ROCKHOUND'S GUIDE

to selected specimens

HE TREASURES in this gallery represent North Carolina's unique geology, economy, people and stories. For those who want to dig a little deeper into the rocks, we offer this guide to the truly spectacular in the collection. Highlighted specimens were chosen for their beauty, rarity, historical importance, or unique features.

Our Prospector's Picks:

CASE 1

All of these petrified wood slabs are from Harnett County. They date to the Cretaceous Period, when *Tempskya* plants were common.

CASE 2

- **2.** Gold coin from Bechtler Mint, 1834. \$5 coin, the largest denomination minted in gold in NC. Gold coins were minted in Rutherfordton before the US Mint opened in Charlotte.
- 3. Gold nugget from Reed Gold Mine. Documentation dates to 1828, when it was acquired by the Humboldt Museum, Germany. It was sold in the mid-1950s to the famous Al Buranek Collection, then acquired by John Barlow in 1978. Shown in four publications: 1.) "North Carolina Gold" by W. Wilson, *Mineralogical Record*, Jan-Feb 1987; 2.) *Barlow Mineral Collection*, by R. Thompson, 1997; 3.) "Gold is Where you Find It" by Bob Jones, *Rock and Gem Magazine*, July 2001; 4.) "North America's First Gold Rush" by C. Tacker, *Gold (Extra Lapis)* (English), No. 5, 2003.
- **4.** Gold in matrix from Ward's Mine, near Silver Hill. Unusual because the matrix is slate, not quartz. Formerly in University of Pennsylvania collection.
- 7. Gold crystals, extremely uncommon in NC, found in an open vein in the Phoenix Mine. Collection includes original label. Formerly in University of Pennsylvania collection.
- 8. Silver on matrix from Silver Hill Mine.
- **9.** Native silver, more rare than gold, from Silver Hill Mine, circa 1837. From Bob Cook collection, originally owned by C.U. Shepard.
- **11.** Gold in quartz from Le Roi Morrison's Mine. Collection includes original label. Formerly in University of Pennsylvania collection.



- **12.** Gold on quartz from famous miner and Reed Gold Mine benefactor Pete Nash. Found at Parker Mine.
- **13.** Quartz covered with rows of tiny gold crystals. From Shuford Gold Mine.
- 17. & 18. Fragile specimens showing microcrystalline gold freely growing in quartz cavaties. From Hercules Gold Mine.
- **20.** Malachite on quartz from McGinn Gold Mine, formerly located in downtown Charlotte. Collection includes original label.

CASE 3

- **1.** Phenakite, a rare beryllium mineral, from F.H. Pough Collection. Pough wrote the *Peterson Field Guide to Rocks and Minerals.*
- **2.** Smoky quartz with clay inclusions from J.A.D. Stephenson collection.
- **6.** Tourmaline (var. rubellite) circa 1850, found in NC gold region. From C.U. Shepard collection.
- **14.** Diamond, one of 13 from NC. Found while panning for gold near Brindletown. Clear brilliant oblong spheriodal, uncut. From J.A.D. Stephenson collection.
- **16.** Calcite with muscovite and tourmaline from B.S. Colburn collection, 1926.

CASE 4

- 1. Bald Mountain meteorite, fell at 11 a.m, July 9, 1929, into a corn field near Little Elk Creek. Found hot, it was seen and heard by locals and boys working in the field. Purchased by NCMNS for \$15.00. Type: Ordinary chondrite, L4. Weight: 7 lbs, 1 oz.
- 2. McDowell County meteorite, found May 1921, in the hills near Marion. It was badly oxidized, green and brown. Described by G.P. Merrill in the 1923 *American Journal of Science*.

 Type: Fine octahedrite. Weight: 1 lb, 12.5 oz.

Rutile with quartz crystals Case 26, #10



CASE 4, CONT.

