Iowa Science Teachers Journal

Volume 21 | Number 1 Article 3

1984

Rock and Mineral Collecting in Iowa

Joseph H. Brown

ROCK AND MINERAL COLLECTING IN IOWA

Joseph H. Brown
7216 Ridgemont Dr.
Urbandale, Iowa 50322

The enthusiastic collector of rocks and minerals enjoys and practices a most interesting hobby. Nature has provided a free source of materials in many different localities, and the Midwest is no exception to this bounty. Success in finding a rare rock or mineral is limited only by the skill and perseverance of the collector. The natural beauty of many mineral, rock, and fossil specimens makes finding them a stirring experience. The value and rarity of these examples of nature's wealth makes the search for them a stimulating and profitable adventure.

Individuals searching for unusual rocks and minerals will find those of igneous origin distributed throughout the state in stream beds and gravel deposits. Sedimentary rocks which develop as a result of erosion, sedimentation, precipitation and/or biological processes are exposed in limestone quarries and various geological outcrop sites located around the state. A source of rock specimens of metamorphic origin exists in the northwest corner of the state. Examples of these metamorphic rocks which have developed from igneous or sedimentary rocks as a result of physical and/or chemical transformations are distributed across the state.

In this paper, some of Iowa's good rock and mineral collecting sites will be identified. The location at additional collecting sites might best be obtained by contacts through the various rock and mineral clubs of Iowa listed at the end of this article.

Quartzite

An outcrop of Sioux quartzite is exposed in Gitchie Manitou State Park, Lynn County, in northwest Iowa. Sioux quartzite is a reddish colored metamorphic rock dating back some 1.6 billion years.

In some places on the exposed layers of the quartzite outcrop, irregular bedding at various angles to the general horizontal plane maybe observed. Sioux quartzite makes an interesting collector's item because of its extreme age. Specimens must be gathered in areas outside the park.

Agates

Agates are the favored stone of many amateur rock collectors because of their wide variety of colors and beautiful patterns. Agates of the fortification type, called Lake Superior agates because they originated in that area, are found in the gravel deposits in Iowa. Gravel pits, stream beds and lake shores frequently contain these interesting stones. During glacial periods, they were washed down the Mississippi River valley into Iowa. Stream bed gravels are glacial deposits which have been reworked and, therefore, provide good opportunities to find agates. Localities for agate collecting occur along the Little Sioux River in western Iowa, along the Raccoon River north of Boone, in the creek beds of

northeast Iowa, as well as along the entire length of the Mississippi River. The gravel beds in the streams around Muscatine are good sources of Lake Superior agates. (Quick, 1963).

A black chert that contains embedded *Triticites* (fusilinids) fossils is found in quarries located in Sec. 27, T 73 N, R 38 W in the Walnut Creek area. This is ½ mile north of Stennett, Iowa, which is northwest of Red Oak, Iowa. Fusilinids are protozoans associated with the Pennsylvanian Period. Collectors polish this rock and refer to it as "rice agates".

"Coldwater agates" may be found at the Kaser Construction Company quarry near Keota, Iowa. They may also be found in a quarry near Ollie, Iowa. This quarry is located by traveling 4⅔ miles west of highway W15 (old highway 77) on highway 78 past the church, then north ½ mile, west 1 mile and north ⅓ mile.

At Orient, Iowa, in Adair County, agates, quartz crystals, and petrified wood may be found 5 miles north and east in washes and clay hillsides of that area.

Conglomerate

Conglomerate, a common sedimentary rock, may be found along the beds of many Iowa streams. This rock is composed of rounded pebbles cemented together in a matrix of finer material. Good exposures of conglomerate may be found in Sec. 10, T 73 N, R 20 W, Pleasant Township in Lucas County and Sec. 21 & 28, T 74 N, R 21 W. in Dallas Township in Marion County. Also found in Iowa is a "peanut brittle" or "pudding stone" variety of conglomerate which is interbedded with sandstones of the Cretaceous Period. Good exposures occur between Red Oak and Coburg, SW½, Sec. 9, T 72 N, R 31 W, in Montgomery County and in Sec. 31, T 79 N, R 31 W, in Guthrie County.

Calcite

Limestone sediments throughout Iowa provide an abundant source of the mineral calcite. Calcite is a clear form of calcium carbonate. An unusually transparent variety of calcite called "Iceland Spar" may be found in the Galena Dolomite Formation. in Sec. 5, T 88 N, R 3 E, in a quarry one mile southeast of Dubuque, Iowa.

