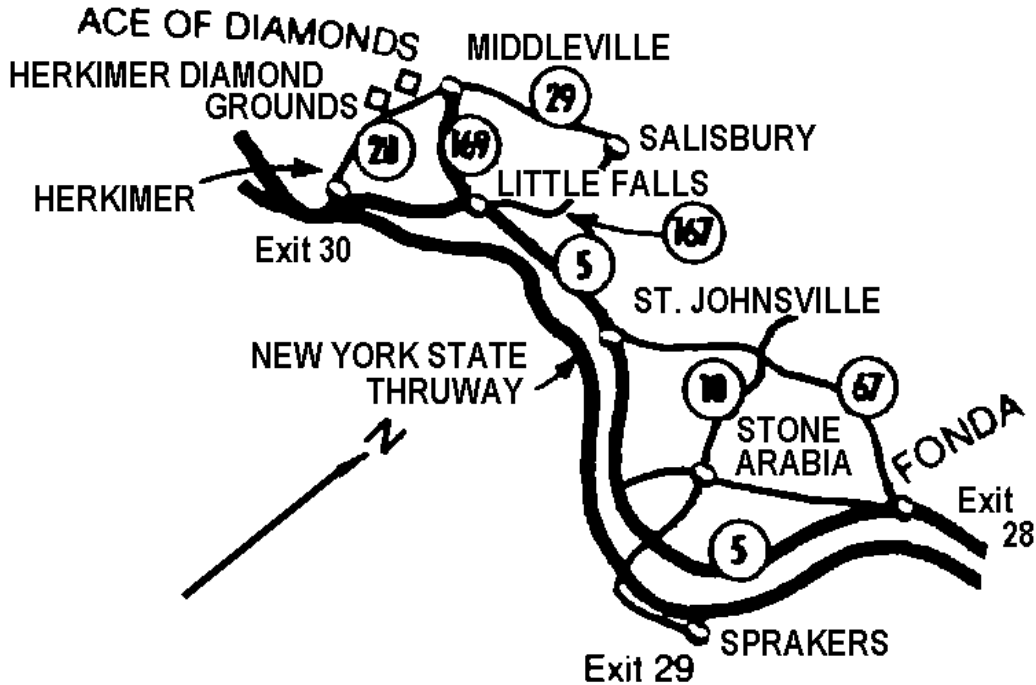
WELLS, in anorthosite boulders to N along Hwy. 8 in E branch of Sacandaga R.—**Labradorite**.

A Location Guide for Rock Hounds in the United States

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**.

New York

LIVINGSTON COUNTY

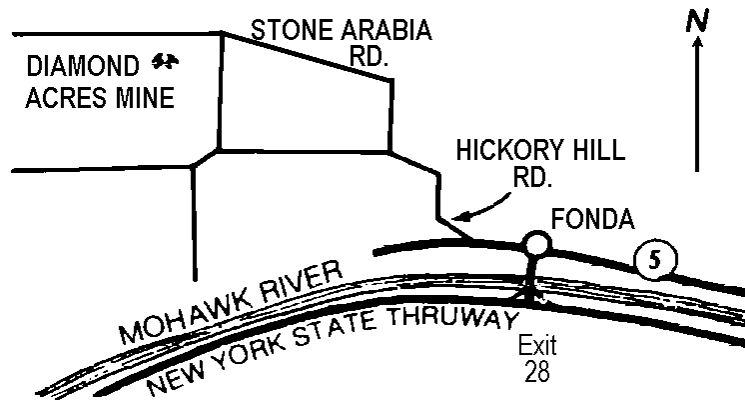
GENESCO, 3 mi. N in banks and bed gravels of a Cr.—**silicified coral**.

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**.

A Location Guide for Rock Hounds in the United States

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**.

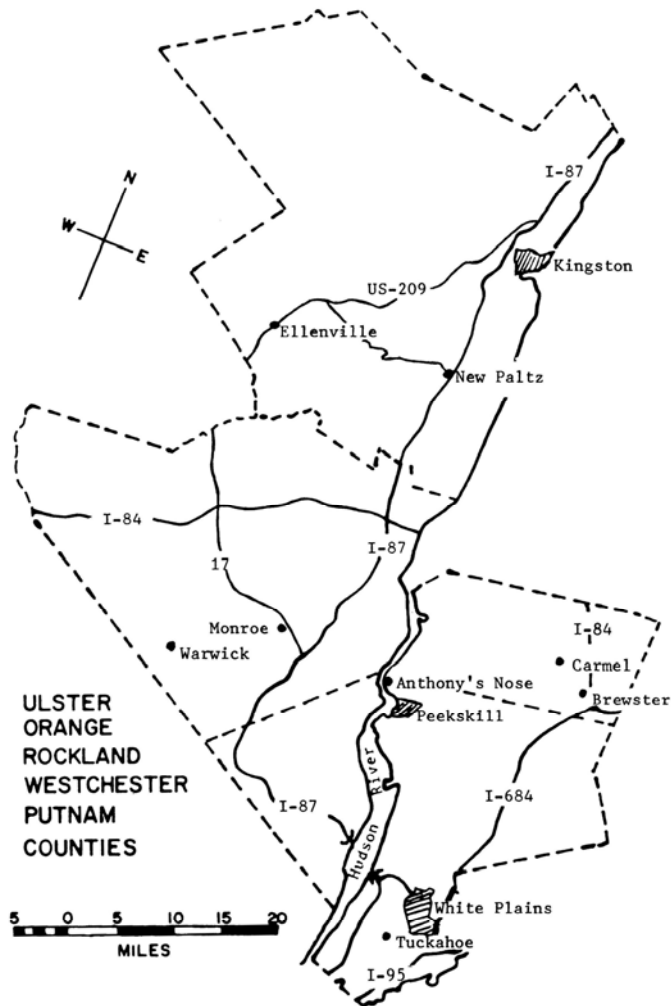
EDENVILLE: ① area mines, and ② between town and Mt. Adam, mines—**Arsenopyrite, Leucopyrite** and **Scorodite**.

MONROE, near Lake Mombasha, pegmatite outcrop—**Phlogopite** Mica (greenish).

OTISVILLE, the Phoenix Mine—**Galena** and **Sphalerite**.

OTSEGO COUNTY

TODDSVILLE, area gravel pits, stream beds—**Sapphire**.



New York

PUTNAM COUNTY

BREWSTER, NW 6 mi., the Tilly Foster Iron Mine—**Actinolite**, **Albite**, **Ankerite**, **Antigorite**, **Apatite**, **Apophyllite**, **Arsenopyrite**, **Augite**, **Autunite**, **Barite**, **Biotite**, **Bronzite**, **Brucite**¹ (fluorescent), **Byssolite**, **Calcite**¹, **Chalcopyrite**, **Chondrodite**², **Chondrodite**², **Chrysocolla**, **Chrysotile**, **Clinochlore**², **Clinohumite**, **Coccolite**, **Crocidolite**, **Datolite**, **Diallage**, **Diopside**¹, **Dipyre**, **Dolomite**¹, **Enstatite**¹, **Fluorite**, **Garnet** (**Grossularite**, **Uvarovite**), **Gypsum**, **Hematite**, **Heulandite**, **Hisingerite**, **Hornblende**, **Humite**, **Hydromagnesite**, **Hydrotalcite**, **Ilmenite**, **Laumontite**, **Limonite**, **Magnesite**, **Magnetite**², **Malachite**, **Marcasite**, **Microcline**¹, **Molybdenite**, **Muscovite**, **Natrolite**, **Oligoclase**, **Olivine**, **Opal**, **Pargasite**, **Phlogopite**, **Prochlorite**, **Pyrite**, **Pyrolusite**, **Pyrite**, **Pyrrhotite**, **Quartz** (milky¹, rose, smoky), **Riebeckite**, **Scapolite**, **serpentine**¹, **Siderite**, **Sphene**², **Spinel**, **Talc**, **Thomsonite**, **Tourmaline**, **Tremolite** and **Zircon** (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)

TOMPKINSVILLE, area quarries—**asbestos**.

TOTENVILLE, SW tip of Staten Island, the Androvette Clay Pits (near Kreischerville on the shore of Arthur Kill)—**Artinite** (fluorescent), **serpentine**.

SARATOGA COUNTY

BATCHELLERVILLE: ① area quarries, in pegmatites—**Feldspar** and **Muscovite** Mica; ② N 12½ mi., at Overlook area—**Rose Quartz**.

SARATOGA SPRINGS: ① intersection of Rte. 9 with the Twp. rd., W ½ mi., pegmatite outcrop—**Chrysoberyl**; ② in Maple Ave. (Gailor) quarry on W side of Hwy. 9 on N edge of city—**Quartz** crystals.

SCHOHARIE COUNTY

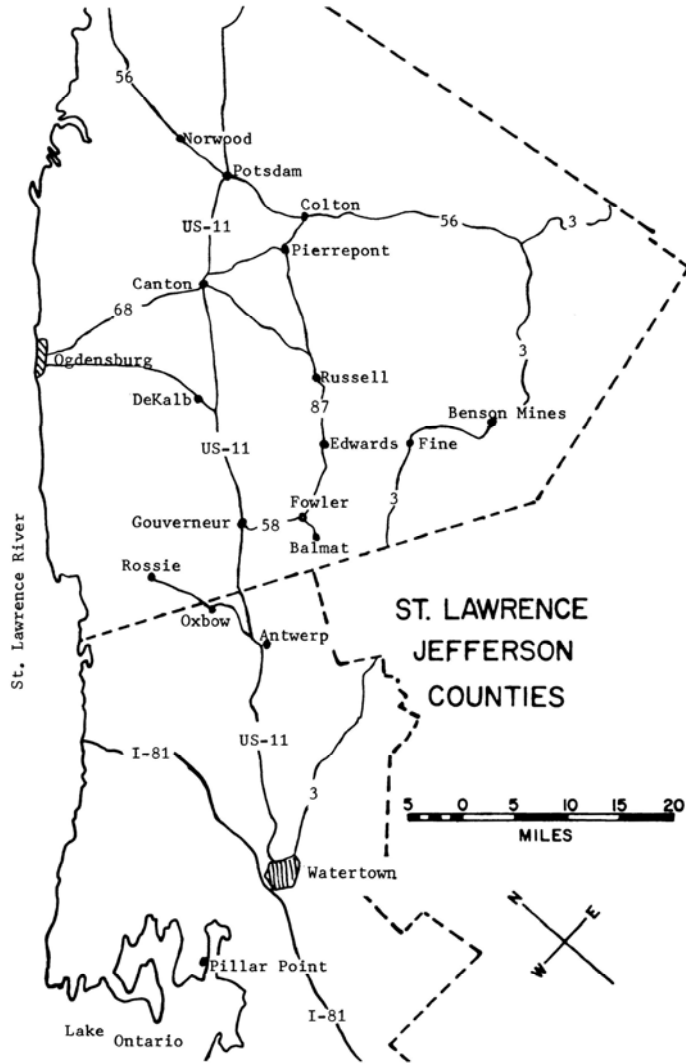
AREA, numerous exposures of sedimentary rocks—**silicified coral**.

SCHOHARIE: ① area exposures of the Brayamn shales and the Roundout Waterline—**Barite** crystals, **Celestite** (as nodular aggregates of delicate crystals); ② town courthouse, vicinity exposures of water limestones—**Barite** crystals (associated with **Strontianite**); ③ N 2 mi., on face of Terrace Hill (within sight of rd. to Schoharie Jct.), an old mine—**Strontianite**

ST. LAWRENCE COUNTY

AREA: The Balmat-Edwards Zinc deposit—**Actinolite**, **Anthophyllite**, **Anhydrite**, **Apatite**, **Arsenopyrite**, **Barite**, **Calcite**, **Celestite**, **Chalcopyrite**, **Chlorite**, **Dolomite**, **Feldspars**, **Galena**, **Garnet** (**Andradite**, **Grossular**), **Geocronite**, **Goethite**, **Greenockite**, **Guitermanite**, **Gypsum**, **Halite**, **Haüynite**, **Hematite**, **Hydrozincite**, **Ilvaite**, **Jordanite**, **Limonite**, **Magnetite**, **Marcasite**, **Mica** (**Biotite**, **Phlogopite**), **Orpiment**, **Pyrite**, **Pyrrhotite**, **Pyrrhotite**, **Quartz**, **Realgar**, **Rhodonite**, **Scapolite**, **serpentine**, **Silver**, **Sphalerite**, **Talc**, **Tennantite**, **Tetrahedrite**, **Tourmaline**, **Willemite** and **Wurtzite**.

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

BRASHER IRON WORKS, area mines—Iron minerals.

CANTON, the High Falls Mine—Pyrrhotite.

DEKALB: ① area quarries—**Barite and Fluorite**; ② in old marble quarries and to S at Richville and also 5 mi. SE at former Mitchell farm in talc—**moonstone, Diopside, brown Tourmaline** (fluorescent).

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

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

FULLERVILLE IRONWORKS, area mines—Iron minerals and Pyrite.

New York

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

HAILSBORO, area limestone quarries—**Apatite**.

HAMMOND, area quarries—**Barite** and **Fluorite**.

HERMON, area mines—**Pyrite**.

MACOMB, area mines—**Barite** (gangue), **Fluorite** and **Galena**.

OSWEGATCHIE, area pegmatite mines, pits—**Muscovite** Mica.

PIERREPONT: ① area pegmatite exposures—**Tourmaline**; ② at Powers Tourmaline Diggings ½ mi. W on Hwy. 68 (fee); ③ at West Pierrepont—**Apatite**, black **Tourmaline**.

PYRITES, area mines—**Pyrite**.

RICHVILLE: ① area of the Reese Farm, in pegmatites—**Pyroxene**, **Tourmaline** (white **Dravite**) and **Tremolite**; ② N 5 mi. and 3 mi. NE, various area outcrops of pegmatites—**Achroite**, **Diopside**, **Dravite**.

ROSSIE, area mines—**Barite** (gangue) and **Galena**.

SOMERVILLE, N 2 mi., as good crystals—**Phlogopite** Mica.

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

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

SULLIVAN COUNTY

SUMMITVILLE, area mines—**Sphalerite**.

SULLIVAN & ULSTER COUNTIES

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

ULSTER COUNTY

ELLENVILLE, area mines—**Sphalerite**.

NAPANOCH, area mines—**Siderite**.

WARREN COUNTY

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

GRAPHITE, area mines—**Graphite**.

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

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

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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, Spkene, Torbernite, Tourmaline** (green, black), and **Uranophane**; ② SE ¾ mi., the Kinkel Quarry: (a) this quarry; (b) ½ mi. W, the Baylis Quarry; (c) 1½ mi. SE, along the Mianus R. in North Castle, the Hobby Quarry—golden **Beryl, Citrine, Quartz** crystals (rose with asterism, smoky); ③ Hwy. 22 S, turn off on rd. to Greenwich, Ct., take first dirt rd. N and follow around old quarry to dump and mill ruins—asteriated **Rose Quartz**.

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

PLEASANTVILLE, area mines—**Muscovite Mica**.

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

North Carolina

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.



North Carolina County Map

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

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backed up against the Great Smoky Mts. Here, in Yancey Co., Mt. Mitchell, at 6,684' is the highest peak in America east of the South Dakota Black Hills.

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

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

ALAMANCE COUNTY

AREA: ① general countywide surfaces, as float—**serpentine**; ② area mines: (a) Dixon's Mine (on both sides of the Haw R.), placers; (b) the Holt Mine; (c) the Anthony Mine; (d) Newlin's Mine—**Gold**; ③ Buck Hill, area, massive and opaque—**Quartz**.

BURLINGTON: ① area fields, streams, cuts, etc.—**Quartz** crystals, red gemmy **quartzite**, **serpentine**; ② the Superior Stone Quarry—**Copper** and **Iron** minerals; ③ on a farm ½ mi. from quarry, loose in soil—**Limonite** (pseudomorph after Siderite), **Quartz** crystals.

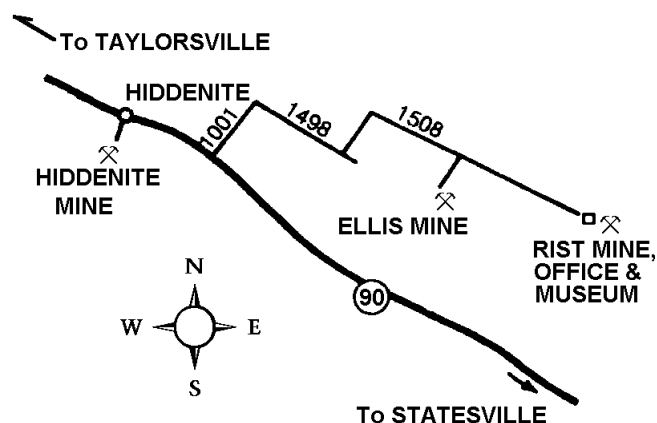
ALEXANDER COUNTY

AREA, Poplar Springs, area—**Rutile** crystals (geniculate, acicular in Limonite and Quartz), **Spodumene**.

ELLENDALE, All Healing Springs (W part of Co. N of Rte. 90): ① near Lambert Cr., pegmatite—**Beryl** (golden, green, yellow); ② near Little R. Church, pegmatite—**Beryl** (pale green, yellow).

North Carolina

HIDDENITE: ① area: (a) in loose soils surrounding town—**Emeralds**; (b) in the Mertie Pegmatite—**Quartz** crystals (champagne color, clear, smoky, amber); (c) many are old mines and dumps—**Aquamarine**, **Beryl**, **Quartz** and **Rutile** crystals; (d) the old Ellis Mine (½ mi. N of the old Hiddenite School, near a creek)—**Emeralds**, blue **Beryl**, **Rose Quartz**, **Rutile**; (e) just S of town, in rd. cuts, massive—**Smoky Quartz**; (f) The Rist Mine and Museum, take Hwy. 1001 N from



Hwy. 90, then right on Hwy. 1498 then left on Hwy. 1508 and follow signs to mine on old American Gems, Inc. digging (pay fee at office)—**Emerald** (crystals and in matrix), **Quartz**, **Hiddenite**, etc.; ② E ¼ mi., old mine—**Aquamarine**, **Calcite**, **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**; ⑩ NE 1.2 mi., the old Revis Farm—**Quartz** (rose, rutilated); ⑪ NE 2 mi. on rd. to Smith's Store, as area float, and at the lackey farm on the same rd.—rutilated **Quartz** crystals; ⑫ N 3.2 mi., pegmatite dikes along the south Yadkin R.—**Quartz** (smoky, rutilated).

STONY POINT: ① area—**Chlorite**, **Goethite**, **Monazite** (fine crystals), **Quartz** crystals (rutilated and with **Byssolite** inclusions), **Spodumene** (fine transparent green crystals); ② the Hiddenite Mine: (a) mine dumps—**Emeralds**, **Smoky Quartz** crystals, **Rutile** crystals, black **Tourmaline**; (b) just S of the mine, pegmatite outcrop—rutilated **Quartz** crystals (with inclusions of **Goethite**, **Diorite**, **Tourmaline**, **Byssolite**).

TAYLORSVILLE: ① area: (a) mine dumps—**Beryl**, **Columbite**, **Quartz** crystals, (rose, smoky), **Rutile** crystals, **Scorodite**, **Tourmaline**; (b) N several mi., in the Brushy Mts. (on the Wilkes Co. line), area mines—**asbestos**, **Chalcopyrite**, **Graphite**, tabular **Quartz** crystals; ② SE, at headwaters of the South Yadkin R. (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.

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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**.

North Carolina

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**.

EVERY COUNTY

CRANBERRY: ① area RR cut banks, and ② SW 1 mi. on dumps of the Cranberry Iron Mine—gem **Epidote**, **Garnets**, **Hematite**, gem **Kyanite**, **Unakite**. (see Mitchell Co. mine location map)

ELK PARK, ½ mi. up Roaring Cr. From hwy., the Bill Burluson farm, (fee) —gem **moonstone**.

PLUMTREE: ① area pits, rd. cuts, gravels—gem **Feldspar** crystals, **Melanite** garnets; ② NE 0.8 mi., the Plumtree Mine—**moonstone**, **Oligoclase** crystals; ③ NE 1 mi. and about ½ mi. off US 19E, the Meadows Mine—**moonstone**, **Oligoclase** crystals; ④ N, on Lick Log Cr., the old Elk Mine—**Garnets**; ⑤ 2 mi. E at dumps of Elk Mica Mine and Slippery Elm mine on Plumtree Cr.—**Garnets**; ⑥ SE 2 mi., the Johnson Mine—**Garnets**.

SPEAR, W 2½ mi. and just off US 19E, the Birch Mine—**Epidote**, soda **Feldspar** crystals.

BUNCOMBE COUNTY

AREA: ① Cane Cr., in gravels—**Calcite**, **Gold**, **Hematite**, **Limonite**; ② Ivy R., area—**Chrysolite**, **Genthite**, **hornstone**, **Talc**, **Tremolite**, **asbestos**; ③ Reams Cr., as large crystals—**Garnets**; ④ Pisgah Mt., area—**Chrysoprase**.



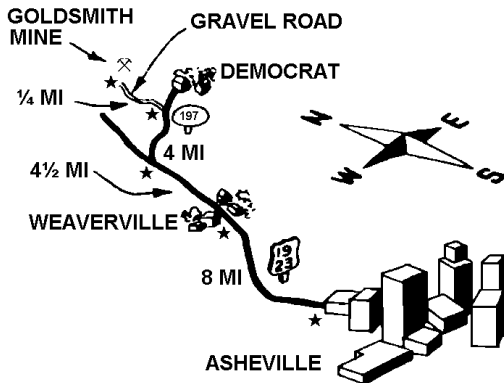
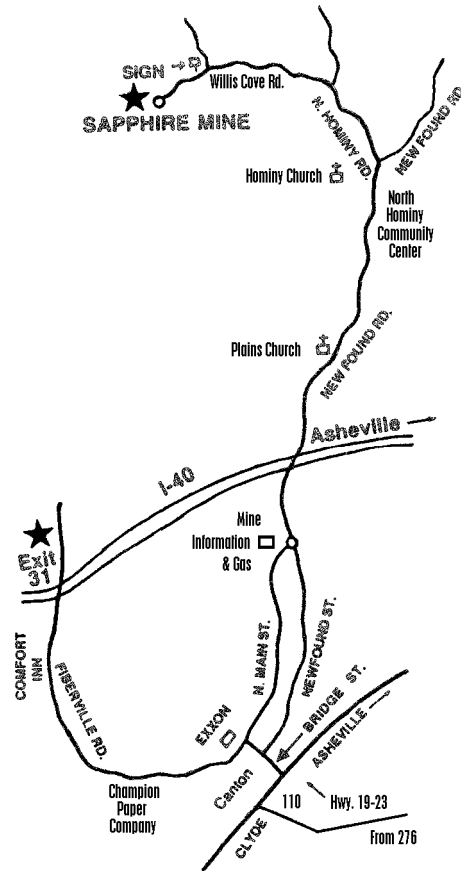
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ASHEVILLE, E and S along the Blue Ridge Parkway: ① Potato Gap; ② NE of the Craggy Gardens picnic area—**Almandite** garnets; ③ Balsam Gap, ½ mi. N of the Parkway, the Balsam Gap Mine—**Albite**, **Allanite**, green **Beryl**, **Columbite**, **Corundum**, black **Garnet**, **Margarodite**, **Biotite** and **Muscovite** mica, **Sapphires** (opaque, muted).

BALSAM GAP, S on Hwy. 276 to Balsam Gap, the 1½ mi. SE, also at Lookout Mt.—**Kyanite**.

BLACK MT.: ① Black Mt. Sta., mine near the Blue Ridge Parkway—**Aquamarine**, gem **Kyanite**; ② just N (and 1.4 mi. SE of Balsam Gap); ③ Lookout Mt., area—**Kyanite** crystals; ④ NE 2 mi., the J.C. Dude Ranch—**Corundum**, **Sapphires**.

CANTON, AT Pressley Corundum Mine, take Main St. to Newfound St., turn left across I-40, left again at first rd. past church, and left again on first gravel rd. Pay fee at second house on left, mine is at end of next rd. on left (see map)—**Corundum**.



DEMOCRAT (N central part of Co.): ① area mines—**Nickel** minerals; ② W on Rte. 197 for ½ mi., turn N 0.2 mi. on secondary rd., the Goldsmith Mine (see map next page)—**chalcedony**, **Feldspar** crystals, gem **Garnets**, **moonstone**, **Olivine** crystals, **Vermiculite**.

SWANNANOVA GAP: ① area pegmatite outcrops—**Corundum** (in **Kyanite**), **Damourite**; ② S, at Ridgcrest—gem **Corundum**; ③ SW 2 mi., old mine—**Limonite**.

BURKE COUNTY

AREA: ① in the Gold placers of the Co. (many) also occur—**Anatase**, **Brookite**, **Chromite**, **Corundum**, **Epidote**, **Fibrolite**, **Hematite**, **Limonite**, **Magnetite**, **Menaccanite**, **Monazite**, **Palladium**, **Pyrope** garnet, **Rutile** crystals, **Tourmaline** (black, green), **Wolframite**, **Xenotime**, **Zircon**; ② SW corner of Co., near Bee Bridge: (a) Brindleton Cr., numerous area mines and prospect; (b) gravels of Hall and Silver creek—**Corundum**, **Diamonds**, **Pyrope** garnets, **Rutile** crystals, **Tourmaline**; ③ Brown Mt., mine—**Albite**, **Fluorite**, **Gold**, some **Platinum**; ④ Linville Mt., mines—**Actinolite**, **Itacolumite**, **Graphite**, **Menaccanite**, **Pyrophyllite**; ⑤ High Peak, N 0.3 mi., area—**Garnets**; ⑥ Scott's Hill, area mines—**Cerargyrite**, **Gold**, **Psilomelane**, **Pyrite**, native **Silver**, **Zircon**; ⑦ South Mt., area mines—**Garnets**, **Graphite**, **Quartz** crystals; ⑧ Sugar

North Carolina

Mt., area mines—**asbestos, Beryl, Gold, Magnetite, Quartz** (doubly terminated), **Rutile**;
⑨ Tremont Mt., area mines—**chrysoprase**.

BRIDGEWATER, area mines—**Garnet, Gold, Manganese** minerals.

BRINDLE TOWN, area mines—**Actinolite, Anatase, asbestos, Beryl, Brookite, Chromite, Columbite, Corundum, Epidote, Fergusonite, Fibrolite, Gold, Graphite, Hematite, Kyanite, Limonite, Magnetite, Menaccanite, Monazite, Montanite, Pyrope garnet, Rutile, Samarskite, Smoky Quartz, Talc, Tellurium, Tetradymite, Tourmaline, Tremolite, Xenotime, Zircon**.

BURKE CHAPEL (SE part of Co.): ① S 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; (b) N 0.3 mi., in mica schist outcrop—**Garnets**.

GLEN ALPINE, W, in pegmatite dike exposure—**pegmatite gems**.

MORGANTON: ① area: (a) Burkmont Mt., area pegmatites—gem **Beryl**; (b) Buzzard Roost Knob, and (c) Walker's Knob—gem **Beryl**; (d) South Mts., area pegmatites and Mica mines—**Aquamarine, Beryl, Feldspar** and **Quartz** crystals; ② E 4 mi., and 1 mi. S of US 70m the Grill prospect—**Quartz** crystals; ③ S 4 to 6 mi., area mines—**Actinolite, Chlorite, Chrysolite, Breunnerite, Garnet, Hematite, Magnetite, serpentine, Tremolite** asbestos; ④ S 8 mi., and ½ mi. E of Walker, the Walker prospect—**Aquamarine, Beryl** (golden, green); ⑤ SE 8 mi., area gravels along Laurel Cr.—**Pyrope** garnets; ⑥ SW 9 mi., pegmatite outcrops—**Aquamarine, Beryl**; ⑦ N 4 mi., an old mine—**Corundum** (altered into **Damourite**), **Galena, Quartz** crystals; ⑧ N 13 mi., on Kingy Branch (tributary of Upper Cr.), the Brown Mt. Mine, in quartz veins—**Gold**; ⑨ 5 mi. S on Hwy. 18 to Tweedy house on E side of rd., pay fee and collect—**Pyrope** garnets.

MORGANTON SPRINGS, area mines—**Titanite**.

RAMSEY, NE 1.6 mi., at Shoup's Ford, many old area mines and prospects—**Corundum, Beryl, Diamond, Garnet, gem Kyanite, Sillimanite, Tourmaline**.

BURKE, McDOWELL & RUTHERFORD COUNTIES

AREA, the Blue Ridge region in which the South Mountain Belt, comprising the South Mt. Range, forms one of the most prominent eastern outliers of the Appalachian Mt. system, constitutes the most important **Gold** bearing belt in NC. The auriferous region embraces from 250 to 300 sq. mi., and panning for **Gold** can be successfully done in practically all streams.

CABARRUS COUNTY

AREA: (with overlap into S Rowan Co.): ① very many old mines, going back to pre-Civil War times (on regional topographic maps) —**Azurite, Gold, Malachite, Quartz** crystals, **Scheelite, Sphalerite**, etc.; ② specifically: (a) Cosby's Mine—**Cuproscheelite, Siderite, Stilpnomelane, Wolframite**; (b) Cullin's Mine—**Azurite, Cuprite** (cubes), **Malachite, Scheelite, Tetradymite**; (c) Flowe's Mine—**Barite, Scheelite, Tungstate** of lime (rhombohedral crystals), **Wolframite**; (d) McMakin's Mine—**Argentite, Barite, Galena, Goslarite, Magnetite, Proustite, Pyromorphite, Pyrolusite, Rhodochrosite**, native **Silver, Sphalerite, Tetrahedrite** (var. Freibergite); (e) Union Copper Mine—**Copper** minerals, native **Copper**.

CONCORD: ① area: (a) mines—**agate, Bornite, Chalcopyrite, Gold, Hyalite** opal, **Goethite** (acicular crystals in Quartz), **Malachite, Magnetite, Quartz** crystals (rose, rutilated), **Tourmaline**; (b) regional fields and stream gravels between town and Harrisburg—**agate, carnelian, chalcedony**, common **opal**; ② SE, the Firness Mine—**Barite, Epidote, Malachite, Scheelite**; ③ SE 7 mi.: (a) the Phoenix Mine—**Gold**;

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(b) S 1 mi., the Tucker (California) Mine, and (c) nearby other mines and prospects—**Gold**; ④ SE 10 mi., the Rocky River Mine—**Chalcopyrite, Galena, Gold, Pyrite, Sphalerite**; ⑤ SE 11 mi., the Allen Furr Mine (23 mi. E of Charlotte)—**Gold, Pyrite, Sphalerite**; ⑥ S 13 mi., the Pioneer Mills group of mines (not worked since the Civil War)—**Barnhardtite, Chalcocite, Chalcopyrite**, some **Gold, Molybdenite, Molybdite**; ⑦ SE 12 mi., the Nugget (Biggers) Mine—coarse **Gold, Galena**.

Faggart: ① E 1½ mi., the Barnhardt Mine—**Gold**; ② NE 3 mi., the Faggart Mine—**Gold**.

GEORGEVILLE: ① NE 1 mi., the Buffalo Mine—auriferous **Pyrite**; ② SE 1½ mi., the Reed Mine—**Gold**; ③ N 2½ mi. the Crayton Mine—**Gold** (minute grains in **Quartz**), **Pyrite**.

MOUNT PLEASANT: ① SW 5 mi., the Harkey Mine, veins in diorite—**Chalcopyrite, Gold, Marcasite, Pyrite**; ② SW 8 mi., the Snyder Mine—**Gold**.

TUCKER, N 3 mi., the Quaker City Mine—**Gold**.

CALDWELL COUNTY

AREA: ① S part of Co., a broad band of Mica schist runs NE to SW in all regional outcrops—**Sillimanite** (best in nodular form); ② Davis Mt., W slope near the river, the Baker Mine—**Anglesite, Chrysotile** asbestos, **Cerussite, Galena, Marmolite, Pyromorphite, serpentine**; ③ Grandmother's Mt., area placers—**Gold, Pyrite, Quartz**.

COLLETTSVILLE: ① N 1.7 mi., in rd. cuts near Rte. 90—massive **Epidote, Pyrite** cubes; ② S, the Hercules Mine (12 mi. N of Morganton in Burke Co.)—**Gold**.

DUDLEY SHOALS: ① SW ½ mi., the Teague Farm (via Cedar Valley rd. W 1 mi., turn S for ½ mi., on country rd.)—**Sillimanite** nodules; ② N 3 mi., the Travis prospect—**Quartz** crystals.

HARTLAND, NW 1½ mi., adjoining mines (Miller, Scott Hill)—**Gold**.

HARTWELL, pegmatite exposures inside town limits—**Beryl, Garnets**.

LENOIR: ① SE 3 mi., on Hibretton Mt. (4½ mi. W of US 321), area—gemmy **Feldspar**; ② NW 4 mi., on NE slope of Bee Mt., the Bee Mt. Mine, in garnetiferous Mica gneiss with pegmatite intrusions—**Gold**; ③ E 7½ mi. on low ridge 1.3 mi. N of Rte. 90 in the Oak Hill dist.: (a) area old Mica mines—**Garnets, Sillimanite**, massive **Quartz**; (b) 2 mi. E of Oak Hill Sta. On Rte. 90, the land farm—**Quartz** crystals; ④ E 9 mi. (2 mi. N of Rte. 90), the Reid prospect—**Feldspar** and **Quartz** crystals, etc.

