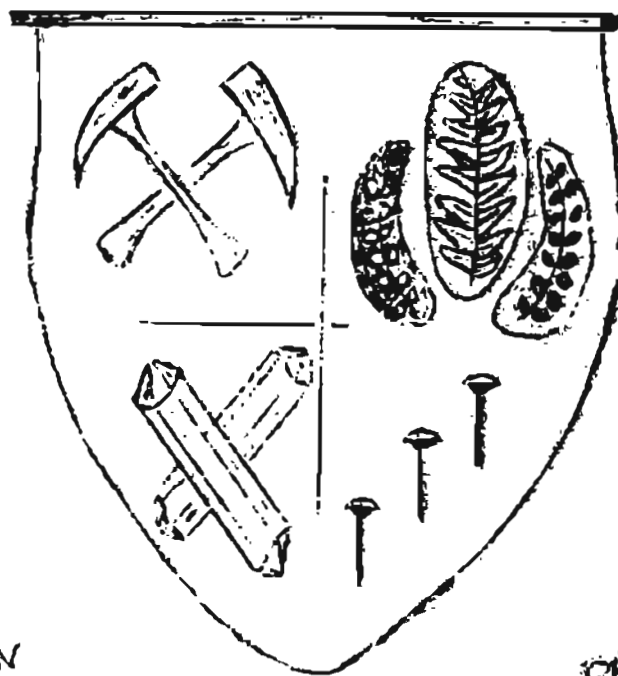


THE PICK AND DOP STICK



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BULLETIN

OF THE

CHICAGO ROCKS AND MINERALS SOCIETY

THE CHICAGO ROCKS and MINERALS SOCIETY

George C. Anderson, President
Nokomis Avenue
Chicago 30, Illinois

Affiliate member: Mid West Federation of Geological Societies

REGULAR MEETINGS are held in the SAUGANASH FIELD HOUSE,
5861 North Kostner Avenue, Chicago, Ill.,
at 8 pm on the second Saturday of each
month. Visitors are welcome. Interest-
ing and informative lectures are deliver-
ed by distinguished speakers.

ANNUAL DUES are two dollars (\$2.00) a year.


The OBJECTIVE is to study the Earth's sciences, to
collect mineral specimens, and to develop
an interest in the lapidary and jewelry
making arts.

Non-members may subscribe to the PICK and DOP STICK for
fifth cents (\$.50) a year. It is mimeographed to eliminate
the high cost of printing.

George C. Anderson - President
Arthur Sanger - Vice-president
Beverly Labuda - Secretary
Emil H. Andreson - Treasurer
Lucill Sanger - Curator and Librarian

Editors

Mr. & Mrs. Grand-Girard - Eastlake Terrace, Chicago 26, Illinois.



THE PICK AND DOP STICK
BULLETIN
OF THE
CHICAGO ROCKS AND MINERALS SOCIETY

Volume 1 Number 1

October 1946

The Chicago Rocks and Minerals Society, recently organized, now takes pleasure in greeting its members and friends with a monthly bulletin, The PICK and DOP STICK. The purpose of the bulletin is to give and exchange information about rocks and minerals, and to announce the various activities of the Society. Contributions describing a field trip, a collection, or articles of a technical nature or informative nature pertaining to minerals or geological formations will be appreciated. Because lapidary, too, is generally a subject of interest to a "rock hound" information on that subject will be welcome also. May the bulletin stimulate and promote an increasing interest and understanding of mineralogy to the end that we may more greatly enjoy the finest of all hobbies.

A great deal of time and thought has been consumed in the process of preparing this bulletin. The Editors struggled with ideas which were presented to the President and the Vice-president for approval. Mr. Editor is responsible for the cover design, which was executed by Mrs. Editor. If we find that this is not just what we want, we will change as we grow. This bulletin is yours and its success will depend on contributions. Therefore, each member is urged to turn in any news items of interest to a mineral minded reader, be that news long or short, personal or impersonal. Articles would be more conveniently received by the Editors before the fifteenth of the month.

The NEXT MEETING of the SOCIETY

will be held at 8 pm, October 12, 1946 at the Sauganash Field House. The program will include reports from the Library Committee and the Design Committee. The speaker will be Mr. C.O. Horberg, a member of the Geology Department of the University of Chicago. He will discuss the "Geology of the Teton Mountains in Wyoming", and he will show Kodachrome slides to illustrate his lecture. We can assure you that it will be an informative and entertaining meeting.

