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ADVANCE REPORT ON DESVAUX LAKE AREA, DASSERAT TOWNSHIP, TEMISCAMINGUE COUNTY

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ADVANCE REPORT

ON

DESVAUX LAKE AREA

DASSERAT TOWNSHIP

TEMISCAMINGUE COUNTY

by

P.E. Auger

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1942

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During the field season of 1941, the writer mapped the geology of a part of Dasserat township, Témiscamingue county. The area examined extends eastward from the north-south centre-line of the township to lot-line 50-51, and northward from near the southern boundary of range IV to a line 3,500 feet north of the east-west centre-line. The Fortune Lake map-area, which has been described by G.S. MacKenzie (1), lies immediately to the east.

In the work in the present area, outcrops were mapped by plane-table, or by chain and compass or pace and compass where the plane-table could not be used. The mapping was on a scale of 400 feet to the inch.

There has been a considerable amount of prospecting in the area, and gold (in assays) has been reported at several localities, notably on the Renault claims. Two producing gold mines, the Arntfield and the Francoeur, lie a few miles to the east.

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(1) MacKenzie, G.S., Fortune Lake and Wasa Lake Map-Areas; Que. Bur. Mines, Geol. Rept. No. 5, 1940.

The area is easily accessible by canoe or motor-boat from Kanasuta, a station on the Nipissing Central railway, over a route that passes through Desvaux and Dasserat lakes.

GENERAL GEOLOGY

The consolidated rocks of the area are of Precambrian age.

Table of Formations

Glacial and Recent	Sand, gravel, boulders
Cobalt Series	Argillites, greywacke, conglomerate, breccia
Intrusives	Diabase Lamprophyre Feldspar porphyry, syenite porphyry, syenite Diorite porphyry Quartz diorite
Keewatin-Type Volcanics	Rhyolite Andesite Basalt

Keewatin-Type Volcanics

The major part of the map-area is underlain by volcanic rocks of Keewatin type. These are cut by numerous dykes and small bodies of intrusive rock ranging in composition from syenite to diorite and diabase.

Acidic lavas underlie all the northern section of the area, where they are well exposed

along the shores of Dasserat lake and on the numerous islands in the lake north of the fire-ranger's island. These lavas are chiefly light coloured rhyolites characterized by numerous pale yellow or greenish spots, mostly amygdules, and also by a porphyritic texture.

Acidic lavas also outcrop at several points in the southeastern corner of the area. One group of these outcrops underlies the more westerly of the two peninsulas between the northern and the southern part of Desvaux lake. They apparently mark the western end of a band of acidic lavas that extends northeastward across the Fortune Lake area. Around the nose of this band is a series of outcrops of lavas of basic and intermediate composition. These are bordered on the north, west, and south by outcrops of acidic lavas which seem to form a V-shaped band with the point of the V oriented westward.

These acidic lavas are markedly different from the rhyolite farther north, surrounding Dasserat lake. They are slightly schistose, non-porphyritic, and do not contain the light coloured spots (amygdules) referred to above. Furthermore, they frequently exhibit such structural features as flow contacts, pillows, flow-lines, and brecciated tops, which are almost completely lacking in the Dasserat Lake rhyolite.

Basic volcanic rock is not very abundant. Scattered outcrops occur east of Dasserat lake, and also, as already mentioned, associated with the acidic volcanics in the V-shaped band of these rocks west of Desvaux lake. The main occurrence of basic volcanics is in a band along the southern border of the map-area, where they are overlain by sedimentary rocks of the Cobalt series east of the observation tower.

Intrusives

Dykes and relatively large bodies of intrusive rock of various types cut the volcanics at numerous points in the area.

Four bodies of quartz diorite (older gabbro) were mapped. One of these is a wide dyke that extends through the area from the northeast corner, passing between Dasserat and Desvaux lakes and finally disappearing beneath sediments of the Cobalt series west of Ogima lake. This dyke is pegmatitic in places along its northern edge, and is very much more basic in composition on the south side than on the north. Outcrops of another body of the rock occur on islands No. 10 and No. 5 in Dasserat lake and on the shore of the lake to the north and southwest, of these two islands. This is a coarse to medium grained rock composed of feldspar and hornblende with occasional grains of quartz.

A large body of diorite porphyry crops out south of Dasserat lake. It trends about S.45°W. and may be followed for a distance of a mile and a half from a point southwest of island No. 5 to the western boundary of the map-area. The rock is quite fresh and massive at the eastern end of the mass and for a narrow width along its contact with the sedimentary rocks of the Cobalt series. Where the mass passes out of the map-area, at the north-south centre-line of the township, the rock is much more altered and fractured, and is intruded by syenite porphyry. The fresh rock is dark in colour and contains plagioclase phenocrysts with some quartz and biotite.

Dykes of syenite porphyry are widespread, intruding the volcanic rocks, the quartz diorite, and the diorite porphyry. The largest body of this rock in the area is just north of the mass of diorite porphyry described above.

There are several facies of the syenite porphyry. The most common type is composed of light coloured, with a tendency to pinkish, feldspar phenocrysts, generally zoned, in a groundmass of feldspar and probably hornblende. It occurs as dykes cutting the diorite porphyry as well as the volcanic formations of the area. Another facies of the syenite porphyry is made up almost entirely of deep-pink phenocrysts of feldspar with scarcely any matrix visible in the hand specimen. At a few places, this type of pink porphyry was seen cutting the first type.