YADKIN VALLEY, area 2 mi. NW of Rte. 268 and 5 mi. E of US 321, the Broyhill Mica deposit—**Beryl, Garnets**.

CASWELL COUNTY

AREA, the Carolina Igneous Belt (comprising Caswell Co. and parts of Person, Alamance, Guilford, Randolph, Davidson, Davies, Rowan, Cabarrus and Mecklenburg counties, and the E fringes of Lincoln and Gaston counties), the second most important Gold bearing section of NC, varying from 15 to 30 mi. wide, very many old mines—**Gold**.

BLANCH, area old Mica mines—**Allanite, Mica**.

LEASBURG, W 3 mi., area prospects—**Chlorite, Epidote, Tourmaline** (fibrous).

MILTON: ① area old Mica mines—**Allanite, Mica**; ② SW 3¾ mi., the Slaughter prospect—**Allanite**.

SEMORA, area old Mica mines—**Allanite, Mica**.

YARBORO, area mine dumps—**Albite, Garnets, Quartz** crystals.

North Carolina

CATAWBA COUNTY

AREA: ① extreme SW corner of Co.: (a) E of Rte. 18 and about 1 mi. E of Burke Co. line, between two tributaries of Jacob Cr., the Bessie Hudson Mine—**Almandite** garnets, gem **Beryl**; (b) the Tallent prospect (5 mi. NE of Toluca in Lincoln Co.)—**Quartz** crystals, Sillimanite; ② Hooper's Quarry—**Calcite, Gold, Graphite, Pyrite**.

CATAWBA, 4½ mi. slightly S of E, the Shuford Mine (and Quarry) on the Southern RR, in numerous auriferous Quartz seams—**Gold**, with **Calcite, Magnetite, Rose Quartz**.

CONOVER: ① area N and W, old Mica mines: (a) 1 mi. from town, the Bowman Mine (extending 7 mi. to the Hefner Mine)—**Apatite, Beryl, Feldspar** crystals, **Garnets, Mica, Staurolites**; (b) 2½ mi. N of Wray's Gin on Rte. 10 and 2.6 mi. NE of Co. line, the Abernathy Water Mine—**Quartz** crystals with inclusions; ② NW 4½ mi., the Drum Mine—**Apatite**, yellow **Beryl, Garnets, Mica**; ③ N 7 mi. on Rte. 16, turn E on dirt rd. for 0.9 mi., area on E side—**Corundum**.

DRUMS CROSSROADS, SE 2.3 mi., exposure—**Steatite**.

HICKORY: ① area mines—**Amethyst, Chalcopyrite, Garnets, Graphite, Hematite, Limonite, Magnetite, Muscovite, Pyrite, Pyrrhotite, Pyrolusite, Quartz** crystals; ② NE 5 mi., near the Catawba R. dam, the Sigmon Mine—**Apatite** (green crystals).

MAIDEN: ① many area mines and prospect—**Gold**; ② E 6 air mi. (or Rte. 16 E for 7 mi., then S for ¾ mi. on Co. rd.), pegmatite dike—pegmatite **minerals**.

NEWTON: ① many area mines and prospects—**Gold**; ② E 2 mi. (and N of Rte. 10), at McLin Cr., deposit—**Steatite**.

SOUTH CREEK, area 1 mi. NE of Rte. 16—**Steatite**.

CHATHAM COUNTY

AREA, Battle's Dam, area mines—**Garnets, Hematite, Manganese** minerals (such as psilomelane), **Rose Quartz**.

BENNETT: ① area old Copper mines and prospects—**chalcedony, jasper, Rose Quartz** along with **Copper** minerals; ② SE 4½ mi.: (a) the Phillips prospect (via Rte. 22 for 2.6 mi. SE, turn E 2 mi. to crossrds., prospect on the N); and (b) the adjoining Bear Creek prospect—**Azurite, Bornite, Calcite, Chalcopyrite, Cerussite, Chrysocolla, Cuprite, Galena, Pseudomalachite, Malachite, Pyrite**.

PITTSBORO, N 1½ mi. on Rte. 87, in area rd. cuts—**Limonite** (pseudomorphs after Pyrite).

SILK HOPE, NW to Co. line area (3.3 mi. SE of Snow Camp in Alamance Co.), an old **Pyrophyllite** mine—gemmy **chert, Quartz** crystals (with Pyrite inclusions).

CHEROKEE COUNTY

AREA: ① Hanging Dog Cr., area gravels—**Staurolites, Tourmaline**; ② in stream gravels where Peachtree Rd. crosses Valley R.—**Chloritoid** (dark green mica), **Ottrelite**, metamorphic minerals; ③ Little Snowbird Mts.: (a) area at headwaters of Vengeance Cr.—**Calcite, Garnet, Quartz** crystals, **Staurolites**; (b) area of Vengeance Cr. to Valletown, a distance of 12 to 15 mi. along the lower slope of the mts., many diggings in the drift—**Gold, Staurolites**; ④ very many countywide exposures of schists in the mountain regions—metamorphic gems and minerals, **Chloritoid, Ottrelite**.

ANDREWS, MARBLE, area 2 mi. from Palmer Museum, on the Bettis Bros. farm—**Staurolites**.

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MARBLE: ① area cr. beds, dike exposures, gravel pits—**Sillimanite** (cat's eye), **Staurolites**; ② SE 1 mi.: (a) Valley R. gravels—placer **Gold**; (b) between Parson's and Brunt branches—**Almandite** garnets; ③ N 1.3 mi., in Hyatt Cr., Fishermare Branch and Allmon Cr. —**Almandite** garnets, **Staurolites**; ④ NW, in the Snowbird Mts., the Parker Mine—**Garnets, Gold, Staurolites**.

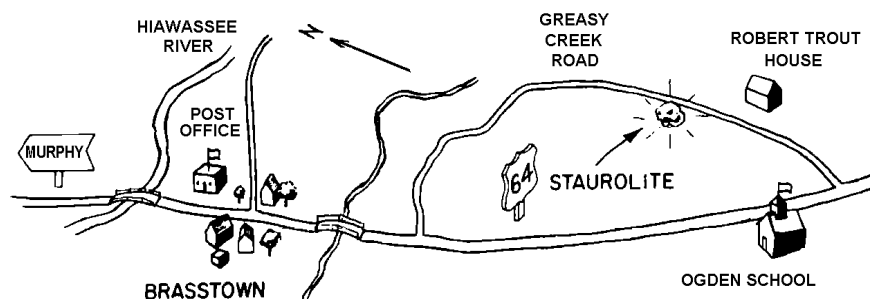
MURPHY: ① area mines—**Cerussite, Dravite** (brown tourmaline), **Galena, Gold, Lead, Pyrolusite, Sillimanite, Silver, Talc, Tremolite** asbestos; ② the No. 6 Mine—**Calcite**, argentiferous **Galena, Gold, Tremolite** asbestos; ③ N 1½ mi., the Hitchcock Mine—**Dravite, Sillimanite, Steatite, Tremolite**; ④ SW ½ mi., area along US 64—**Limonite** cubes; ⑤ SW 4.2 mi., the Metals and Minerals Mine—**Dravite, Sillimanite, Steatite, Tremolite**; ⑥ at Voiles Cabins off Rte. 290 on Haiwasee Dam rd.—**Smoky Quartz**.

UNAKA: ① area gravels, pits, etc.—**Staurolites**; ② E ½ mi. on rd. toward Murphy, gravels of Beaverdam Cr.—**agate, Epidote**, pink **Feldspar**, placer **Gold, jasper, petrified wood, Smoky Quartz** crystals, **Staurolites**.

CLAY COUNTY

AREA: ① East central part of Co. N of US 64, Buck Cr.: (a) area mines in peridotite-dunite—pink **Corundum, Smaragdite** (green amphibole), **Anorthite, Olivine** crystals, **Spinel, Zoisite**; (b) the Cullakane Mine (6 mi. N of the GA state line and 20 mi. SW of Franklin in Macon Co., via US 64) —**Bronzite, Corundum, opal, Peridot**; (c) the Maney Cut—pink **Corundum, Smaragdite**; (d) S side of US 64, area boulders—**Unakite**; (e) the Buck Creek Dude Ranch, SW 0.3 mi., the Herbert Mine (on Little Buck Cr.) —**Corundum**; (f) the Buck Creek Campground, area—**serpentine**; ② the Cat Eye Cut (600 ft. W of Chestnut Knob) —cat's eye **Corundum** (asteriated); ③ Chestnut Knob, area—**Corundum** (white star); ④ Park Gap (near Chunky Gal Mt.): (a) area—**Garnets**; (b) on NE slope of the mt., area—**Staurolites**; ⑤ Red Corundum Knob, area—**Actinolite**, pink **Corundum**, gem **Kyanite, Olivine** crystals, **Ruby, serpentine**.

BRASSTOWN: ① area prospects and mines—**Gold**; ② W ½ mi., on N side of US 64, area **Garnets**; ③ E 1 mi., on Tusquitee Cr. (near Hayesville), area—**Staurolites**; ④ in rd. cuts along Greasy Cr. —**Staurolites**; ⑤ in bank along gravel rd. and nearby pastures and in matrix on mountainside (see map above) —**Staurolites**; ⑥ Greasy Cr. gravels—**Almandite** garnets, **Staurolites**.



HAYESVILLE: ① Corundum Knob (½ mi. W of the Bureau of Mines Sta.), area—**Corundum** (two tones); ② E, on Penland Bald, area—**Garnets**; ③ E 12 mi., near US 64, area Amphibole exposures—**Rubies, Sapphires, Smaragdite**.

SHOOTING CREEK: ① area exposures and gravels—Hyalite opal **geodes**; ② N 1.8 mi. on US 64, near Muskrat rd., in outcrop of Mica schist—pink **Corundum**; ③ W, near

North Carolina

Spring Hollow, area—**Rutile** crystals; ④ W, at Elf: (a) area—**Corundum** (red, in nodules of green Amphibolite), **opal**, **Quartz** crystals, **Smaragdite**; (b) as float around lake Chatuge—**Corundum** (deep to gray blue, pink), **Smaragdite**; (c) area near Myers Chapel—**Corundum**.

CLEVELAND COUNTY

CASAR: ① area, NE via Rte. 10 into NE corner of Co.: (a) Carpenter's Knob, 0.3 mi. NE of rd. following E side of the hill, on W bank of a farm rd. trending NW, area—**Corundum** (black, blue gray) enclosed in **Sillimanite**; (b) 1.6 mi. W of Toluca, Lincoln Co., on SE flowing tributary of Knob Cr., the A.F. Hoyle Mine—**Apatite**, **Autunite**, **Garnet**, **Zeolite** minerals; (c) area around St. Peters Church, numerous old mines—**gem** crystals; (d) S, on mining area centered at Carpenter Grove Church—**gem** crystals; ② S, on farms reached after crossing Ward's Cr. W of town and along W fork of the Broad R.—**Quartz** crystals (rutilated); ③ N, on N side of Old Sheep Knob (just N of a dirt rd.), area mines—**Corundum**; ④ W 2 mi., area—**agate**, **Quartz** crystals (rutilated); ⑤ SW 2½ mi., the Cooke Mine—**Beryl**; ⑥ SW 3½ mi., the Elliott Mine—**Beryl**.

FALLSTON: ① E 1 mi. and N 3.8 mi., the Norman Mine—**Garnets**, **Tourmaline**; ② E 1.3 mi., on S side of the main rd., the Fallston prospect—**Smoky Quartz** crystals; ③ SE 3 mi., the Mauney Carpenter Mine—**Quartz** crystals (clear, smoky).

GROVER, N 2½ mi. on US 29E, then N on Co. rd., pegmatite—**Aquamarine**.

HOLLYBUSH, W side of Broad R., pegmatite—yellow **Beryl**.

KINGS MOUNTAIN (major mineral dist.): ① area gravels—**Diamonds**; ② the Foote Mineral Co. Mine, more than 30 gems and minerals, including—**Apatite**, **Beryl**, **Bikitaite**, **Brannockite** (fluorescent), **Calcite**, **Cassiterite**, **Childrenite**, **Eucryptite** (fluorescent), **Fairfieldite** (as good crystals), **moonstone**, **Purpurite**, **Rhodochrosite**, **Roscherite**, **Spodumene** (fluorescent), black **Tourmaline**, **Vivianite**; ③ 1 mi. NW of jct. of US 74 and US 29, the Bun Patterson Mine—**Beryl**; ④ the Mountain Mine—**Alunogen**, **Arsenopyrite**, **Galena**, **Garnet**, **Gold**, **Graphite**, **Muscovite**, **Melanterite**, **Pyrite** (abundant crystals), **Tourmaline** and **Quartz**.

LATTIMORE: ① S ½ mi., the Jones Mine—milky **Quartz** crystals; ② SE 1 mi., the Hunt Mine, abundant—**Quartz** crystals; ③ W 1½ mi., the Joe Humphries Mine—**Beryl**, **Feldspar** crystals (penetrating massive quartz), **Tourmaline**; ④ the L. Yates Brooks farm, area—**Anatase** (blue crystals), **Muscovite**; ⑤ 1 mi. from the Yates farm (inquire), area—**Anatase**, **Muscovite**.

POLKVILLE: ① NE 0.9 mi., the Getty No. 1 Mine—**Muscovite**, **Marcasite**, **Quartz** crystals, **Spar**, **Sillimanite**; ② NW ¾ mi. and just W of Duncan's Cr., dumps of the Lattimore Mine, abandoned—**Beryl**, **Quartz** crystals, black **Tourmaline**.

SHELBY: ① area mines (very many), all highly mineralized: (a) N to Union Church and Double Shoals; (b) W to Mooresboro and Lattimore—**Anatase** crystals, **Actinolite**, **Beryl**, **Emerald**, **Magnetite**, **moonstone**, **Muscovite**, **Quartz**, **Tourmaline**, etc.; (c) S along Rte. 18 all way to Blackburg, Cherokee Co., SC, in regional fields, streams, cat banks, etc.—**gem** crystals; ② S on Rtes. 18 & 150 at the forks, then W 1.8 mi. to a secondary rd., turn S ½ mi.: (a) area along the Broad R., in fields on both sides of rd., several localities—**Quartz** crystals; (b) Charon Church crossrds., S 1 mi., area—**Quartz** crystals; (c) ¼ mi. due N of the Stice Dam, area—**Corundum** (bronze, gray), **Quartz** crystals; (d) 1.3 mi. due E of Earl, on tributary of Buffalo Cr., area—**Aquamarine**, **Garnet**; (e) 1½ mi. E of the Stice Dam, the Turner Mine—**Aquamarine**; (f) 1 mi. NE of the dam, the Old Plantation Mine—**gem Beryl**; ③ N, along Little Harris Cr. Near rd. to Double Shoals, numerous Mica mines: (a) 1 to 1¼ mi. SW of Union Church, mines (especially the Spangler Mine)—**Garnets**, **Quartz** with green mica inclusions; (b) 1.1 mi. S of the church, the Weathers Mine—abundant **Garnets**; (c) 2½ mi. SE of Union Church, area—**Garnets**, **Mica**; (d) on N

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side of Cr. By Double Shoals, the Bowen Mine—**Garnets, Mica**; (e) ½ mi. from the Bowen Mine, at edge of woods S of Little Harris Cr., the Harris Mine—**Feldspar** crystals, **Garnets, Smoky Quartz** crystals; (f) 1½ mi. SW of Double Shoals on S side of dirt rd., the Mary Gold Mine—**Sillimanite** (gem); ④ NW 2.7 mi., the Niagara Mine; ⑤ NW 3.3 mi., the McGinnis Mine; and ⑥ NW 4¾ mi., the Martin Mine—crystals of **Feldspar, Pyrite, Quartz**; ⑦ S 30° W 4¾ mi., near E bank of first Broad R. and ½ mi. NE of the dam, area—**Aquamarine, Beryl, Emeralds, Mica, Smoky Quartz** crystals, **Tourmaline**; ⑧ SW 4¾ mi., the Allen property (and Turner Mine), area 6' thick dike—**Aquamarine, Emeralds, moonstone**, rutilated **Quartz** crystals; ⑨ W 6.2 mi., near Cr. ¼ mi. S of US 74, the McSwain Mine—**Garnets, Sillimanite**; ⑩ SW 6.2 mi., the Mill Race Mine, in mica schist—**Garnets**.

CUMBERLAND COUNTY

AREA: ① Countywide stream gravels and alluvial deposits, gravel pits, excavations, rd. cuts, etc.—**agate, chalcedony, chert, jasper**, common **opal, agatized wood**; ② Cape Fear R. and tributaries, gravel beds—**agate, chalcedony, chert, jasper**, common **opal, agatized wood**.

DAVIDSON COUNTY

AREA, very many regional mines—**Chalcopyrite, Gold**, arsenic **Pyrite, Tetradymite**.

CID: ① area mines—**Chalcopyrite, Gold**, arsenic **Pyrite, Tetradymite**; ② W, the Emmons (Davidson) Mine (12 mi. SE of Lexington) —**Calcite, Chlorite, Gold, Siderite, Silver**.

LEXINGTON: ① area S and E, noted old Gold-Silver belt, many abandoned mines—**Gold, Silver, Marcasite, Pyrite**, etc.; ② E 6 mi., the Conrad Hill Mine—**Chalcopyrite, Limonite, Malachite, Silver**, specular **Hematite**; ③ W 10 mi. and 1 mi. W of Oaks Ferry on Yadkin R. on Hairston farm—**orbicular granite**.

LINWOOD, NW 5 mi. and 1 mi. S. of Tyro, area—**Amethyst**.

SILVER HILL (5 mi. SE of Lexington, an old abandoned mining town): ① area mines—**Anglesite, Argentite, Calamine, Calcite, Cerussite** (fine crystals, massive), **Chalcanthite, Chalcocite, Chalcopyrite, Cuprite**, argentiferous **Galena, Goslarite, Malachite, Melaconite, Pyromorphite, Silver, Sphalerite, Stolzite, Wavellite** (green, brown, black, colorless, yellow), **Zoisite**; ② N ¼ mi., old mine—**Argentite, Feldspar** crystals, **Malachite, Pyromorphite, Scheelite, Wavellite**; ③ S 1 mi., on W side of Flat Swamp Cr. Valley, NW of the Silver Valley crossrds., the Silver Valley Mine—**Chalcopyrite, Galena, Gold, Pyrite, Silver, Sphalerite**; ④ W 5 mi., David Beck's Mine—**Chalcopyrite, Gold**, arsenic **Pyrite, Tetradymite**.

THOMASVILLE: ① SE 1½ mi., the Loftin Mine—**Gold**; ② SE 2 mi., the Lalor (Allen) Mine: (a) on old dumps—**Copper Pyrites, Gold, Limonite, Hematite**; (b) ½ mi. W of the Loftin Mine, the Eureka Mine—**Gold**.

DAVIE COUNTY

AREA, mines, including Butler, County Line, Isaac, Allen and several old mines on Callahan Mt.—**Gold**.

FARMINGTON, E 2 mi. to Rte. 801, turn N for 1½ mi., area pegmatite exposures—**Autunite, Columbite**.

OAKS FERRY, W 1 mi., near the Yadkin R. on the Hairston farm—**orbicular granite**.

North Carolina

DURHAM COUNTY

BETHESDA, W of US 70, area fields, cuts, gravels, etc. as float—**silicified wood**.

DURHAM: ① W, near jct. of US 75 and Rte. 98, area float—**petrified wood**; ② inquire in town rock shops for directions to a major quarry about 15 mi. distance—**Calcite**, **Biotite**, **Kobellite** (steel gray var. of Jamesonite), **Siderite** (gemmy olive green crystals).

WEAVER, gravels of the Eno R.—**agatized wood**.

FORSYTH COUNTY

KERNERSVILLE, area fields, rd. cuts, gravels, etc.—**Chrysolite**, **Bronzite**, **Tourmaline**.

WINSTON-SALEM: ① area quarries, pits, deposits, etc.; and ② S 4 mi., mines—**Halloysite**, **Hematite**, **Magnetite**, Manganese **Garnet**.

FRANKLIN COUNTY

AREA: ① N part of Co., many pegmatite outcrops—**Beryl**, **Mica**; ② the Portis Mine—**Diamond**, **Gold**.

CENTERVILLE: ① area: (a) the Taylor place on Rte. 561 W of the crossrds., outcrop—royal purple **Amethyst**; (b) old mine dumps near Rte. 58 on rd. to Inez—**Gold**; (c) near Sandy Cr., on S side of first rd. out of town leading NW from Rte. 561, the Van Alston prospect—**Gold**; ② NW several mi., near 58, many pegmatites—**Beryl**, **Feldspar** and **Quartz** crystals, **Tourmaline**, etc.

FRANKLINTON, W 4 mi., several pegmatite outcrops, some mined—**gem** minerals.

LOUISBURG: ① area gravels, fields, etc.—**Amethyst**; ② E 18 mi., old placers—**Gold**, **Diamonds**.

YOUNGSVILLE: ① NW 4 mi., the Mitchell Mine, and ② NW 5 mi., near rd. to Pokomoke, the Gully Mine, both in pegmatites—**gems** and **minerals**.

GASTON COUNTY

ALEXIS: ①: (a) E 1½ mi.; and (b) E 2.4 mi., in area fields as float—gem **Kyanite**, **Lazulite**, **Rutile** crystals; ② Chubb's (Clubb) Dist.: (a) many area mines—blue **Corundum**, **Dumortierite**, gem **Lazulite**, gem **Kyanite**, **Lithiophyllite**; (b) Chubb Mt. area—**Corundum** (red, blue), **Damourite**, **Gold**, Manganese **Garnet**, **Hematite**, **Magnetite**, **Margarite**, gem blue **Kyanite** crystals, **Rutile** crystals, **Talc**, **Tourmaline**; (c) at the Lowe farm on Chubb Mt. On Hwy. 27 between Lincolnton and Charlotte—**Rutile** crystals; (d) Crowder's Mt.—**Barite**, **Chalcopyrite**, **Corundum** (red, blue), **Damourite**, **emery**, argentiferous **Galena**, **Gold**, Manganese **Garnet**, **Hematite**, **Limonite**, **Magnetite**, **Margarite**, **Menaccanite**, **Monazite**, gem blue **Kyanite** crystals, **Rutile** crystals, **Pyrite**, **Talc**, **Topaz**, **Tourmaline**.

BESSEMER CITY: ① S, in the Devil's Workshop area—**Goethite**; ② E 2.3 mi., near Long Creek Church, a pegmatite dike exposure—**Apatite**, **Beryl**, **Spodumene**.

CHERRYVILLE, N of Rte. 277 and E along Little Beaverdam and Beaverdam creeks: ① at confluence, pegmatite exposure—**Cassiterite**; ② SE 3½ mi., the Big Bess Mine—gem **Apatite**, **Beryl**, **Garnet**, **Feldspar**, **Marcasite**, **Pyrite**, **Quartz** (blue), **Rutile** crystals, **Sillimanite**, **Tourmaline**, **Zircon**; ③ SE 4.3 mi., the Self Mine—**Feldspar** crystals, **Smoky Quartz**, **Zircon**; ④ SE 5 mi., on Rte. 274, the Huskins Mine—**Beryl**, **Garnet**, **Tourmaline**.

CRAMERTON, S in extreme corner of Co.: ① the Oliver Mine (12 i. SW of Charlotte, Mecklenburg Co.) on W side of the Catawba R.—**Galena**, abundant **Gold**, **Pyrite**; ② the

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McLean or Rumfeldt Mine (15 to 16 mi. SW of Charlotte); ③ the Duffie Mine (16 mi. SW of the same town); and ④ the Rhodes Mine (18 mi. SW)—**Gold**.

CROWDERS, the King's Mt. area, numerous mines—**Altaite, Bismite, Calcite, Chalcopyrite, Galena, Gold, Magnetite, Nagyagite, Pyrrhotite, Sphalerite, Tetrahedrite**.

DALLAS, NW 6 mi., the Long Creek Mine (3 veins)—**Gold**.

KING'S MT. STATION: ① S 1½ mi., the Catawba (King's Mt.) Mine, in limestone—**Gold**; ② E side of King's Mt. and 4 mi. E of the Catawba Mine, the Crowder's Mt. (Caledonia) Mine—**Gold**.

GRANDVILLE COUNTY

AREA: ① N half (with overlap into Person Co. on W), very many regional Copper and Gold mines including: Royster (Blue Wing), Holloway, Mastodon, Buckeye, Pool, Gillis, Copper World and Yancy—**Bornite, Chalcocite, native Copper, Gold, Pyrite**; ② area stream gravels—**Topaz**; ③ area mine dumps, rock exposures, etc.—**Andalusite, carnelian, Malachite**; ④ Reed's Cr. gravels—**agate, jasper, jasp-agate, Quartz** crystals; ⑤ Oak Hill, S, on Mountain Cr.—**agate, jasper**; ⑥ Long Mt., area—**agate, jasper**.

BULLOCK: ① E and SE, area exposures, abundant—**Pyrite**; ② NE 1½ mi.: (a) outcrop of metabasalt porphyry—**Clinozoisite, Epidote, Labradorite, Titanite**; (b) ½ mi. farther N—**Epidote, Hornblende, Quartz** crystals; ③ NW 6 mi. and ¾ mi. from state line, area—**Limonite, Hematite, Quartz** crystals.

BUTNER, area—**agate, Amethyst, jasper**.

CREEDMORE-GRANVILLE-OXFORD, a 15 mi. long stretch along US 15 and I-85, area both sides of highways—cryptocrystalline **quartz gemstones**.

POCOMOKE, N 2 mi., area—**Lepidolite** (with **Rubellite**).

STEM, 2 mi. distant on Bowling Mt., deposit—**Pyrophyllite**.

VIRGINIA: ① area to S, many old Copper mines—**Copper** minerals, native **Copper** and **Silver, Epidote, Hematite, Malachite, pink Feldspar, Pyrite, Quartz**; ② S 2 mi., and 1 mi. W, the Holloway Mine—**Bornite, Chalcocite, native Copper, Gold, Pyrite**; ③ the Blue Wing Church: (a) N, the Blue Wing Mine—**Azurite, Calcite, Argentite, Chlorite**, etc.; (b) across rd. from church, prospect pits—**Malachite, specular Hematite**.

WILTON, E 2 mi., a granite quarry—**Calcite, Epidote, Feldspar, Molybdenite, Quartz**.

GUILFORD COUNTY

BIGSONVILLE, area—**Quartz** crystals (green, with **Actinolite** and **asbestos** inclusions).

FRIENDSHIP: N, the Tuscarora Iron Mine—**Limonite, Hematite, Magnetite, Corundum**; ② NE, the mine on the McCarvisten farm—**Iron** minerals.

GIBSONVILLE, area—green **Quartz** with asbestos inclusions.

GREENSBORO: ① SW 5 mi., the Fisher Hill Mine; ② SE 6 mi., the Hodges Hill Mine; ③ SSW 6 mi., the Mills Hill Mine—**Chalcopyrite, Gold, Hematite, Magnetite, Menaccanite, Pseudomalachite, Pyrite, Siderite**; ④ SW 6 mi., the Twin Mine—**Gold**; ⑤ SW 8 mi., the Gardner Mine—**Chrysocolla, Gold, Malachite**; ⑥ S 9 mi., the North Carolina (Fentress) Mine, old, with Gold vein traced for 3 mi. along the outcrop—**Copper** minerals, **Gold**.

JAMESTOWN: ① NE 2 to 3 mi., the Gardner Hill Mine—**Chrysocolla, Gold, Malachite**; ② 2¼ mi., on N side of Rte. 29, the North State (McCullough) Mine—**Chalcotrichite, native Copper, Cupric Pyrites** (fine crystals), **Cuprite, Malachite, Gold, Siderite**.

North Carolina

HALIFAX COUNTY

AREA, all exposures of Quaternary gravels throughout Co.—**petrified wood**.

BRINKLEYVILLE, S, on property of the Boy Scouts of America, area—**Chalcopyrite, Molybdenite, Pyrite, Sericite**.

GLENVIEW, W 1.7 mi., old mine—**Gold**.

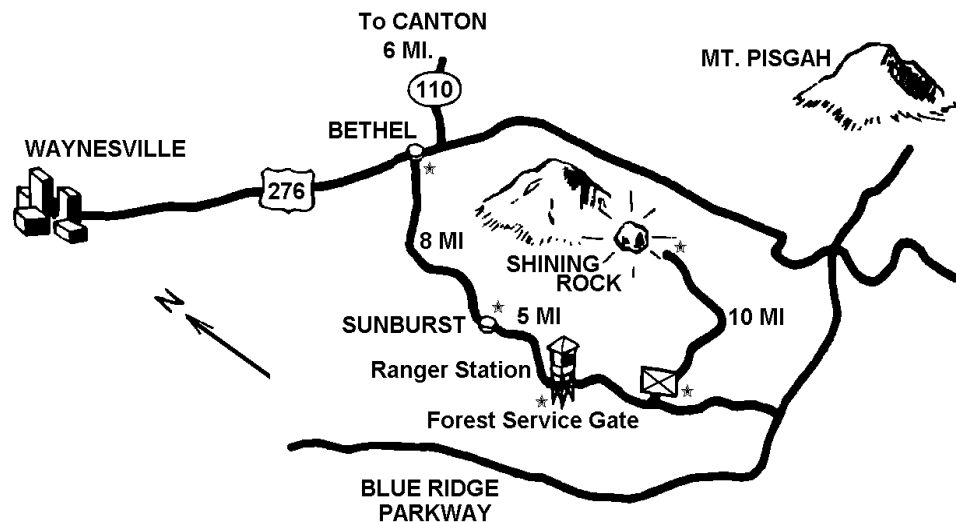
ROANOKE RAPIDS, the Gaston Ore Banks—**Limonite, Hematite, Magnetite**.

HAYWOOD COUNTY

AREA: ① several pegmatite mines in Co. are open on a fee basis; make inquiry at any rock shop—**Tourmaline** and other gems, etc.; ② Hall's Mine—**Chlorite, Chrysolite, Corundum, Talc, Tremolite**.

CANTON, NW 4 mi., the Presley Mine—**Albite, Amphibolite, Corundum** (blue, gray, altered into Damourite and Albite), **Damourite** (large crystals and scales), **Sapphire** (clear, color-zoned, opaque, star).

HAZELWOOD, S 21° E 3.9 air mi., on SW slope of Roberson Ridge between two unnamed branches of Deep Gap Cr., the Big Ridge Mine—**Ankerite, Apatite, Biotite, Garnets, Hedenbergite, Margarodite, Menaccanite, Muscovite, Pyrrhotite, Quartz** crystals and **Tourmaline**.



WAYNESVILLE: ① AREA, Newfound Gap, pegmatite—**Rubies**; ② N 2 mi., old mine—**Talc, Tremolite, asbestos**; ③ S 2 mi., on Richland Cr., old mine—**Damourite, Garnet, Limonite, Psilomelane**; ④ SE 6 mi., on the Pigeon R., the J.H. Edmondson property at Retreat—**Almandite** garnets, **Corundum**, gem **Kyanite**; ⑤ an outstanding locality for Rose Quartz is Shinning Rock ledge, E on Hwy. 276 for 7 mi. to Bethel, S through Sunburst to US Forest Ranger Sta., get permit and key to gate and drive 10 mi. to Shinning Rock—**Rose Quartz**.

HENDERSON COUNTY

BAT CAVE: N on Rte. 9: ① 1 mi., in gneissic outcrops—moss **Epidote**; ② ½ mi. farther, in rd. cut—**Unakite**.

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ETOWAH, on SE slope of Forge Mt., the Boylston Creek Mine (12 mi. W of Hendersonville)—**Gold**.

MILLS RIVER, W, along the Green R. on the S side of the Blue Ridge, area—granular **Calcite**, **Xanthitane**, **Zircon**.

TUXEDO: ① area pegmatite mines, in a zone running NE to SW for several mi. semi-parallel with the Green R.: (a) ½ mi. E of town the Freeman Mine; (b) 1.8 mi. SW of town, the Pace Mine; (c) ½ mi. E, the Jones Mine; and (d) 3 mi. SW of the Freeman Mine—**Apatite**, **Epidote**, **Garnet**, **Octahedrite**, **Sphene**, abundant **Zircon**; ② W shore of Lake Summit, at W end—**agate**.

IREDELL COUNTY

AREA, countywide scattered outcrops of **Quartz**—**Quartz** crystals, specular **Hematite**.

HARMONY-TURNERSBURG, along the South Yadkin R., area— **Beryl**, **Corundum**, **Tourmaline**, etc.

MOORESVILLE, WNW 4½ mi., area—**agate**, **Amethyst**, **Quartz** crystals.

NEW HOPE: ① area old Mica mines—**Beryl**, **Garnet**, **Mica**, **Quartz** crystals, **Tourmaline**, etc.; ② ½ mi. S of the Post office, the McClelland prospect—**Beryl**, **Quartz** crystals; ③ SW 2 mi., the Campbell prospect—**Beryl**, **Quartz** crystals.