At the September meeting, we had the pleasure to hear Dr. Frank L. Fleener, of the Joliet Mineralogists, who was accompanied and introduced by Ben Hur Wilson. Mr. Wilson was a speaker at an earlier meeting of the Society. Both contribute much to the field of mineralogy with their books, articles, and lectures. Dr. Fleener discussed fossils in general and the Pennsylvanian Floral Fossils of the Joliet region specifically. He gave an interesting account of the early recognition by man of fossils, many surrounded by superstitions. In the efforts to account for their existence, perhaps the most amusing story of the earlier opinions concerning them was the belief that they were unsatisfactory forms of plant and animal life which had been discarded by the Creator in favor of more highly developed forms of life. He mentioned that the approximate age of the fossil beds dated back something like 500 million years. He discussed how the vegetation in the swampy areas at that time were gradually covered with water through which rivers beds were finally cut. A muddy sediment buried the plant materials. The plant remains decayed over a period of years, water percolated through the mud, which changed to shale, chemical reactions took place where the plant matter lay causing the shale to form into a nodule or concretion. The shape of these follow the radiation of the chemical reactions of the plant so that the distance from the enclosed plant matter to the edge of the nodule is usually equal. These are the smooth flat ovals for which we so avidly search the strip mine areas.

"During the last twenty years the trend toward diversification of mineral raw materials has continued with no evidence of slackening. Many of the minor metals that have well established commercial uses were not employed in industry at all during World War I, and were known only as laboratory specimens. Many others that were of minor importance twenty years ago are now being used in a volume far greater than the increase of the common materials. A great variety of technological advantages in industry and mining together with discovery of larger quantities of some of the 'new' minerals have contributed to this end."

'World Minerals and World Peace.
Leith, Furness, and Lewis.'

An AUCTION and RAFFLE - November 9, 1946

The PROGRAM COMMITTEE reports the following:

An AUCTION and RAFFLE will be held at the time of the regular November meeting. There will be no business meeting on the evening of the auction and raffle unless there is something urgent, but there will be a speaker. Before and after the lecture, bidding will take place and raffle tickets will be sold. After the bidding is finished and that which makes the world go 'round has been duly collected and entered, the raffle will be held. And when this is all over there will be food for the body and food for conversation. We hope that this program will attract many "rock-hound" visitors.

Donations already known are:

RED OBSIDIAN	- Mr. Anderson	
PETRIFIED WOOD)	
JASPER, red and yellow)	The Editors
AGATE NODULE)	
BRAZILIAN material)	The Sangers
CABINET SPECIMENS)	
-----?-----	- Mr. Kraft	His material is top quality.

The RAFFLE will include:

A STERLING SPRING BRACELET made and donated by Mr. Anderson
An AGATE HEART PENDANT made and donated by the Sangers
A MONTANA IRIS AGATE CABOCHON, cut and polished by the Sangers.
This is very unusual and brilliant iris and needs no imagination to see the flashing fire banding. The Empress Josephine is said to have had a complete set of jewelry made of iris (or rainbow agate as it is sometimes called) mounted in gold with exquisite workmanship.

We hope that there will be more auction and raffle prizes donated. If anyone wishes to donate or knows someone else who does, see Mr. Anderson, chairman of the Program Committee. But BUY raffle tickets, and buy enough to insure your chances of winning the unusual prizes. An auction is an interesting event as well as a profitable one (we hope) for the Society, as it gives an opportunity to many to see and handle and buy many specimens that they had not formerly been able to add to their own collections. And the exquisite work on the raffle prizes should not be overlooked.

There will be a door prize also.

THE SOCIETY'S PRESIDENT

Mr. George C. Anderson, the president of the Society, is well fitted to the office by background, training, and personality. He has been a craft teacher for over twenty years, having had classes in leather craft, hammered copper, jewelry making, wood work, wood carving, archery. He has the wonderful ability of being able to speedily master any new craft he chooses to take up. He has built complete lapidary units, with quality and practicality as the goal.

During the last five years, Mr. Anderson has been Director of the Sauganash Park, and since October 1, 1946 he shares craft instruction responsibilities at Chase Park and Green Briar Park. In the past, Mr. Anderson has been chosen to participate in the advancement of handcrafts. He was one of the judges of the local Napoleon's Coach Contest sponsored by the Illinois State Fischer Body Craftsman's Guild. In 1933, he was given charge of the Boy Scout Exhibit at the Century of Progress, where each week a new group of Scouts came to work on various crafts for the benefit of the World's Fair visitors.

Always a lover of nature, he has been interested in mineralogy for some time. The Society feels that it is very fortunate indeed to have as its President such an outstanding figure in the field of recreation.

We find that the emphasis of interest varies in an organization interested in mineralogy and lapidary work, in that the lapidists feel that the knowledge and collection of minerals is secondary, whereas the mineralogists feel that knowledge of themake up of minerals is primary. We feel that a knowledge of the various groups of minerals, together with their chemical properties and characteristics will result in an even greater interest among those primarily interested in fashioning jewelry from them. Therefore, we take pleasure in presenting the following article, the first of a series, on minerals.