To the east of block 7, a band of very fine-grained pink syenite lies between the lake-shore and the large body of syenite porphyry first mentioned. It contains practically no ferromagnesian minerals. In places, it is slightly porphyritic. This syenite cuts the quartz diorite, the diorite porphyry and the syenite porphyry.

Numerous dykes of 'younger' diabase cut the acidic volcanics and the quartz diorite west of Ogima lake, close to their contact with sediments of the Cobalt series. Similar dykes cut the syenite porphyry on the south shore of Dasserat lake, southeast of the fire-rangers island. The diabase is a dark, massive and fresh-looking rock.

Cobalt Series

The Swinging hills, in the southern part of the map-area, are composed of sediments of the Cobalt series. These underlie the southwestern corner of the area, with a tongue projecting toward the northeast as far as the south shore of Dasserat lake.

These sediments are argillites, greywacke, and conglomerate. They are resting on the eroded surface of the pre-Cobalt formations, with bedding about parallel to that surface.

No intrusives were seen cutting these sediments, but quartz veins are frequent, traversing them in all directions.

STRUCTURE

The volcanic rocks of the area are everywhere highly folded. Those in the southeastern section are slightly schistose.

In the volcanics in the central and northern part of the area, structural features which might throw light on the attitude of the flows are rare, but such as were seen indicate that the tops of the flows are facing toward the south.

Data for determining structure are more plentiful in the southeast corner of the area. Here the volcanics from two synclines, converging toward the west. The axis of one of these synclines, striking S.64°W., crosses Desvaux lake from its northeastern corner to its outlet into Ogima lake. The axis of the other passes through the centre of Ogima lake, with strike N.66°W. If prolonged westward, the axes of the two synclines would meet at a point where there is an embayment of the volcanics in the sediments of the Cobalt series, west of Ogima lake, and these lines of prolongation are marked by strong shear-zones in the volcanics.

The distribution of acid and basic volcanic formations in this portion of the map-area to indicate the presence between the two synclinal axes of an anticline plunging toward the west. If this interpretation is correct, the core of the anticline is composed of acidic lavas overlain by basic volcanics, on top of this is the band of acidic volcanics which occupies the troughs of the two synclines and swings around the western nose of the anticline.

There are numerous minor shear-zones in the volcanics along the western shore of Desvaux lake, most of them striking east-west or a little south of west.

The mass of diorite porphyry south of Renault bay is highly shattered, so much so that it is even difficult to secure a hand specimen which is not crossed by several minute fractures. This characteristic is particularly conspicuous in the present workings on the Renault claims, but although the rock is thoroughly fractured, in few places only does it show true shearing. Where shearing was observed, its direction was found to be approximately east-west.

The strike and dip of the sediments of the Cobalt series vary from place to place. The maximum dip observed is 35°, and the average 10°to 15°. In general, it seems that the beds in these sediments follow the shape of the older pre-Huronian surface on which they were laid down.

ECONOMIC GEOLOGY

Free (visible) gold has not been reported in the area, but assays have shown the presence of gold in material from quartz veins, and also from shear-zones, in the intrusive and volcanic rocks at numerous localities. Chalcopyrite is common as disseminated grains in the syenite and diorite porphyries. Up to the present, however, no commercial deposits of gold as base-metals have been discovered in the area.

Renault Claims

The Renault claims are on the south shore of Dasserat lake. They are underlain by diorite porphyry, syenite porphyry, and sedimentary rocks

(argillite and conglomerates) of the Cobalt series. Numerous trenches and pits have exposed shear-zones, most of them of small dimensions, in the intrusive rocks, and the writer was informed by A. Renault, owner of the claims, that assays have shown the presence of gold in material from some of the shears. A series of samples of the sheared diorite porphyry, taken by the writer and assayed in the laboratories of the Quebec Bureau of Mines, were found to contain both gold and copper, the highest results obtained being $6.82 in gold per ton and 0.66 per cent copper. These samples were from workings along the north-south centre-line of the township, and were taken at 7-foot intervals over a width of 40 feet across the shearing.

The syenite porphyry along the southeastern shore of Renault bay is cut by a quartz vein, some 600 feet long and one to four feet wide, striking in a general northeasterly direction. The vein is of white, milky quartz carrying pyrite, chalcopyrite, some galena, and unimportant values in gold. The occurrence is described in the Bureau's Preliminary Report No. 135.

Groleau Claims

These claims are on the eastern shore of Dasserat lake. They are underlain by Keewatin-type volcanics, cutting which are dykes of 'older' diorite. The northern margin of the most important of these dykes was explored by trenching and some diamond drilling. Since that time, some additional trenching has uncovered the rock along minor shear-zones. This work has failed to reveal mineralization of commercial value.

General

Old workings are to be seen in several other places in the area, and particularly along the

two shear-zones west of Ogima lake. The more northerly of these shear-zones was explored extensively by the Lapierre-Dasserat Syndicate prior to 1928. Several test pits were sunk along the shear in the acidic volcanics, which contain abundant disseminated sulphides. Assays of picked samples collected by the writer showed only low values in gold.