STATESVILLE: ① area: (a) the Statesville Quarry—**Oligoclase** sunstone; (b) the Cook farm, ½ mi. W, area; (c) and 1½ mi. S, area—**agate**, **Amethyst**, **Quartz** crystals; ② area fields just N of town—**Amethyst**; ③ N on US 21 and 1.6 mi. N of the Prison Camp—**Corundum** (pale blue); ④ W, at the Acme (Collins) Mine—**Sapphires** (in stream gravels behind a drive-in theater; old mine dumps have been built over); ⑤ S 3 mi., area—**agate**, **Amethyst**, **Quartz** crystals; ⑥ W 5 mi., near old city airport, area—**Zircon** (fluorescent), ⑦ S 12½ mi., area—**agate**, **Amethyst**, **Quartz** crystals; ⑧ SW 14 mi., at Snow Creek: (a) N, on the Campbell property—**Beryl** (golden, green), **Quartz** crystals, black **Tourmaline**; (b) Fox Mt., area—**Rutile** crystals; ⑨ NW 14 mi.: (a) on farms along Rte. 115; (b) S of Rhyne's store —**Citrine**, **Quartz** crystals (smoky, clear); (c) ½ mi. N of Rhyne's store, a massive outcrop— **Rose Quartz**.

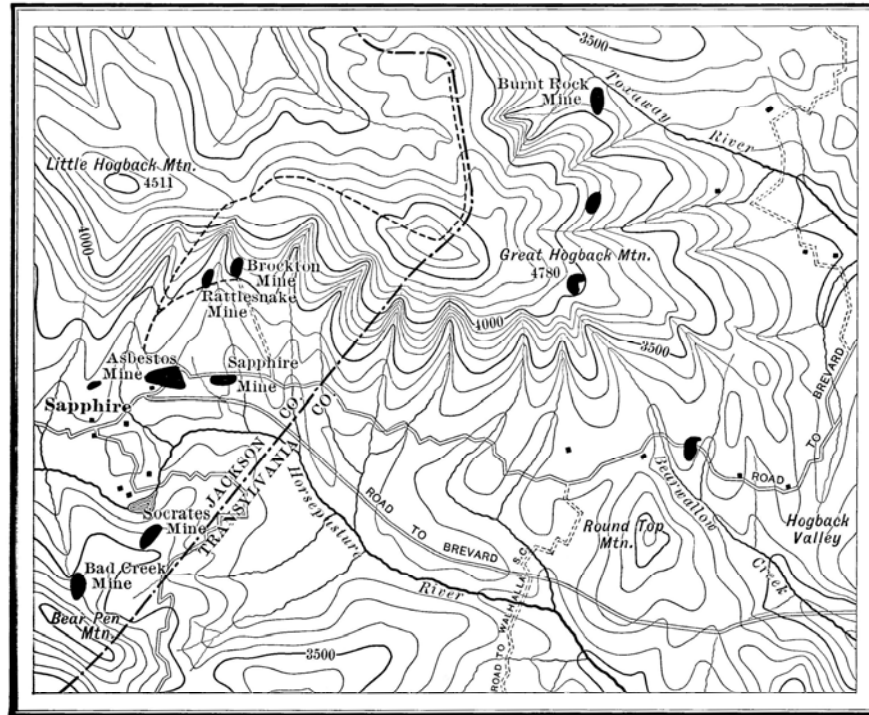
JACKSON COUNTY

AREA: ① countywide Cr. Gravels, particularly along the S slope of the Blue Ridge, near Hogback, Chimney Top Mts. and Cashiers, placers—**Gold**; regional pegmatite outcrops—**Golden Beryl**; ③ confluence of Johns Cr. With Caney Fork, a ridge 1¼ mi. SSE, outcrop—**Golden Beryl**; ④ E central border, near Pinhook Gap, the McCall Mine—**Feldspar**, **Garnets**, **Mica**, **Quartz** crystal, **Tourmaline**, **Uranium** minerals; ⑤ Hall Sta., area—**Almandite** garnets; ⑥ the Wolf Creek Mine—**Chalcocite**, **Chalcopyrite**, **Chrysocolla**, native **Copper**, **Malachite**; ⑦ 1¾ mi. NE of Whiteside Cove, the Grimshawe Mine—**Golden Beryl**; ⑧ SW of Toxaway Mt. and ¼ mi. NW of US 64, pegmatite outcrop—**Beryl**, **Aquamarine**, **Garnets**, black **Tourmaline**, etc.; ⑨ S of US 64 on Transylvania Co. line: (a) area mines, especially the Rice Mine—**Aquamarine**, **Sapphire**; (b) along S shore of Sapphire lake, the Sapphire Mining Co. Mine—**Sapphires**.

BALSAM, S 57° E 2 air mi., the Big Flint (grassy Ridge) Mine—**Biotite**, **Garnets**.

CASHIERS: ① E 4¼ mi., between Fairfield Lake and a tributary of Horse-pasture R., in peridotite exposure spanned by US 64 and extending to Little Hagback Mt. on the N—**Corundum**; ② Sheepcliff Mt., the Sheepcliff Mine—**Aquamarine**, **Golden Beryl**, **Feldspar**, **Garnets** (various colors), **Mica**, **Quartz** crystals, **radioactive minerals**; ③ Whiteside Mt., area old mines—**pegmatite gems**.

North Carolina



MAP OF THE PERIDOTITE AREAS NEAR SAPPHIRE, JACKSON COUNTY, N.C.



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 Bowers Mine—**rum Mica**.

DILLSBORO, S 23° W 7½ air mi., the Eagle Cope Mine (above Savannah Cr. And US 23, about ½ mi. W of the Cowee sawmill) —**Biotite, Garnets, Muscovite, Pyrite, Pyrrhotite**.

HOGBACK, the Hogback Mine—**Chromite, Chrysolite, Corundum, Damourite, Dudleyite, Margarite, Quartz** crystals (drusy), **Rutile** in Corundum (rare), **Tourmaline**.

MONTVALE: ① area stream gravels—**Rubies, Sapphires**; ② the Grimshawe Mine—**Aquamarine, gem Corundum**.

SAPPHIRE: ① area stream gravels along border of Transylvania Co. line; ② SSW 2 mi., the Beryl Mines (½ mi. N of summit of Sassafras Mt.); and ③ the Sapphire and Whitewater mines—**Golden Beryl, Corundum**.

WEBSTER: ① near town, an outcrop—gem **Olivine**; ② area dunite outcrops—**Bronzite** (altered Enstatite), **Websterite** (Bronzite-diopside); ③ area mines—**Actinolite, chalcedony, Chromite, Chrysolite, Corundum, Deweylite, Enstatite, Genthite, Magnesite** (crystalline, earthy), **Marmolite, Penninite, Pyrolusite**, drusy **Quartz** crystals, **serpentine, Talc, Tremolite, Wad**; ④ SE, via Rtes. 107 & 116, area deposits—**Actinolite, Bronzite, Chromite, Diopside, Garnierite, Genthite, Goethite** (botryoidal), drusy **Quartz** crystals, **serpentine, Steatite, Websterite**; ⑤ large pegmatite dike exposed in W central part of Co.—**Gems, pegmatite minerals**.

WILLETS: ① area not far E of town and Sylvania—**Rhodolite** garnets; ② SE 1 mi., on Sugarloaf Mt., via US 19A and old rd., a mine—**Garnets**.

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LINCOLN COUNTY

AREA: ① an extensive Tin-Spodumene mining belt shared with adjoining Co.: (a) regional old mines, and (b) regional stream gravels, as float—**Cassiterite** nodules (pegmatites are most exposed SE of Laboratory and E of US 321); ② Pumpkin Center, SE 1 mi., old mines dating back to the Civil and Revolutionary wars—**Goethite, Hematite, Tin** minerals.

COTTAGE HOME, are gravels—**Diamond**.

DENVER: ① S 1.3 mi., at the Forney farm—**Amethyst, Quartz** crystal; ② SW 1¼ mi. and 2 mi. NE of Iron Station, a farm—**Amethyst**.

FALLSTON: ① NE 2½ mi. and extending for some distance, series of pegmatite outcrops (some mixed) —**Gem** crystals and minerals; ② NE 3 mi., the Biggerstaff place (¼ mi. N of residence), the Deadman Mine—**Feldspar** crystals, **Garnets, Hornblende, Quartz** crystals, **Tourmaline**; ③ NE 4 mi. (on way to Flay): (a) the Brown and Carbine mines; and (b) the Foster Mines—**Beryl, Garnet, blue Quartz, green Feldspar**.

FLAY (near Fallston): ① area mines—**Apatite, Corundum, Mica, Sillimanite** (schist), black **Tourmaline**; ② S, at the Baxter Mine (off Rte. 274, almost on the Gaston Co. line) —**Smoky Quartz** crystals; ③ S 2 mi. and ½ mi. W of Rte. 274, the Eaker Mine— gem **Garnets**.

IRON STATION: ① area all way to Denver, in NE part of Co., scattered localities—gem **Amethysts**; ② NE 1.7 mi., on the Lynch farm—**Amethysts**; ③ NE 2 mi., at the Randleman (Goodsen) farm, (fee) —museum quality **Amethysts**; ④ NE 4 mi., the Grahan Mine—**Chalcopyrite, Gold**; ⑤ N on Hwy. 1314 to Hwy. 73, turn right, then right on Hwy. 1509, and right again on Hwy. 1417, pay fee and walk to digging area on Reel farm —**Amethysts**.

LINCOLNTON, near the Hope Mine—**Gold**.

MACPELAM CHURCH, E 2 mi., old mine—Manganese **Garnets, Chalcopyrite, Pyrite**.

MACOM COUNTY

AREA: ① Hanging Dog Cr., gravel beds, and ② Persimmon Cr.—**Staurolites**.

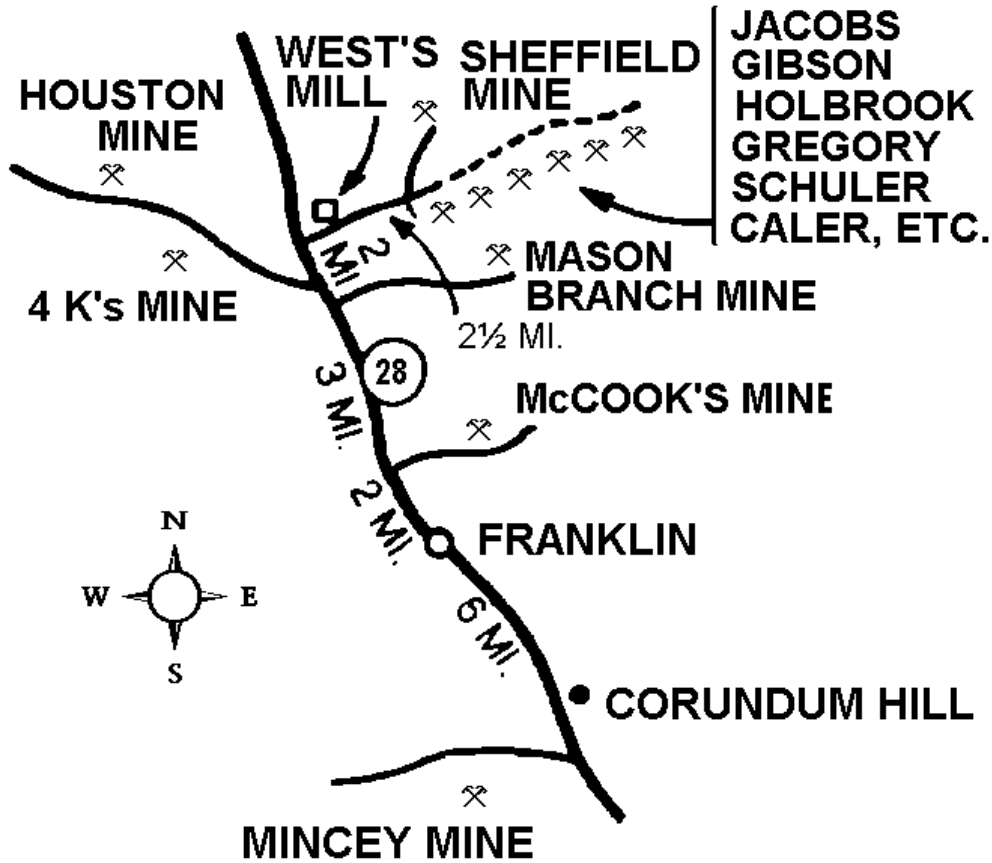
BURNINGTOWN (3 mi. N of Franklin), off Rte. 28 via Co. rd., in gravels of Burningtown Cr.—**Sapphires** (orchid, pink).

ELLIJAY (3 mi. SE of Franklin), the Mincey Mine—**Corundum** (various kinds), **Ruby, Sapphire** (bronze, blue).

FRANKLIN (Gem Capital of the World): ① area mines, prospects and diggings —**Amethyst, Bronzite, Epidote, Fibrolite, Rhodolite** garnet, **jasper, Kyanite, Menaccanite, Quartz** crystals (dendritic), **Rhodochrosite, Ruby, Rutile** crystals, **Sapphires, Sphalerite, Staurolites, Wad**; ② E 1½ mi. at Corundum Hill in dunite and serpentine—industrial **Corundum, Rubies, Sapphires** (blue, green, orchid, pink, yellow; to large size), **Bronzite, Chromite, Olivine** crystals; ③ ESE 4½ mi., on S slope of Higdon Mt. ½ mi. N of US 64, W of Crows Branch Cr. Jct. With the Cullasaja R. (part of Corundum

Hill), area outcrops (in dunite) and mines—**Actinolite, Anthophyllite, Cerolite, chalcedony, Chromite, Chrysolite, Corundum, Culsageeite, Deweylite, Diaspore** (rare), **Enstatite, Genthite, Kerrite, Maconite, Margarite, Magnetite, Hyalite opal, Penninite, Prochlorite, drusy Quartz** crystals, **Ruby, Rutile** (rare), **Sapphire, serpentine, Spinel** (crystals, granular), **Tourmaline, Talc, Tremolite, Wilcoxite**; ④ E 6½ mi., the Mincey Mine (also under Ellijay) —**Corundum** (various kinds), **Ruby, Sapphire** (bronze, blue); ⑤ S, along the Tennessee R., area—**Columbite, Damourite, Garnets, Kyanite, Staurolites**; ⑥ NW 1¼ mi. (from center of town), the Allman Cove group of Mines—**Biotite, Feldspar, Muscovite, Quartz**;

North Carolina



⑦ N 6 mi., the Cowee Valley (take Rtes. 23-141 N 3 mi. from Franklin, turn NW on Rte. 28 about 4 mi. into signposted mining dist. And up Cowee Cr. Past the Cowee Baptist Church): (a) many area mines (fee)—**Garnets, Rubies, Sapphires**, etc.; (b) confluence of Calor Fork and Cowee Cr., area gravels—**Corundum** (pink, orange, violet, white), **Corundum** nodules (in Saprolite); (c) turn E to the famed Cowee Creek Ruby Tract (of mines) along the Calor Fork of Cowee Cr., (Dale, Demko, Carter, Cowee Valley, Gibson; in creek flume diggings Holebrook, Rockhound Haven Gem, Shuler, etc.; fee charges at all mines)—**Corundum, Garnets, Rubies, Sapphires**; (d) regional mine dumps also contain **Beryl, Bronzite, Chromite, Corundum, Fibrolite, Gahnite** (zinc spinel), **Garnets, Gold, Hornblende, Ilmenite, Iolite** (colorless), **Kyanite, Monazite, Pleonaste** (black spinel), **Pyrite, Quartz** crystals, **Rubies, Rutile** crystals, **Sapphires, Staurolite** (transparent), **Tremolite** and **Zircon**; ⑧ N 5 mi. on Hwy. 28, right to head of valley to Masom Mt.—**moonstone**; ⑨ 10 mi. E at Sheep Knob Mt.—**Aquamarine**; ⑩ one of the most reliable locations for Rhodolite garnets, is a Mason Branch Mine known as the Ried Mine, Take Hwy. 28 NW from Franklin 5 mi. to Mason Branch sign pointing to mine, take rd. ¼ mi. to mine—**Rhodolite garnets, Sapphires**.

HIGHLANDS: ① in city limits, a pegmatite outcrop just N of US 64—**Beryl**; ② SW on US 64 (NW of town) and W 2 mi. to dry Falls, then take Co. rd. southerly along Turtle Pond Cr.: (a) in area gravels—**Corundum, Almandite** garnets, **Quartz** crystals, etc.; (b) an old mine in area—**Beryl** (common, golden), **Feldspar, Muscovite, Quartz** crystals, black **Tourmaline**; ③ 3 mi. out on US 64 turn onto gravel rd. ¾ mi. to Whiteside Mt., area—**Almandite** garnets; ④ SE 4½ mi., N of rd. just W of the Jackson Co. line, the Ammon

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Mine—**Amethyst**; ⑤ SW 5½ mi. on Rte. 106, to Little Scaly Mt.: (a) in area rock exposures, and (b) area mines—**asbestos**, gem **Corundum**, **Rutile** crystals, **serpentine**, **Vermiculite**; ⑥ 6 mi. out on Rte. 106, the Waggoner Mine (on Abe's Cr.) — **Amethyst**.

OTTO (9 mi. S of Franklin): ① E 0.6 mi.: (a) a mine on Tessentee Cr.— **Amethyst** (in Kaolinite weathered from pegmatite); (b) area stream gravels— **Amethyst**, **Garnets**; (c) near headwaters of Tessentee Cr., old mine— **Amethyst**, **Beryl**, **Corundum**; ② mouth of Tessentee Cr.: (a) NE 2 mi., the Connally Mine; and (b) E 4 mi., area gravels—**Amethyst**, **Quartz** crystals.

RAINBOW SPRINGS, SW 9 mi. on Hwy. 64 to bridge where Buck Cr. Crosses hwy., turn right at bridge and go 1 mi. to another bridge, park and hike up mt. To outcrop— **Pyrope** garnet, **Ruby** in **Smaragdite**.

WESTSMILL (6 mi. N of Franklin via Rte. 28), S 1.6 mi. from the Wests Mill bridge to slopes of Mason Mt.: ① area stream gravels— **Corundum** pieces, **Garnets**, **Hornblende** and **Quartz** crystals; ② the Rhodolite Mine— **Rhodolite** garnets (abundant), **Gedrite**, **Hypersthene**, **Biotite**; ③ ½ mi. S of crest of Mason Mt., a quarry— **Rhodolite** garnets, **Gedrite**, **Hypersthene**, **Kyanite**, **Biotite**, **Quartz** crystals.

MADISON COUNTY

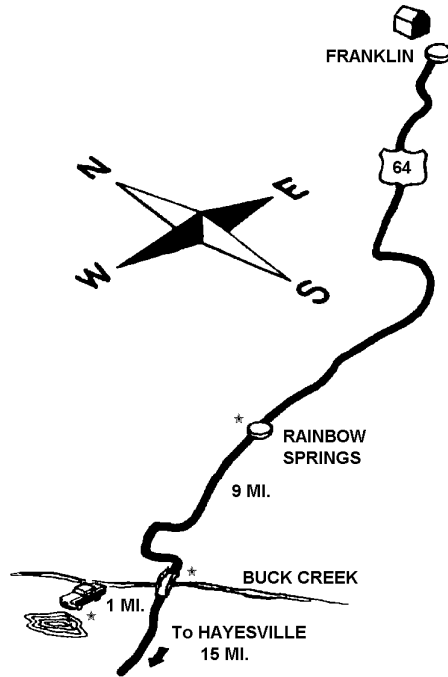
AREA: ① many rock exposures along Co. rds. and hways.—**Unakite**; ② N part of Co., many localities—**Essonite** garnet, **Vesuvianite**; ③ W part of Co., in mined deposits— **Ilmenite**, **Hematite**, **Magnetite**, **Psilomelane**, **Pyrolusite**; ④ Bear Cr., 2 mi. above mouth, area—**Calcite**, **Chlorite**, 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, outcrop—**Unakite**; (b) 1 mi. N of confluence with Spring Cr. (which empties into French Broad R.) —**Unakite**.

DEMOCRAT, N, 1.7 mi. to first E trending rd. after passing the Pleasant Gap Methodist Church, then ½ mi. to the Carter Mine (at head of Holcombe Branch) —**Beryl**, **Chromite**, **Chrysolite**, **Corundum** (pink, white), **Culsageeite**, **hornstone**, **Hyalite** opal (aqua color), **Menaccanite**, **Olivine** crystals, **Prochlorite**, **Quartz**, gem **serpentine**, **Spinel**, **Tremolite**.

HOT SPRINGS: ① area, a new discovery—orange fluorescent **Barite** crystals with **Sphalerite**; ② area gravels, float in field, rd. cuts, etc.: (a) along the French Broad R., (b) around Knapp's store, and (c) near Reed's Cr.—gem **jasper**; ③ just S and extending to Joe and E to big Lauel and Walnut creeks, the Max patch Mts., type locality, with many outcrops in a broad area along the Tennessee border—**Unakite**, **jasper**.

MARSHALL: ① area—**Bornite**, **Calcite**, **Chalcopyrite**, **Epidote**, **Fluorite**, **Galena**; ② gravel beds of Little Pine Cr.—**Rhodolite** garnets; ③ N 6 mi. on Redmon Dam rd, cross dam, turn right, go to forks, take left for to Lone Pine Mine (fee \$2.00) —**Almandite** garnets.



North Carolina

REDMON: ① just N, above RR tracks—gem **Almandite** garnet; ② SW 2 mi., on Little Pine Cr., the Little Pine Garnet Mine—**Almandite** garnet; ③ SW, near headwaters of Paw Paw Cr., old mine—**Barite**.

WALNUT: ① area exposures, occasional—**Staurolites** (twinned crystals); ② Walnut Cr., near the French Broad R., area—green **Coccolite** in **Calcite**, **Phlogopite** mica.

McDOWELL COUNTY

AREA: ① stream gravels of Co.—**Pyrope** garnets, placer **Gold**; ② area Mica mines (many) —**Garnets**, **Mica**, etc.; ③ Glade Cr., North Muddy Cr., and South Muddy Cr.—**Gold**, **Platinum**, etc. ④ Hunt's Mt., area—**Gold**; ⑤ Second Broad R., between Vein Mt. and Huntsville Mt., the Vein Mt. Mine—**Chalcopyrite**, **Gold**, **Pyrite**; ⑥ the old toll rd. to Mt. Mitchell, near Greybeard Mt. (almost on the Buncombe Co. line), pegmatite outcrop; and ⑦ many other pegmatite exposures in area—**Almandite** garnet, **Autunite**, **Beryl**, **Columbite**, **Smoky Quartz** crystals, **Samarskite**.

BRACKETTOWN, in valley of the headwaters of South Muddy Cr., the Marion Bullion Co. Mine—**Chalcopyrite**, **Diamonds**, **Galena**, **Gold**, **Platinum**, **Pyrite**, **Sphalerite**.

DYSARTSVILLE: ① numerous area old era Gold mines, placers—**Gold**; ② South Muddy Cr. Crossing of Rte. 26: (a) in cr. gravels—**Diamond**, **Gold**; (b) nearby placer mines—**Corundum**, **Gold**, **Zircons**; (c) a tributary 1.2 mi. SE of town, the Mills farm—**Corundum**; ③ SW 2 mi., on N side of paved rd. to US 221, as float in stream gravels—**Corundum**.

GRAPHITEVILLE, area exposures, extending into Buncombe Co.—**graphite**, gem **Kyanite**, **Quartz** crystals.

MARION: ① S, in pegmatite dike exposures—**gem** crystals; ② Lincolnville Mt.: (a) area—**Quartz** crystal; (b) ½ mi. S of North Cove School, on the Gregg and Lonon farms—**Psilomelane**, **Pyrolusite**; (c) near the North Cove along Honeycutt Cr. and Tom Cr. N of US 221, in Mica prospects on the Swofford property—**Mica**, **Uranium** minerals; ③ headwaters of North Fork of the Catawba R.—**Pyrite**, **Sphalerite**; ④ SW 6 mi., the Sugar Hill area, on the Charles Laney farm—**Amethyst**.

NEBO: ① RR and rd. cuts along Rte. 105—**Quartz** crystals; ② outcrops of Mica schist in the banks of Lake James, abundant—**Garnets**.

OLD FORT: ① W, in the Brevard Belt, area mines—**Graphite**; ② W 4½ mi., along Mills Cr., area mica prospects—**Beryl**, **Mica**.

WOODLAWN: ① quarry near US 221—dogtooth **Calcite**; ② a few hundred yds. N, area—phantom **Quartz** crystals.

MECKLENBURG COUNTY

AREA, Clear Cr. Twp., on a high plateau from which flow McAlpine's Cr. to the SW, Reedy Cr. to the NE, and Clear Cr. to the SE: ① the Surface Hill Mine—**Chalcopyrite**, **Gold**; ② old mine on Clear Cr.—**Diamond**, **Gold**.

CALDWELL, area float—**agate**, **carnelian**, **chalcedony**.

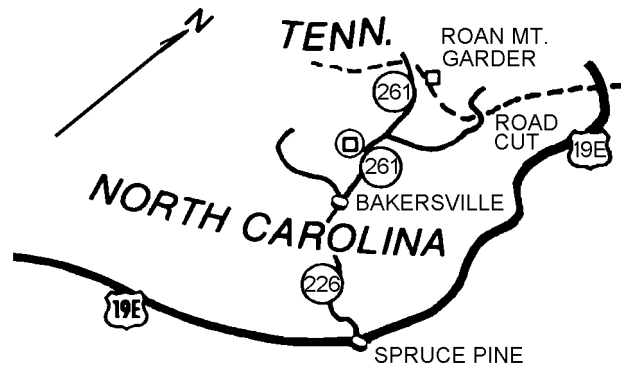
CHARLOTTE: ① building excavations in city—**jasper**, **leopardite**; ② S ½ mi. from town center, the St. Catherine (Charlotte) Mine, and ③ S 1 mi., the Rudisil Mine—**Copper Pyrites**, **Gold**, **Iron**, massive **Pyrite**, **Silver** (traces); ④ W 2½ mi., the Clark Mine—**Gold**; ⑤ NW 5½ mi., the Capps Mine (between Rossel's Ferry and Beattie's Ford rds.) —**Copper** minerals, **Gold**; ⑥ W 9 mi., the Stephen Wilson Mine—**Gold**; ⑦ NW 11 mi., the Hopewell (Kerns) Mine, and other nearby mines and prospects—**Copper** minerals, **Gold**, **Pyrite**, etc.

A Location Guide for Rock Hounds in the United States

MICHELL COUNTY

AREA: This is a generally rugged, mountainous county with so many gem mines that detailed topographic quadrangle maps, or such rockhound maps as are pit out by Baker's Motel and Tainter's New Service in Spruce Pine are required for pin-point accuracy in locating any of the prolific collecting locations. Nearly all such locations are old or active mines, privately owner, and requiring either permission to enter or a modest fee to collect. Almost all the mines listed here are in the Spruce Pine surroundings. ① countywide stream gravels and gravel pits—**agate**; ② Grassy Cr.: (a) area gravels—**Aquamarine, Golden Beryl**; (b) the prehistoric Indian Sink Hole Mine—blue **Beryl**; (c) the Meadows Mine—blue **Beryl**; ③ the Buchanan Mine—**Albite** feldspar, **Allanite**, **asbestos**, **Beryl**, **Gummite**, Manganese **Garnet** (black Andradite), **Graphite**, **Muscovite**, **Kyanite**, **Phosphuranylite**, **Yttrogummite**.

BAKERSVILLE: ① nearby Clarence Wilson farm, exposure of a Feldspar matrix—gem **Epidote** crystals; ② the Kona area, exposures—**Epidote**; ③ Medlock Mt., area—**Feldspar** crystals (included with Hematite or Goethite); ④ SE 1 mi. on white Oak rd., the Pannell Mine (reached by turning left out of town on Rte, 226) — **Bronzite**, **Corundum**, **Mica**, **Vermiculite**; ⑤ SE 1.2 mi., the Pannell farm, exposures —**Ruby**, **Sapphire**; ⑥ S 2½ mi., a mine— **Actinolite**, **Chromite**, **Chrysolite**, **Deweylite**, **Enstatite**, **Magnesite**, **Penninite**, **Quartz** crystals, **Rutile** (in Corundum), **Saponite**, **serpentine**,



Talc, **Tremolite**; ⑦ SE 4 mi. on Hwy. 226 in Quartz near top of Yellow Mt.—**Kyanite**; ⑧ E 3 mi., area—**Albite**, **Epidote**; ⑨ N 1 mi., at base of Meadow Mt., area **moonstone**, **Oligoclase** feldspar (transparent); ⑩ NE 1½ mi., Clarence E. Wilson property—**Epidote** (doubly terminated crystals); ⑪ N, on McKinney Cove rd., at Lick Ridge, area—chatoyant **moonstone**, **Epidote** (dark crystals), **Sphene**; ⑫ N on the Roan Mt. rd. (Rte. 261) to area of scenic Roan Mt. (elev. 6,267'): (a) turn W 0.3 mi. S of Carvers Gap, opposite sign *Pete's Crest Farm*, a mine—**Uranium** minerals; (b) area outcrops on Roan Mt.—**Unakite**; (c) 12 mi. NW on Hwy. 261 at Roan Mt. Flower Garden—green **Feldspar**, **Thulite**; ⑬ NE 7 mi., on the Dillinger farm—gem **Kyanite** (bladed green crystals).

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**.

North Carolina

GLEN AYRE (NE of Spruce Pine): the Biddix place—**moonstone**; ② NE 2.4 mi. (½ mi. E of Rte. 261), mine owned by Benton McKinney—**Orthoclase** feldspar (with sunstone sheen).

HAWK (4½ mi. ENE of Spruce Pine on Co. rd. 1211, about halfway between Rte. 226 and US 19E): ① N 1 mi., the Hawk Mine—**Allanite, Apatite, Epidote, Oligoclase** feldspar (water clear crystals), **Pyrite, Thulite**, black **Tourmaline**; ② E 1 mi., the Stagger Weed Mine—**Feldspar** and Milky **Quartz**; ③ the Sugar Tree Mine—**Garnets** (huge clear crystals); ④ S, at the Clarissa Mine—gem **Garnets**; ⑤ E 2.6 mi.: (a) old mine dumps—**Corundum, Kyanite, Ruby, Sapphire, Tremolite**; (b) the Dillinger farm—**Ruby, Sapphire**.

INGALLS, W on Co. rd. 1143 (area starting 3 mi. E of Spruce Pine leading from main hwy.), area fields, cuts, etc.—**Actinolite** crystals (in boulders), foliated **Talc, Steatite**.

KINGS MT., the Foote Mineral Co. Mine—**Cassiterite, Spodumene**.

LINVILLE FALLS, E 4 mi., at Wiseman View, area—dendritic sandstone, **Quartz** crystals.

LITTLE SWITZERLAND (on the Blue Ridge Parkway), NW via Co. rd. 110 and 1104 to the Crabtree Emerald Mine (map next page) —**Apatite** (fluorescent), **Emerald, Emerald** matrix.

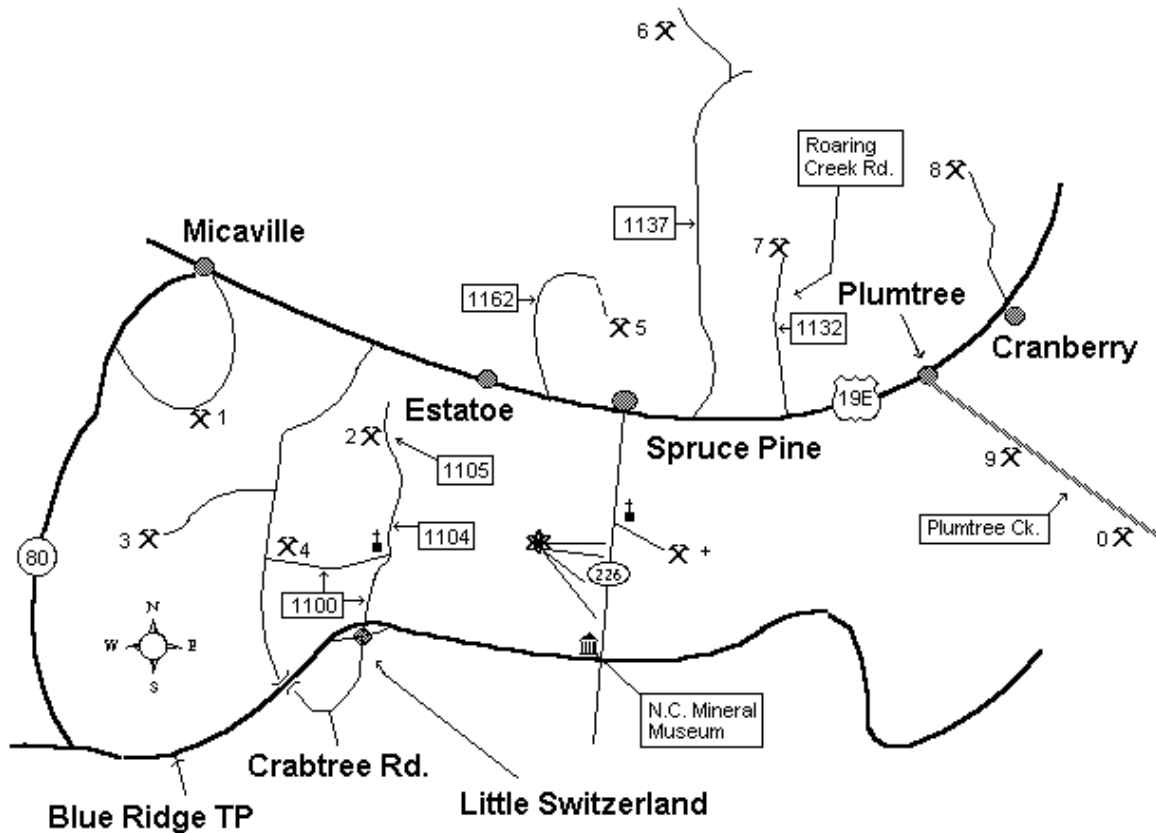
MOUNT PLEASANT, NW 2½ mi. on rd. to Hughes, turn left on dirt rd. at Hughes, the Lieback Mica Mine—fine large red **Garnets**.