* The Editors *

AGATE AND JASPER

By Arthur Sanger

Many of the books on precious and semi-precious stones which circulate in the jewelry trade relegate stones cut from quartz crystals to a secondary position and barely give agates a mention, or indicate that they are suitable for paperweights and book-ends. The only jasper usually mentioned is bloodstone (also called heliotrope). The jewelers' lists of birthstones for the different months (a dubious aid to sales) exclude the more abundant materials in favor of those selling for a higher price.

In point of fact, however, the amateur cutter who makes cabochons out of agates and jaspers need not take a back seat with regard to the more costly gems. Agates and jaspers, with their diversity of patterns and colors, can be cut in a variety of shapes and if nicely polished are so strikingly beautiful that they will attract the eye alongside any of the faceted gems except those of appreciable size and excellence. Moreover, the utilization of agates and jaspers as cutting materials makes the hobby one which can be enjoyed by members of the wage-earning class.

It might be well, in this first issue of a new publication, to try to define the terms "agate" and "jasper". To begin with, both are composed of the mineral quartz, which is composed of the elements silicon and oxygen in such proportions that it is a silicon dioxide (SiO_2). They are generally considered to be non-crystalline in structure, but actually they are cryptocrystalline, that is, composed of crystals which are so minute that they can be seen only with a high powered microscope. The mineral name for silicon dioxide is silica. When pure, it is a colorless transparent stone, the proper name of which is chalcedony, but which could perhaps be called a "clear" agate.

Agates are chalcedony stones which contain "impurities", some foreign substance or substances, usually inorganic, which impart color or cloudiness to the clear chalcedony. Thus an agate with different colored bands or rings was formed from waters carrying, first, silica with one impurity, and then, later, silica with another impurity. The mossy dendritic "growths" in other agates are likewise caused by impurities. Some authorities limit true agates to those stones which were formed as more or less spherical nodules within cavities in softer rocks, usually the empty steam bubble cavities of old volcanic lava beds. However, some agate materials were deposited in narrow fissures in the form of veins, and when cut and polished are indistinguishable from agates formed in

nodular cavities. To qualify as an agate a stone must be wholly or in part transparent or translucent. Agates are found in nearly all colors, ---milky, red, brown, yellow, green, lavender, even a translucent black.

Jaspers are also chalcedony but pigmented so deeply that they are opaque. Probably the most common colors are red, (due to iron impurities) and yellow (due to limonite), but many other colors appear. Some jaspers are variegated in their patterns and derive separate names, such as orbicular jasper (with a pattern of small circles), breccia jasper (not a real breccia, but with the color in separate blotches to resemble brecciated rock), bloodstone (green with red spots), moss jasper,, etc. Other jaspers have floral patterns or bandings. Some are named after the locality in which the particular patterns are found, such as Stone Canyon jasper, Mojave Desert jasper, etc. Many jasper pebbles are to be found in gravel pits, along shore lines, in river beds, even in areas where agates are scarce. These pebbles come in plain colors of red, green, black, yellow, and brown. Others have bandings and mottled patterns and some have floral designs. Some of the most attractive jasper cabochons have been cut from pebbles.

Agates also have many names. Fortification agates have an enclosed pattern of bandings resembling the walls of a medieval stronghold. Carnelian is a clear red color. Chrysoprase is an apple green variety, the pigmentation being due to a small amount of nickel oxide. Ring or eye agates have well-defined circles. Plume agates have patterns resembling plumes or flowers. In the Middle West we have the Lake Superior agate, a small but brightly banded agate. Sweetwater agates, Brazilian agates, and others are names for localities. And there are many others. The Montana agate is a clearstone with brown dots or blotches, or with dark dendritic (tree-like) growths. These are usually type names and identify certain agates as the Montana agates even though they may be found in adjoining states. Saganite agates have long hairlike crystals of rutile in them. Oregon is famous for its moss agates of many colors. A compilation of all agate names and types would be an interesting pastime.

Silicon, the element, is never found in a pure state in nature. The compound, silica, is very abundant, however, and is slightly soluble in water, especially if the

water is hot or slightly acid, as it often is due to carbon dioxide from decaying plant material. Both agates and jaspers are formed by the deposition of these solutes in veins and cavities, a discussion of the process being reserved for a future date, which must also be the case with the crystalline forms of silica (quartz crystals) and with opals, which are composed of silica with a little additional water. Sometimes the silica-bearing waters dissolve the tissues of decaying tree trunks resulting in agatized, jasperized, or opalized wood, petrified by silica replacing the wood, molecule by molecule.

An onyx agate is a variety of agate where the bands of black and white are straight in parallel layers, such as are used for cameos. Sardonyx is a similar stone but with reddish-brown and white bands. These are not to be confused with true onyx, such as that used for lamp bases, as that is a different mineral -- calcite (lime) instead of silica.