Large masses of calcite, as well as clusters of crystals called "dog-tooth spar," may be found in limestone quarries in Sec. 14, T 79 N, R 12 W, near Cresco in Howard County, and Sec. 33, T 80 N, R 6 W, River Products Company, Johnson County. The northeast edge of the town of Le Claire, Iowa, in Scott County, has a quarry that is a good place for collectors to search for this type of calcite. Pint's quarry, SW¼, Sec. 36, T 89 N, R 12 W, on the northeast edge of Raymond, Iowa, on the north side of highway 20 has excellent specimens of calcite lining the walls of vugs and cavities in the limestone.

When calcite crystals grow close together, an intergrowth of the crystals is common. A type of calcite called "cone-in-cone" consists of a series of small cone-shaped structures one within the other in an inverted position. A location in the SE¼, SW¼ Sec. 16, T 87 N, R 26 W, Hamilton County, about five miles north of Stratford, Iowa, where County Road E crosses the Boone River is a good place to collect this type of calcite. There is a layer of this kind of calcite, which is black colored, exposed on the west bank of the river across from Bells Mill Park and a short distance to the south of the bridge.

"Satin spar," a fibrous variety of calcite with a silky luster, is often collected from the St. Genevieve limestone beds found 2½ miles south of Pella, Iowa, in an abandoned quarry in SW¼, SE¼, Sec. 15 T 76 N, R 18 W. The fossil remains of *Lepidodendron*, ancient scale trees of the Pennsylvanian Period, may be collected at this site from the dark brown beds capping the St. Genevieve limestone.

Oolitic Limestone

Oolitic limestone is composed of small round particles of calcium carbonate formed in a concentric or radial fashion to develop a distinctive type of limestone. Outcrops of this rock may be found in the Gilmore City Formation of the Mississippian Period in Humbolt County along the Des Moines River. Quarries in Secs. 25, 35, and 36 T 92 N, R 31 W, one mile west and one mile north of Gilmore City in Pocahontas County, also contain oolitic beds of limestone.

Geodes

Geodes are hollow, rounded balls of rock with interiors often lined with calcite, quartz, or other kinds of minerals. They may be found in stream beds and outcrops in the Keokuk area. Geodes were formed some 325 million years ago in the shales of the Lower Warsaw Formation and the argillaceous dolomites of the Upper Keokuk Formation of the Mississippi System. Any hillside or creek exposure of the Warsaw Formation may provide a source of these unique structures (Sinotte, 1969).

Geodes may be found in upper level shales at Keokuk, Lee County. One specific location is south on 5th St., west of the Union Carbide plant. At Steamboat Rock, Hardin County, quartz geodes may be found along the Iowa River.

Fossils

Along the Mississippi River about five miles east of Muscatine, Iowa, on highway 22 is a one-sided railroad cut about ¼ mile long and 75 to 90 feet high. It is referred to locally as the "Wyoming Hill" area. Trees and plants of the great coal ages are preserved and exposed here. The cut has a steep face with an exposed coal layer about 24 inches thick near the top of the hill. The loose, weathered material at the bottom, as well as large masses that can be split open, contain good material. Park at either end of the hill, go across the ditch toward the river and follow the railroad to the collecting area. Parking at the top of the hill and going over the top is dangerous.

Abundant straight cephalopods may be found at Graf Station, Dubuque County, on the Illinois Central Railroad about 8.0 miles west of Dubuque on highway 20 and about 1.5 miles north. It is an exposed portion of the Maquoketa Formation of Silurian age. An abundance of horn corals are in the Quasqueton area, Buchanan County, in the talus along the bluffs south of the Wapsipinicon River and 2.0 miles west of Quasqueton, Iowa.

Conclusion

This paper has outlined the general occurrence and location of some of the rocks and minerals that may be collected in Iowa. Along with the enjoyment of collecting, there are certain responsibilities. Collectors must always obtain permission before collecting on private property. It is against the state law to collect rocks and minerals from any state park or preserve. Stream beds or road cuts are the major places to collect without permission or restriction.

Kenneth W. McNichols, Executive Director, Iowa Limestone Producers Assn. Inc. Des Moines, Iowa, is an authority on the location of quarries within the state and a source of information on their mineral deposits.

For safety, a hard hat and heavy boots are a must, particularly in quarries and strip mines. Rock outcrops in Iowa are prime habitats for rattlesnakes and copperheads. For a thorough discussion of safety consult *Better Science Through Safety* (Gerlovich and Downs, 1981).

Other equipment needed is a collecting bag, rock hammer, hand lens, and, perhaps, a bottle of HCl. A basic mineral book such as *The Minerals of Iowa* by Paul J. Horick, 1974, can be very helpful in location and identification.