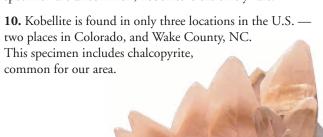
- **3.** Rich Mountain meteorite, fell at 2 p.m., June 20, 1903, about 12 miles east of Sylva. It was seen and heard cutting tree-tops 40 feet from the observer, possibly part of a meteor shower. Purchased by NCMNS for \$10.00. Type: Ordinary chondrite, L6. Weight: 1 lb.
- **4.** Deep Springs meteorite was found on Deep Springs Farm in 1846, reportedly buried 4 to 5 feet. Shows faint Widmanstatten texture. Described by Genth in 1891 *USGS Survey Bulletin* No. 74. Type: Iron; ataxite. Weight: 12 lbs.
- **5.** Castalia meteorite fell at 2:30 p.m., May 14, 1874. Observer heard a rumbling roar 3 miles north of Louisburg, with explosions lasting 4 minutes. Broke into 12 or more pieces. Composed of 15% nickel/iron and 85% stony minerals (bronzite, olivene, anorthite, and enstatite). Described by Genth in 1891 *USGS Survey Bulletin*. Type: Ordinary chondrite, H5. Weight: 1 lb 1 oz.
- **6.** Hendersonville meteorite, found in 1906, located 3 miles northwest of Hendersonville. Composed of nickel, iron, pyroxenes, and olivene. Type: Ordinary chondrite, L5. Weight: 6.7 oz.

CASE 7

- 2. Calcite with rare purple color and very large, clear crystals.
- **4.** Calcite from Moncure with rings showing growth path.
- **6.** Honey-colored calcite from Woodlawn Quarry, showing unusual epitaxial overgrowths. The dark lines are concentrated impurities at the edge of interior crystals that have since been covered with new growth. Shown in monograph on "Calcite," p. 90, *Extra Lapis* (English), 2003.

CASE 8

- **4.** Perfect cluster of apophyllite from Durham, an excellent example of this mineral.
- **5.** Gyrolites from Durham showing perfect form. Rare because they grow at lower temperatures than other minerals in the region.
- 7. Tiny but perfect pyramid-shaped tetrahedrite crystal on siderite and galena-kobellite matrix. All minerals in this specimen are uncommon; kobellite is extremely rare.



Calcite cluster Case 7, #2

CASE 9

- **3.** Apatite with uncommon bright purple color. From Foote Mine.
- **4.** Large crystals of rare fairfieldite on pegmatite matrix. Among the best in the world. From Foote Mine.
- 7. Very delicate cluster of bikitaite crystals. Foote Mine and mines in New England are the only sources of this rare lithium mineral in the US.



Gold Nugget Case 2, #3

- **8.** Hematite (iron ore) in textbook reniform shape. Also called "kidney ore." From Devil's Workshop.
- **10.** Limonite in botryoidal form (shaped like a bunch of grapes) from Crowder's Mountain. Unusual irridescence.
- 11. Extremely large red rutile crystal from Lowe's Mine.

CASE 10

- **2.** Nicest and possibly largest spodumene crystal from NC. Terminated crystals very rare for this mineral. From Foote Mine.
- **4.** Fairfieldite, a rare phosphate mineral, in globular form with small spheres of rhodochrosite and fluorite in crevice.
- 7. Apatite crystals in crevice with uncommon lavendar color. From Foote Mine.

CASE 11

- **2.** Lazulite crystals in pyrophyllite matrix. Perhaps a unique pseudomorph, lazulite shaped like andalusite crystals. From Gearhart Mine.
- **5.** Large cluster of pyrite showing well-developed crystals and a nice penetration twin. From Glendon Mine.
- 12. Ilmenite found near Ramseur.

CASE 12

- **5.** Kaolinite pseudomorph, replacing microcline crystal. From Gearhart Mine.
- **8.** Uncommon double-terminated anatase crystal in quartz cluster. Superb crystal of uncommon mineral. From Shingletrap Mountain.
- **11.** Excellent rare lazulite crystal on calcite matrix, unique for NC. From Gearhart Mine.
- **15.** Perfect octahedral crystals of pyrite, which often forms cubes, on pyrophyllite matrix. From Glendon Mine.

CASE 13

- **4.** Unusual clear green fluorite, with delicate white calcite "flower" formation and clear calcite clusters.
- **5.** Copper from Virgilina, one of NC's historic copper districts. All copper mines closed by 1911. Native copper is uncommon.
- **6.** Two kinds of mica in one specimen. Lepidolite, a pinklavendar mica, is rare. Muscovite, a white mica, is common.