Agates are somewhat porous, and are thereby able to absorb pigmentation. The dyeing of commercial agates in different colors is greatly practiced. Much of the South American agate is gray banded agates of good shape and texture and these are commonly colored or heat treated. Nearly all of the onyx agate is from the bottom portions of large agates which have flat sides and straight bandings and hence are suitable for the cutting of cameos after dyeing. The white banding in agates is usually impervious to dyes, and in fact, usually gets whiter in the subsequent heating process, whereas the bands of clear agate generally absorb the dyes readily.

THE EARTH SCIENCE DIGEST, a new rockhound magazine, made its first appearance in August 1946. It is published by the Earth Science Publishing Company, Box 57, Omaha, Nebraska. The articles are interesting and cover a wide field.

The Mid West Federation of Geological Societies is holding its annual convention in Minneapolis, Minnesota, on October 19 and 20, 1946. The convention will begin at 9:30 am at the Public Library, Hennepin Ave. and 10th St. on the 19th. It will include illustrated lectures and short field trips. We are urged to make hotel reservations early.

WESTERN HOLIDAY

This is the first section of a sketch of the Editors' recent three week trip through Colorado and Arizona. For one not having been far west, it was a thrilling experience to see the very blue skies and the white clouds, clear of smoke and dust, and to travel in the depths of enfolding canyon walls or over the awe inspiring mountain passes.

Our trip had a two fold purpose, one to view the ever changing beautiful scenery, and the other to increase our mineral collection. During the trip, every opportunity was taken to hunt minerals along the highway. The accumulation was not as large as anticipated because of several factors. The area near the highway has been fairly well picked out because of the activities of the many collectors in the West. As one becomes acquainted with the natives, one may be directed to nearby, good hunting grounds. We learned, however, that particularly good jaspers and agates were claimed staked, and that the good picture wood could be found only by prospecting with pack mules on three day or longer trips into the hills. Hunting along river beds and creek beds was fun even though our collection was not greatly increased, and hunting in the mining areas where one could easily gain permission was acceptably productive. Generally, the shop owners and collectors were friendly and informative. However, we being "tenderfeet" on some occasions had our "leg pulled" a bit. For example, the owner of a beautiful piece of beryl told us that it was harder than a diamond. This same collector had traveled extensively and had many unusual specimens, one or two more interesting than we had seen in a museum or a private collection. One in particular was a magnesium formation bearing a remarkable resemblance to a pine cone.

Scenically, Colorado is known as the Switzerland of America, and mineralogically as one of the richest states. The Rockies are rugged and majestic and hold many resources yet undiscovered. After traveling through the flatter central states, the rolling and mountainous terrain of Colorado presents a striking contrast. At the varying levels of altitude which are quickly covered in mountain traveling, vegetation changes rapidly from heavy forests to barren rock. Flowers are profuse at all but the highest levels, but even there are sometimes seen strange tiny blooming plants, an inch to an inch and a half high.

Mining is done in almost all parts of the state. Much alabaster is mined in the northern and central part, and throughout Boulder Canyon. Idaho Springs is noted for gold mining. As one carefully unwinds oneself from the mountain between Kokomo and Climax, a grand view of the huge Molybdenum mine unfolds. The guards at the entrance were not to be persuaded and no specimens of 'moly' or by-products were obtained.

Leadville has the largest operating lead and zinc mine now in that vicinity. Nice specimens were found of marshite and martinite on quartz, pyrite crystals, galena, and sphalerite. The area near Salida yields much feldspar. Between Montrose and Ouray, where the Uncompahgre River crosses the highway, we stopped and hunted plasma, finding only a few good pieces. The best is found farther north on the same river, however.

The famous Million-Dollar Highway, a rough narrow high mountain road, is the only road from Ouray south, through Silverton to Electra Lake. The name implies the cost of building rather than the quality of the road. Being blasted from the rocky mountain sides, the road bed was rocky and had been washed out by the recent heavy rains. There were straight drops of what appeared to be several thousand feet at many of the unprotected turns. From this highway one sees numerous mines dotting all sides and levels of the mountains, many of them abandoned. Treasure Tunnel Mine, located near Red Mountain (and it's really red) provided us with specimens of quartz with pyrite, chalcopyrite, and peacock ore. The towns of Ouray and Silverton are nestled in the mountains and retain many of the quaint old buildings.

Reaching Durango, after going through the beautiful San Juan Forest, we were escorted to a tourist home by the village policeman in a squad car, as he keeps the list of available tourist rooms. Durango has a rock shop, which has odd and beautiful polished woods, such as walnut, and which also crafts silver jewelry in the modern mode. Nearly all of the towns one sees on the highways have many jewelry and gift shops, with the emphasis on Indian crafts. While the Indians do beautiful work, it is a pleasure to see the smooth silver work without the Indian die designs, set with the same beautiful woods and minerals in a smart sophisticated manner.

Continued next month ----The Editors
