University of Wisconsin-Extension

GEOLOGICAL AND NATURAL HISTORY SURVEY
3817 Mineral Point Road
Madison, Wisconsin 53705

M.E. Ostrom, State Geologist and Director

MINERAL RESOURCES OF MARINETTE COUNTY

by

E.F. Bean

Open-File Report 41-2

1941

MINERAL RESOURCES OF MARINETTE COUNTY

By

E. F. Bean

I. DEPOSITS INVESTIGATED

The following deposits were investigated in company with James Murphy and Senator Philip Downing on September 30 and October 1, 1941.

T.38N.,R.21E. Town of Niagara

We drove and walked northwesterly from the East $\frac{1}{4}$ corner of Section 34 on a fa rly well-graded road to a point near the center of Section 21. The aerial map shows this road extending to a junction with U. S. Highway 8 at the NW corner of Section 20. We saw no rock outcrops. There is some fairly good gravel exposed on the river bank in Section 27 below Sturgeon Falls. It is likely that the country rock is greenstone and granite, covered with glacial drift.

Bennett Exploration

C. G. Bennett is exploring by test pits in the SW SE of Section 7, T.38N.,R.20E. He is working near the contact of the greenstone with pegmatite g anite. From his pits he has samples showing fluorite (calcium fluoride), pyrite (iron sulphide), pyrrhotite (sulphide of iron often containing nickel), and chalcopyrite (sulph de of iron and copper). He reports one assay showing $2.45 per ton of gold. His showings are interesting but are not as yet commercial. It is possible that he may uncover a more valuable deposit.

Luther A. Herriman Exploration

This is a low hill in a cleared field south of CTH "Z" in the NE$\frac{1}{4}$ SW$\frac{1}{4}$ of Section 24, T.36N.,R.21E. The rock is greenstone, part of which is badly weathered. In the weathered rock there are narrow veins of amphibole which is fibrous enough to be called asbestos. The fibre is too short to be of value.

Mr. Herriman has experimented with the finely ground weathered rock, mixing some with cement and some with linseed oil to make a plaster for both interior and exterior work. The experiment is interesting but the product is probably of no commercial value.

The weathered rock could be used for road surfacing, but the County could not afford to pay more royalty for this than for gravel.

One assay of this rock is interesting.

Silica	50.20
Manganese	.08
Iron	7.63
Aluminum Oxide	.62
Calcium Oxide	2.70
Magnesium Oxide	32.91
Nickel	.40
Chromium	1.69

The amounts of nickel and chromium are too small to be of commercial interest. Perhaps another sample should be assayed to determine whether the deposit is of interest as a source of either metal. The exposed deposit is small and would not be of value unless exploration shows it to be more extensive and to have a merchantable metal content.

Miscauno Exploration

This is north of the dam in the NW¼ of SW¼ of Section 16, T.36N.,R.21E. Exploration work here was done by Victor Smeister. Several test pits were dug in greenstone which carries sulphides. It is rumored that gold assays were reported.

Staso Milling Company

Plant and quarry are in the NE¼ NW¼ and NW¼ NE¼ of Section 26, T.37N.,R.21E. This company quarry trap (greenstone) for the production of roofing granules. They have a well-equipped plant. The Land Committee showed wisdom in selling this land at a reasonable price because this is a responsible company prepared to invest a considerable sum in plant and equipment and to employ local labor. The assessed valuation of the town and county were increased and local unemployment relieved.

Homestead Copper Mining Company (Florence County)

Mr. Lind, who was a shareholder and miner in this enterprise, told us that the work was done about 1916. We saw the abandoned shaft east of the road. This indicated good workmanship. He said there were three test pits west of the road; that two tons of "ore" were shipped to New Jersey from the eastern shaft. The assay was:

See T R file. T38 R19E

Gold	$6.60	per ton
Silver	$4.20	per ton
Copper	?	per ton

The company spent about $30,000 on exploration and were offered $70,000 for the property at one time, but refused the offer.

Rahm Nickel Prospect

This is in Florence County, but is so near to Marinette County that it is of interest. The M. A. Manna Company has options on sections 29, 30, and 31 of T.38N.,R.19E. They are drilling in Section 30, where the first hole is down about 600 feet.

II. GENERAL ECONOMIC GEOLOGY

Granite and Trap

Granite and trap are so abundant that such lands have relatively little value unless they are near a railroad. In my opinion these lands should be sold at reasonable prices because (1) the land is not worth much and (2) quarries provide employment. The granite of Marinette County is of excellent quality. At Athelstane there is an exceptionally fine quarry, which is, however, about six miles from the railroad.

Limestone and Marl

Outcrops of dolomite limestone in the southeastern part of the County are a possible source of crushed stone and agricultural lime. Marl is fairly well distributed over the County. A survey completed in January 1936 describes 19 deposits of marl and 13 deposits of limestone. A copy of this report is in the office of the agricultural agent. The agriculture lime requirements of the County can be met without prohibitive haul by the use of marl or limestone.

