OZALID-BANDA HUGHES·OWENS
DRAWING No. ......
DETAILS ......
HUGHES·OWENS 313 1102
13K/10 (147)

LEGEND

SEDIMENTARY-VOLCANIC-METAMORPHIC ROCKS

ELSONIAN AND LATER

PALEOHELIKIAN

Bruce River Group

12 **Brown Lake Formation:** 12a, *Red and gray boulder and cobble conglomerate;* **12b**, *varicolored tuffaceous sandstone, minor impure quartzite;* **12c**, *quartzitic conglomerate.*

11 **Heggart Lake Formation:** 11a, *Buff to pink quartzite, red arkose;* **11b**, *arkosic sandstone (granite wash);* **11c**, *red and gray cobble to boulder conglomerate, coarse grit, quartzite;* **11d**, *red siliceous mudstone;* **11e**, *amygdaloidal mafic flow; mafic dikes and sills present in all units.*

PALEOHELIKIAN AND EARLIER

Kanairiktok Valley area / **Kaipokok Valley area**

APHEBIAN

Moran Lake Group (in depositional contact with Archean granite and gneiss). (Kanairiktok Valley area)

Moran Lake Group equivalents (in tectonic contact with felsic schist and refoliated gneiss) (Kaipokok Valley area)

8 *Deformed felsic fragmentals and volcanogenic sediments, minor gray limestone* (**8a**).

7 *Pillowed to massive intermediate and mafic lava with minor pillow breccia, locally schistose in narrow shear zones;* **7a**, *dolostone and/or chert.*

7A *Strongly schistose intermediate to mafic metavolcanic rocks, relict pillow structures locally* (**7Aa**) *but commonly well banded with chert and dolomite* (**7Ab**); *mafic to intermediate metatuffs, minor iron formation (I.F.), weakly foliated to strongly schistose metadiorite and metagabbro* (**7A**).

6 *Interbedded gray and black siltstone and mudstone, slate, phyllite, minor conglomerate;* **6a**, *brown dolostone and/or gray to maroon chert.*

6A *Black graphitic and chlorite-sericite schists and phyllites, gray quartzite; slate, minor mafic metatuff;* **6Aa**, *dolostone and/or gray chert.*

APHEBIAN AND EARLIER

ARCHEAN

1B *Felsic and mafic schists. Strongly refoliated and retrogressed equivalents of* **1**. *Mylonitic in places, may contain equivalents of* **4A**. *Metadiabase sheets parallel regional foliation.*

1A *Banded "schistose" gneiss and banded gneiss with superimposed foliation - retrogressed equivalents of* **1** *in which original gneissic character is discernable. Partially retrogressed amphibolite units common locally. Diabase sheets are schistose and commonly parallel to the superimposed foliation.*

2 **Ugjoktok greenstones: 2a**, *Mafic metavolcanic rocks;* **2b**, *felsic metavolcanic rocks.*

1 **Hopedale gneiss:** *Banded amphibolite facies quartzofeldspathic and dioritic gneiss;* **1a**, *amphibolite, metagabbro. Diabase sheets undeformed.* (Kanairiktok Valley area)

1 **Hopedale gneiss:** *Banded amphibolite facies quartzofeldspathic and dioritic gneiss; amphibolite units common locally;* **1a**, *amphibolite, metagabbro, garnetiferous. Diabase sheets undeformed or slightly schistose.* (Kaipokok Valley area)

PLUTONIC ROCKS

15 *Gabbro, diorite, diabase. Probably of several generations and vary from undeformed to schistose.*

14 **Otter Lake granite:** *Coarse monzonite and granodiorite;* **14a**, *gray leucogranite. Both vary from undeformed to strongly foliated and mylonitic.*

13 *Pink quartz-feldspar porphyry.*

10 **Junior Lake granite:** *Variably foliated, pink to gray hornblende granodiorite.*

9 *Pink, fine to medium grained, weakly foliated leucogranite.*

5 *Diabase and gabbro dikes and sheets. Locally as dike swarms. Generally undeformed where cutting* **1, 2, 3, 4** *but slightly schistose locally. Strongly schistose* (**5a**) *in* **1A, 1B** *and* **4A**.

4A *Strongly schistose leucogranite and leucocratic quartzofeldspathic schists. Schists texturally similar to* **1B** *except a granite protolith recognized. Where locally only weakly deformed, similar to* **4**.