CASE 16

- **3.** Textbook garnet crystals on matrix. From Henson's Creek Mine, near Spruce Pine.
- **5.** Huge red garnet crystal with perfect sharp facets. One face is skeletal. From Little Pine Mine.
- 7. Cut garnet cabochon with extremely rare 4-point star. From Tweedy Mine, Morganton area.
- **9.** Small garnet crystals with large, rare idocrase crystal. From Hot Springs.

CASE 17

- **1.** Garnets in quartz matrix from Deer Park Mine. Garnets have usual diamond-shaped faces with facets in between, creating an uncommon combination of 12- and 24-sided crystals.
- **2.** Unusual cinnamon-colored garnets with textbook crystal shape. From Metcalf Mine.
- **10.** Perfectly formed garnet crystals on textbook mica sheets. From Little Henson's Creek Prospect.

CASE 18

- **3.** Exceptionally clear barite crystals with unusual crystal form. From Crowder's Mountain area.
- **6. & 7.** Extremely rare monazite twins, among the best in the world. Found about 30 years ago near Double Shoals. Only 5 found; two displayed here, one at Smithsonian, another at Grandfather Mountain. Specimen #6 won a national award for best "thumbnail" (less than 1") species about 25 years ago.

CASE 19

- **3.** Reticulated rutile with reddish-golden twinned crystals. A pseudomorph in progress, the siderite matrix is being replaced by goethite.
- **5.** Incredibly clear golden crystals of mica cover this fragile specimen. Such fine crystals of mica that it stumped our curator of geology.

CASE 20

These pieces from central NC are rare indeed—cerrusite, pyromorphite, silver, lead and copper minerals from long-closed mines near Salisbury, dating back to the 1830s.

- **1.** Tabular cerrusite crystals, very fragile, from Silver Hill Mine. From W.W. Jefferis collection.
- **4.** Fragile and amazingly well-preserved cerrusite crystals, an uncommon lead carbonate. From Silver Hill Mine, circa 1850.
- **8.** Rare green pyromorphite, an exceptional color. From Silver Hill Mine.

CASE 21

Emeralds, North Carolina's state gem, have been historically produced at only three mines—the Crabtree Emerald Mine, the Old Plantation Emerald Mine, and the Rist Mine. The Foote Mine is a new NC locality, bringing the total to four. North American Emerald Mine, currently producing large emerald crystals, occupies part of former Rist Mine property.

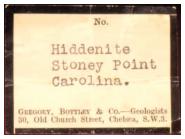
- 1. Emerald with red rutile needles, a penetration twin.
- **5.** & 6. The 1-carat emerald stone in necklace was cut from tip of large emerald crystal with red rutile inclusions. The natural emerald was shown twice before cutting: 1) "The Rist and Ellis Tracts, Hiddenite, North Carolina," by D. Brown and W. Wilson, *The Mineralogical Record*, Vol. 32, March-April 2003, pp. 129-140; and 2) on the front page of *The Yadkin Ripple*, April 10, 1997, with two men who found it, Gilbert Wooten and Craig Rutledge.
- **14.** Emerald in matrix from Foote Mine. Very few emeralds have been found at this locality. Published in "Forgotten Emeralds?" by Hilton Freed, *Mineralogical Record*, Vol 31, Nov-Dec 2000, p. 518.
- **15.** Emerald from Old Plantation Mine. Material from this mine is difficult to obtain.

CASE 22

Emerald

Case 21, #1

- **4.** Dramatic and extremely fragile rutile specimen, held together by a soft matrix, which normally would be destroyed by too much handling. Found by workers digging a basement for a home in Hiddenite.
- **8.** Crystal cluster with mica, biotite, siderite, rutile, orthoclase and two forms of calcite. All are skeletal.
- **9.** Light green emerald, also called "green beryl." A textbook terminated crystal, crystal faces visible on tip. Found in same pocket as hiddenite specimens #10 and #11.
- **10.** Hiddenite crystal, now 1/3 the size it was before cutting. A superb gem quality stone, found in same pocket as emerald #9.
- 11. This 2.4 carat gem was cut from hiddenite specimen #10.
- **16.** Hiddenite crystals on matrix. Collection includes original label from British mineral dealer Gregory, Bottley & Co (shown below). The town of Hiddenite did not exist when specimen was found, so nearest town, "Stoney Point," is listed as the origin. Matrix is quartz on metamorphic rock.
- **19.** Large, exceptional ilmenite plates in crevice. Originally covered with calcite, the ilmenite was revealed by dissolving the calcite with acid.