PENLAND: ① E 0.2 mi., in horseshoe bend of the North Toe R., the Deer Park Mine (map 5) —**Autunite, Feldspar** crystals, **Garnet, Hyalite** opal, **Mica, Monazite** crystals, **Thulite, Torbernite, Uraninite**; ② Penland Jct.: (a) in rd. cut on Rte. 226—gem **Epidote**; (b) N 1½ mi., Bear Cr. Gap (on Bear Cr. Rd. N of Rte. 226), area—gem **Kyanite**.

SPEAR, many area mines and dumps—**Beryl, Garnets, Epidote** crystals, **Mica**. Most mine rds. Require 4-wheel drive.

SPRUCE PINE. This small community is located on US 19E about 4 mi. N of the Blue Ridge Parkway, a center for a large Feldspar and Kaolin mining industry. Within a radius of 20 mi. are far too many gem and mineral mines to list other than a few of great interest. Many of the commercial mines are open to collectors on weekends only, or weekdays if no blasting is scheduled. Because of the rugged terrain, it is advisable to hire a local guide with a 4-wheel drive vehicle. Mine owners usually charge a modest fee. The town itself has many rock shops through the center of town. ① Area mica and Feldspar mines (very many) —**Actinolite, Amazonite, Autunite, Garnet, Hyalite** opal, gem **Kyanite**, foliated **Talc, Thulite, Tourmaline**, etc.; ② the Grassy Creek Mine near town—**Aquamarine**; ③ E on US 19E to English Knob (0.4 mi. W of the Avery Co. line), mine on E side of hwy.—**Autunite, Columbite, Cyrtolite, Gummite, Monazite, Pitchblende, Samarskite, Torbernite**; ④ E on US 19E to jct. With Co. rd. 1143 (second rd. branching N), then: (a) N 1 mi., a mine—**Actinolite, Talc**; (b) N 1.3 mi., turn right on unmarked rd. (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, 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**. ⑤ 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**; ⑥ SE 2½ mi. (air) and SE of Brush Cr. (follow Rte. 226 to Little Switzerland 5 mi. S of Spruce Pine, turn right on Co. rd. 1100 to a church, take Co. rd. 1104 to the Crabtree Emerald Mine (elev. 5,000'), (fee) —**Emerald, Garnets, Beryl** (pale colors, yellow), **Schorl**;

The Spruce Pine - Little Switzerland Area



- | | | |
|-----------------------|---------------------------|--------------------|
| 1 Fanny Gouge Mine | Aquamarine, Garnet | |
| 2 Crabtree Mine | Emerald, Golden Beryl | |
| 3 No 20 Mine | Thulite | |
| 4 McKinney Mine | Beryl, Thulite, Amazonite | |
| 5 Deer Park Mine | | |
| 6 Wiseman Mine | | |
| 7 Burlson Mine | Moonstone | ★ Local Rock Shops |
| 8 Cranberry Iron Mine | | |
| 9 Elk Mica Mine | Garnet | |
| 0 Slippery Elm Mine | Garnet | |
| + Grassy Creek Mine | Aquamarine, Moonstone | |

⑦ 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),

North Carolina

Bornite, Chalcopyrite, Columbite, Covellite, Gummite, Hyalite opal (blue, translucent, brilliantly fluorescent), **Malachite, Muscovite**, (with brilliant Garnet inclusions), **Samaraskite, 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**; ⑧ 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**; ⑨ 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**; ⑩ 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**; ⑪ NNE 1.8 mi., the Wiseman Tract (¼ mi. SW of English Knob)—**Aquamarine, Golden Beryl**; ⑫ NW 2 mi. on Rte. 226 and 1½ mi. NE of Minpro on a private rd., the Pine Mt. Mine—**Autunite, Hyalite** opal, **Torbernite**; ⑬ 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; ⑭ NW 5 mi., the Putnam Mine (and on dumps of adjoining Deer Flat and Pine Mt. mines) —pink **Thulite**; ⑮ 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: ① regional abandoned silica quarries—**Quartz** crystals (clear, smoky, some rutilated); ② Beaver Dam Cr. Jct. With the Yadkin R., NE 2 mi., the Beaver Dam Mine—**Gold, Pyrite**; ③ 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**; ④ 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: ① W 2½ mi., the Montgomery Mine—**Gold**; ② W 3 mi., the Iola Mine—**Gold**, siliceous **Pyrite**.

ELDORADO: ① area old mines—**Azurite, Calcite, Gold, Hydrozincite** (strongly fluorescent), **Malachite, Pyrite, Silver, Smithsonite, Sphalerite**; ② SE 2 mi., on E side of the Uwharrie R., a mine—**Gold**; ③ E 3 mi., the Riggon Hill Mine—**Gold**; ④ S 8 mi., the Moratock Mine—**Copper** minerals, **Gold, Pyrite**; ⑤ N 1½ mi.: (a) the Coggins (Appalachian) Mine, in argillaceous slates and schists—**Gold**; (b) E, at the Eldorado Mine—**Gold, Silver, Pyrite**, etc.; ⑥ 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 Schields—**Gold**; ② gravels of Deep Cr.—**petrified wood**; ③ gravels of Shut-In Cr.—**jasper** (gemmy, showy).

A Location Guide for Rock Hounds in the United States

CARTHAGE: ① NW 8 mi., the Bell Mine—**Gold**; ② NW 11 mi., the Burns (Alfred) Mine—**Gold**: (a) $\frac{3}{4}$ mi. N, the Cagle Mine, and (b) $\frac{1}{4}$ mi. W of the Cagle, at the Clegg Mine—**Gold**.

GLENDON: ① area **Pyrophyllite** mine—**Fluorite, Hematite, Lazulite, Pyrite**; ② NE 1.6 mi. (go 1 mi. E from town, turn E 1.3 mi. on old logging rd. and take right fork to an old Copper mine on the Haw Branch rd.)—**Azurite, Calcite, Malachite**.

ROBBINS, SW, at confluence of Cabin and Dry creeks, on the Moore farm—**Amethyst, Quartz** crystal.

NASH COUNTY

AREA: ① regional mines such as Conyer's, Nick Arrington, Thomas, Kerney, Taylor, Mann, Davis, etc.—**Gold**; ② Portis Mine: (a) on dumps—**Gold, Iron, Manganese** minerals; (b) SE 1 mi., the Arrington Mine—**Gold**.

ARGO (NW corner of Co. and 5 mi. SE of Ransom's bridge), the Mann-Arrington Mine, in chloritic and porphyritic schist—**Gold**.

NASH & FRANKLIN COUNTIES

AREA, the N portion of these two counties plus the S sections of Warren and Halifax counties, known as the Eastern Carolina Belt, comprises some 300 sq. mi. containing very many old mines—**Gold**.

ORANGE COUNTY

CHAPEL HILL: ① area woods, fields, creek gravels—moss **agate, petrified wood**; ② area mines—**Chalcopyrite, Epidote, Hematite, Limonite, Magnetite, Pyrite, serpentine**; ③ NW 12 mi., the Robeson Mine in Quartz—**Gold**.

HILLSBORO: ① area fields, stream gravels, rd. cuts, etc.—moss **agate**, sagenitic **Quartz** crystals (Chlorite inclusions); ② area mines—**Barite, Chlorite, Epidote, Pyrite** cubes, **Pyrophyllite**; ③ S, in abandoned Barite pit—**Barite, Calcite, Celestite**; ④ NE 5 mi. and just S of city, near RR crossing on Rte. 86, area—**Andalusite** crystals, **Pyrophyllite** rosettes; ⑤ at Piedmont Minerals Mine—**Andalusite, Lazulite, Topaz**.

PERSON COUNTY

REGION, extending SW, covering part or all of the counties of Durham, Orange, Alamance, Chatham, Randolph, Moore, Montgomery, Davidson, Stanley, Cabarrus, Anson and Union. Known as the Carolina Slate Belt, this region contains many once rich **Gold** mines in a zone from 15 to 50 mi. wide. The chief gangue minerals in these mines are: **Bornite, Calcite, Chalcopyrite, Quartz, Rhodochrosite** and **Siderite**.

ALLENSVILLE, NE $\frac{1}{4}$ mi., then N on secondary rd. 1 mi. to the old Durgy Copper Mine—**Malachite**.

LONGHURST, NW 2 mi. to Hager's Mt., Quartz vein exposed between rd. and Marlowe Cr. to the W—gem **Kyanite** (with **Pyrophyllite**).

SURL: ① N 2.3 mi. on paved rd. to Mt. Tizah (S part of Co.), on W side of rd. across from a church, area fields, rd. cuts—**Actinolite, Hematite, Limonite, Manganese** minerals, **Quartz** (with Chlorite inclusions); ② 1 mi. E of Mt. Tizah along rd. to Moria, area fields and cuts—**Pyrite** crystals, **Limonite** (most cubes found $\frac{1}{4}$ mi. W of Mt. Tizah).

North Carolina

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 ¾ 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.

A Location Guide for Rock Hounds in America

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).

North Carolina

FRANCISCO, SE 4 mi., on N bank of Big Cr. Near confluence with the Dan R. (take dirt rd. left from Rte. 89 midway to Danbury), the Hole Mine—**Garnets, moonstone, Quartz** crystals (milky, smoky).

GAP, COFFEE GAP on Rte. 66 near Hanging Rock State Park, center of a gem and gemstone region: ① area in the Sauratown Mts., a well known Quartz outcrop—**Lazulite** (dark blue gem crystals, massive in quartz), **Quartz** crystals; ② 2 mi. SW of Gap, an excellent deposit—**Itacolumbite**.

SANDY RIDGE: ① W 1 mi. on Rte. 770, turn SW on Co. rd. 1½ mi. to dumps of the Hawkins Mine—**Garnet, Pyrite, Quartz** crystals; ② SW 4½ mi. (turn left off Rte. 704 1 mi. W of Oak Ridge onto unmarked rd. for 1½ mi.), the Moorefield Mine—**Quartz** and dark **Tourmaline**.

SURRY COUNTY

BURCH STATION, E 1½ mi. from Rte. 268 to the Clarence Greenwood farm—**jasper, Quartz** crystals.

DOBSON, N 10 mi., area mines—**Actinolite, Breunnerite, Chlorite, Hausmannite, Magnesite, Magnetite, Manganese Garnet, Pyrolusite, serpentine, Steatite, Talc** (green), **Wad**.

ELKIN, MT. AIRY: ① area outcrops—rock **crystal** (some with inclusions of Iron, Chlorite, Actinolite); ② Mt. Airy: (a) a nearby Feldspar quarry—**Oligoclase** crystals (clear); (b) NE, in large granite quarry—**jasper, Quartz**; ③ gravels of the Mitchell R.—yellow **chalcedony**, gemmy **Hornblende** crystals, **Steatite**; ④ W, on Pleasant Hill (Wilkes Co.), near Rte. 268—quartz **gemstone**.

PILOT MOUNTAIN: ① area—rutiled **Quartz** crystal; ② NE 1.3 mi., on the Phillips and Cos farms—rutiled **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**.

A Location Guide for Rock Hounds in America

ROSMAN: ① E, on the Tinsley farm N of the Girl Scout Camp, area—dogtooth **Calcite**; ② N off US 64: (a) 1 mi. toward Balsam Grove, the W on secondary rd. crossing North Fork, on S side of rd. W of the river, area—**Quartz** crystals; (b) 2.2 mi. SW of Balsam Grove, in pasture of the Hogsed farm (reached via rd. W from the main rd. 2 mi. S of Balsam Gap), as float—**Quartz** crystals.

WAYNESVILLE, SE, on US 276 to Bethel (first crossrd. Stop, up side rd. to recently opened cr. Bed min, fee), abundant—**Sapphires**.

UNION COUNTY

MONROE, W (including much of the W side of Co.): ① area mines, such as Lemmonds (Marion), New South, Crump, Fox Hill, Phifer, Black, Smart, Secrest, Moore Hill (group) 2 mi. S of Indian Trail—**Calcite, Gold, Pyrite**, etc.; ② N 14 mi., in extreme NW corner of Co., the Crowell Mine: (a) on dumps—**Gold**; (b) $\frac{3}{4}$ mi. SW, the Long Mine, and (c) 3 mi. SE of Long Mine at the Moore Mine—**Calcite, Chalcopyrite, Galena, Pyrite, Siderite, Sphalerite**.

POTTER'S STATION, N $1\frac{1}{2}$ 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, Hematite** pseudomorphs after **Pyrite, Margarodite, Pyrite** (large crystals), **Tourmaline**; ③ the Durham Quarry—**Rosenhahnite** (fluorescent).

PURNELL: ① area: (a) the Powell farm, between Newlight Cr. and Water Fork, area—**Corundum**; (b) Bayleaf, area contact zone exposures (take rd. W from village leading

North Carolina

to Rte. 50, 2 mi. to Barton's Cr. crossing; or via the Neuse R. NE of village, or go to the jct. of Buckhorn and Newlight creeks) —carvable **Steatite, Actinolite**; ② S 2 mi., near Horse Cr., a pegmatite outcrop on the Thompson farm—**Allanite** (black), **Beryl** (green and yellow, opaque).

RALEIGH: ① E, in area of Wilder's Grove: (a) E½ mi. on US 64, turn N on dirt rd. 1 mi., area near the Neuse R. to the E—**Amethyst** (large, color zoned); (b) W 2½ mi. near US 64, area—**Amethysts**; (c) N 1 mi. on paved rd. the jct. with a secondary rd., then E 0.7 mi. to entrance to a dim trail S of the rd., area—**Amethysts**; ② N, turn off US 70 on N side of Crabtree Cr. bridge onto paved rd. 3½ mi. to Mine Cr., area exposures—gem **Kyanite**; ③ S 5 mi.: (a) area Mica mines in pegmatite—**Feldspar** crystals, **Garnets**; (b) ½ mi. E of US 15A, on the Coburn farm—**Feldspar, Garnet, Mica, snowy Quartz**; ④ NE 5 mi., area—**Amethyst, Quartz** crystals.

WAKE FOREST, W 3 mi. and 2 mi. S of Rte. 264, the Wakefield Mica Mine—**Mica**, massive **Quartz** (gray, pale blue).

WARREN COUNTY

INEZ: ① S 2 mi. to the Franklin Co. line, many area pegmatite exposures—gems, minerals; ② S 2½ mi., on E side of Rte. 58, pegmatite on the Fowler farm—**Amethyst, Beryl, Lepidolite, Smoky Quartz** crystals, **Staurolites**; ③ just E of the Fowler farm, on both sides of Rte. 58, the Harris deposits—**Mica, Quartz** crystals.

WATAUGA COUNTY

AREA, Rich Mt.: ① head of Cove Cr., area—**Actinolite, Chromite, Chrysolite, Epidote, Quartz, Penninite, Tremolite**; ② mouth of Squirrel Cr., area—**Chrysotile** asbestos.

BLOWING ROCK, area stream gravels, placer—**Gold**.

BOONE: ① area stream gravels, especially Hardings Cr., placer—**Gold**; ② N 8 mi., at Elk Knob, area old mines—**Azurite, Garnets, Epidote, Limonite, Malachite, Calcite, Cuprite, Pyrite, Pyrrhotite**, etc. (mainly primary Copper minerals).

WILKES COUNTY

AREA: ① E part of Co., on Zeb Souther farm—**Smoky Quartz** crystals; ② Bending Rock Mt., area exposures—**Itacolumbite**; ③ headwaters of Honey Cr., area gravels—**Amethyst, Quartz** crystals (clear, smoky).

CHAMPION, area old Mica mines—**Beryl, Garnet, Mica**.

DEEP GAP, E 6 mi.: ① the Flint Knob Mine—**Galena**, some **Gold, Pyrite, Silver**; ② the Laurel Spur of Flint Knob, area—**Calcite, Galena**.

NORTH WILKESBORO, area old asbestos mine—gem **serpentine**.

TRAP HILL: ① area fields, cuts, gravels, etc.—**agate** (silvery, mossy), brecciated **jasper, chalcedony**; ② the Trap Hill Mine—auriferous **Chalcopryite, Garnet, Galena, Magnetite, Pyrrhotite, Pyrite, Rutile** crystals, **Tourmaline**; ③ E side of Bryan's Knob, in quartz veins—**Chalcopryite, Pyrite, Pyrrhotite**; ④ Bryan's Gap on E face of the Blue Ridge, a bold outcrop of **Quartz** (has been traced for nearly 3 mi.)—**Gold, Pyrite**.

WILKESBORO, N 2 mi., area—**Garnet, serpentine, Talc**.

A Location Guide for Rock Hounds in America

YADKIN COUNTY

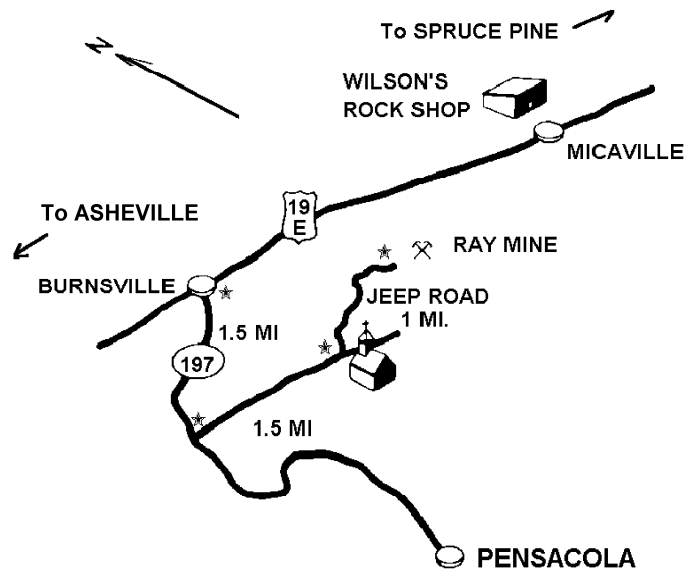
AREA: ① area pegmatite outcrops, many—**Beryl, Garnet**; ② area stream gravels—**carnelian**.

YADKINVILLE: ① E 6 mi., on SW side of a creek, at the Hauser Mine—**Feldspar** crystals and **Smoky Quartz** crystals; ② SE 8 mi., the Dixon Mine—**Gold**.

YANCEY COUNTY

AREA: ① ON Blue Rock rd., the Spider Mine—**Thulite**; ② the Guggenheim Mine—**Albite, Apatite, Autunite, Halite, Manganese Garnet, Margarodite, Muscovite, Tourmaline**; ③ the Hampton's Mining Creek Mine—**Actinolite, Bronzite, Chromite, Chrysolite, Deweylite, Epidote** (fine green crystals), **Enstatite, Magnesite, Penninite, serpentine, Talc, Tremolite**; ④ the Young's Mine—**asbestos, Bronzite, Chromite, Chrysolite, Enstatite, Manganese Garnet, Muscovite, Pyrite, serpentine, Talc, Tremolite**; ⑤ the North Toe R., area gravels—**Dithene** (gem Kyanite crystals); ⑥ Yellow Mt., area outcrops—**Dithene**.

BOWDITCH, E 1.9 mi., the Gibbs Mine on W bank of the Smith Toe R.—**Oligoclase** crystals (transparent, greenish).



BURNSVILLE: ① many area mines—**Garnets, Mica, Platinum, etc.**; ② E ½ mi. to trail leading S of US 19, E ½ mi. to the Doe Hill Mine—**Feldspar, Garnets, Mica, Pyrite**; ③ SE 2½ mi., on Hurricane Mt.: the Ray Mica Mine (see map page 291) —**Albite, Amazonite, Apatite, Aquamarine, Autunite, gem Beryl, Columbite, Emeralds, 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), **Yttracrite, Zircon**; (b) along the right fork of the rd. to the Shanty Mine—**Apatite, Garnets, Hyalite** opal; ④ Parrot's Ford (3 mi. distant from town), area—**Tantalite, Tourmaline**; ⑤ SW 5 mi. on Rte. 197, the Ray Olivine Mine—**Apatite, asbestos, Beryl, Chlorite, Chromite, Columbite, Garnets, Olivine** crystals, **serpentine**; ⑥ W 6 mi. on rd. to Red Hill, on E side of rd. at Green Mt., area outcrops visible from rd.—**Chromite, Olivine** crystals; ⑦ N 6

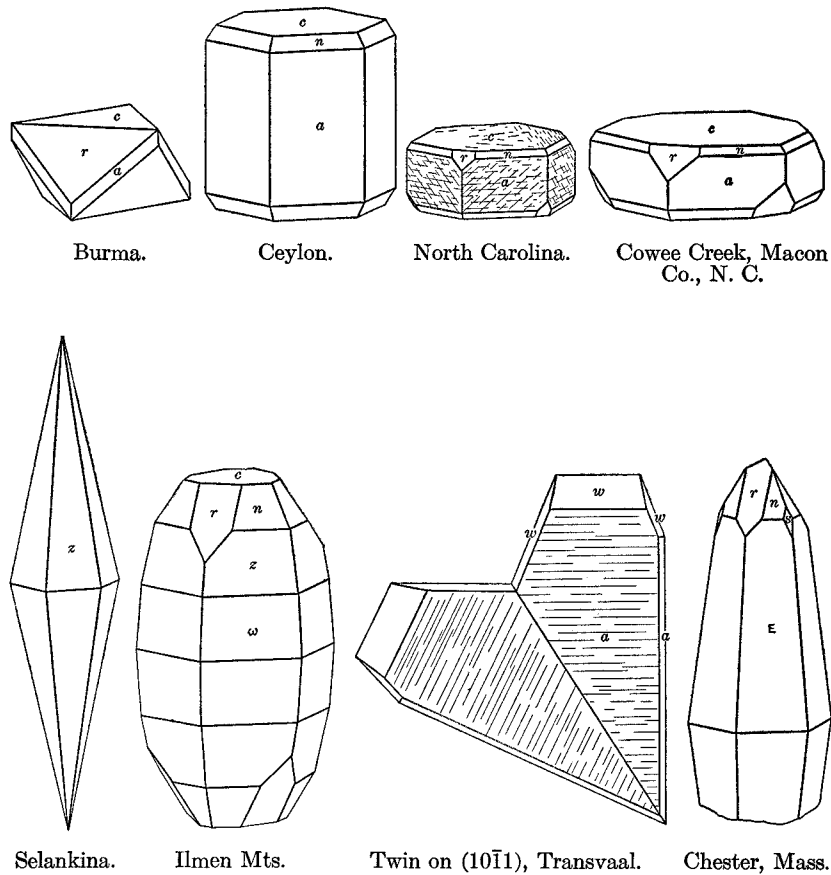
North Carolina

mi., area—**Labradorite, Platinum**; ③ NW 10 mi., on W side of Sampson Mt. via US 19 to Lewisburg, turn SW along Bald Mt. Cr. (with Sampson Mt. visible 5 mi. to the S): (a) the Hayes Mine—**Corundum** (blue, gray, beige, white, cat's-eye); and (b) head of Bald Mt. Cr., the Cattail Branch Mine—gem **Beryl, Garnets**.

CELO: ① area: (a) Celo Ridge, area mine dumps—**Sapphires**; (b) Toe R. gravels—**Corundum, Sapphires**; (c) mine dumps about town—**Feldspar, Garnet**, gem **Kyanite, Mica**; ② NE 1½ mi., the Little Gibbs Mine, on the South Toe R.—gem **Oligoclase** crystals.

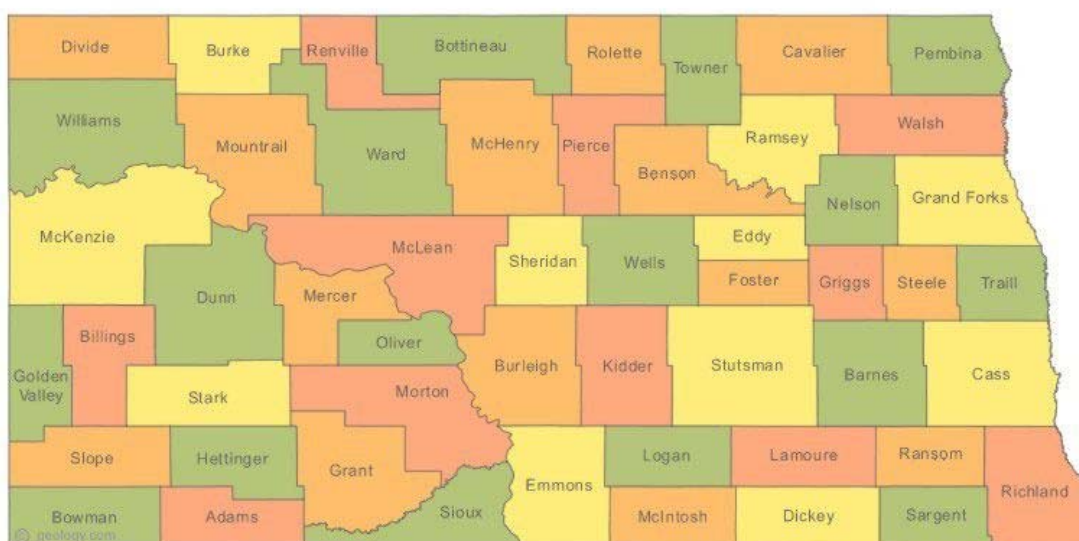
MICAVILLE: ① N 2 mi., the Presnell Mine—**Apatite, Almandite** garnets, **Columbite, Mica**; ② SE 2.7 mi.: (a) the Fanny Gorge Mine—**Apatite, Columbite, Autunite, Garnets, Pitchblende, Thulite**; (b) on S side at the Spec Mine—**Aquamarine, Almandite** garnets; ③ SE 3½ mi., the old Charles Mine—blue **Apatite** crystals, pink **Thulite**.

BERYLS



NORTH DAKOTA

This fertile state, geographic center of North America, is everywhere surfaced by Quaternary soils and sediments overlying rock formations of greatly varied ages. The eastern half, known as the Lowlands, once lay beneath the vanished waters of the great Pleistocene Lake Agassiz. Deeply buried beneath the lake sediments are rock formations of Mississippian, Jurassic and Cretaceous ages. The western counties exposed here and there much older formations, of Devonian age. West of the Red River Valley, abrupt escarpments rise 300' to the glacial drift prairies of scattered lakes, occasional moraines, and extensive, rolling, grass covered hills. Along the Little Missouri River lie the strongly eroded scenic, and almost inaccessible spires and minarets of the famed Badlands, extraordinarily rich in fossils that reach back to the era of the dinosaurs.



North Dakota County Map

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.

North Dakota

ADAMS COUNTY

HETTINGER, N. 10 to 12 mi., NE and E, along both sides of the entire course of the Cedar R.—**agate** **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: ① from Mott to Richardton, a broad area along both sides of Rte. 8—**agate**, **chalcedony**, **agate** **wood**, **jasper**, **jasper-agate**; ② from NW of Mott 150 mi. to Williston (Williams Co.), area breaks, rd. cuts, etc.—**Selenite** crystals.

KIDDER COUNTY

TAPPEN, E, in regional gravel pits—**agate**, **chalcedony**, **jasper**, etc., **fossils**.

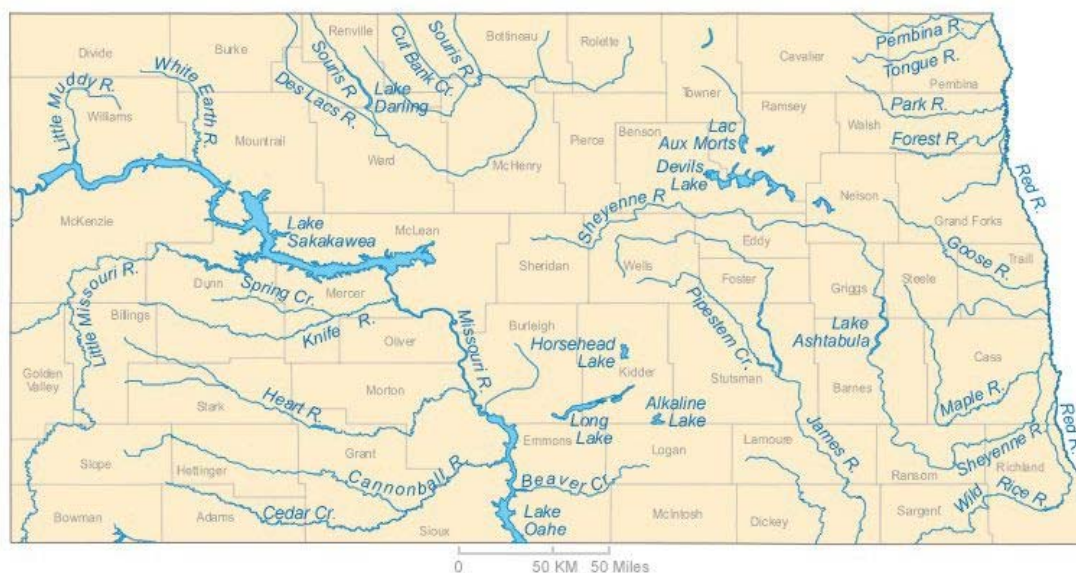
McHENRY COUNTY

DENBIGH, regional gravels of the Mouse R. SW to Velva—quartz **gemstones**, **fossils**.

McKENZIE COUNTY

AREA, gravels of the Yellowstone, Missouri and Little Missouri rivers—*Montana* moss **agate**, **jasper**, **silicified wood**, etc.

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Rivers & Lakes of North Dakota

EAST FAIRVIEW, in gravel bars near confluence of the Missouri and Yellowstone rivers—*Montana* moss **agate**, **jasper**, **silicified wood**, etc., especially around Cartright just to the E on Rte. 23/200.

GRASSY BUTTE, W and N, gravels of the Little Missouri R.—*Montana* moss **agate**, **jasper**, **agatized wood**, **plasma**.

SEARING, broad general surrounding region—**petrified wood**.

MERCER COUNTY

GOLDEN VALLEY, S, the Crowley Flint Quarry (a historic site)—gem **flint**.

HAZEN, area mines—**Uranium** minerals.

MORTON COUNTY

MANDAN: ① area hills, draws, washes, etc.—**agate**, **chalcedony**, **chert**, **silicified teredo wood**; ② area gravel pits.—worm-bored **teredo wood** (borings filled with Calcite or chalcedony).

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**.

North Dakota

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**.

OHIO

Only Paleozoic rock formations underlie Ohio's Pleistocene surface debris and Quaternary soils. For long ages Ohio lay beneath a shallow sea which received successively enormous quantities of Ordovician, Silurian, Devonian, Mississippian and Pennsylvanian sediments; the erosional products of some 200 million years. Few, if any Mesozoic rocks appear within the state, but every one of Ohio's 88 counties is surfaced with Pleistocene debris. The state was buried completely four times by Ice Age glaciers, leaving the land surface nearly level but with some fairly rugged low hills in the southeastern corner. There are few localities containing worthwhile gems or minerals, although excavations in the underlying black, Upper Devonian (New Albany) shales occasionally produces pieces of silicified wood.



Ohio ranks first in the nation in the production of limestone and dolomite, and second in the production of clays. Lesser production of iron, petroleum, natural gas and coal

Ohio

from thick beds contributes to the mineral economy. But as far as the collector is concerned, Ohio is unique in but a single gemstone, an exceptionally high quality, colorful **flint** that is mostly a mixture of chert, translucent chalcedony, jasp-agate and common opal, rivaling in beauty the Arizona agatized wood. This gem flint occurs in the 8 mile long Flint Ridge, between Newark (Licking Co.) and Zanesville (Muskingum Co.), a region of rolling, wooded hills. Here, prehistoric Indians quarried the toolmaking material for arrowheads and other implements.

While occurrences are widespread throughout Ohio, the chief deposits of true flint (characterized by ease of working) include the highly colored *Vanport flint* of the Flint Ridge and the *Upper Mercer flint* exposed in Hocking, Perry, and Coshocton counties. Early American settlers also quarried a rough, porous flintstone from outcrops, especially around McArthur, Vinton Co., for making the burstones they needed for grinding grain in their water mills.



Other collectable minerals are rare, although quarries in the western counties, especially the Clay Center Quarry 12 miles southeast of Toledo but in Ottawa Co. between

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Rtes. 51 and 579 yield good specimens of **Celestite**, **Dolomite** crystals, **Fluorite** (fluorescent), , **Galena**, **Marcasite**, **Pyrite**, **Selenite** and **Sphalerite**. A few alluvial **Diamonds** have been found.

ASHTABULA COUNTY

CONNEAUT, area pits, quarries, rd. cuts, etc.—cone-in-cone **Calcite**.

CLERMONT COUNTY

MILFORD, area creek gravels and alluvial deposits, rare—**Diamond**.

CLINTON COUNTY

WILMINGTON, area of Todd's Ford, a mineral deposit—**Hematite**.

COSHOCTON COUNTY

AREA, townships of Washington, Virginia, Bedford, Jackson, Jefferson, Bethlehem, Monroe and Clark; on regional knobs and ridges and just above areas of drainage in townships of Franklin, Keene, Mill Creek and Tuscarawas, as hard dark gray to black nodules—**flint**.

CUYAHOGA COUNTY

CHAGRIN FALLS (on Geauga Co. line), area quarries—**oilstone**.