4 *Medium grained, gray to white, massive to weakly foliated leucogranite. Could possibly be Aphebian in age.*

3 *Massive to variably foliated granitoid rocks, undivided. Locally nebulitic with gneiss and amphibolite inclusions.*

SYMBOLS

- *Geological contact (defined, approximate, assumed, assumed or interpreted from aerial photograph with high degree of uncertainty)*
- *Area of outcrop, station localities in area of abundant outcrop and small outcrops in poorly exposed areas*
- *Structural trend (from aerial photograph)*
- *Lineament (from aerial photograph); correspond to shear zones in Unit 7*
- *Bedding, tops known (inclined)*
- *Bedding, tops unknown (inclined, vertical)*
- *Gneissic layering (inclined, vertical)*
- *Schistosity, slaty cleavage, mylonitic fabric: a foliation (S_m) of unknown relative age, locally composite in nature (inclined, vertical, dip unknown)*
- *Foliation (S_{m+1}) superimposed on S_m (inclined)*
- *Foliation (S_{m+2}) superimposed on S_m (inclined, dip unknown)*
- *Facing direction of pillow lava (dip unknown)*
- *S_1 schistosity or slaty cleavage (inclined, vertical)*
- *Symmetry of folds of various planar features (schistosity, cleavage, bedding) as observed on flat outcrops*
- *F_1 fold axis*
- *Axis of minor fold of S_m, S, M, Z, sense of vergence looking along arrow*
- *Syncline*
- *Esker (direction of flow unknown)*
- *Areas of extensive glacial drift*
- *Mineral occurrence* ×
- *Fault (defined, approximate, assumed)*

Abbreviations

Bornite	bo
Chalcocite	cc
Chalcopyrite	cp
Galena	gn
Specular hematite	hem
Iron formation	i.f.
Pyrite	py
Pyrrhotite	po
Sphalerite	sp
Uranium	U

Some of the occurrences shown on the map have been taken from the regional map of Moore (1954) and may not be accurately located.

N.B. *Multiple foliation symbols used on this map represent only relative ages of the foliations in each rock unit as deduced from regional relationships, i.e. it does not imply that S_1 in the Archean granites is the same S_1 in the Bruce River Group, only that in each case it is the first foliation* **recognized.**

Compiled by A.B. Ryan, 1978

Geology by A.B. Ryan, 1976, 1978; W.R. Smyth, 1976; and B.E. Marten, 1974. Area west of Beartrack Lake by I. Ermanovics, 1978.

This map may be subject to revision and correction.

Geological cartography by Mineral Development Division, Department of Mines and Energy, Government of Newfoundland and Labrador.

Copies of this map may be obtained from the Publications and Information Section, Mineral Development Division, Department of Mines and Energy, P.O. Box 4750, St. John's, Newfoundland A1C 5T7.

Base maps at scale 1:50,000 published by Surveys and Mapping Branch, Department of Mines and Technical Surveys. Revised by Mineral Development Division for this edition.

Approximate magnetic declination at center of map, 1974, 34 24' West, decreasing 5.9' annually.

Elevations in feet above mean sea level.

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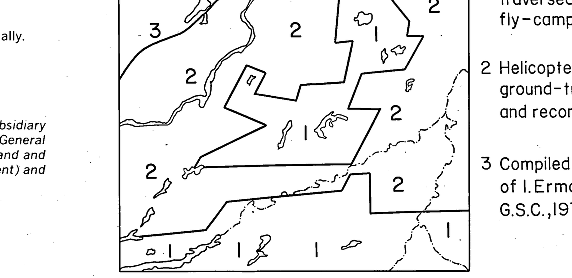
MINERAL DEVELOPMENT DIVISION
DEPARTMENT OF MINES AND ENERGY
GOVERNMENT OF NEWFOUNDLAND AND LABRADOR

13 K/10



1 Chiefly ground traversed from fly-camps

2 Helicopter supported ground-traversing and reconaissance

3 Compiled from work of I. Ermanovics, G.S.C., 1978

ELEVATIONS IN METRES ABOVE MEAN SEA LEVEL
CONTOUR INTERVAL .... 20 METRES
NORTH AMERICAN DATUM 1927
TRANSVERSE MERCATOR PROJECTION

MAP 7949
KAIPOKOK RIVER
LABRADOR NORTH DISTRICT
NEWFOUNDLAND

Scale 1:50,000 Échelle

MARGINAL NOTES

The map area is easily accessible by float plane or helicopter from Goose Bay, 135 km to the southeast.