Quartzite

McCaslin and Thunder Mountains are quartzite. Quartzite is quarried for gannister in the Baraboo district. The quartzite of Marinette County is too remote from the railroad to justify the opening of a quarry. There has been some interest in McCaslin Mountain because there is a possibility that iron formation is associated with the quartzite as it is in the Lake Superior iron ranges.

We have no record of any drilling.

Iron Ore

With the exception of the quartzite areas, the geology of the County completely eliminates the possibility of discovering iron ore in commercial quantity. It is likely that small deposits of "bog ore" occur. If near a railroad such deposits might be worth consideration as paint pigment.

Molybdenite

Considerable effort has been expended on the Middle Inlet prospect in Section 18, T.33N.,R.20E. Up to date the venture has not been profitable.

A little molybdenite has been found in the Daniels Quarry near Amberg. In Florence County there has been some exploration for molybdenite in Section 33, T.38N.,R.19E. Some molybdenite is reported in a quartz vein near the E¼ corner of Section 11, T.38N., R.19E. Although none of these deposits have proved to be of commercial value, the widespread occurrence of molybdenite suggests the possibility that a deposit of commercial importance may be found.

Gold, Silver, Lead, and Zinc

From time to time assays showing small values in one or more of these metals have been reported from the granite area. In no case have the deposits carried enough value to warrant development. If the results of exploration in Florence County are encouraging, there will be interest in exploration in Marinette County.

Gravel Deposits

No investigation of gravel resources was made during the trip. However, the Geological Survey has made road material investigations of large areas for the Highway Department. Reports on all of that work are on file in the office of the County Highway Commissioner, Mr. Arndt Eklund. There are large areas in which good gravel is scarce. In other smaller areas gravel is abundant. Gravel is probably the most valuable mineral resource of the County, because of its value for highway and other construction.

Even though there are large reserves, no county-owned gravel land should be sold without carefully weighing the future needs of the County, for the construction o

maintenance of highways. Gravel land away from the railroad should not be sold unless a thorough investigation proves that there is an unlimited supply of gravel on other county-owned land in the vicinity. By thorough investigation, I mean test-pitting and not casual inspection. There have been too many instances of counties selling gravel land for a small price per acre only to buy it back later at a generous price per yard. Gravel land near a railroad should never be sold at a low price per acre. If sold at all, the gravel should be sold on a royalty basis. The Division 3 office reports that the average royalty in that division is about ten cents per cubic yard. Even at three cents per cubic yard the returns per acre are large, as ind cated below.

Height of face	Cu. Yds. Per Acre	Value at 3¢ per cu. yd.
10	16,000	$480
15	24,000	$720
20	32,000	$960

It is suggested that the County Highway Commissioner arrange for road material surveys of the unsurveyed areas in order that the County may have a complete inventory of its gravel resources. This will eliminate any possibility of sale of gravel land, and facilitate the planned use and conservation of gravel resources.

Oil and Gas

There is a possibility but not a probability that oil and gas may be found in commercial quantity in the southeastern part of the County. There is no possibility of production in either the sandstone or the granite area. In spite of this fact, I believe the County Board made a wise decision when they voted to lease county lands. A "wildcat" firm can secure leases on privately owned lands. The County will be more likely to secure complete samples of the drilling. Even if all holes are dry, the drill records will be of some scientific and possibly of economic interest.

Any attempt to sell stock or interests should be reported immediately because no Wisconsin money should be invested in the venture.

III. RECOMMENDATIONS

Geological Mapping

The geology of the granite and greenstone area has not been carefully mapped.

This is the first step in determining whether occurrence of commercial deposits of minerals is possible. Contact zones are more likely to carry values but are less resistant to weathering and erosion. Outcrops are numerous but the cover of glacial drift obscures many of the contact zones which are the more promising places for exploration.

The mapping could be accomplished in various ways. The County could employ a geologist to do the work. In my opinion this work is a proper function of the State Geological Survey, because the State is interested in any project that might lead to the development of new industries. If an appropriation were made to the Geological Survey, field work could be done in an area in northeastern Wisconsin where relatively little detailed work has been done. We can promise no definite results, except that the geological data would direct exploration to the more promising locations.

Exploration

Search for mineral deposits could be made by private interests or by the County. The County should encourage private exploration on County-owned lands. If geological work shows that there are some favorable sites on County-owned land, exploration could be done by W.P.A. crews, or by private interests.

Leasing and Sale of County-owned Lands

As recommended in the general discussion above, the County is more interested in industries than in actual returns from the sale of land.

1. Exploration should be encouraged by favorable leases. Injury to forest, crops, roads, bridges and other county property should be covered by a bond.

2. Sale of granite and greenstone land to reputable companies is recommended. If there is any doubt about the reliability of the prospective buyer a lease is preferable, because that will safeguard the forest cover. The deed or lease should restrict the use of the property because the County does not wish to permit the creation of new communities. Should the enterprise fail or cease operation, the County would face the problem of a stranded population. Without a mine or quarry location, the enterprise secures employes from existing communities.

3. Gravel lands. The County should never sell the fee of gravel lands, because

the return is small in proportion to what the County may have to pay for the gravel later. In areas where the gravel reserves are large, and there is no chance that there will be a shortage of highway material, gravel land should be leased on a proper royalty.