Original Label, Hiddenite Case 22, #16

CASE 23

- **1.** Gem-quality bronze corundum (var. sapphire), cut and polished. Features excellent 6-point star. From Mincy Mine.
- **3.** Slice of a bronze corundum (var. sapphire) crystal with visible growth rings. From Mincy Mine.
- 7. Large ruby crystal with spots of sapphire.
 Unusual to find both ruby and sapphire in one crystal.
- **11.** Beautiful pink ruby from W.W. Jefferis collection, 1873. From Buck Creek Mine.
- **18.** Extremely large, 6-sided, gem-quality ruby. If cut and polished, would probably reveal a star, due to minute rutile inclusions. Incredible size and color. From Corundum Hill Mine.

CASE 24

- **8.** Xanthitane pseudomorph, replacing titanite. On feldspar matrix, from a zircon mine. From Tuxedo.
- **10.** Axinite with cluster of rare green pumpellyite, on feldspar matrix. From McKinney Mine.
- **13.** Epidote in unusually good crystal form. Crystals are fairly uncommon in igneous rock. These have good luster and are well exposed. From Wilson Farm near Bakersville.

CASE 25

- **1.** Large amethyst cluster with shiny luster, brilliant surfaces, and deep purple color. From Reel Mine, a classic NC locality.
- **2.** Seven large amethyst crystals on matrix, with several smaller quartz crystals. Amethyst crystals do not occur on matrix very often. From Reel Mine.
- **3.** Huge terminated smoky quartz crystal from Hiddenite. Shown in *Gem and Crystal Treasures* by Peter Bancroft, 1984, p. 27.

CASE 26

- **2.** Citrine with lovely color and razor-sharp terminations, rare for U.S. From Adams' Farm.
- **3.** Quartz with rutile needles embedded inside and protruding from surface of crystal. This large crystal is the source of specimen #10, "Rutile with quartz crystals."



Hiddenite specimen and card in "Green Imposter" kiosk

CASE 26, CONT.

- **5. & 6.** These quartz scepters have amethyst tips. The amethysts are later overgrowths.
- **9.** Iron-stained quartz cluster with double terminations on many crystals. From Gerhardt Mine.
- 10. A beautiful spray of rutile with unusual quartz overgrowths. Unique specimen, one of the world's best. Shown in "Rutile" by Bob Cook, *Rocks and Minerals* magazine, March-April 2003, pp. 112-116. Jeff Scovil's photo of this piece used on banners and other advertizing materials for exhibit. Also shown on front of this Guide. Broken from the top of specimen #3, a large rutilated smoky quartz (see circled area on specimen for contact point).
- **11.** Quartz with unusual chlorite ghost crystal. From Heffner Farm.
- **14.** Large double-terminated smoky quartz crystal, skeletal, with inclusions.

CASE 27

Amethyst Cluster

Case 25, #1

- 1. Smoky quartz cluster weighing 60 lbs, with double termination and mud inclusions. The side facing down is a single large crystal.
- **3.** Quartz cluster with chlorite ghost crystals.
- **4.** Smoky quartz with rutile needles, some protruding from the crystal. Red rutile is distinctive to Hiddenite.

"GREEN IMPOSTER" KIOSK

The hiddenite specimen in this kiosk is unique. It is the first crystal of hiddenite found (and later removed from) its matrix. William Earl Hidden attached the specimen to his business card, certifying its origin and the year it was discovered, 1880. Shown in two publications: 1) "Some Hiddenite History," by Frederick H. Pough, *Lapidary Journal*, Feb. 1993, pp. 14, 112-114; 2) "First Commercial Use of Rare Earth Minerals: North Carolina's Monazite and Zircon Industry," by J.L. Lininger, *MATRIX: A Journal of the History of Minerals*, Vol. 10, No. 4, 2002-03, pp. 191-206.

Treasures Unearthed

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