The topography is varied and, to some degree, bedrock controlled. The Kanairiktok River has incised a highland area developed over granitoid rocks. The Kaipokok River meanders through a lowland area of gneisses and schists which disappear under an extensive area of swamp and string bog to the east. A north-northeast trending rib, underlain by mafic volcanic rocks, reaching 420 m in height rises abruptly from the surrounding lowlands north of Moran Lake. The area east of Moran Lake is a hummocky plateau developed over a variety of rock types. Glacial deposits are widespread, and vary from thin surficial veneers over bedrock to thick glaciofluvial outwash plains in the Kanairiktok and Kaipokok River valleys (Fulton *et al.*, 1970).

The area is situated in the north central portion of the Labrador Central Mineral Belt and is underlain by Precambrian rocks ranging from Archean to Elsonian in age. Previous regional mapping in the area has been by Moore (1954), Williams (1970) and Ryan (1977). The area has been periodically prospected for base metals and uranium since the mid 1940's (*cf.* Halet, 1946; Moore, 1954; Macpherson, 1954; Ellingwood, 1958; Collins, 1959; Bernazeaud, 1965; Phipps, 1978).

The oldest rocks in the area are the amphibolite grade banded gneisses (unit 1) and intercalated banded amphibolite (unit 1a), which constitute part of the Archean Hopedale Gneiss Complex (Kranck, 1953; Sutton, 1972) of the Nain structural province. The gneisses are chiefly white to pink weathering, gray, well layered, quartz-feldspar-biotite rocks with garnet bearing quartz dioritic compositions and lit-par-lit migmatites present locally. Amphibolite layers, commonly garnetiferous and locally displaying a porphyritic texture, constitute mappable units northwest of the Kanairiktok River and south of Copper Pond. They are also common in the gneisses along the eastern margin of the map area but have not been delineated due to insufficient data. Some of the amphibolite units display relict gabbroic textures, though for the most part they are well banded and contain interbands of granitic material.

The southern extension of the Ugjoktok metavolcanic belt (unit 2) occurs in the northwest corner of the map area. Ermanovics and Raudsepp (1979) have recognized both mafic (2a) and intermediate to felsic (2b) volcanic rocks in this supracrustal belt. The mafic rocks are mainly hornblende gneiss and schist in which relict pillow lavas are present; the felsic rocks are banded metatuffs.

Massive to weakly foliated and ghost-banded granitoid rocks (unit 3) have intruded the gneisses and the Ugjoktok metavolcanics; these vary from granodiorite to quartz diorite in composition. Banded granitic gneiss and amphibolite inclusions are common locally. Some of the amphibolites appear to be disrupted synkinematic dikes.

Gray to buff weathering, weakly foliated leucogranite and granodiorite (unit 4) have intruded the banded gneisses in the Kaipokok River valley. The foliation in these granites overprints that in the gneissose inclusions. Since there is no absolute age on these intrusions, they could be either Archean or early Proterozoic in age.

A conspicuous feature of the Archean complex is the preponderance of diabase/gabbro intrusions (unit 5), which vary from narrow dikelets a few centimetres in width to thick (100 m) sheets. Locally, they form dike swarms.

The Archean complex in the Kaipokok River valley has been affected by a retrogressive (greenschist facies) metamorphism and accompanying penetrative foliation which has overprinted the regional amphibolite facies assemblages. This event is attributed to the Hudsonian Orogeny. In many places the original gneissic character of the rock is preserved (unit 1A), but the banding is folded and the otherwise crosscutting diabase dikes are folded and schistose. The superimposed foliation in some places appears to be cataclastic and the rocks are flinty and mylonitic. A zone (unit 1B) of polydeformed felsic (quartz-feldspar-sericite-chlorite) and mafic (chlorite-actinolite) schists occurs west of Copper Pond, and continues northward past Island Pond (Ryan, 1977). These schists contain relics of their protoliths, indicating they have been derived by intense reconstitution and retrogression of the Archean gneisses and the leucogranites which intrude them. The distribution of the recognizable schistose granites (4A) indicates they have an elongate form. This might be attributable to synkinematic intrusion, and suggests the possibility of a Proterozoic age for the slightly schistose granites in the Archean to the east.

Unconformably overlying the Archean rocks east of the Kanairiktok River are the sedimentary and volcanic rocks of the Aphebian Moran Lake Group (units 6, 7) (Smyth *et al.*, 1978). The unconformity is exposed in a gully in the northern part of the map area where strongly sheared black slates are in nonconformable contact with a medium grained altered granite. The granite is crumbly and brown-green to orange in color due to the replacement of feldspar by clay minerals and a pervasive carbonate alteration, a result of Aphebian paleoweathering. A few metres of nonexposure separate black slates from weathered amphibolite (a chlorite-carbonate rock) north of Embee Pond and brown dolostone from leucogranite north of Moran Lake.