DELAWARE COUNTY

DELAWARE, area Co. exposures of blue clay, as clusters and nodules—**Pyrite** (crystals sharply cubic).

FRANKLIN COUNTY

COLUMBUS, area countywide exposures of blue clay in rd. cuts, pits, quarries, excavations—**Pyrite** (clustered crystals sharply cubic).

HIGHLAND COUNTY

SINKING SPRING, area ore deposit (most important in Ohio)—**Hematite**.

HOCKING COUNTY

AREA exposures throughout Co. of the Upper Mercer horizon, commonly represented by black flint of excellent quality: ① Benton Twp. Map, Sec. 24, along high ridges and knobs, as nodules—**flint**; ② Green Twp., 2½ mi. SW of Kachelmacher and 1 mi. W of Freeland School—**flint**; (high quality); ③ Sec. 23, E center, in a hollow as scattered nodules—**flint**; ④ Washington Twp., SW part of Sec. 31 in a gully on the knob—**flint**.

Ohio

HOLMES COUNTY

AREA, townships of Berlin, Hardy, Killbuck, Mechanic, Paint and Salt Creek (with occurrences in shale or sandstone); and conspicuous deposits in townships of Clark (limestone occurrences), Prairie and Walnut Creek—**flint**.

JACKSON COUNTY

AREA, townships of Bloomfield, Coal, Hamilton, Jefferson, Franklin, Lick, Madison and Milton, as nodules in the Vanport member—**flint**.

LAWRENCE COUNTY

AREA, townships of Decatur, Elizabeth, Perry, Symmes, Upper and Washington, as nodules in limestone exposures—**flint**.

LICKING & MUSKINGUM COUNTIES

AREA, from 3 mi. SE of Newark, Licking Co., to 12 mi. NW of Zanesville, Muskingum Co., 8 mi. long by ¼ mi. wide: ① Flint Ridge—**agate, Amethyst, carnelian, chalcedony, chert** (various colors), jasper-like **flint, jasp-agate, jasper, Smoky Quartz** crystals, clear **Quartz**. From Brownsville, Licking Co., take US 40 E 3 mi., turn N to Flint Ridge State Park, and area of 10 mi. radius of private lands—gem **flint**. ② Regional rd. cuts, banks, stream banks and beds—gem **flint**, translucent **chalcedony**, drusy **quartz**.

LUCAS COUNTY

SYLVANIA, SW, at jct. of Brint St. and Centennial rd., the Medusa Quarry (SW of 4 quarries), very many specimens—**fossils** (some replaced by Marcasite), hollow shells lined with **Calcite** crystals or **Marcasite**.

WHITEHOUSE, area quarries—**Celestite, Gypsum**.

MUSKINGUM COUNTY

AREA—**agate, Amethyst, carnelian, chalcedony, chert** (various colors), jasper-like **flint, jasp-agate, jasper, Smoky Quartz** crystals, clear **Quartz**..

ZANESVILLE, area mined deposits—**Hematite**.

OTTAWA COUNTY

CLAY CENTER, area limestone quarry, famed—**Calcite, Celestite** (fluorescent), **Dolomite** crystals, **Fluorite** (fluorescent), **Pyrite, fossils**.

GENOA, SE, in area quarries—**Calcite, Celestite, Dolomite** crystals, **Fluorite, Marcasite, Pyrite, fossils**.

GREEN (or Strontian) ISLAND, Put-in-Bay, Lake Eire, as fine crystals and large masses filling fissures in the waterline rock—**Celestite**.

PERRY COUNTY

AREA: ① countywide deposits, long worked, as nodules—**flint**; ② townships of Monday Creek, Salt Lick, Pike and Clayton, area—**flint**.

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ROSS COUNTY

CHILLICOTHE, W several mi., in a region exposures of blue clay, as large masses—**Pyrite** crystal clusters.

SANDUSKY COUNTY

WOODVILLE, area quarries—**Calcite**, **Celestite**, **Dolomite** crystals, **Fluorite**, **Marcasite**, **Pyrite**, **Witherite** (fluorescent), **fossils**.

SCIOTO COUNTY

PORTSMOUTH, countywide regional quarries—**Catlinite**.

SENECA COUNTY

MAPLE GROVE (N of Tiffin to Ft. Seneca on Rte. 53 and W 2 mi. on secondary line rd., then N ½ mi. to Maple Grove Quarry) —**Calcite**, **Celestite**, **Dolomite** crystals, **Fluorite**, **Marcasite**, **Pyrite**, **fossils**, etc.

TUSCARAWAS COUNTY

CANAL DOVEL, MIDVALE, NEW PHILADELPHIA, ROSWELL, WAINWRIGHT, regional mines—**Pyrite**.

TUSCARAWAS, STARK, SUMMIT & PORTAGE COUNTIES

AREA, from the NW part of Tuscarawas Co., in numerous townships along the valley of the Tuscarawas R. from Bolivar to Zoar Station, as nodules in limestone outcrops—**flint**.

VINTON COUNTY

AREA: ① Swan Twp., on Upper Mercer horizon exposed along an old rd. in SE part of Sec. 9—**flint**; ② townships of Richland (Sec. 1, central part along an abandoned rd.), Wilkesville, Vinton, Clinton and Elk, in Vanport limestone exposures as nodules—**flint**.

WAYNE COUNTY

AREA, Paint Twp., Sec. 24, near center, as black nodules—**flint**.

WOOD COUNTY

BOWLING GREEN, W and S, at the Pugh Quarry—crystals of **Barite** (fluorescent), **Calcite**, **Celestite**, **Fluorite**, **Pyrite** (all in cavities and veins).

LIME CITY, area quarries—**Celestite** (fluorescent).

Oklahoma

OKLAHOMA

The Sooner State occupies approximately 70,000 sq. mi. of nearly level land in the southern part of the Great Plains. The western Oklahoma Panhandle is part of the arid, short grass Great High Plains, broken by the Black Mesa in the northwest corner of Cimarron Co. and the Wichita Mts. in the southwest. Black Mesa, at 4,978' elevation, is the highest point of the state. From the Panhandle the land slopes gently east and south to a minimum elevation of less than 350' in the extreme southeastern corner of the state. There are elevated regions, ranging from 200' to 1,200' higher than the surrounding plains, in the Wichita, Kiamichi, Ouachita and Arbuckle mountains and in the westward extensions of the Missouri Ozarks.



Parts of Oklahoma are mineralogically important. Extensive coal beds occur around McAlester, Pittsburg Co., and the great mines of the extreme northeastern corner, known as the Tri-State Area, are famed for their production of **Lead** and **Zinc** along with similar production from the adjacent mines in Kansas and Missouri. While western Oklahoma produces a good deal of **Gypsum**, it is the immense petroleum deposits which have given the state much of its fame and wealth.

Barite occurs at many localities in maroon sediments of Lower Permian age, with the greatest concentrations south and east of the Wichita Mts. and in the central counties of Comanche, Kiowa, Stephens and Tillman, with locally abundant exposures in McClain and Garvin counties. In the Barite dists, the mineral occur in veins, nodules and Barite-clay carbonate concretions in shale or as sand-barite concretions in sandstone. The *state stone* of Oklahoma, if it can be called that, is the Barite Rose.

Southwestern Oklahoma, especially in Beckham and Tillman counties, produces **alabaster**, **agatized** and **petrified wood**, and other **quartz family gemstones** from regional gravel pits and stream beds. Along the Cimarron and North Canadian rivers, gravel bars carry **agate**, **jasp-agate**, **jasper** and **petrified wood** along with **fossil** bones and teeth of Pleistocene mammals.

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Rivers & Lakes of Oklahoma

ALFALFA COUNTY

JET, W 6 mi. on US 64, then N 3 mi. on dirt rd. to crossrds., then E 1¼ mi. to gate; collecting area on the Salt Plains National Wildlife Refuge are posted—**Selenite** crystals. Collecting on the refuge is permitted from 8 AM to 5 PM only on weekends and holidays between April and mid October; per person limits are 10 lbs. Plus one crystal cluster per day. Natural salt (halite) coating the plains, 7 mi. long by 3 mi. wide.

ATOKA COUNTY

AREA, Impsom Valley, W side, on branch of Tenmile Cr., in fissure veins in Stanley shale—**Grahamite**.

ATOKA, area quarries—**novaculite**.

BECKHAM COUNTY

AREA, Gypsum quarries—**alabaster**, **Selenite**, **petrified wood**.

ELK CITY, area quarries—**alabaster**, **Selenite**.

BLAINE COUNTY

AREA (extending SW into Custer Co.), regional quarries—**Borate** minerals (**Priceite**, **Probertite**, **Ulexite**).

SOUTHARD, area quarries—**Borate** minerals.

WATONGA, NE 6 mi., quarry—**Borate** minerals.

WINNVIEW, area scattered through clay shale exposures, as raw nuggets—native **Copper**.

Oklahoma

CADDO COUNTY

APACHE, SW 4 mi., quarry—**Calcite** rhombs (fluorescent).

CANADIAN COUTNY

EL RENO (W end of the Oklahoma City complex), in gravel bars along the North Canadian R.—**agate, jasper, petrified wood.**

CIMARRON COUNTY

KENTON: ① E 2 mi. on Rte. 18 to turnoff to Roberts Ranch and 2.3 mi. to ranch house, fee, collecting area—**agatized algae, agatized cycad wood**; ② N to Tri-State Marker (OK-CO-NM), on hill—rose **agate**; ③ E ½ mi., turn N across Cimarron R. 11.2 mi. into Colorado, turn E 2.3 mi. to the Layton Ranch (fee), in bed and sides of Carrizozo Cr. S from Colorado into Oklahoma —rose **agate, agatized algae, agatized cycad wood.**

COAL COUNTY

LEHIGH, HUNTON, area mines—**Manganese** minerals.

COTTON COUNTY

RANDLETT: ① E 3 mi., and ② E 6 mi., as small fissures in red shale—**Malachite.**

DEWEY COUNTY

SEILING, TALOGA, area—**agate, Jadeite, jasp-agate, jasper, petrified wood,** etc.

GARFIELD COUNTY

ENID, T. 24 N, R. 8 W (NE¼SE¼ Sec. 24), area—native **Copper.**

GARVIN COUNTY

PAULS VALLEY, area of Sec. 18, T. 4 N, R. 1 E, in red sandstone—**Malachite.**

GREER COUNTY

AREA, the Wichita Mts., regional mines—**Amphiboles, Zircons.**

MANGUM: ① area quarries—**alabaster**; ② N of town, general area—**agatized wood.**

HARPER COUNTY

BUFFALO, area—**agate, chalcedony, chert, jasper.**

ROSTON, on twin buttes 1 mi. E of Hwy. 283 and 7 mi. N of jct. of Hwy. 283 with Hwy. 64—**Aragonite.**

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HUGHES COUNTY

WETUMKA, area of Sec. 30, T. 8 N, R. 9 E, as clear, transparent, coarsely crystalline masses—**Barite**.

JACKSON COUNTY

ALTUS, area draws, washes, cut banks, gravels—**Smoky Quartz** crystals.

JOHNSTON COUNTY

MILL CREEK: ① area mines—**Manganese** minerals; ② NE 6 mi., old Thompson Ranch near W line of NW¼ Sec. 15, T. 1 S, R. 5 E—**Barite, Iron** oxides.

KIOWA COUNTY

HOBART, in quarries near Altus Reservoir—**Quartz** crystals.

OTTAWA COUNTY

MIAMI-PICHER, regional Lead-Zinc dist. Mines as important contributors to the Tri-State Dist. Mineral production—**Anglesite, Aragonite, Barite, Calamine, Calcite, Chalcopyrite, chert, Dolomite, Galena, Greenockite, Gypsum, Marcasite, Melanterite, Quartz** crystals, **Pyrite, Smithsonite, Sphalerite**.

The major producing mines occur within an area of 25 to 30 mi. revolving around the mining towns of Picher, Cardin, Century and Quapaw.

PEORIA, QUAPAW, area mines—**Calamine, Cerussite, Galena**.

SENECA, area mines—**tripoli**.

PUSHMATAHA COUNTY

ANTLERS: ① area draws, washes, gravels—green **Quartz** crystals; ② Impson Valley, McGee Creek and Moulton mines—**Impsonite** (bitumen).

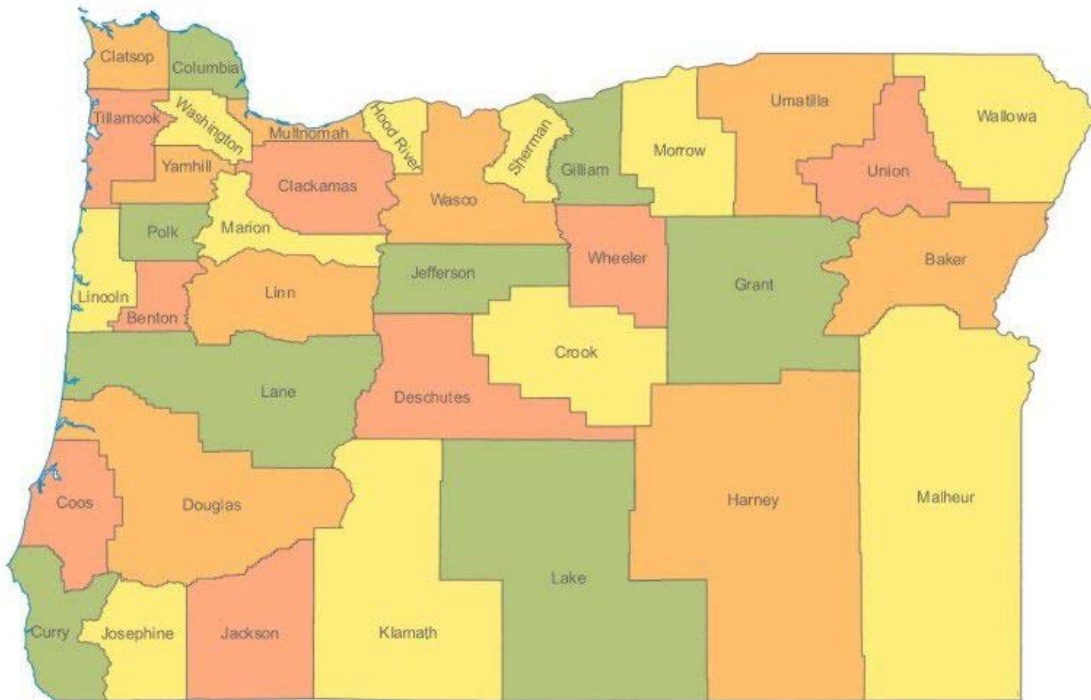
WOODS COUNTY

ALVA: ① countywide regional fields, washes, stream beds, cut banks, etc., especially ② S of Alva—**agate** (banded, mossy), **chalcedony, chert, jasper**.

Oregon

OREGON

The geologic character of Oregon was formed during Tertiary times when millions of years of volcanic activity during the Oligocene and Miocene epochs raised the Cascade Mts., and layered nearly the whole surface of the state with thick beds of volcanic ash and flows of basalt. The Cascade Range, with its numerous snow-covered volcanic cones, divides the 100 mi. wide strip of rainy western Oregon from the high arid plateau county of the eastern two-thirds of the state. Northeastern Oregon is part of the 225,000 sq. mi. basalt Columbia Plateau, one of the largest raw lava regions of the world.



Oregon County Map

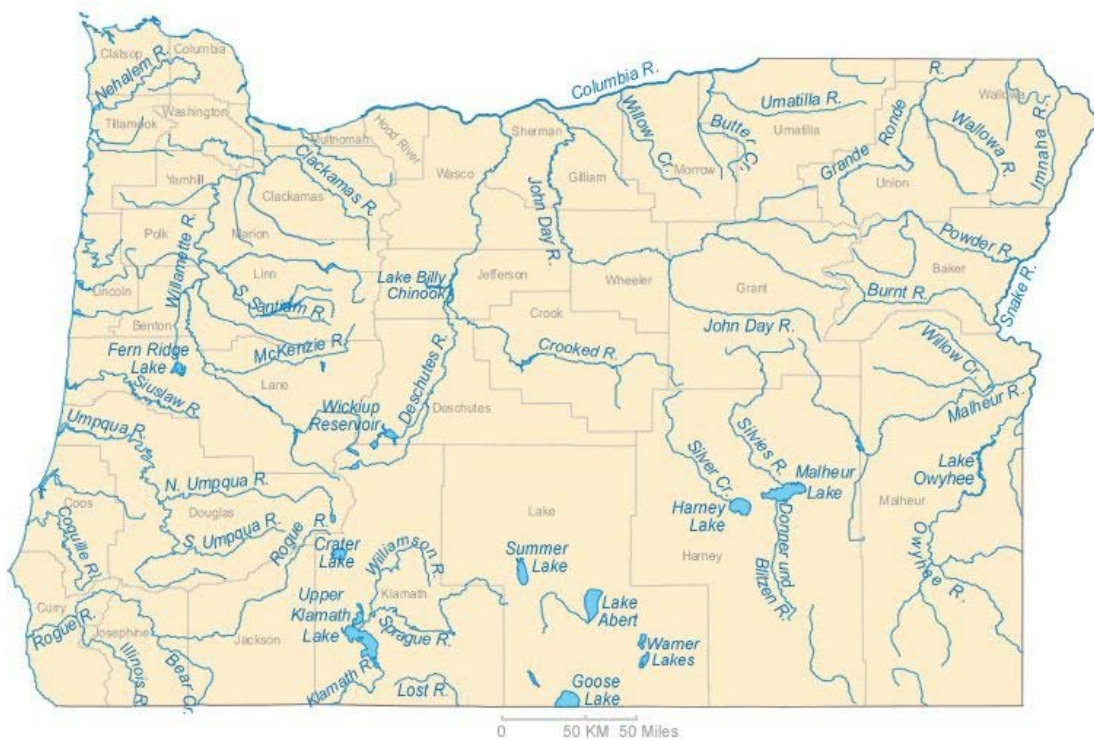
Central and eastern Oregon embraces many thousand sq. mi. of some of the most prolific gemstone collecting land in America. Here almost every type of **Quartz family gemstone** can be found, along with such oddities of the mineral kingdom as geodes, nodules, fossils, and a great array of silicified woods. The fertile western region is also heavily endowed with gemstones, and nearly every creek and river gravel bar, regional gravel pit or other excavation and rd. cut reveals attractive minerals, gemstones, fossils and petrified wood.

A federal law passed in 1962 limits collecting of rocks from public lands to not more than 25 pounds plus one piece per person per day, not to exceed 250 lbs. per year. Petrified wood may not be sold or bartered to commercial collectors. A particularly informative and colorful *Central Oregon Rockhound Guide* is available free of charge, published by the Forest Service in cooperation with the Bureau of Land management, and the Prineville-Crook county chamber of Commerce.

The state rock of Oregon was officially designated as the **thunderegg**, one of the most distinctive and sought-after mineral oddities in the world. These spherical masses of

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agate core in a volcanic matrix range in size from less than 1" to several ft. in dia., with most specimens being slightly larger than baseballs. The exterior surface is an uninteresting, drab rind of chocolate brown rhyolite or silicified volcanic tuff, nearly always knobby in appearance. This rind encloses a solid core of a peculiarly geometric, multisided mass of translucent chalcedony which may be banded agate in contrasting colors, deep red carnelian, jasp-agate, or chalcedony containing a small unfilled cavity lined with Quartz crystals. No two thundereggs are alike, and no matter how one is sawed or sliced, the interior presents a star shape in lovely contrasting colors against the dark brown, buff, or tan rind matrix. The most prized specimen contain carnelian or reveal exquisite and colorful designs ranging from five-pointed stars to miniature landscapes. Not a few thundereggs are actual doubles enclosed in an elongated rind. Such nodular gemstones are invariably associated with highly siliceous volcanic rocks and are found abundantly in rhyolite flows and welded tuffs in a broad zone north and west of US 26. The geology exposed in this area is mainly the Clarno formation of Eocene age and includes basic flows and andesite intrusives. The genesis of thundereggs is almost completely unknown.



Rivers & Lakes of Oregon

Some of Oregon's coastal beaches are considered by rock collectors as the finest areas in the world for **agates** (clear, ribbon), **jasper**, **agatized wood**, **coral**, **bloodstone** and **fossils**. Agate Beach near Newport in Lincoln Co. was well named. Other beaches well known to collectors are Otter Rock, Bob Creek, Ten Mile, Hecceta Head, and beaches both north and south of Yaquina Bay. The best hunting is right after winter storms and after extreme high tides have churned up the sands.

Oregon also ranks 10th in the **Gold** producing states of America. The Gold panning hobbyist may still reap small seasonal fortunes in nuggets and colors from the streams of northeastern Oregon's Blue Mts. and those descending the Siskiyou Mts. of far southwestern Oregon.

Oregon

BAKER COUNTY

BAKER: ① area land surfaces, draws, washes, etc., many varieties—**quartz family gemstones**; ② area mining dists., including Baker, Buck Gulch, Virtue, etc., regional mines (lode and placer)—**Gold, Pyrite, Pyrrhotite** (bearing Gold), **Tetrahedrite**; ③ N 2 mi., a quarry—**Gypsum, satin spar**; ④ Shirttail Cr., area—**agate, chalcedony, jasper, Oregon Jade** (green **plasma** agate), **agatized wood**; ⑤ E, in volcanic rocks and in Powder R. gravels along the Richland Valley—**chalcedony geodes** (lined with drusy quartz crystals).

COPPERFIELD (NE part of Co.), the Copper Butte Dist. (including the Lower Snake R.), regional mines, especially the Copper Queen—**Chalcocite, Malachite, Pyrite**.

CORNUCOPIA (ghost town), the Bryan Mine and others—**Gold, Pyrite, Sylvanite**.

DURKEE, area washes, draws, slopes—quartz family **gemstones**.

GEISER, the Bonanza Dist. regional mines—**Gold, Pyrite**.

HOMESTEAD (extreme NE corner of Co.), the Iron Dike Dist. mines, as predominant metal—**Silver** minerals.

PLEASANT VALLEY. Area draws, washes, hillsides—**garnets** (resembling Rhodolite), **opalized wood** (banded black and white).

RICHLAND, area surfaces, draws, etc.—quartz family **gemstones**.

RYE VALLEY, area mines—**Argentite, Arsenopyrite, Cinnabar, Galena, Pyrite, Pyrolusite, Specularite** (in Argillite), **Sphalerite, Tetrahedrite**.

SPARTA (14 mi. NW of Richland), area mines—**Arsenopyrite, Galena**.

SUMPTER: ① area mining dists. Of Cable Cove, Elkhorn and Burnt River Divide (Sumpter), regional mines—**Argentite, Arsenopyrite, Cinnabar, Galena, Pyrite, Pyrolusite, Specularite** (in Argillite), **Sphalerite, Tetrahedrite**; ② Cracker Creek Dist.; and ③ N, in the Bourne Dist., area mines (several deep)—**Gold, Pyrite**.

WHITNEY (11 mi. SW of Sumpter): ① Greenhorn Dist.: (a) area gravels surfaces—**Gold, agate, silicified wood**; (b) Greenhorn Mts., area NW of the Owyhee Reservoir—**agate**.

BENTON, LANE, LINN, CLACKAMAS & MULTNOMAH COUNTIES

AREA, all low-water gravel bars of the Willamette R., and its tributaries—**agate, jasper, bloodstone, petrified wood**, etc.

CLATSOP COUNTY

ASTORIA, Pacific Ocean beaches in gravels as waterworn pebbles—**bloodstone, jasper**, some **agate**.

Pittsburg, MIST, JEWEL, ELSIE, NEHALEM (take E to W along the Nehalem R. from Columbia Co. NE of Vernonia), low-water stream gravels all way to ocean—**agate, carnelian, jasper**.

COLUMBIA COUNTY

GABLE, Columbia R. shores, in gravels—**Thomsonite**.

VERONIA: ① SW, in gravels of Clear Cr.—plume **agate, carnelian, jasper**; ② in gravel bars of Clear Cr. and town—**agate, carnelian, chalcedony, jasper**; ③ area logging RR cuts—**Zeolite** minerals, **fossils**.

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COOS COUNTY

AREA, ocean beach gravels, entire length of Co.—**agate**.

BANDON, just N, at Bullards Beach State park, in beach sands—**Platinum**.

COOS BAY, W to ocean beaches, both N and S of the bay entrance along entire coast of Co.—**agate, petrified wood**.

MYRTLE POINT, including the Eden and Randolph dists., regional stream placers—**Gold**.

CROOK COUNTY

AREA: ① W side of Co., especially in broad triangle between US 26 on N and US 20 on the S, all land surfaces, draws washes, etc.—**agate, chalcedony, chert, jasper, petrified wood, quartzite**; ② Howard area black-sand placers—**Cinnabar, Gold**; ③ McAllister Butte (near Ochoco Cr.), area—gem **moss agate**.

PAULINA, SW 5½ air mi., in T. 17 S, R. 22 E: ② Sec. 8 & 29, the South Fork, area—**agatized limb casts**.

POWELL BUTTE, area draws, washes, breaks, slopes, etc.—plume **agate**.

PRINEVILLE. Most of the following localities have been abstracted from Central Oregon Rockhound Guide, published in 1971 by the US Forest Service. This broad region ranks among the finest gemstone collecting areas in America for **moss agate** (all sizes and colors), **Quartz** crystal geodes, massive botryoidal **agate**, and **thundereggs**. Many of the listed localities comprise free collecting claims owned by the Prineville chamber of Commerce; many others are on private land and require permission.

① Area, Viewpoint, several excellent locations on private lands, fee charged—**thundereggs**; ② E 5 mi. on US 26, Ochoco Lake shores above the dam, area—*Ochoco jasper*; ③ E 6 mi., on US 26, on NW side of the Ochoco Reservoir in Sec. 14, T. 14 S, R. 16 E, area—*Ochoco jasper*; ④ E approx. 19½ air mi., in T. 14 S, R. 18 E, sheep Cr. (NW¼ Sec. 25), area—green **moss agate**; ⑤ E, into the Clarno Basin, all regional land breaks, washes, erosional slopes—**fossil** bones and cones; ⑥ ENE on US 26 to dirt rd. turnoff NE along Ochoco Cr., then NE ≈ 12 mi. (into Wheeler Co.): (a) turn W, back into Crook Co. to Coyle Spring (Sec. 34, T. 12 S, R. 19 E), area—green **jasper**; (b) Sec. 35, Ahalt Cr., area—**Vistaite**; ⑦ NE ≈ 12 air mi. (6.2 air mi. due N of the E end of the Ochoco Reservoir), in T. 13 S, R. 17 E, Dry Cr.: (a) line between Sec. 7 & 8, SW¼ Sec. 8, area—**jasper**; (b) due N ½ mi. or so, area—**thundereggs**; ⑧ NE ≈ 16 air mi. (11 mi. NNE of E end of the Ochoco Reservoir), in T. 12 S, R. 17 E: (a) S part of Sec. 22, Harvey Cr., area—**thundereggs**; (b) NW¼ Sec. 22, Harvey Gap—**thundereggs**; (c) nearby, in Sec. 30, T. 12 S, R. 18 E, at Forked Horn Butte, area—**thundereggs**; ⑨ NE ≈ 16 air mi.: (a) T. 13 S, R. 18 E, White Fir Spring (Sec. 7), area—**thundereggs**; (b) Sec. 5, white Rock (immediately SE of Wildcat Mt.), area—**thundereggs**; ⑩ NE ≈ 19 air mi., at Wildcat Mt., the famed Ochoco Nodule Beds, area—plume **agate, chalcedony, opal, thundereggs** (agate centers); ⑪ NE ≈ 25 air mi., in Sec. 26, T. 11 S, R. 18 E (area reached by USFS rd. 1223), area—green **moss agate**; ⑫ NE ≈ 26 air mi. via US 26 to the Ochoco Divide, turn W on dirt rd. to Whistler Spring in T. 12 S, R. 18 E: (a) Sec. 11, area about the springs—**thundereggs**; (b) Sec. 16, Desolation Canyon, area—**thundereggs**; ⑬ S about 15 mi. on the Crooked R. rd. to the Prineville Reservoir dam, then continue S and E about 6 mi. to rd. fork at Bear Cr.: (a) turn N to mouth of Bear Cr. in Sec. 4, T. 17 S, R. 16 E, area—**agate**; (b) from fork turn S and E about 12 mi. (past Little Bear Cr. turnoff, then up Bear Cr. from its confluence with Sage Hollow Cr.), then fork N on crooked dirt rd. about 3 mi. to Sec. 15, T. 18 S, R. 17 E, Fischer Canyon (on the Crook Co. side of the Deschutes Co. line), area—**petrified wood**; ⑭ S ≈ 19 mi. on Rte. 27 and 2 mi. S of confluence of Bear Cr. with the Prineville Res., on E side of Taylor Butte (Sec. 9, T. 17 S, R. 16 E): (a) area—**moss agate, chalcedony**, drusy **quartz** in agate; (b) gravel bars of the whole length of Bear Cr. —**moss agate, chalcedony**, drusy **quartz** in agate; ⑮ SSE about

Oregon

12 mi. on the Juniper Canyon rd. to Antelope Cr.: (a) area E toward the Carey Ranch in Sec. 11, T. 16 S, R. 16 E, the famed Carey Agate Beds—Carey plume **agate**, **chalcedony**, **jasper**; (b) SW about 3 mi. to end of rd. in Sec. 21 (a short distance E of the Prineville Res.), area of Reservoir Heights—black **moss agate**; ⑩ SE ≈ 12½ air mi. to Eagle Rock in Sec. 29, T. 15 S, R. 17 E, area N of the Prineville Res. And Crooked R.—dendritic **agate**; ⑩ SE ≈ 30 air mi. into Ochoco Natl. Forest, in Sec. 1 & 2, T. 17 S, R. 19 E, at Shotgun Cr., area—varied **moss agate**; ⑩ SE ≈ 40 air mi.: (a) 4½ mi. S of Logan Butte, in SE¼, SE¼ Sec. 12, T. 19 S, R. 19 E, Smoky Mt., area—**agatized limb casts**; (b) ≈ 4 mi. SE of Logan Butte at Owens Water-South Pole Cr. in Sec. 3 & 9, T. 19 S, R. 20 E, area—green **agatized wood**.

CURRY COUNTY

AREA: ① ocean beaches along entire Co., but especially N and S of the mouths of the Chetco and Rogue rivers—**agate**, **Californite** (Idocrase), **Jasper**; ② Rogue R. gravel bars from Marial in the NE corner of Co. to its mouth at Wedderburn—**agate**, **Garnets**, **Gold**, **jasper**, **petrified wood**.

AGNESS: ① area Rogue R. gravels—**agate**, **carnelian**, **chalcedony**, **Grossularite** garnets, **Gold**, **jasper**, **Quartz** crystals; ② old mines and prospects along the lower Illinois R.—**Copper** minerals, native **Copper**.

BROOKINGS, area ocean beach gravels—**agate**, **jasper**, **Nephrite** jade.

CHETCO, CORBIN, ECKLEY, MARIAL, OPHIR, PORT ORFORD, SELMA, many regional streams with placer sands, formally mined and yielding colors and nuggets to the casual seasonal panner—**Gold**.

PORT ORFORD, area ocean beach sands—**Platinum**.

SIXES, E on rural rd. into Coast Range ≈ 15 mi. to Sugarloaf Mt., area talus slopes and stream gravels—**Nephrite**, **serpentine**.

WEDDERBURN (at mouth of the Rogue R.), area river gravels—**Grossularite** garnets.

DESCHUTES COUNTY

LAPINE (30 mi. S of Bend on US 97), N 5 mi., turn E for ≈ 13 mi., area between Paulina and East lakes—**obsidian**.

DOUGLAS COUNTY

AREA, Cedar Springs Mt., the Ball Mine—**Azurite**, **Chalcocite**.

GLENDALE, area old hydraulic placers and lode mines—**Gold**.

OAKLAND, SE, area old mines—**Cinnabar**.

REEDSPORT, W, all ocean beach gravels N and S of Winchester Bay—**agate**.

RIDDLE, NW, at Nickel Mt., area mines—**chrysoprase**, **Nickel** minerals.

ROSEBURG: ① SE 9 mi., area quarries—**marble**; ② E 12 mi., in gravels of Davis Cr.—orbicular **jasper**; ③ area gravels of the Umpqua R.—*Oregon Jade* (massive **Grossularite** garnet): (a) N, in gravel bars of the North Umpqua R. and (b) especially 22 mi. E in same river gravels, and (c) S, in gravel bars of the South Umpqua R.—**agate**, **chalcedony**, **carnelian**, **jasper**, **petrified** and **silicified wood**.

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GRANT COUNTY

AREA: ① many old mining dists. In NE part of Co., including Alamo, Crane Creek, etc.—**Gold**; ② at Beach Creek, in cavities in volcanic rock—**Cowlesite, Levyne** (both fluorescent).

CANYON CITY (just S of John Day on US 395), several area old placer mines—**Gold**.

GRANITE (far NE part of Co. and 14 mi. NW of Sumpter, in Baker Co.), many dredger tailings and area mines—**Arsenopyrite, Galena, Gold**, etc.

JOHN DAY, NE, in very broad area extending to Austin (30 mi., the Poker Flat mining dist.), hydraulic placers—**Gold**; ② and Granite (38 air mi.), all regional draws, washes, land surfaces—gem **jasper**.

PRAIRIE CITY: ① the Quartzburg Dist. mines—**Cobaltite, Chalcopyrite, Gold**; ② the Copperopolis claims—**Malachite**; ③ Saw Mill Gulch, hydraulic placers—**Gold**.