The following is a listing of some of Iowa's rock and mineral collecting societies. These clubs provide programs and many aids for collectors, as well as a source of information about collecting sites.

NORTHEAST

TRI-STATE GEM AND MINERAL SOCIETY OF DUBUQUE.
James C. Ehlers, Pres., 1171 Miller Road, Dubuque, Iowa 52001.

CEDAR VALLEY ROCK AND MINERAL SOCIETY.
Alberta Cray, Editor, 1125 J. Ave. N.W., Cedar Rapids, Iowa 52405.

MID-IOWA ROCK CLUB.
Luvern Baskerville, 1015 E. South St., Marshalltown, Iowa 50158.

BLACK HAWK GEM AND MINERAL SOCIETY.
Mrs. Lois Fleming, Sec., 414 Baltimore, Waterloo, Iowa 50701.

CHARLES CITY ROCK AND MINERAL CLUB.
Mary Gesell, Pres., 207½ Patten Ave., Charles City, Iowa 50616.

NORTH IOWA ROCK CLUB, INC.
Mrs. Lenore Forbes, Editor, RR#1, Nora Springs, Iowa 50458.

NORTHEAST IOWA ROCK CLUB.
Dr. Harry E. Raplus, Pres., Box 469, Fayette, Iowa 52142.

NORTHWEST

RIVER VALLEY ROCKHOUNDS, INC.
Hugh Carroll, V. Pres., Rt. 2, Fort Dodge, Iowa 50501.

AMES ROCK AND MINERAL CLUB.
Ken Lewis, Sec., 1009 Roosevelt Ave., Ames, Iowa 50010.

STORM LAKE AREA ROCKHOUNDS.
Ruby Steig, Sec., P.O. Box 724, Storm Lake, Iowa 50588.

SIOUXLAND GEM AND MINERAL SOCIETY.
Mrs. Mildred Peterson, 1600 West 26th St., Sioux City, Iowa 51103.

SOUTHEAST

GEODE GEM AND MINERAL SOCIETY.
Betty Scott, Pres., 114S 7th St., Burlington, Iowa 52601.

CHICAUQUA ROCKHOUND SOCIETY, INC.
Chester Coleman, Pres., Rt. 1, New London, Iowa 52645.

SAC AND FOX LAPIDARY CLUB.
Frank H. Clark, Pres. 179 N. Moore St., Ottumwa, Iowa 52501.

GEODE ROCKS AND MINERALS SOCIETY OF S.E. IOWA.
Lois J. Smith, Sec., Box 158, New London, Iowa 52645.

ILLOWA GEM AND MINERAL SOCIETY.
Mary Jane Hochne, Editor, 219 Kirkwood Blvd., Davenport, Iowa 52803.

MINERAL STUDY GROUP.
John Francis, Liaison, 116 W. 6th St., Muscatine, Iowa 52761.

OLD CAPITOL GEOLOGICAL CLUB.
James W. Bogart, Pres., 903 Page St., Iowa City, Iowa 52240.

SOUTHWEST

CENTRAL IOWA MINERAL SOCIETY.
Carol Wright, Liaison Officer, 2233 N.W. 80th St. Pl., Des Moines, Iowa 50322.

DES MOINES VALLEY ROCKS AND RELICS CLUB.
Larry Zachary, Pres., Rt. 2, Donnellson, Iowa 52625.

MADISON COUNTY ROCKHOUNDS, INC.
Glee Harsh, Pres., 724 2nd St., Perry, Iowa 50220.

DALLAS COUNTY ROCK CLUB, INC.
Mrs. Margaret E. Harsh, Liaison Officer, 724 2nd St., Perry, Iowa 50220.

NISHNA VALLEY ROCK CLUB, INC.
Pearl Campbell, Editor, 600 East 3rd St., Atlantic, Iowa 50022.

HAWKEYE GEM AND MINERAL CLUB OF S.W. IOWA.
Esther Ross, Sec., 706 Thorn, Stanton, Iowa 51573.

References

Gerlovich, J. A. and G. E. Downs. 1981. *Better Science Through Safety.* Iowa State University Press, Ames, Iowa. (Chapter 7, Field Activities)

Horick, P. J. 1974. *The Minerals of Iowa* (Educational Series No. 2) Iowa Geological Survey. Iowa City, Iowa.

Quick, Lelande. 1963. *The Book of Agates and Other Quartz Gems.* Chilton Book Company. Philadelphia, Pennsylvania. (pp. 128-130).

Sinotte, Stephen R. 1969. *The Fabulous Keokuk Geodes.* Wallace-Homestead Company. Des Moines, Iowa. (pp. 37-106).