The sediments (unit 6) of the Moran Lake Group are chiefly laminated black and gray pyritic and graphitic mudstones and siltstones with lesser gray quartzite, chert, dolostone and conglomerate. Rusty brown dolostone (6a), in places cut by a network of cherty veins, forms the base of the sequence north and south of Moran Lake (Ellingwood, 1958), and elsewhere occurs as small pods higher in the sediments. A narrow conglomerate unit exposed 4 km northeast of Embee Pond contains mafic volcanic clasts in which a prehnite-pumpellyite assemblage is present that appears to predate the incorporation of the clasts into the sediment.

Brown weathering, light to dark green pillow lava, pillow breccia and massive flows (unit 7) overlie the slates. The volcanics are commonly cut by hairlike fractures filled with chlorite or carbonate. Chert, chert partially replaced by dolostone, and dolostone units locally separate individual flows (*e.g.* north side of Moran Lake). The least altered pillow lava displays a well preserved "quench" microstructure composed of plagioclase and clinopyroxene. The pyroxene exhibits curved and sheaflike forms commonly nucleated on skeletal plagioclase feldspar. Plagioclase also forms microscopic glomeroporphyritic clusters. Similar quench textures have been reported from Aphebian pillow lavas in western Labrador (Pearce and Donaldson, 1974). The volcanic rocks are cut by shear zones which destroy their primary character and produce schistose metamafic rocks composed of relict original minerals, actinolite, epidote and serpentine.

Several belts of metasedimentary (unit 6A) and metavolcanic rocks (units 7A, 8) which occur in the Kaipokok Valley are interpreted as Aphebian cover, equivalent to the Moran Lake Group; they were deformed along with the Archean basement during the Hudsonian Orogeny.

Polydeformed graphitic schists, phyllites, sericite-chlorite schists and quartzites (unit 6A) form a continuous belt west of Island Pond and occur as several other small slivers in the schists and metavolcanics elsewhere in the area. Bedding is rarely preserved in these rocks. Although some massive quartzite horizons have behaved competently, the most prominent feature is a composite foliation within which relicts of transposed bedding can be recognized. Rusty dolostones (6Aa) are present in the metasediments in some areas, and north of Island Pond banded dolostone occurs in strongly sheared granite. Pebbles of granite abound in the dolostone, suggesting that the contact represents a modified unconformity.

Schistose intermediate to mafic metavolcanic rocks (unit 7A) form several distinct belts in the area. The most extensive belt stretches about 22 km northward from Best Lake. It is separated from slightly retrogressed banded gneiss and foliated leucogranite by a zone of tectonic schists and mylonitic gneiss. The other belts all occur in the felsic schist zone near Boiteau Lake and Island Pond. The volcanics are commonly well banded, the banding in some outcrops representing primary variations in bedded tuffs; deformed pillow lavas (7Aa) occur west of Jean's Lake. Narrow brown dolostone horizons (7Ab) are present north of Island Pond, tightly folded cherty iron formation occurs in the banded volcanics 1.5 km east of Island Pond. Foliated metagabbro and metadiorite (7Ac) have been recognized locally in the metavolcanics, but when strongly deformed cannot be easily distinguished from the volcanic rocks.

A prominent hill south of Island Pond is composed predominantly of pale green, polydeformed, strongly flattened and folded, monolithologic felsic pyroclastics and volcanogenic sediments (unit 8); deformed pillow lava occurs to the east. Several lenses of gray limestone (8a) occur in the felsic metavolcanics at the southern end of the belt, and foliated metagabbro cuts it. The whole sequence was originally believed to be siliceous metasediments which were part of the Archean complex (Ryan, 1977) because of its lithological similarity to Archean supracrustal rocks south of Adlatok Bay (Taylor, 1972). However, the recognition of pillow lavas resembling those of the Moran Lake Group, the pyroclastic origin of the discontinuously banded siliceous rocks and the same structural history as the metasediments infolded with the felsic schists suggest this belt may be of Aphebian age. Felsic volcanic rocks form a substantial portion of the Aphebian Aillik Group to the east (Bailey, 1978), the lower portion of which resembles the Moran Lake Group. Thus, conceivably, the deformed felsic volcanics could represent a stratigraphic horizon of the Moran Lake Group which is not seen elsewhere because of pre-Paleohelikian erosion.