SUSANVILLE (Dist.), many area old mines—**Cinnabar, Chalcopyrite, Gold, Sphalerite**, etc.

HARNEY COUNTY

AREA, the Steens Mts. in SE corner of Co. (follow any desert rd. into general surrounding region of these abrupt, high isolated mts.): ① reds. S from Princeton 40 mi. Se of Burns via Rte. 78 lead to W side of the Steens, and ② rds. SW from Folly Farm 30 mi. SE of Princeton leading to the Alvord Ranch, Andrews, and Fields give access to the E side of the range, all regional land surfaces, draws, washes, etc.—**moss agate, jasper, thundereggs, geodes, Quartz** crystals, etc.

BURNS: ① W, broad general area, and ② E to Buchanan, area of the Harney Valley—**moss agate, jasper, thundereggs, geodes, Quartz** crystals, etc.; ③ N 18 mi. on US 395, then 7 mi. W, Silvies Canyon in Myrtle Park—wood **opal**; ④ E 40 mi., the Warm Springs Reservoir: (a) area surfaces—**agate, chalcedony, jasper, petrified wood**; (b) at milepost 171 on US 20 turn S on dirt rd. 14.2 mi. to the reservoir, on E side of rd. along lake and on surfaces of surrounding hills—**agate** (black dendritic and white plume).

DENIO, the Pueblo Mts. (S of the Steens Mts.), mines, as large masses—**Uraniferous silica**.

HARNEY CITY, area placers—**Gold**.

JACKSON COUNTY

AREA, This Co. and including adjoining Josephine Co. are located in the Mountain Region of SW Oregon. The **Gold** producing mines of SW Oregon belong to the same mineralized belt as the deposits in Siskiyou Co., CA.

APPLEGATE (Dist.): ① area diggings and hydraulic placers along the Applegate R. (originally worked by Chinese labor) —**Jade** (botryoidal, or *Monterey* type), **soapstone**, placer **Gold**; ② Upper Applegate Dist. (area drained by the Applegate R.): (a) area mines, (b) the Queen Anne Mine, and (c) the Sterling Mine—**Arsenopyrite, Calcite, Gold, Pyrite**.

ASHLAND: ① Big Butte, area—**agate**; ② SE, on Green Springs Mt. (elev. 4,551'), area slopes, draws, etc.—**agate** nodules, **carnelian, chalcedony, jasper**; ③ mining dist., including Mt. Ashland or Siskiyou Peak, Pilot Knob and Grizzly Peak plus the intervening Bear Cr. Valley, with several tributaries leading N as far as Phoenix (8 mi.): (a) Ashland area mines—**Gold, Pyrite, Pyrrhotite, Quartz** crystals, **Sericite**; (b) Columbine mines—**Chalcopyrite, Gold, Marcasite, Pyrite, Pyrolusite**; (c) Crackerjack mines—**Bornite, Chalcopyrite, Calcite, Gold, Pyrite**; (d) Mattern mines—**Calcite, Gold, Pyrite**; (e) Palmer Cr., small prospect—**Cinnabar**; (f) Reeder, area mines—**Calcite, Chlorite, Gold**,

Oregon

Pyrite; (g) Shorty Hope, mines—**Calcite, Chalcopyrite, Galena, Gold, Pyrite, Pyrrhotite.**

BUTTE FALLS, area stream gravels—**bloodstone.**

CENTRAL POINT, area from 4 mi. E of town to 6 mi. NE at Eagle Point: ① Rogue R. gravel bars, and ② gravels of Antelope and Butte creeks and their tributary draws—**moss agate.**

EAGLE POINT, area stream gravels—**moss agate, bloodstone.**

GOLD HILL (Dist.), includes the Rogue R. Valley from Central Point and Table Rock E to Josephine Co., a great many important regional old mines scattered in the backcountry, most of which have similar minerals on their dumps—**Arsenopyrite, Bornite, Calcite, Chalcopyrite, Galena, Gold, Pyrite, Pyrolusite, Pyrrhotite, Sphalerite.**

JACKSON (Medford Dist.) The dist. adjoins the Ashland Dist. on the NW and includes all of the Bear Cr. Valley between Phoenix and Central Point; to the SW it extends to the divide between Bear Cr. and the Little Applegate R; to the NE it is limited by Antelope Cr.: ① the Norling Mine—**Gold, Pyrite;** ② the Opp Mine—**Calcite, Chlorite, Gold, Pyrite, Petzite;** ③ the Town Mine—**Gold, Pyrite, Quartz;** ④ the Yellow King Mine—**Gold, Pyrite.**

MEDFORD: ① on hills above McCloud on Rte. 62 to Crater Lake: (a) area basalt outcrops—**Natrolite;** (b) draws, washes, slopes, etc.—**Quartz** crystals; ② Big Butte, area—**medfordite** (green and white jasper); ③ Big Falls, area—**bloodstone;** ④ NE 10 mi. on Rte. 62, broad area—**carnelian moss agate;** ⑤ N 12 mi., Table Rock, area—**agate, petrified wood.**

JEFFERSON COUNTY

AREA, N and E parts of Co., tributaries of the John Day R., in regional gravels, draws, washes, etc.—**fossil ferns.**

ASHWOOD: ① area—**agate, chalcedony, geodes, jasper, thundereggs;** ② E 22 mi., the Horse Heaven Mine—**morrisonite** (chert).

MADRAS: ① general region—**agate, chalcedony, geodes, jasper, thundereggs;** ② NE 17 mi. and 4 mi. SE of Willowdale, the Fulton Agate Beds (formally known as the Friday Ranch), one of the best known gem locations (fee) —**agate, chalcedony, jasper, precious Opal, thundereggs.**

WILLOWDALE, general area surfaces, draws, washes, etc.—**agate, chalcedony, geodes, jasper, thundereggs.**

JOSEPHINE COUNTY

AREA, Josephine Cr., placer gravels—**Gold, Josephinite** (a Nickel mineral), **Platinum** nuggets.

CAVE CREEK JUNCTION: ① area gravels and placer mines along Cave Cr.—**Gold, Rhodonite;** ② E 18 mi. to famed Oregon Caves, all area surrounding the cavern—**agate, chalcedony, Gold** nuggets (in alluvial gravels of watercourses), **jasper, petrified wood, Rhodonite.**

GALICE (Dist.), occupies the Rogue R. Valley NW of the mouth of Jump-Off-Joe Cr. to the W boundary of Co., many area old mines—**Arsenopyrite, Azurite, Bornite, Calcite, Chalcopyrite, Chrysocolla, Galena, Gold, Malachite, Pyrite, Pyrolusite, Pyrrhotite, Sphalerite.**

GRANTS PASS (Dist.), occupies the Rogue R. Valley SE of the mouth of Jump-Off-Joe Cr. (except Applegate Valley), many old mines—**Arsenopyrite, Azurite, Bornite, Calcite, Chalcopyrite, Chrysocolla, Galena, Gold, Malachite, Pyrite, Pyrolusite, Pyrrhotite, Sphalerite.**

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HOLLAND, S 1½ mi. along Althouse Cr., area—**agate, Garnets, Gold** nuggets, **jasper, Quartz** crystals, **serpentine**.

KERBY, W 10 mi., mine—**chrysotile** asbestos.

WALDO (Dist.), occupies the SW corner of Co., an area drained chiefly by Althouse and Sucker creeks and the East Fork of the Illinois R.: ① a few placer and lode mines—**Azurite, Bornite, Chromite, Chrysocolla, Galena, Gold, Malachite, Quartz** crystals, **Silver**; ② near headwaters of the Illinois R., at Sailor's Diggings, placer—**Gold**.

KLAMATH COUNTY

AREA: ① Crater Lake National Park: (a) all area surrounding park—**agate, petrified wood**, etc.; (b) immediately S of park, area—*Crater Lake Flower jasper*; ② Klamath R. gravel bars—**agate, jasper, chalcedony**, etc.

LAKE COUNTY

AREA, far NE corner of Co. (reached 12 mi. Se of Hampton, Deschutes Co. via US 20), on SE side of hwy., Glass Butte (elev. 6,393'), center of a vast volcanic area (obsidian flow) denominated as the Glass Butte Recreational Rockhound Area in Sec. 3, 10 & 14, T. 23 S, R. 22 E (the Glass Butte-Black Butte area)—**obsidian** (various types).

LAKEVIEW: ① all surrounding desert area—**agate, jasper, geodes, nodules, sanidine, sunstone**; ② S 8 mi., in Crane Canyon, area—**agate, jasper, thundereggs**; ③ N 6 mi. on US 395, turn E on Rte. 140 to Warner Canyon, general area with long N-S dirt rd. giving access from Crane Mt. On the S to Crook Peak on the N—quartz family **gemstones, petrified wood**.

PLUSH, NE to Hart Mt.: ① W flank and draws—**agate, chalcedony, geodes, jasper, opal, thundereggs**; ② summit, cavities in Tertiary basalts—**chalcedony, opal**.

QUARTZ MT. (E side of Quartz Pass on Rte. 140 about 66 mi. E of Klamath Falls, Klamath Co.), area of the pass—**agate, chalcedony, jasper**, etc.

LANE COUNTY

BOHEMIA (S part of Co. 15 mi. SE of Disston), a mining dist. comprising placer claims on Sharps, Martin and Steamboat creeks and tributaries—**Gold, Barite, Cerussite, Chalcopyrite, Pyrite**.

GOSHEN, E 3 mi., Mt. Pisgah, area—**agate, Calcite, Heulandite, jasper, Malachite, Mesolite, Quartz** crystals.

HAMPTON, LANDAX (on Rte. 58 about 30 mi. SE of Eugene), W, at June Mt., a ledge—**salt peter**.

TRENT, S on Hwy. 58, then ½ mi. to rd. E to Snyder ranch to dig (fee)—**agate** with **Realgar**.

LINCOLN COUNTY

AGATE BEACH (famed OR coast collecting locality, especially after every winter storm), in beach gravels—**agates, moonstones, jasper, chalcedony**, etc.

NEWPORT: ① area beaches, especially at Agate Beach to the N—**agate, chalcedony, jasper, petrified wood, Quartz** crystals (waterworn); ② Yakina Bay to Toledo, area black sands—placer **Gold**.

YACHATS: ① area beaches—**sagenite agate, chalcedony**, orbicular **jasper, moonstone, geodes**; ② beaches S to Florence, Douglas Co.; and ③ beach gravels 2 mi. N of

Oregon

the mouth of China Cr. to Commings Cr. beach 3 mi. S of town—**agate, jasper, petrified wood, enhydros, moonstones, Grossularite** garnets; ④ gravels of Big Cr. —**Garnets.**

LINN COUNTY

SWEET HOME, HOLLEY, area: ① the Sweet Home Petrified Forest (embracing some 20 sq. mi.), especially along Ames Cr. and the shores of the Calapooya R., area—banded **agate**, crystal **geodes, silicious wood**; ② Chandlar Mt. SW of Holley, area—**agate** (purple or *Calapooya* blue), **carnelian.**

QUARTZVILLE, in placer sands of Quartzville Cr.—**Gold.**

MALHEUR COUNTY

BROGAN, all surrounding area—**agate, chalcedony, chert, jasper, petrified wood.**

IRONSIDE: ① all surrounding area; and ② NE, to the Willow Cr. Reservoir, all surrounding area—**agate, chalcedony, chert, jasper, petrified wood.**

JORDAN VALLEY: ① all area draws, washes, surfaces—chert, jasper; ② gravels of Jordan Cr.—**agate, chert, jasper, petrified wood.** (A dirt rd. runs E, rough and very steep in places, to the highly mineralized region of De Lamar and Silver City, Owyhee Co., ID, a back door entrance passable for stout cars and pick-ups; many great Silver mines, etc.)

MALHEUR, area extending NE to Rye Valley, Baker Co., many regional mines (some very deep lodes)—**Gold.**

NYSSA: ① area immediately surrounding town—**agate, geodes, nodules, jasper, petrified wood, thundereggs**; ② basalt rimrocks along regional cr. valleys—**moss agate, jasper, chalcedony, thundereggs**; ③ SW 8 mi. to Owyhee, then W and S on Co. rd to the Owyhee Reservoir Dam: (a) NW 10 mi., near Nigger Rock, area—**agate, chalcedony, jasper, petrified wood**; (b) the Morrison Ranch near S end of the reservoir, area—**morrisonite** (a gemmy jasp-agate); ④ S 35 mi., broad area extending over the ID state line, best reached S from Homedale, ID, on US 95, then S 2 mi. to large sign: *Graveyard Point*, 4 mi. W and 1 mi. S. (Brass Plaque). From the monument head S along a ditch bank to a bridge, cross W, and take main dirt rd. on right of emergency air strip, up a hill, through a gentle gap, and across a cattle guard back into OR: (a) all area surrounding both sides of the state line—**agate**; (b) W 2 mi. from the cattle guard to a rd. fork, take right fork, all area hills along both sides of rd. showing pits, trenches, excavations—**agate.**

ROCKVILLE (at S end of the Sucker Cr. Canyon about 43 mi. S of Nyssa), upstream along Sucker Cr. for entire length—**agate, chalcedony, chert, jasper, opalized wood.**

MARION COUNTY

DETROIT, the Santiam Dist., area placers—**Gold.**

MORROW COUNTY

HEPPNER, SE, to area of buttes—opal filled **nodules.**

PARKERSMILL, S, at Opal Butte, area—**Hyalite** opal.

POLK COUNTY

DALLAS, area land surfaces—**jasper.**

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SHERMAN COUNTY

BIGGS, S 5 mi. along US 97, and 5 mi. S of Rufus, area—**agate, jasper** (*Wascoite* type).

TILLAMOOK COUNTY

AREA, ocean beach gravels of entire Co. S of Oceanlake, Lincoln Co.—**agate, jasper, bloodstone, moonstone.**

UNION COUNTY

STARKEY, the Orofino Mine: ① area—**agate, jasper**; ② mine dumps—**Gold.**

WILLOWA COUNTY

JOSEPH, along the Lower Inmaha R., area—**agate, prase.**

WASCO COUNTY

ANTELOPE: ① general area—**agate** (iris, moss), **chalcedony** (rose, geodes), **Jade, jasp-agate, jasper**; ② E 1¼ mi., a quarry—red **jasper**; ③ E 10½ mi., area—**jasper**; ④ S 6.8 mi. on rd. to Ashwood, Jefferson Co., area—green **moss agate**; ⑤ SE 15 mi., area—**fossil** ferns.

MOSIER, area stream gravels—**petrified wood, silicified pine cones.**

PINE GROVE, W, and SE of Bear Springs Forest Camp, at Sunflower Flats, all hillsides and creek gravels—**jasper, thundereggs.**

SIMNASHO, the Warm Springs Indian Reservation: ① general area—brecciated **jasper**; ② S flanks of the Mutton Mts., area—**agate, chalcedony** geodes, black agate **geodes.**

THE DALLES: ① W, gravels of upper Chenoweth Cr. (E side of mts. from Mosier), area—white **opalized wood.**

WAPINITIA, N, in mts., area—**agate, chalcedony, jasper.**

WHEELER COUNTY

ANTONE, in gravels of Spanish Gulch, placers—**Gold.**

DAYVILLE: ① NW 7 mi., and ② E 13 mi., area—**fossil** bone, **petrified wood**; ③ gravels of the John Day R. (through entire Co.)—**fossils, petrified wood.**

FOSSIL, S and W 16 mi., the famed Clarno Fossil Beds, area—**agate, jasper, fossils, petrified wood.**

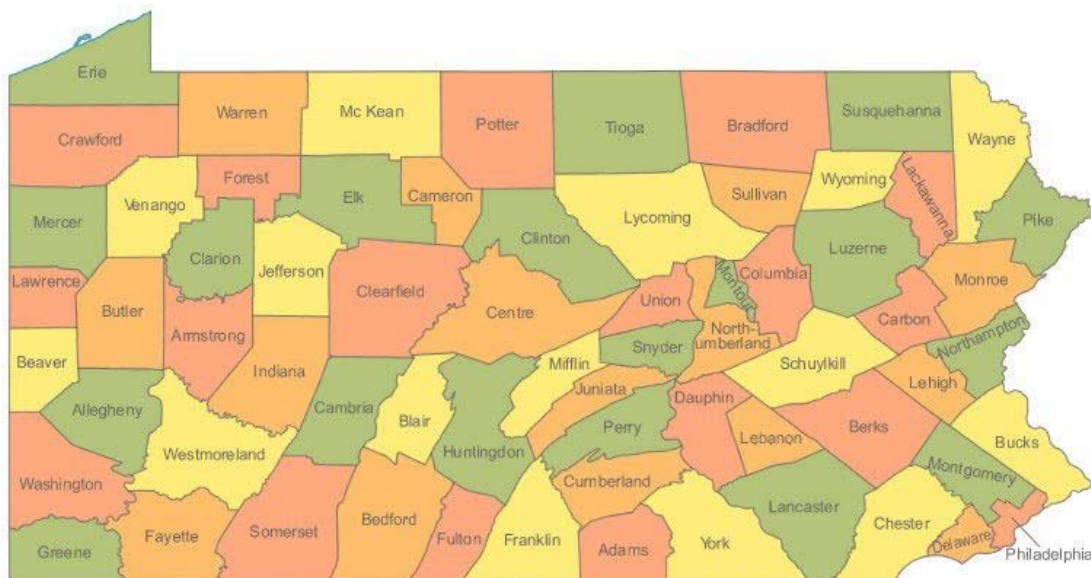
YAMHILL COUNTY

McMILLVILE, area—**Calcite** (fluorescent).

Pennsylvania

PENNSYLVANIA

Known as the Keystone State, Pennsylvania manifests an extraordinary geological history. Except for the coastal plains southeast of Philadelphia and around Lake Erie, the state is mostly hills and steep, high mountain ridges slashed by narrow valleys. Central Pennsylvania is a 2,500' plateau with a generally Arctic character, marked by the sprawling parallel Blue and Allegheny mountain system. Through these mountains drainage rivers, older than the mountains themselves, cut spectacularly scenic *water gaps* that enabled colonial pioneers to penetrate the rich interior limestone valleys.



Pennsylvania County Map

During the Ordovician and Silurian periods, Pennsylvania was part of a great western syncline lying beneath shallow epeiric seas and being steadily filled by the wasting away of the western slopes of Precambrian Appalachia. This ancient continental land mass, now entirely gone and with its granite roots sunk beneath the Atlantic Ocean off the shores of New England, was the source land for the basic rock strata of the state—the coarse, deltaic Pottsville conglomerate. The sedimentary deposits reached thicknesses of 4,000' and 5,000', and the widely extended beds of Pennsylvanian marine limestones were formed while much of America lay under the epicontinental seas.

During the 50 million year period of the Upper Carboniferous epoch, undoubtedly the greatest Coal forming era in the world. Vast tropical forests of Sigillarian, Lepidodron and Calamities were extracting CO₂ from a steaming atmosphere to convert into the enormous Coal beds for which the state is famed. This Pennsylvanian epoch, which began some 330 million years ago, derives its name from *Penn's Woods*, the name given to the colony by the original Dutch who first began settling the land in 1681.

Although most of the gemstone and mineral localities of Pennsylvania are found in the southeastern counties, with a few in the south-central and southwestern portions of the state, a few minerals played an important role in the state's economic development. The Iron which was important in the Revolutionary War came largely from the Great Cornwall Ore Banks of Lebanon Co., opened on South Mt. at Cornwall, the greatest concentration of iron east of the Mississippi River. While coal constitutes the greatest of the state's natural resources, it was the associated petroleum which really began the world's oil industry after

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Col. Drake drilled his first famous wagon-wheel well near Titusville, Crawford Co., striking an oil gusher at 69½'.



Rivers & Lakes of Pennsylvania

Nickel and Copper were mined in Lancaster Co. before the Revolutionary War, and the Wood Chromite Mine provided most of the **Chromite** used before the Civil War. Very little Gold and Silver have been found, and what Gold was produced came as a by-product of the Cornwall Iron Mine. Most minerals mined in the state, other than a little Lead and Zinc, are in the nature of marble, limestone, sandstone and other building products. From 1839 to 1892 a good deal of Corundum came from several mines in Chester and Delaware counties, and gem **Corundum** crystals are still gathered from pegmatite exposures in these counties. Mountain stream gravels produce **Epidote**, **Calcite**, **Quartz** crystals and silicified woods. Many quarries and gravel pits prominent along most of the state's great rivers yield a never ending supply of Quartz family gemstones. Hundreds of Coal mines produce high quality **Pyrite cubes**. Limestone quarries yield the usually familiar crystals of **Calcite**, **Dolomite** and **Pyrite**.

ADAMS COUNTY

AREA, S part of Co. along the Md. State line, many regional Copper mines—**Azurite**, **Cuprite**, **Malachite**, etc..

CASHTOWN: ① 2 mi. N of Newman School at head of the Buchanan Valley, in large Quartz vein—specular **Hematite**; ② W 1 mi. (W of Virginia Mills and N of Marshall), area outcrop—specular **Hematite**, **Piedmontite** (a red Epidote); ③ Charmain, outcrop along RR—**Piedmontite**; ④ E, at Fox Fills, area—**Garnets**; ⑤ N, on W side of Piney Mt., area—**Piedmontite**; ⑥ Caledonia State park, area—**agate**, **jasper**.

FAIRFIELD, N 1½ mi., at foot of Sugarloaf Mt., area—**Garnets**.

GETTYSBURG: ① Culp's Hill, Bushman's Quarry on S slope—native **Copper**; ② E 2 mi. to Rocky Grove School (2½ mi. SE from the Baltimore Turnpike), many area quarries along the rte.—native **Copper**; ③ SE 2½ mi. on US 140, on W bank of Rock Cr. (just before the Power Hill jct.), the Teeter Stone Quarry—**Chabazite** (peach colored crystals), **Epidote**,

Pennsylvania

Malachite (as coatings), **Pectolite**, massive **Quartz**; ④ NE 4 mi., Granite Hill, area quarries—**Feldspar, Magnetite, Olivine, Quartz**, etc.

MARIA FURNACE: ① SW 2 mi., on N banks of Tom's Cr., the Reed Hill Mine; ② Pine Mt., on rd. from town: (a) NE ½ mi., on W side of rd., the Bingham Mine; (b) W ¾ mi., the Virgin Mine—**Azurite**, native **Copper, Cuprite, Epidote** (on Pine Mt.), **Malachite, Quartz**.

ALLEGHENY COUNTY

ETNA, N 2 mi., at Wittmen and RR cut near Rte. 8—**Barite, Calcite, Pyrite, Sphalerite, Wurtzite**.

GLASSMERE, area quarry—**Barite, Calcite, Pyrite, Sphalerite, Wurtzite**.

TRAFFORD CITY, S 0.3 mi., a limestone quarry—**crystals, minerals**, abundant **fossils**.

ARMSTRONG COUNTY

APOLLO, GIRTY, KITTANNING, McWILLIAMS, many regional limestone quarries and mines extending for many miles along a major outcrop: ① mine dumps—**specular Hematite, Magnetite**, etc.; ② area quarries—**Calcite, chert, Pyrite**, etc.

EDDYVILLE, S, in large old quarry—**gem crystals, minerals**.

KAYLOR, on Sugar Cr. between town and Snyder's Run, a large quarry—**Calcite, Iron minerals, fossils, Pyrite**.

MANORVILLE, area quarries—**Pyrite** cubes.

NORTH VANDERGRIFT, in stream bed of Gravel Bar Hollow, old Lead/Zinc pits—**Galena, Calcite**, massive **Barite, geodes, Sphalerite**, etc.

SOUTH BETHLEHEM, all along Redbank Cr. (N boundary of Co.), area both upstream and downstream—**jasper, petrified wood**.

BEDFORD COUNTY

BARD, BUFFALO MILLS, HYNDMAN, MANNS CHOICE, NAPIER, all regional quarries (many)—**crystals, fossil corals**.

EVERETT, NE 6 mi. and 4 mi. S of Hopewell, between Ray's Hill and Broad Top Mt., the Sherman Valley: ① 2 mi. N of Hopewell, mine dumps and in cuts and exposures along the Sherman Valley rd.; ② ½ mi. E of Cypher Sta., near gap on Ray's Hill; ③ 1½ mi. E of the Sherman Valley open-cut mine—**Calcite, Chlorite, Cryptomelane, Orthoclase, Limonite, Quartz** crystals, **Tourmaline, Zircon**.

ST. CLAIRSVILLE, take the Pennsylvania Turnpike at the Bedford Interchange, go 6 mi. on Rte. 220, take right turn E over Brumbaugh Mt. To Morrison Cove, an area of 10 sq. mi.—**Herkimer diamonds, Quartz, Amethyst, Calcite** crystals.

WATERSIDE: ① area fields all way to New Enterprise—**Amethyst, Quartz** crystals; ② S 1 mi., at Morrison Cove; and ③ N 1 mi., on W side of Yellow Cr., area—**Calcite, chalcedony, chert**.

BERKS COUNTY

BIRDSBORO, S 1 mi., in quarry—**Zeolite** crystals.

BLANDON, HANCOCK, TOPTON, READING, area deposits—**ochers**.

BOYERSTOWN, W ½ mi., on Ironstone Cr. (first Iron furnace erected in state)—**Magnetite**.

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EARLVILLE, 2 mi. W of Hill Church, the Dotterer Mine—specular **Hematite**.

FURNACE HILL, ROCKLAND, area Iron mines—specular **Hematite**.

JACKSONWALD, S 1.3 mi. on the Lorane rd., in rd. cut at base of hill—**Calcite** (orange), **Chabazite** (peach color), **Prehnite** (green), **Epidesmine** (rare var. of Stilbite, as white translucent crystals and rosettes).

MORGANTOWN: ① E 1¼ mi. on Rte. 122, the Grace Mine—**Actinolite**, **Apophyllite**, **Byssolite**, **Calcite**, **Epidote** (massive, pale moss green), **Garnets**, **Natrolite**, **Quartz** (massive, white and smoky), **Selenite**, **Stilbite**, **Tremolite**; ② the Jones Mine—**Malachite**.

READING: ① area: (a) Alsace Twp., area mines—**Pyrrhotite**; (b) gravels of the Schuylkill R.—**jasper**; (c) the Fritz Island Mine—**Azurite**, **Malachite**, **Magnetite**, **Chalcopyrite**; ② E 1 mi., old mine—**sienna**.

SINKING SPING, S 2 mi. on the Fritztown rd., turn E ½ mi. on Chapel rd., then N on Wheatfield rd. for 1 mi. to the Wheatfield Magnetite Mine—**Calcite** crystals, **Fluorite** (amber crystals), **Magnetite**, **Melanite** garnets.

BLAIR COUNTY

ALTOONA: ① NE, in village of Culp (on W and N border); and ② W of the Birmingham Sta., all area Lead/Zinc mine dumps (very many) —**Anglesite**, **Barite**, **Calcite**, **Cerussite**, **Dolomite**, **Galena**, **Hemimorphite**, **Pyrite**, **Smithsonite**, **Sphalerite**; ③ Bald Eagle and Dunning mts., area mines—**Anglesite**, **Barite**, **Calcite**, **Cerussite**, **Dolomite**, **Galena**, **Hemimorphite**, **Pyrite**, **Smithsonite**, **Sphalerite**.

CANOE CREEK (and Sinking Valley), many regional mines—**Calamine**, **Galena**, **Smithsonite**, **Sphalerite**, **Calcite**, **Cerussite**, **Anglesite**, **Dolomite**, **Hemimorphite**, **Pyrite**.

CLAYSBURG, SPROUL, regional quarries—gemmy **chert**, **Quartz** crystals.

DUNCANVILLE, HOLLIDAYSBURG, ROARING SPRING, ROYER, TYRONE, many regional limestone quarries—**crystals**, **gems**, **minerals**.

BRADFORD COUNTY

NEW ALBANY, the Carpenter Mine—**Azurite**, **Chalcopyrite**, **Cerussite**, **Malachite**, **Melaconite**.

BUCKS COUNTY

AREA, countywide cr. beds and banks—**petrified wood**.

BUCKINGHAM, EUREKA, NEW HOPE, RUSHLAND, TREVOSE, regional limestone quarries—**crystals**, **gems**, **minerals**.

BUCKMANVILLE, area mines—**Copper** mineral, native **Copper**.

COOPERSTOWN, E 2 mi., area—gemmy **diabase**.

DURHAM (Twp.), at Mine Hill, area—**Feldspar**, **Hematite**, **Magnetite**, **Quartz**.

EUREKA, at Eureka Quarry to NE—**Smoky Quartz** crystals

FEASTERVILLE: ① area outcrops—**sunstone**; ② Triassic rock outcrops: (a) S and SE of Holland Sta., (b) NE of Leonard's Sta., (c) ¼ mi. SE of Roelof's Sta., (d) 1½ mi. N of Woodburne Sta., (e) numerous other outcrops—**agate**, **chalcedony**, **chert**, **silicified wood**.

MORRISVILLE: ① gravels of the Delaware R. opposite Trenton, NJ—**jasper** pebbles; ② all regional gravel pits between town and 20 mi. S of Philadelphia—**jasper**.

NESHAMINY, N 2 mi. and ¾ mi. W of Neshaminy Cr., the Vanartsdalen Quarry—**Chesterlite** (blue orthoclase **moonstone**).

Pennsylvania

NEW BRITAIN, area mines—**Galena, Sphalerite**.

NEW GALENA, area mines—**Galena, Sphalerite**.

NEWTOWN, W, and ¼ mi. SE of Roelof's Sta., in Neshaminy Cr.—**jasper, petrified wood**.

PERKASIE, N 2 mi., at Rock Hill (largest quarry in Co.)—**gem** crystals in pockets and vugs.

QUAKERTOWN, area traprock quarries, in pockets—**gem** crystals.

RIEGELSVILLE, area stream gravels and gravel pits—gem **Quartz** minerals.

VAN SCIVER, gravel operation—**gem** crystals and **minerals**.

CARBON COUNTY

BOWMANSTOWN, S, at Lehigh Gap (on Penn. Turnpike on the Lehigh Co. line), area mines—**Siderite**.

CHRISTMANS (in the Leighton quad.), S 2,000', on both E and W sides of the Lehigh R. gorge—**Uranium** minerals.

JIM THORPE: ① area fields, stream gravels, etc.—**jasper**; ② 0.4 mi. S of the courthouse and ¾ mi. E of RR bridge over the Lehigh R. (1 mi. S of town) area—**Uranium** minerals; ③ E, on N side of nose of Mt. Pisgah, area—**Allanite, Andersonite** (fluorescent), **Autunite, Carnotite, Chlorite, Liebigite** (fluorescent), **Metatorbernite** (fluorescent), **Mica, Pyrite, Quartz, Schroeckingerite** (fluorescent), **Sklodowskite** (fluorescent), **Soddyite** (fluorescent), **Tyuyamunite, Uranophane** (fluorescent), **Uraninite**.

MAUNCH CHUNK: ① N ¼ mi., on Mt. Pisgah in exposure of conglomerate—**Carnotite**; ② SE 7 mi., extending in a SW direction for 20 mi., many regional mines, especially at Hazard and Millport—**ocher**.

CENTRE COUNTY

LEMONT, in Neidgh Quarry and loose in soil—**Quartz** crystals.

CHESTER COUNTY

AREA, many regional Corundum mines in Co.—**Corundum, Feldspar, Diaspore** (clear crystals), **Kyanite, Margarite** (pearly plates), **Sillimanite, Spinel, Tourmaline**.

AVONDALE (London Grove Twp.): ① the Leiper Quarry—**Garnets** (Almandite, Essonite); ② N ¼ mi., area—**Apatite**; ③ E ¼ mi., area—**Quartz** crystals (clear, smoky), **Rutile** crystals.

CHATHAM, SW 1 mi., area—**Apatite**.

CHESTER, NORTHROP, area pegmatite outcrops—gem **Beryl, Garnets**.

COATSVILLE, NW 1½ mi., pegmatite outcrop on Rte. 30 by-pass and just S of, on S side of hwy. (park on side rds. and walk), area—**Amethyst, Beryl, Epidote, Garnets, Smoky Quartz** crystals.

DOWNINGTOWN, N on Rte. 282 through Lyndell, turn NE to crossrds. Of Cornog, to the Keystone Trap Rock Co. quarry on N side of hwy.—**Byssolite, Epidote, Feldspar, Garnet, Prehnite, Quartz** crystals (blue, clear, smoky, w/ inclusions), **Sphene, Tourmaline**.

EAST BRADFORD (Twp.), S and SW of Sconneltown, between Brandywine Cr. and Plum Run, area—rock **crystal**.

EAST NOTTINGHAM (Twp.), 1½ mi. NE of Chrome, area pegmatites—**Corundum**.

FAIRVILLE, area quarries—**Labradorite, sunstone**.

FREMONT (West Nottingham Twp.), SW 2 mi., area—**Corundum, Albite** crystals.

A Location Guide for Rock Hounds in the United States

GOAT HILL, area bounded by Co. line and the MD border, numerous old pits and prospects—**Albite**, **Magnesite**, **Sepiolite** (Meerschbaum).

HAUTO, area—**Quartz** crystals.

KENNETT SQUARE: ① SE ½ mi., at Pierce's Paper Mill (on E branch of Red Clay Cr.); and ② SE 2 mi., on Cloud's farm (on a brook that enters the E branch) —**Labradorite**, **sunstone**.

KNAUERTOWN, 0.12 mi. N of village of St. Peters, at French Cr. Magnetite mine and dumps—**Apatite**, **Apophyllite** crystals, **Azurite**, **Calcite** (green crystals w/ inclusions of Byssolite, Malachite or Chalcopyrite), **Chrysocolla**, **Erythrite**, **Malachite**, **Pyrite** crystals, **Quartz** crystals, **Rhodochrosite**, **Stilbite**, **Wernerite**.

LYNDEL, the Cornog Quarry—blue gemmy **Quartz**.

NOTTINGHAM: ① general area, exposures—**sunstone**; ② SW 2 mi., on S bank of Black Run, numerous quarries (largest is Brandywine) —gem **serpentine**, **Garnets**, **Feldspars**, **Tourmaline**; ③ Nottingham Park: (a) across cr. bordering park and S of the main office, trails lead through woods to many old mines, on dumps—**Albite**, **Chrome** minerals; (b) SW ¼ mi., the Keystone Quarry; and (c) W, at the Sparveta Quarry —fibrous **Actinolite**, **Apatite**, **asbestos**, **moonstone**, massive **Quartz**, **Tourmaline**, **Williamsite**; ④ Cooper School, N, in fields—**Colerainite** (in rosettes with Feldspar), **Goethite**.

OXFORD, S, on the MD state line—**Brucite**, **Chromite**, **Kämmererite**, **Magnesite**, gemmy **serpentine**, **soapstone**, **Williamsite**, **Zaratite**, etc. Very many old Chromite mines of the Scott, Pine Groves and White Barrens—gem **serpentine**, **Williamsite**.

PARKESBURG, area pegmatite outcrops—**Rutile** crystals.

PHOENIXVILLE: ① area Lead / Zinc mines, the Jug Hollow Mine in Schuylkill Twp. —**Barite**, **Cerussite**, **Chalcopyrite**, **Galena**, **Malachite**, **Melaconite**, gold-bearing **Pyrite**; ② S, to the Wheatly Lead Mine and the Chester County Mine (0.2 mi. S of rd. between Pickering and Willaims Corner) —**Anglesite** (fluorescent), **Apatite** (fluorescent), **Azurite**, **Barite** (clear crystals), **Cerussite** (fluorescent), **Chalcopyrite**, **Cuprite**, **Fluorite**, **Galena**, **Hydrozincite** (fluorescent), **Linarite**, **Malachite**, **Mimetite**, **Pyromorphite** (green & yellow), **Quartz** crystals, **Silver** minerals, native wire **Silver**, **Sphalerite** (rare), **Sulfur**, **Wulfenite**.

POMEROY, area—**Rutile** crystals.

UNIONVILLE (Newlin Twp.): ① area farms, small mines and prospects—**Corundum**; ② NE ½ mi. at Corundum Hill, in pegmatite exposures—gem **Beryl**, **Corundum**, **Diaspore**, **Citrine**; ③ 1 mi. N of Corundum Hill: (a) area; and (b) NE 2 mi. on Northbrook rd. at Corundum Hill—**Corundum**, **serpentine**.

VALLEY FORGE, W ½ at abandoned Jug Hollow Mine—**Amethyst**.

WAKEFIELD, S on US 222 to near MD border, turn E on rural rd. to Cedar Hill Quarry—**verde antique**, **Williamsite**.

WARWICK (Twp.), French Cr., area Iron and Copper mines—**Chalcopyrite**, native **Copper**, specular **Hematite**, **Limonite**, **Magnetite**.

WEST CHESTER: ① N, area—gem **serpentine**; ② ¼ mi. E of Pocopson Sta. (in Birmingham Twp.), many outcrops in area—rutilated **Amethyst**, **Quartz** crystals (clear, smoky); ③ S 1.4 mi. to Darlington Corners, the Brinton Quarry (on Radley Run on N side of Rte. 926, W of Rte. 322, just SW of center of Darlington Corners) —**Actinolite**, gem **Beryl**, **Bronzite**, **Clinocllore**, **Feldspar** crystals, **Garnets**, **Quartz** crystals, **Tourmaline**, **Williamsite** (translucent green), **Zircon**; ④ S 2½ mi., on W side of Osborn Hill, area—**Corundum**, **Quartz** crystal (clear, smoky).

WEST PIKELAND Twp., Opperman's Corner, on Rte. 113, NE ½ mi., at old Ben Franklin Mine (reached via exit 23 from Penn. Turnpike onto Rte. 111, S for ½ mi. to Rte. 113), quarries on the N—**Garnets**, **Graphite**, **Limonite**, **Quartz** (gemmy blue), **Pyrite** crystals, **Zircon**.

Pennsylvania

WESTOWN Twp., many area outcrops—**Quartz** crystals (clear, smoky).

WILLOWDALE (East Marlboro Twp.): ① SW 1 mi., on W branch of Red Clay Cr., area—rock **crystal**; ② at Baiey's farm SW of Willowdale—**Tourmaline**

COLUMBIA COUNTY

CENTRAL, near town— **Meta-zeunerite**, **Uranospinite** (both fluorescent), and other **radioactive minerals**.

ESPY, area mines—**Calamine**.

CUMBERLAND COUNTY

BOILING SPRINGS: ① SE 2 mi.; ② SE 3 mi.; ③ White Rock, 1 mi. E of Reading Bank, area—**Cryptomelane** (gemmy, blue black), **Goethite**, **Quartz** crystals, **Tourmaline**, **Zircon**; ④ N, in a traprock dike crossing the Co.—**Calcite**, **Fluorite**, **Quartz** crystals.

CARLISLE: ① area farm fields—banded **agate**, **Quartz** crystals; ② E 1 mi. from the Carlisle Interchange on the Penn. Turnpike, area on S side of Rte. 11—banded **agate**; ③ NW 1½ mi., area—**agate**, **jasper**, **Amethyst**, **Quartz** crystals (clear smoky).

CLEVERSBURG-PINE GROVE FURNACE, South Mt., area mines—**Copper** minerals, native **Copper**.

MT. HOLLY SPRINGS: ① W, general area of fields, ditches, cut banks, etc.—agate **nodules**; ② SW 1 mi., area mine dumps—**Cryptomelane** (gemmy, blue black), **Goethite**, **Quartz** crystals, **Tourmaline**, **Zircon**; ③ S on Rte. 34 through Holly Springs, turn W at main intersection for ½ mi., take right fork to a farm 1.2 mi. from Rte. 34 on N side of rd., area fields S of farm, ditches, banks, along fences, etc.—**agate**, **chalcedony**, **jasper**; ④ SW 3 mi., on N flank of South Mt., the Wharton Mine—gem **Cryptomelane**; ⑤ W 3½ mi. on Huntsdale rd., turn S opposite cannery by RR to South Mt. phosphate mine dumps—**Apatite**, **Braunite**, **Cacoxenite**, banded **chalcedony**, **Quartz** crystals, **Strengite**, **Wavellite** (often with Pyrolusite); ⑥ W 4 mi., in vicinity of Moores Mill, area mines—**Wavellite**.

PINE GROVE FURNACE, N 1 mi. along Little Rocky Ridge, in area Quartz outcrops—specular **Hematite**, **Quartz** (milky, smoky, yellow).

DAUPHIN COUNTY

HARRISBURG, take I-83 S across Penn. Turnpike to overpass, the 1 mi. farther to Fairview church, collect from weathered material—**agate**, **Garnet**.

DELAWARE COUNTY

AVONDALE (Springfield Twp. – see map on next page): ① area quarries, in small amounts— **Chalcopyrite**; ② Leiper's Quarry (now Faccenda Quarry) on E side of Crum Cr.—**Aquamarine**, **Golden Beryl**; ③ in a quarry to SE on W side of Crum Cr.—**Quartz** crystals; ④ 1 mi. W in quarry on George Sharpless Farm—**Amethyst**.

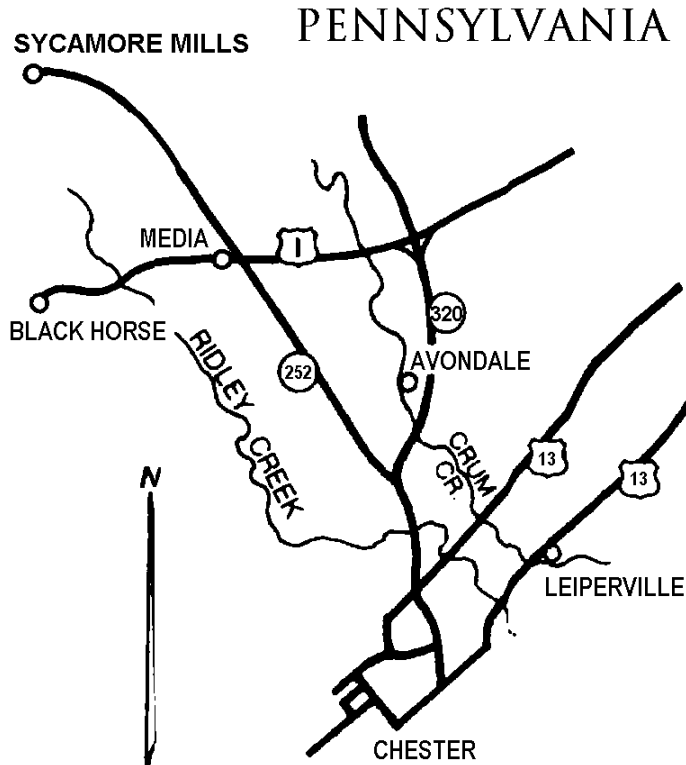
BAKER: ① area quarries—**Amethyst**, **Smoky Quartz** crystals; ② area rd. cuts, excavations, etc.—**Amethyst**, **Quartz** crystals.

BOOTHWYN (Upper Chichester Twp.): ① SW 0.3 mi., and W of the E branch of Naaman's Cr., on N side of the B & O RR Sta.—**Sphene**; ② N ½ mi., on the Armstrong farm E of the Chelsea rd.—**Amethyst**; ③ N 2 mi.: (a) and E of the Chelsea-Boothwyn rd., area; and (b) at J.B. Okie's farm— **Amethyst**; ③ loose in soil at McCay's farm—rutilated

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Quartz crystals; ④ in pits on W side of E branch of Naaman's Cr.—**Quartz** crystals, **Garnets**.

CHADD'S FORD: ① SW 1 mi., area transparent **Oligoclase** crystals; ② S 1½ mi., in gravels and banks of the Brandywine R.—**Amethysts**.



CHELSEA: ① SW 1 mi., mined as an abrasive—**Garnet**; ② W 2 mi., a pegmatite mine—**Garnet**. **CHESTER** (Twp.): ① area gravels of Chester Cr.—**Amethyst**, **Smoky Quartz** crystals; ② area quarries—gem **Beryl**, **Feldspar**, rock **crystal**; ③ E ¼ mi., Shaw & Esrey Quarry (N of the B & O RR) —**Amethyst**, **Beryl**, **Smoky Quartz** crystals; ④ Bridgewater Sta. on the Penn. RR, opposite, at John Mullen's Quarries (on E side of Chester Cr.)—**Mica**, **Quartz** crystals, **Sphene**.

CHESTER HEIGHTS (Aston Twp.), S 1 mi.: (a) in soil above Peter's Mill dam in Green cr.; and (b) in gravels of Green's Cr.—**Almandite** garnets.

CROZIERVILLE: ① area fields, rd. cuts, etc.—**Amethysts**; ② W ½ mi., on S side of Chester Cr. opposite Lenni, area—**Amethysts**.

CRUM LYNNE (RR Sta.), Ward's Quarry on Crum Cr.—**Amazonite**, gem **Beryl**, **Feldspar**, **Quartz** crystals.

DARBY (Upper Providence Twp.): ① Sycamore Mills, E along Ridley Cr., pegmatite dike exposures—**Amazonite**, transparent **Oligoclase** crystals, **sunstone**; ② 3½ mi. below, at the Shaw & Esrey Quarry—**Aquamarine**, **Beryl**; ③ near White Horse, 3 mi. S—**Beryl**.

ELWYN STATION, area farm fields—**Corundum**.

GLENDALE (SW corner of Lansdowne quad. In Haverford Twp.), take Glendale rd. N of Darby Cr., 1 mi. S of jct. of cr. with Rte. 3, a pegmatite mine—gem **Beryl** (to 4" long), **Garnets**, **Feldspar**, **Quartz**, black **Tourmaline**.

GLEN MILLS (Thornbury Twp.), area—**Amethyst**, **Albite**, rutilated **Quartz** crystals.

Pennsylvania

LEIPERVILLE (Ridley Twp.): ① W ½ mi., at Deshong's Quarry on E side of Ridley Cr.—**Aquamarine, Golden Beryl, Thulite, Quartz** crystals; ② E ¾ mi., in fields of Sherz's and Hibbard's farm—**Corundum**.

MARPLE Twp.: ① general area—**Amethyst, Quartz** crystals (clear, rutilated); ② Plamer's Mill, area mines—**Chromite**.

MEDIA (Middletown Twp.): ① the Media Quarry—gem **Beryl, Feldspar, Quartz**; ② W: (a) in area pegmatite outcrops—**Corundum**; (b) on the Schofield and Hibbard farms—**Corundum**; ③ W 1 mi., at Mineral Hill: (a) area farm fields, rd. cuts, etc.—**Albite, Amazonite, Corundum, sunstone**; (b) the Mineral Hill Quarry (W of Ridley Cr. and N of Blackhorse) —**Albite, Amazonite, aventurine, Aquamarine, gem Feldspar, Garnets, moonstone, sunstone**; ④ N, at the Phillips Chromite Mines—gem **serpentine**; ⑤ Black Horse: (a) S ¼ mi. along rd. to Elwyn, area—**Corundum**; (b) SE ½ mi., pits in pegmatites—**Corundum** (crystals to 6" long, in area farm fields as gray, blue, white and brown crystals), **Amazonite, Beryl, Feldspar, Kyanite, moonstone**; (c) NE ½ mi.—green **Quartz**; (d) ¾ mi. (1 mi. W of Media), area—**Albite, Amazonite, sunstone**; (e) SW, to Chrome Run, area of widespread pegmatite outcrops—**Albite, Amazonite, sunstone**; ⑥ NW 2½ mi., Blue Hill, area—**Albite, Amazonite, Beryl, Oligoclase, sunstone**; ⑦ NW 2½ mi.: (a) ¾ mi. NE of Sycamore Mills, at Blue Hill Crossroads —**Quartz** crystals (blue, green); (b) 1 mi. E of Rose Tree dam on Crum Cr., area —**Amethysts**; ⑧ Lenni Sta.: (a) E, in RR cut—**Albite, Amazonite, Oligoclase, sunstone**; (b) N 1 mi., on Dismal Run, area—transparent **Oligoclase** crystals.

Morgan station: ① S ¼ mi., area—**Corundum**; ② W, area fields, cuts, etc.—**Amethysts**; ③ Dutton's Mill rd., a pegmatite dike outcrop—**Amethysts**; ④ Village Green, area—**Corundum, yellow Quartz** crystal.

MORTON, NW, in area quarries—**Garnet, Feldspar** crystals, rock **crystal**.

NEWTON SQUARE (Newton Twp.): ① W 1 mi., in pegmatite outcrops and rd. cuts—**Oligoclase**; ② a mine near Ox Run, in serpentine—**Chromite**.

SWARTHMORE, S, on Crum Cr., in Leiper's Quarry—gem **Beryl** (golden to pale yellow green), **Amethyst, Garnets, Quartz** crystals.

SCAMORE MILLS: ① E, in fields of Reece's farm on Ridley Cr.—**Corundum**; ② W ½ mi. on Walker Yarnell's farm—**Smoky Quartz** crystals; ③ S ¾ on J. Tyler's farm—green **Quartz**.

TRAINER STA. (Lower Chichester Twp.): ① N 1½ mi., on a knoll near the Linwood Mill Dam—**Quartz** crystals (clear, smoky); ② at William Trainer's farm ½ mi. N—**Quartz** crystals (clear, smoky), green **Beryl**.

UPLAND: ① area quarries on Chester Cr.—**Feldspar, Garnets, Quartz** crystals; ② E: (a) area around Henvi's Quarry N of Chester Cr.—**Amethyst** geodes; (b) area around Waterville rd.—**Amethyst** geodes.

UPPER DARBY (P.O.), along West Chester Pike, W ½ mi., area—**Quartz** crystals (large clear, smoky).

WAYNE, E, area quarries and stream gravels—**Garnets, blue Quartz** crystals.

FRANKLIN COUNTY

AREA: ① South Mt., in gemmy rhyolite porphyries, breccias and conglomerates; and ② Pigeon Hills, area—gem red **jasper**.

CALEDONIA PARK: ① area around the Caledonia State Park—**agate, jasper**; ② N slope of Huckleberry Hill—**Garnets**.

CHAMBERSBURG, area mines—**Barite**.

LANCASTER STA., area quarries—**Fluorite**.

WAYNESBORO, area mines—**Barite**.

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FRANKLIN & ADAMS COUNTIES

AREA, the Blue Ridge Summit (E of Waynesboro), E on Rtes 16 and 116 (toward Fairfield), with Greenstone being a center for a large area of many old mines and mills: ① on mine dumps—**Copper** minerals, native **Copper**, **Quartz**; ② the Ruberoid Quarry—**Copper** minerals, **Epidote** (in rhyolite, some with native Copper inclusions); ③ the Bingham Mine—**Cuprite**; Mine—**Cuprite**; ④ Mt. Hope area quarries and mine dumps—**Talc**, native **Copper** (at Bechtel Copper Mine); ⑤ the Snively Copper Mine (a popular rock club field trip locally)—**Cuprite**.

FULTON COUNTY

FORT LITTLETON, N 1 mi., pits and trenches along Aughwick Cr.—**Barite**, **Calcite**, **Chalcopyrite**, **Pyrite**, **Quartz** crystals.

NEEDMORE: ① Beaverdam Pond, area—**Manganese** minerals; ② Duvall Cove, along Oregon Cr.—**Manganese** minerals; ③ McConnell's Cove, area limestone quarries—**gems**, **minerals**; ④ W 4 mi., on Sideling Hill at Whips Cove—**Cryptomelane**, **Psilomelane**, **Pyrolusite**.

GREENE COUNTY

CARMICHAELS, DURBIN, MT. MORRIS, WHITELEY, regional quarries in sandstone—**Quartz** crystals.

JEFFERSON, along Tenmile Cr. to Laurel Run, area quarries—**Quartz** crystals.

MORRIS TWP., SE section, along Browns Run, area—**Iron** minerals, **nodules**.

OAK FOREST, 2 mi. above, at Pursley Run—**Iron** minerals, **nodules**.

TRUMBULL, on S bank of Tenmile Cr., a quarry—**Calcite**, **Pyrite**.

WAYNESBURG, S 1½ mi., in a sandstone quarry—**Quartz** crystals.

HUNTINGTON COUNTY

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

McCONNELLSTOWN, ORBISONIA, UNION FURNACE, area limestone quarries—**Calcite** crystals, **Fluorite**, etc.

MT. UNION, THREE SPRINGS, in area sandstone quarries—**Quartz** crystals.

WARRIORSBURG, S 3 mi., on S slope of Dry Hollow Ridge, numerous Iron mines—gemmy **Cryptomelane**, **jasper**, **Quartz** crystals.

LANCASTER COUNTY

BAINBRIDGE (Paradise Twp.): ① N 1 mi., area fields—**petrified wood**; ② Kinzer, area—rutilated **Quartz** crystals; ③ 2 mi. NW of Churchtown; and ④ 3 mi. NE of Churchtown—**petrified wood**.

BART, E of ruins of smelter ¾ mi. N of Gap Nickel Mines—**Smoky Quartz**.

BLUE BALL: ① many area quarries—**gems**, **minerals**; ② N on Rte. 23 to the Showalter Quarry on N side of rd.—dogtooth **Calcite**, **Fluorite**, specular **Hematite**, **Quartz** crystals, **Rutile**.

BROWNSTOWN, a nearby quarry on Conestoga Cr.—crystals of **Calcite** and **Quartz**.

CENTERVILLE, an abandoned quarry on Chickies Cr.—crystals of **Calcite** and **Quartz**.

Pennsylvania

COLUMBIA: ① E, a quarry—crystals of **Calcite**, **Dolomite** and **Quartz**; ② N 1 mi. from jct. of Rte. 30 with the St. Joseph's Academy rd., then N toward Chestnut Hill, park car on summit, area fields to E and W); and ③ 1 mi. farther NE, to Grubb Lake and Mud Lake, area—**Limonite** (geodes).

EAST PETERSBURG, SILVER SPRINGS, TALMAGE, very many area quarries—crystals of **Calcite** and **Quartz**.

EPHRATA, SW 1 mi., a quarry—**Dolomite** (tinted pink and green).

GAP: ① SW 4 mi., the Gap Nickel Mine—**Chalcopyrite**, **Millerite**, **Pyrite**, **Pyrrhotite**; ② many area quarries—**gems**, **minerals**.

JERKINS CORNER: ① W 0.3 mi., at Rock Springs Run (Fulton Twp.) and 1¼ mi. NNE of Rock Springs, MD, area—moss **agate**; ② at Cedar Hill Quarry, reached via Hwy. 222 going E on road (along PA-MD line) and following signs to mine—**Brucite**, **Magnesite**, **Talc** (all fluorescent), and **Williamsite**.

LANCASTER: ① area quarries along Conestoga Cr.; ② quarries along Little Conestoga Cr.—crystals of **Calcite**, **Dolomite** and **Quartz**; ③ NE, in the Stoner Quarry, abundant—**Pyrite** crystals; ④ the Blue Ball Quarry—**Calcite**, **Dolomite**, **Fluorite**, **Hematite**, **Pyrite**, **Quartz** crystals, **Rutile**; ⑤ area Zinc mines—**Calamine**, **Cerussite**, **Smithsonite**; ⑥ N 1 mi., near Fruitville Pike, on E side on the property of a nursery—**Limonite** cubes.

LITITZ, N, in a quarry—pink **Calcite** crystals.

MILLERSVILLE, W 1 mi., a quarry—**Calcite** crystals, **Pyrite**.

MT. PLEASANT (Bart Twp.), NW 1 mi., area—**Amethyst**.

PEQUEA, the Pequea Mine—**Galena**, **Sphalerite**, **Wulfenite**.

QUARRYVILLE, SE on Rte. 472 to Union, turn W onto left trending rd. before reaching edge of village, go ½ mi. to the Stillwell Quarry—**Brucite**, **Chlorite**, **Chrysotile**, **Magnetite**, **Williamsite**.

TEXAS, area outcrops—**serpentine**.

WAKEFIELD, S, the famed State Line Dist.: ① the Cedar Hill Quarry (just N of the PA-MD state line, reached from US 222 via an E trending rd.—**agate**, **Aragonite**, **bloodstone**, **Brucite**, **Calcite**, **chalcedony**, **Chromite**, **Deweylite** (fluorescent), **Dolomite** crystals, **Hydromagnesite**, **Magnesite**, common **opal**, **prase**, **Williamsite** and many other minerals; ② the Octoraro Cr. dist., in serpentine exposures—**Chromite**.

WINGDALE, SE 3 mi. on rd. to Lee's Bridge (9 mi. SW of Oxford), the old Wood Chromite Mine shafts and adjoining pits—**Brucite**, **Cacoxenite**, banded **chalcedony**, **Chromite**, **Uvarovite** garnet, **Millerite**, **serpentine**, **Steatite**, **Vesuvianite**, **Williamsite**.

LEBANON COUNTY

ALMA, AVON, CLEONA, MILLARDSVILLE, MYERSTOWN, PALMYRA, very many regional quarries, wide assortment—**gems** and **minerals**.

CORNWALL: ① many area quarries—**gems** and **minerals**; ② area mines—**Azurite**, **Chalcopyrite**, **Magnetite**, **Malachite**, **Pyrite**; ③ S, just NW of a rd. at Big Hill (on old Rte. 322), extensive mine dumps—**Actinolite**, **Andradite**, **Calcite**, **Chlorite**, **Diopside**, **Epidote**, **Fluorite**, **Grossularite**, **Gold** (traces), **Labradorite**, **Magnetite**, **moonstone**, **Prehnite**, **Pyrite** crystals, **Sphene**, **Talc**, **Tremolite**, **Wurtzite** (crystal form), **Zeolites**.

JONESTOWN: ① S 1 mi., in Bunker Hills, in white sandstone—**Quartz** crystals; ② S 2 mi., a traprock quarry—**gem** crystals.

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LEHIGH COUNTY

ALBURTIS, BREINIGSVILLE, area deposits—**ochers**.

ALLENTOWN: ① area hills, washes, fields—gemmy **jasper**; ② S 7 mi., near Penn. Turnpike, area fields, washes, rd. cuts—colored **chert**.

BETHLEHEM, S 4 mi. on Rte. 12, at Friedensville: ① area Zinc mines—**Aragonite**, **Calamine**, **Greenockite**, **jasper**, **Quartz** crystals, **prase**, **Pyrite**, **Smithsonite**, **Sphalerite**; ② ½ mi. W of main town intersection, the New Jersey Zinc Mine—**Aragonite** crystals (fluorescent), **Nicholsonite** (fluorescent, phosphorescent), **Pyrite** crystals, **Quartz** crystals, **Smithsonite** (banded), **Sphalerite** crystals, **Spinel**.

MACUNGLE, SE 2 mi. (½ mi. N of Shimerville), area—blue **Corundum** (Sapphires; large crystals, asteriated).

SHIMERVILLE, N ¾ mi., area—**Sapphires** (large crystals, asteriated).

VERA CRUZ (13 mi. S of the Lehigh Interchange of the Penn. Turnpike), in regional hills—**jasper** (red, brown, yellow), **Sapphires**.

LUZERNE COUNTY

HAZELTON, WEST PITTSTON, area anthracite coal mine dumps—**Pyrite**.

WHITE HAVEN: ① area quarries—gemmy red **quartzite**; ② N 5 mi., the Moosehead mines—**ochers**.

WILKES-BARRE, area coal mines: ① W, at Naticoke; ② S, at Ashley (4 mi. S of Ashley jct., near village of Mountaintop) —**Pyrite**.

LYCOMING COUNTY

BEAVER LAKE: ① W 0.7 mi., on the Leon Myers farm (just S of Strawbridge), in a sandstone outcrop—**Meta-zeunerite**, **Uranospinite** (both fluorescent), and other **radioactive minerals**; ② E side of Beaver lake, ½ mi. N of outlet, a sandstone outcrop and an old Copper mine—**Copper** minerals (radioactive); ③ S ½ mi. from the Beaver Lake Hotel, on W side of Beaver Run 250' from hwy. Crossing of cr., an old Copper mine—**Copper** minerals (radioactive); ④ SW of the S end of Beaver Lake 1 mi., on hill facing S between two branches of Beaver Run, old Copper mine—**Azurite**, **Chalcocite**, **Chalcopyrite**, **Malachite**, **fossils** (plants).

MUNCY, the Muncy Quarry—**Calcite** (fluorescent).

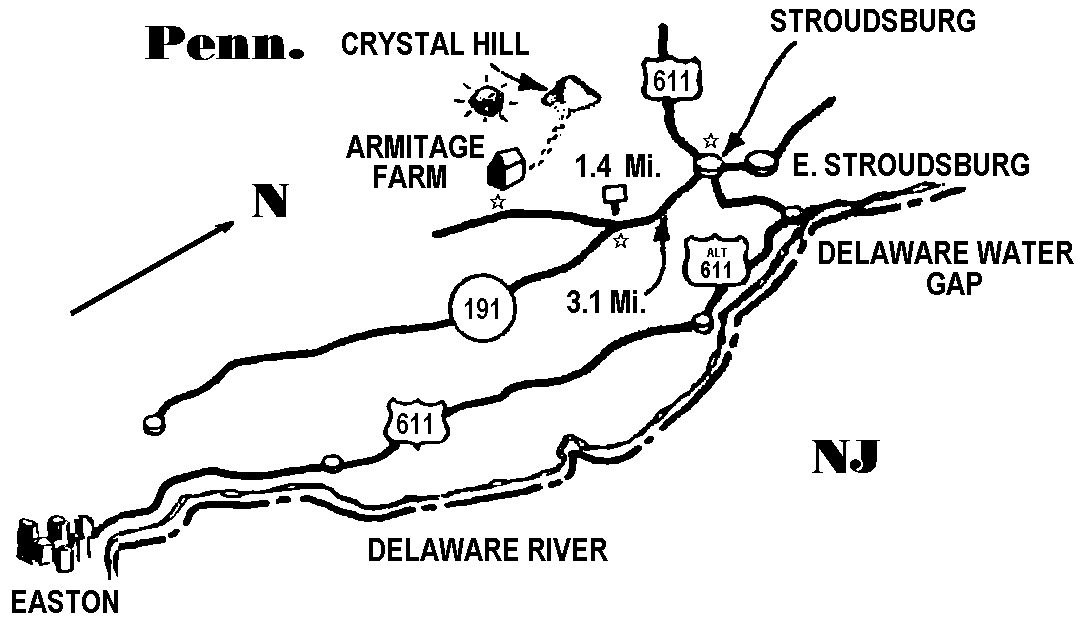
TIVOLI, N edge of town on N side of Big Run 200' NW of US 220, area—**Copper** minerals (radioactive), **fossils**.

MONROE COUNTY

AREA: ① SE part of Co., all regional limestone quarries—**Calcite**, **Pyrite**, etc.; ② Delaware Gap, area quarries—**Fluorite**.

KUNKELTOWN: ① area stream beds and banks—**Quartz** crystals (some coated with tiny crystals of Azurite); ② S, in sand and clay pits—**Quartz** crystals.

STROUDSBURG: ① area close to NJ line—**agatized corals**, **Quartz** crystals and gemstones (see map next page) ; ② steep wooded area located on the Christian Armitage farm S of Stroudsburg. Crystal Hill is reached by taking Rte. 611 E from Stroudsburg to a blinker light and turning S on Hwy. 191 for 3.1 mi., then keeping right 1.4 mi. to Armitage house, walk up steep hill to site where quartz crystals are loose in fine grained quartz conglomerate (fee)—**Quartz** crystals.



MONTGOMERY COUNTY

AREA: ① Alsace Twp.: (a) Spies Church, NNW 1½ mi., and (b) 1½ mi. S of Jacksonwald, at Kensey Hill, area—**chalcedony, jasper, jasp-agate**; ② Edge Hill (and near Spring Hill), area mines—**Pyrolusite**; ③ Lower Providence Twp., the Eaton Mine—**Cerussite, Copper** minerals, **Iron** minerals.

AUDUBON, the Ecton Mine—**Cerussite, Sphalerite** (both fluorescent).

BOWERS Sta.: ① S 1 mi., on Flint Hill (on Rte. 320 on the Schuylkill R.), and ② Olney Furnace, NE 1¼ mi., at Green Hill, area—**Amethyst, chalcedony, silicified wood**.

BRIDGEPORT, SE ½ mi., on Rte. 202, the Bridgeport Dolomite Quarry (along side the RR) —**Calcite, chalcedony, Dolomite, Goethite, jasper, Malachite, rock crystal, Sphalerite**.

CONSHOHOCKEN, GLENSIDE, MONTGOMERYVILLE, NORRISTOWN, PLYMOUTH, all regional quarries—gem **serpentine, Steatite**.

DURHAM (Twp.), general area outcrops of Cambrian quartzite—**chalcedony, jasp-agate, jasper**.

JARRETTOWN, W 2 mi. at Hill Crest, quarry—gem **serpentine, Talc**.

LAFAYETTE Sta. (Lower Merion Twp.): ① SE, in quarries on both sides of the Schuylkill R.—**serpentine, Steatite**; ② NE bank of river, at Prince's Quarry, variety—gemmy **minerals**; ③ the Lafayette Soapstone Quarry (on the Schuylkill R.) —**serpentine, Steatite**; ④ Lafayette Hill, a quarry—**Chalcopyrite, soapstone**.

MONT CLARE (across the Schuylkill R. from Phoenixville, Chester Co., near confluence of river with Perkiomen Cr. and trail to Audubon's Home): ① many area old Copper mines; ② the Perkiomen Mine—**Azurite, Chalcopyrite, Barite, Malachite**; ③ N of bridge over small cr., mine—**Goethite, Linarite, Malachite, Mimetite, Glauberite**.

MORGANVILLE Sta.: ① E ¼ mi., and ② Maple Glen, area gravel pits—**petrified wood**.

PERKIOMENVILLE, E ½ mi. on Rte. 29 and about 8 mi. SW of the Quakertown exit of the NE extension of the Penn. Turnpike, in a quarry—**Actinolite, Calcite** (fluorescent), **Chlorite, Epidesmine** (crystals with Calcite and Pyrite), **Epidote, Fluorite** (purple,

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translucent), **Garnet**, **Heulandite**, **Limonite**, **Natrolite**, **Pyrite** crystals, rock **crystals** (in groups), **Stilbite**, **Zeolites**.

PHILADELPHIA (Philadelphia Co.), N and W, in cr. beds and rural country fields, cut banks, etc.—**agate**, **chalcedony**, **chert**, **jasper**, **Quartz** crystals, **petrified wood**.

ROSE GLEN, NW $\frac{3}{4}$ mi., at the Gladwyne quarries, many kinds—**Quartz** family gemstone.

SUMNEYTOWN: ① nearby mine in Upper Salford Twp.—**Azurite**; ② S 1 mi., on the Kobers farm, an old Copper prospect—**Azurite**, **Tenorite**, **Zeolites**.

WEST MANAYUNK, along Rock Hill rd., many quarries—gem **serpentine**, **Steatite**.

NORTHAMPTON COUNTY

BETHLEHEM: ① many area quarries—**chert**, oolitic **flint**, **crystals**, **fossils**; ② NE $3\frac{1}{2}$ mi., the Camels Hump Mine—**ocher**; ③ E 5 mi. and S of Redington (Lower Saucon Twp.), on South Mt., area—**Cat's-eye**, **chalcedony**, **chert**, **prase**, **Quartz** crystals.

EASTON: ① area: (a) mines—**ocher**; (b) limestone quarries below town—oolitic **chert**, dark **flint**; (c) quarries along Bushkill Cr.—**chert**, **flint**; ② N side of Rte. 611 and 1.3 mi. N of jct. with Rte. 22, at Chestnut Hill (Forks Twp.), area quarries—**Apatite**, **asbestos**, **Bronzite**, **Diopside**, **Epidote**, **Pyrite**, **Quartz** crystals, **radioactive minerals** (rare), noble **serpentine**, **Sphene**, **Talc**, **Tremolite**, **Vesuvianite**, **Williamsite**.

FREEMANSBURG, HANOVERVILLE, HELLERTON, ISLAND PARK, many regional limestone quarries—**chert**, oolitic **flint**, **crystals**, **fossils**.

PHILADELPHIA COUNTY

FRANKFORD: ① area gneissic outcrops—**Chalcopyrite**; ② Falls of Schuylkill, area—**Fluorite**; ③ Wissahickon Cr., area gneiss outcrops—**Chalcopyrite**.

SCHUYLKILL COUNTY

AREA, numerous anthracite Coal mines—**Pyrite** cubes.

MAHONEY CITY, area anthracite Coal mines, gemmy—**Pyrite** cubes.

POTTSVILLE: ① the Mammoth Coal Bed, gemmy—**Pyrite** crystals; ② the Diamond Bed—**Pyrite** crystals.

ST. CLAIR, area, **Dickite** (fluorescent), **Siderite**.

SULLIVAN COUNTY

LAIRDSVILLE, NE 1 mi., turn N from Rte. 115 for $\frac{1}{2}$ mi., turn right 1 mi. to second rd. fork, bear left 2.7 mi. (from Rte 115) to an abandoned house, behind it is an old prospect pit—**Galena**, **Chrysocolla** (turquoise colored), **Copper** and **Uranium** minerals, **Marcasite**, **Metatorbernite** (flakes), **Uranophane**, plant **fossils**.

STRONESTOWN, S $\frac{1}{2}$ mi. on Rte. 220, Eagles Mere, S on rd. opposite jct. $\frac{1}{4}$ mi., a hillside exposure—**Copper** and **Uranium** minerals.

WESTMORELAND COUNTY

ALEXANDER, area farm fields, cut banks, ditches, etc.—**chalcedony**, **jasper**, variously colored **Quartz**.

DERBY, area exposures, gravels, quarries—rock **crystal**.

Pennsylvania

GREENSBURG: ① area limestone quarries—**Marcasite, Pyrite**; ② area clay beds—**petrified wood**; ③ E 7 mi., a quarry—**Quartz** crystals.

HUFF, IRWIN, JEANETTE, PENN, area shale exposures in pits, rd. cuts, quarries—**Marcasite, Pyrite**.

KINGSTON: ① area fields—**jasper**; ② ½ mi. above the waterworks, in Loyalhanna Gap, area—**Calcite, Marcasite, Pyrite, fossils**; ③ gravels of the Conemaugh R.—**petrified wood**.

LIGONIER, W 3 mi. on US 30 to a large quarry (½ mi. long) —**Quartz** crystals, **fossils** in limestone.

McCHANCE, W 1 mi., at Long Bridge, an extensive quarry—**Quartz** crystals, **fossils**.

YORK COUNTY

DELTA, PEACH BLOSSOM, a quarry on the York Co.-MD boundary—**Verde Antique** (called Cardiff green marble).

DILLSBURG: ① S ½ mi. on US 15, a diabase exposure—**Analcime, Apophyllite, Calcite, Laumontite, Leonhardite, Natrolite, Pyrite, Quartz** crystals, **Sphalerite**; ② N 2½ mi., a limestone quarry, many varieties—gem **crystals, minerals**; ③ the James Iron Mine—**Magnetite, Pyrite**.

HARRISBURG, S on I-83 to Reesers Haven via Lemoyne and new Cumberland interchanges, 1 mi. beyond an overpass, area—**agate, Amethyst, chalcedony, Andradite** garnets, **opal, Quartz** crystals, **silicified wood**.

LISBURN, N, in gravels of Yellow Breeches Cr., a conglomerate decorative stone—**Potomac marble**.

MARCH RUN, on W bank of the Susquehanna R., area—**Potomac marble**.

MOUNT HOPE: ① the Bechtel Min (in town); ② S 1 mi., mine; ③ NE 1 mi., on E side of mt., the Snively Mine—**Azurite, Bornite, Chalcopyrite**, native **Copper, Malachite, Cuprite**.

THOMASVILLE: ① area quarries—**Fluorite, Pyrite, Quartz** crystals; ② S on US 30 (5½ mi. SW of West York), quarries along both sides of rd. N of the RR intersection—**Calcite** crystals (some fluorescent), **Fluorite, Hematite, Marcasite, Pyrite, Quartz** crystals.

WEST YORK, W 1 mi. on Rte. 234, in cement quarries—**Azurite, Calcite** crystals, **Chalcopyrite, Galena, Malachite, Quartz** crystals.

YORK HAVEN, S and SW 2 mi., area fields—**petrified wood**.

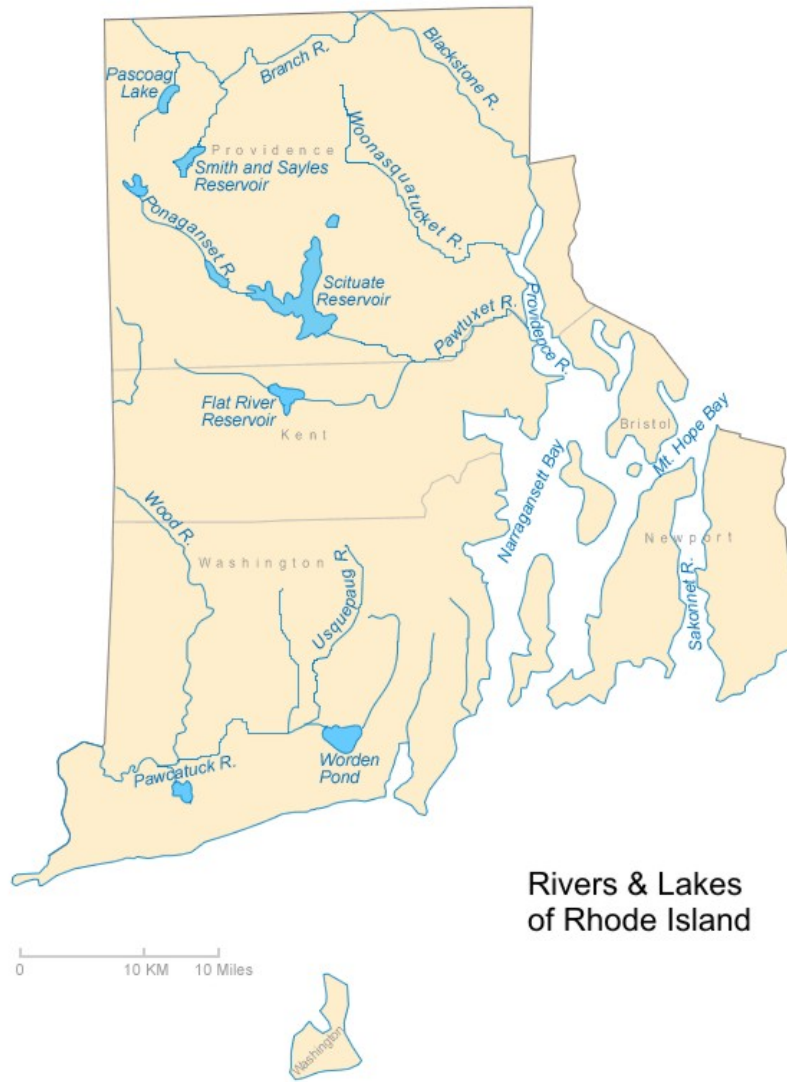
RHODE ISLAND

Smallest and most densely populated of the fifty states, Rhode Island was named from the principal island in Narragansett Bay. With a western boundary only 42 miles long and a maximum width across the south of 35 miles, the surface of this state is rolling and hilly, cut by short, swift streams that pour over many waterfalls. Sandwiched between Connecticut and Massachusetts, Rhode Island's geology partakes of both. Sedimentary deposits, other than Pleistocene to Recent, are extremely rare, since the whole state was scoured to bedrock by Ice Age glaciers.



The state's geology was extensively studied in the nineteenth century, with some areas being prospected and mined for iron, Graphite, manganese and talc. There are few gemstones occurrences of any consequence.

Rhode Island



Rivers & Lakes
of Rhode Island

BRISTOL COUNTY

BRISTOL, area gravel pits and deposits, as pebble—**jasper**.

KENT COUNTY

WARWICK, in gravels along the shores of Narragansett Bay—**carnelian** pebbles.
WEST GREENWICH, at Nooseneck, Weaver Hill rd. and I-95—**Amazonite**.

NEWPORT COUNTY

JAMESTOWN, near Jamestown bridge abutments on Canonicut Island—**Staurolite**.

TIVERTON: ① S 4 mi., a mine—**Graphite**; ② in quarry on Fish rd.—rutilated **Quartz**.

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PROVIDENCE COUNTY

AREA: ① Calumet Hill, area quarries—**agate**, **chalcedony**, **jasper** and **sagenite Quartz** crystals; ② Fenner Ledge, a large mine—**Graphite**; ③ Mt. Hope Bay, area beach gravel—**agate**, **Amethyst**, **carnelian** and **jasper** pebbles.

BRIDGEPORT, PAWTUCKET, VALLEY FALL, area mines—**Graphite**.

CRANSTON, area deposits—**Graphite** and **Hematite**.

CUMBERLAND HILL: ① area quarries—**agate**, **chalcedony**, **jasper** and **Quartz** crystals; ② (a) Iron Mine Hill Quarry at Sneece Pond, take Copper Hill rd. W to West Wrentham rd., N ½ mi. and W ¼ to Ballou Meeting House—**serpentine** with **Diopside**; (b) Iron Hill Mine dumps—**Amethyst**; (c) near Sneece Pond, area extensively prospected during the second decade of the 19th Century, mines and prospect pits—**Chalcopyrite**, **Garnet**, **Magnetite** (especially in beach sands on the S side of the Pond), **manganese ore** (resembling **Knebelite**, in a bed 40 ft. thick), **Molybdenite**, **Rhodonite** and **Wad**; ③ at McLaughlin's Ledge—**Smoky Quartz**.

DIAMOND HILL: ① (a) area quarries—**agate**, **chalcedony**, **jasper** and **Quartz** crystals; (b) Diamond Hill Granite Quarry in dumps—**Arsenopyrite**, **Epidote**, **Magnetite**, **Sagenitic Quartz** and **Tremolite**; ② area mines—**Hematite**; ③ area limestone exposures, in pockets—**agate**, **chalcedony**, **Amethyst** and **Quartz** crystals (clear, smoky).

JOHNSTON, in Hwy. 6 road cuts—**Beryl**.

LIMEROCK, in Conklin Lime Company Quarry—**serpentine**, **agate** and **Quartz**.

MANVILLE, area quarries—**talc**.

PAWTUCKET, area beach gravels—**agate**, **carnelian**, **Amethyst** and **jasper**.

PROVIDENCE, 5 mi. N of North Providence, at Dexter: ① an area lime quarry—**Bowenite** (a jadelike serpentine); ② the nearby Conklin and Harris quarries—**Bowenite**; ③ Wanskirch Granite Quarry—**Quartz**.

SMITHFIELD, area quarries in mica slate and from outcrops of quartz mica schist—**whetstone**.

SPRAGUEVILLE, at jct. of Mann School and Wanskuck Hill rds. in road cut—**Beryl**.

WOONSOCKET, E 2½ mi., the Iron Mine Hill (and a prominent constituent of the regional gabbroid rock)—**Magnetite**.

WASHINGTON COUNTY

KINGSTON, TOWER HILL, area mines—**Galena**.

NARRAGANSETT, in outcropping pegmatites along the eastern shore, at Bonnet Point, Bonnet Shore Beach, Ft. Varnum and Watson Pier—**Beryl** and **Quartz**.

SAUNDERSTOWN, area mines—**Graphite**.

WESTERLY, Westerly Granite Quarry—**Beryl**.

South Carolina

SOUTH CAROLINA

This subtropical state divides roughly into three main geological regions: the broad sea level Coastal Plain, separated from the rolling Piedmont down the middle of the state by the Fall Line, and the small Inner Piedmont in the extreme northwestern corner as part of the Blue Ridge of the southern Appalachian Mountain system. The *Upcountry*, as the Inner Piedmont is known, covers approximately 500 sq. mi. of mountainous territory that culminates near the North Carolina boundary in Pickens Co. at Sassafras Mt., 3,560' high.



The underlying rock formations of the Inner Piedmont are primarily gneissic schists and granites of Precambrian to early Paleozoic age, cut by granite intrusives and smaller bodies of dunite and peridotite. Regional pegmatite exposures provide sources for **Amethyst**, **Beryl**, **Corundum**, **Garnets**, smoky and clear **Quartz**, **Tourmaline**, **Topaz** and **Zircon**. These more showy gem crystals were discovered early, but not commercialized until the 19th century. Although mining of **Copper**, **Lead** and **Zinc** remains minor, some placer **Gold** was worked. The pegmatite gems were found in the stream gravels, along with an occasional alluvial **Diamond**.

In the northern Kings Mountain Belt the regional metamorphism that accompanied intense folding and faulting produced widespread conglomerates, marble, quartzites and schists in which **Vermiculite** mines became the major minable mineral. The many Vermiculite mines scattered throughout the Inner Piedmont also yield collectable gemmy

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specimen of **asbestos**, **Barite**, **Copper** minerals, **Feldspar**, **Garnets**, **Kyanite**, marble and **Mica**.



With the exception of the Piedmont and the Blue Ridge section, South Carolina's surface is largely Upper Cretaceous (Tuscaloosa Fm.) laden with **fossils**, Tertiary and Recent sediments.

ABBEVILLE COUNTY

AREA: ① countywide stream gravels, rock exposures, cut banks, fields, etc.—**Beryl**, **Corundum**, **Epidote**, blue **jasper**; ② regional mines (in long belt extending NE across several counties)—**Gold**.

ABBEVILLE: ① area mines—**Gold**; ② S 9 mi. and ½ mi. E of Beula Cross Roads, a mine—**Gold**.

ALLENDALE, take Hwy. 301 SW across the Savannah R., turn NW for 8 mi. to where rd. makes sharp turn S, continue ahead on dirt rd. 12 mi. and collect along rd.—**chert**.

ANTREVILLE, go 3 mi., W on Hwy. 284, then a mi. N on S-1-72, and ¾ mi. farther and right to house (fee), return to next rd. S and go E and N a mi. to mine—**Amethyst**, **Smoky Quartz**.

CALHOUN FALLS, area mines—**Chalcopyrite**, **Graphite**, **Ilmenite**.

DONALDS, SE 4 mi., on the J.T. Algary farm—**Amethysts**.

South Carolina

DUE WEST, at the nearby Ellis-Jones Amethyst Mine—**Amethyst** (largest crystals up to 45 lbs.).

LOWNDESVILLE: ① N 1.8 mi. at Barnes place; and ② just S of town on the McCalla farm—**Amethyst**; ③ S 46° W 3 mi., a mine—**Gold**.

McCORMICK STATION, the Dorn Mine—**Gold**.

AIKEN COUNTY

AREA, Silbur Bluff on the Savannah R., at base of alluvial deposit, mined—**Manganese** mineral (bearing Cobalt).

AIKEN, area of Herse Cr. Valley, 1 mi. off old US 1 near Clearwater, as area float and in gravel pits—**Amethyst**, **chalcedony**, **Ilmenite**, **Monazite**, **Quartz** crystals (clear smoky, rutilated), **Rutile** crystals, **Zircon**.

ALLENDALE, S of US 301 across the Savannah R. bridge, turn N on Co. rd. 8 mi. to a sharp left turn, take dirt trail along track—*Savannah River* **agates**.

ANDERSON COUNTY

AREA: ① Savannah R boundary of Co., on NE bank of river ¼ mi. from mouth of Big Generostee Cr.: (a) the old Gaillard Mica Mine, and (b) the Fretwell prospect—**Aquamarine**, **Golden Beryl**; ② numerous exposures along a belt extending from near Anderson part Iva on to Lake Secession to Due West, Abbeville Co.—**Amethysts**.

ANDERSON: ① W 2 mi., area, as occasional clear crystals—**Beryl**; ② E 3 mi., several pegmatite exposures: (a) area—**Beryl**, **Almandite** garnets, **Limonite** cubes, **Mica**, **Quartz** crystals (clear, smoky), black **Tourmaline**; (b) ¼ mi. NNE, area—**Aquamarine**; ③ SW 8 mi., in narrow veins—**asbestos**; ④ N 9 mi., near dam on Twenty-six Mile Cr., the Burgess Mine—**Feldspar**, **Garnets**, **Mica**, **Quartz** crystals; ⑤ at J.M. McConnell place 3½ NE in schist—**Emerald**; ⑥ at Ferguson Mine 5.6 mi. N on Hwy. 187, and ½ mi. SW of McConnell place in pegmatite—**Beryl**; ⑦ S 15 mi. on Hwy. 28 where rd. cuts dike near lake—**Amethyst**, **Garnet**.

IVA: ① NW 1¼ mi. along Wilson's Cr. on Rte. 413, on the Frank Pruitt farm—**Golden Beryl**; ② S, area of the Sherard farm near Moffettsville, in exposure of mica slates—**Amethyst** (single crystals and clusters); ③ SW 3 mi., the J.B. Anderson farm—**Golden Beryl**; ④ N 5.7 mi. on US 187, the Martin-Blackwell-Ferguson Mine—gem **Beryl**; ⑤ SE 11 mi., on the Thompson and Jackson farms—gem **Corundum**, **Garnets**, white **Quartz**, **Zircons** (orange, brown).

PELZER, on Co. line, pegmatite outcrop (extends 1½ mi. SW of Piedmont to 1 mi. S of Pelzer)—**Aquamarine**, **Indicolite** tourmaline.

CHEROKEE COUNTY

AREA: ① E part of Co., in prospect pits, mines, rd. cuts, stream gravels and banks—**Barite**, **Hematite**, gem **Kyanite**, **Sillimanite**, etc.; ② the Bowen R. region, in exposures in the Archean gneiss—**Corundum**, **Sapphire**.

BLACKSBURG: ① NW, the Bowen R. drainage basin, extending to Buffalo Church: (a) area slate exposures—**Corundum**, **Garnets**; (b) regional stream gravels—**Corundum**; (c) tributaries of the Bowen R., in gravel beds—**Corundum**, **Sapphire**; ② NW 2½ mi. on Rte. 83 (the Buffalo Church rd.) and on the Andrew Moore farm—**Emeralds**, **Sapphires**; ③ Porter's Hill, area stream gravels—**Corundum**, **Garnets**, **Quartz** crystals, **Topaz**, **Zircon**, etc.; ④ Earles Sta. (10 mi. S of Shelby), area pegmatites—**Emeralds**, etc.

BUFFALO CHURCH: ① area stream gravels—**Amethyst**, **Rutile** crystals; ② W, on the W.T. Gibbons farm—**Amethyst**, **Corundum**, etc.

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COWPENS, NE 3 mi., several area mines—**Corundum** (particles), **Gold**, **Monazite**, **Pyrite**, **Tourmaline**.

GAFFNEY: ① area, pegmatite dike outcrops—**Cassiterite**; ② NE 1¼ mi., the Ross Mine, and other nearby mines—**Cassiterite**, **Feldspar** crystals, **Fibrolite** (banded kyanite), **Quartz** crystals, **Pyrrhotite**; ③ SE 2.8 mi., on Limestone Cr. (tributary of the Broad R.), the Cameron Mine—argentiferous **Galena**, **Pyrite**, **Pyromorphite**, **Siderite**; ④ SW 8 mi., at Love Springs, the Troy Blanton Mine—**Garnets**, **Mica**, **Tourmaline**; ⑤ SE 11 mi. (and 1 mi. W of Smith's Ford on the Broad R.), the old Darwin Mine—**Gold**; ⑥ SE 12 mi., near the 12 mi. post, Flint Hill, area mines—**Gold**; ⑦ at Porter's Hill, on Bowen R.—**Sapphire**.

KINGS CREEK: ① area mines—**Barite**; ② SW 2 mi., the Barkat Mines—**Gold**; ③ Canaan Church, W, mines (Bolin, Wyatt)—**Gold**; ④ E from Rte. 97 (and S of Rte. 5), mines (Dixon, Eutis, Southern Gold, Wallace)—**Gold**, **Chalcopyrite**, **Copper** minerals, **Galena**, **Hematite**, **Kyanite**, **Quartz** crystals, **Pyrite**, **Sillimanite**, **Steatite**.

WALHALLA, N 15 mi., area mines—**Galena**.

CHESTERFIELD COUNTY

AREA, numerous old mines—**Gold**, **Pyrite**.

JEFFERSON: ① area N of Rte. 265, along the Lynches R., numerous old mines—**Topaz**; ② W 3 mi. to Brewer Knob on the Lynches R. (Co. line), the old Brewer Mine—**Cassiterite**, **Covellite**, **Enargite**, **Gold**, **Kyanite**, **Pyrite**, **Quartz** crystals, **Rutile** crystals, **Staurolites**, **Topaz** (massive, blue, champagne, golden).

DARLINGTON COUNTY

DARLINGTON, E to the Pee Dee R. crossing of I-95, on W side of river near bridge, abundant—**petrified wood**.

HARTSVILLE, along Bellyache Cr.—**petrified wood**.

DARLINGTON & FLORENCE COUNTIES

REGION, all fields, stream beds, rd. cuts, etc.—**petrified wood**.

EDGEFIELD COUNTY

EDGEFIELD: ① N 6° W 12 mi. (2½ mi. N of Meeting St.), E side of Sleepy Cr., a large area of old mines—**Gold**; ② in Turkey Cr. within sight of Hwy. 25—**serpentine**.

FAIRFIELD COUNTY

AREA: ① countywide sand and gravel pits—**petrified wood**; ② Lake Murray Dam, in rock exposures along river bank—**Garnets**, **Kyanite** crystals.

LITTLE MOUNTAIN, E, to the W side of the Broad R., an old mine—**Kyanite** crystals.

GREENVILLE COUNTY

GREENVILLE: ① N 5 mi., near E end of Parris Mt. State Park, pegmatite exposure at jct. of two streams, the Boling prospect—**Beryl**, **Garnet**, **Quartz** crystals (clear, smoky), **Sillimanite**, black **Tourmaline**; ② SW 7 mi., just W of Rte. 20 across RR near Saluda R.,

South Carolina

the Cleveland Mica prospect—gem **Beryl, Mica**; ③ SE 9 mi., the Willimon Mine—gem **Kyanite**; ④ numerous old area Vermiculite mines, on dumps—**Amazonite, Feldspar, Rutile** crystals, **sunstone, Xenotime** (resembling zircon).

GREER: ① area mines, and ② NW 8 mi.: (a) the McBee Mine, and (b) 1 mi. above, on opposite side of Middle Tyger R., mines—**Gold, Pyrite**.

MARIRTTA, 4 mi. distant, area mines—**Polycrase**.

PIEDMONT, at the D.D. McNeely place—**Beryl**.

PRINCETON, NW 3 mi., the Desota Mine—**Gold**.

TIGERVILLE, E 1 mi. on Rte. 414, near Baptist church, a Vermiculite mine—gem **crystals, minerals**.

GREENWOOD COUNTY

AREA, NE part of Co., from 4 mi. SE of Shoals Jct. to 1 mi. SW, across Co. line E of Due West, Abbeville Co., numerous exposures, outcrops, fields, etc.—**Amethyst, Quartz** crystals, etc.

BREEZEWOOD, W 2 mi., mine—**Psilomelane**.

GREENWOOD: ① NW to jct. of US 25 and US 178, then N 4.3 mi., in rd. cut—**Limonite** cubes (to 2" dia.); ② S 5 mi., area mines—**Psilomelane**; ③ at Stockman's Quarry—**Garnet**; ④ at Wrenn's place—**Amethyst**; ⑤ at Harper's place at powerhouse—**chalcedony**; ⑥ at Milford place—**Quartz** crystals (clear, smoky).

SALUCA, on W shore of lake Greenwood—**Unakite**.

SHOALS JUCTION: ① SE 1½ mi., and ② SW 1 mi. (3 mi. SE of Donalds, Abbeville Co.), area fields, cut banks, etc.—**Amethyst, Quartz** crystals; ③ as float near Lake Greenwood—**Amethyst**.

HORRY COUNTY

MYRTLE BEACH, area beach gravels—**agate, chalcedony, Quartz, fossil** shark teeth.

KERSHAW COUNTY

CAMDEN, NW 9 mi. (1 mi. NW of Getty's Bridge over Sawney's Cr.), the Lamar Gold Mine—**Gold**.

LANCASTER COUNTY

KERSHAW: ① area mines; ② N 51° E 3.8 mi., the Haile Gold Mine (large scale) — **Gold, Pyrite, Quartz**, etc.; ③ N 5° E 8 mi., on Flat Cr. tributary of Lynches R., the Blackmon Gold Mine—**Gold, Pyrite, Sericite**; ④ the Maile Mine—**Molybdenite**.

LIBERTY HILL, a deposit near the Wateree Reservoir on a tributary of the Catawba R.—gem **Smoky Quartz** crystals (to 6" long and 2½" dia.), **Zircons**.

LAURENS COUNTY

CROSS HILL: ① S on Rte. 39 to jct. (marked by white house on the right), turn right on dirt rd. to next right turn, in farm field; and ② N on Hwy. 39 to crossrds. With large white house, turn right 3 mi. until rd. takes shape turn, turn and go ½ mi. to rd. right into pines, dig in field to right of rd.—**Amethyst**.

A Location Guide for Rock Hounds in the United States

LAURENS: ① at New Cemetery and inside city at Dead Man's Cut in railroad—**Corundum**; ② at Dead Man's Cut—**Pyrope** garnets.

MARLBORO COUNTY

BLLENHEIM, in sand pits 4 mi. S—**petrified wood**.

McCORMICK COUNTY

McCORMICK: ① area creek sands, placer—**Gold**; ② 2½ mi., old mine—**Gold**; ③ W 2 mi. on Rte. 378, turn left on Plum Branch rd. 2 mi. to cr. bridge, area on right just before bridge—**Limonite** cubes.

NEWBERRY COUNTY

PROSPERITY, area, as crystal masses—**Rutile**.

OCONEE COUNTY

AREA, gravel beds of the Toxaway and White Water rivers, old placer mines—**Gold**.

ADAMS CROSSING, SW 3 mi., a mine—**Gold**.

CHERRY, SW 1½ mi., a mine—**Gold**.

PULASKI, N 4 mi. (10 mi. N 40° W of Ft. Madison), a mine—**Gold, Graphite**.

SENECA: ① area mines—**asbestos**; ② N 2 mi., on the Leroy farm—gem cat's-eye **Sillimanite** crystals; ③ S 5½ mi., old mine—**Gold**.

WALHALLA: ① N 11½ mi., old mine—**Gold, Pyrite**; ② W 14 mi. (1 mi. W of Rogues Ford and 2 mi. below Cannon's Stone), on E scarp of the Chatooga R., the Henckel Mine—**Gold**; ③ N 15 mi., on the Middle Fork of Cheochee Cr., old mine—**Gold, peridotite, Pyrite**.

PICKENS COUNTY

CALHOUN, N 1 mi., mine—**Gold, Mica**.

CLEMSON: ① area of mica mines around Clemson College; ② N 4½ mi. and 0.7 mi. NW of Twelve Mile Cr., the Head prospect; and ③ NW 7 mi. (SW of cr. 1 mi. E of the Seneca R.), the Davis prospect—**Garnets, Quartz** crystals.

EASLEY, area schist outcrops—carvable **Steatite** (with Chlorite).

RICHLAND COUNTY

COLUMBIA, at Lake Murray—**Amethyst**.

SLUDA COUNTY

SALUDA, NE 6 mi. (12 mi. S of Newberry), in fork of Big Cr. and the Little Saluda R., the Cultbreath Mine—**amphibolite, Chalcopyrite, Chlorite, Gold, green Hornblende** crystals, **Magnetite, Niccolite, Pyrite**.

South Carolina

SPARTANBURG COUNTY

AREA, countywide stream gravels—placer **Gold**, rare **Diamonds**.
COWPENS, N 2 mi., old mica mines—**Mica**, black **Tourmaline**.
ENOREE: ① area of jct. of Enoree rd. and Dutchman's Cr.—gemmy red **quartzite**;
② E 5 mi. on Rte. 92, then 1 mi. on Rte. 30 and 3 mi. E on Co. rd. to Vermiculite prospects
(in Cross Anchor Twp.)—massive **Quartz**, pegmatite **gems** and **minerals**.
GLENN SPRINGS, S 8 mi., area mines—**Psilomelane**.
SPARTANBURG: ① area mines—**asbestos**; ② area stream gravels, placers—**Gold**,
Zircons; ③ E, in a granite quarry—**crystals**, **minerals**.

UNION COUNTY

AREA, numerous old mines scattered through Co.—**Gold**.
WEST SPRINGS, on Fair Forest Cr., the Nott Mine—**Gold**, native **Copper**, **Pyrite**.

YORK COUNTY

AREA, numerous well known old Gold mines in Co.—**Gold**.
BETHANY, N 3 mi. on W side of Rte. 161, the Patterson Mine—**Gold**, **Pyrite**,
Quartz crystals.
BLACKSBURG, E, to Kings Mt. Battlefield: ① S 1.3 mi., area pits—**Barite**; ② E 2
mi., the Ferguson Mine—**Gold**, **Pyrite**, **Quartz** crystals.
CATAWBA JUNCTION, SE 4 mi., extensive exposure—**Wad**.
CLOVER: ① NW 3 mi. on Rte. 508, in rock exposures on Henry Knob—**Andalusite**,
gem **Kyanite**, **Lazulite**, **Staurolites**, **Tourmaline**; ② SW 5.7 mi., old mine on Bullock's
Cr. of Broad R.—**Gold**, **Magnetite**, **Monzonite**, **Pyrite**, **Sericite**, **slate**.
HICKORY GROVE: ① N 1 mi., the Wylie Mine—**Gold**; ② SE 2 mi., alongside Rte
221, the Thunderhead Mine—**Gold**, **Pyrite**; ③ W 2.2 mi. on Smith's Ford rd., at head of a
branch of Guin Moore's Cr. on S side of rd., the Magnolia Mine—**Gold**, **Malachite**, **Biotite**,
Quartz crystals; ④ SW 3.2 mi., old mine—**Gold**; ⑤ SW 4 mi., and ⑥ ½ mi. NW of Rte. 211,
area—**Andalusite**, **Kyanite**, **Lazulite**, **Staurolites**, **Tourmaline**.
Hickory Grove-Smyrna, AREA OF Quartz vein outcrops extending NE between both
towns, some 50 Gold mines and prospects along both sides of Rtes. 5, 97 and 221—**Calcite**,
Galena, **Gold** nuggets, **Sphalerite**, **Tourmaline**.
KINGS CREEK, SW 3 mi., the Carroll & Ross Mine (on Wolf Cr. tributary of the
Broad R.)—**Gold**, **Pyrite**.
PIEDMONT SPRINGS, N 1 mi. and just N of Rte. 55, numerous pits (mainly W and
N from Zoar Church on Rte. 731)—**Barite**.
ROCK HILL, W 5 mi. and 0.2 mi. S of jct. of Co. rd. 46-102 with Co. rd. 46, as area
float—**Sillimanite**.
SMYRNA: ① NE 1 mi., the Horn Mine; ② E 2 mi., the Castles and Scoggins mines—
Gold, **Pyrite**, **Quartz** crystals; ③ W 1 mi., the Martin Mine—Gold nuggets; ④ SW 3 mi.,
area rock outcrops—**Andalusite**, **Kyanite**, **Lazulite**, **Staurolites**, **Tourmaline**; ⑤ W 3½
mi., the Hull Mine—**Calcite**, **Galena**, **Gold**, black **Tourmaline** (sunbursts), etc.; ⑥ SW 4.4
mi.: (a) the Dorothy Mine; and (b) an old prospect ½ mi. E of the mine—**Gold**, **Malachite**,
etc.
YORK: ① area mines, such as (a) the Big Wilson Mine; and (b) E 4 mi., the Mary
Mine—**Chalcopyrite**; ② NE, an old Copper Mine—**Malachite**, **Cuprite**, native **Copper**;
③ Five Points crossrds. On Nanny Mt.: (a) ¼ mi. W of jct. of Rtes. 49 and 56, on right side of
rd. leading to Clover, along the NC boundary, area fields, cuts, breaks, etc.—black
Corundum; (b) area mines 11 mi. NE of York on Nanny Mt.—**Pyrrhotite**.