Two granitic bodies in the south central part of the area are considered to be late Hudsonian in age. A weakly cleaved, medium grained, equigranular, slightly chloritized pink granite (unit 9) stretches from Junior Lake to Ferguson Lake. It appears to intrude banded metavolcanics northeast of Ferguson Lake, but the contact was not observed. This granite is intruded by a weakly foliated hornblende-biotite (chlorite) granite known as the Junior Lake granite (unit 10) (Smyth *et al.*, 1975). The Junior Lake granite also intrudes mylonitic gneisses in the Kaipokok River valley 3 km north of Ferguson Lake.

The Paleohelikian Bruce River Group (units 11, 12) unconformably overlies the Moran Lake Group, pink leucogranite, and the Junior Lake granite (Smyth *et al.*, 1975). It has been divided into a lower formation of conglomerates and sandstones, a middle formation of tuffaceous sandstones, and an upper formation of volcanic flows (Smyth *et al.*, 1978); the latter, which is not exposed in the map area, has yielded a Rb-Sr whole rock age of 1474 ± 42 Ma (Wanless and Loveridge, 1972).

The lower division, the Heggart Lake Formation (unit 11), in the vicinity of Moran Lake is composed of a basal nonbedded to poorly bedded, buff to pink, well sorted, impure quartzite (unit 11a) (Chaulk, 1979) which rests unconformably on pillow lavas of the Moran Lake Group north of Moran Lake. The sediments face and dip steeply to the southeast or east. The quartzite passes upwards into well bedded red arkoses and grits in which red mudstones (unit 11d) locally form mappable horizons. These bedded red arkoses rest on eroded Moran Lake lavas east of Joe Pond and on deeply oxidized and reddened pillow lava west of Boiteau Lake, suggesting northward onlap. Minor intercalations of grit and conglomerate occur in the sandstones, but the major conglomerate (unit 11c) part of the Heggart Lake Formation outcrops east of Moran Lake. Several conglomerate units have been recognized by Chaulk (1979) and subdivided on the basis of color and clast content. Red polymictic cobble to boulder conglomerate occurs between Moran and Conglomerate Lakes and north of Brown Lake. Its clasts are chiefly granite, gneiss, quartzite, sandstone, mafic and felsic volcanic rocks, and jasper. The conglomerate between Conglomerate and Brown Lakes is a buff to gray rock dominated by granite clasts. A thin gray siltstone outcrops along the south shore of Brown Lake and an amygdaloidal flow (unit 11e) with quartz-epidote amygdules occurs south of the lake.

The unconformity between the Junior Lake Granite and the Heggart Lake Formation is exposed east of Pat Lake. In this area the sediments dip and face to the northwest. A poorly sorted arkosic sandstone and grit (unit 11b) of variable thickness, interpreted as a "wash" derived from the underlying granite, separates the granite from the conglomerates. Even though top indicators are rare within the formation, bedding in the area south of Pat Lake dips towards the granite, and indicates that the sediments along the northern margin of the Junior Lake granite are overturned. Cleavage-bedding intersections also indicate overturned strata. The contact between the Junior Lake granite and the Heggart Lake Formation is also exposed in the Bruce River 1 km north of Carr Lake. The contact is sheared but is interpreted as a modified unconformity in which conglomerate unconformably overlies the granite.

The Heggart Lake Formation is overlain by the Brown Lake Formation (unit 12), a unit composed predominantly of tuffaceous sandstones (Smyth *et al.*, 1975, 1978). The contact south of Brown Lake appears to be transitional, though elsewhere it is either a fault or a disconformity. In the latter case, a red polymictic conglomerate occurs at the base of the formation (Ryan, 1978; Chaulk, 1979; Smyth *et al.*, 1975, 1978). A polymictic conglomerate (unit 12a) underlies Brown Lake sandstones in a small syncline of Bruce River Group which unconformably overlies slates, siltstones and phyllites of polydeformed Moran Lake Group east of the Stipec River; this may be basal Brown Lake, or possibly Heggart Lake, Formation. The Brown Lake sandstones (12b) are multicolored (pale green, mauve, pink, red, gray), well bedded, medium to fine grained rocks which are commonly cross-bedded. Thin, pink, spotted chert beds occur locally and appear to be devitrified dust tuffs. A well developed sericite foliation, not always apparent in outcrop, has destroyed any vestiges of shards that may have been present in these volcanogenic sediments (*cf.* Smyth and Ryan, 1978). Some of the sediments are relatively devoid of feldspar, being dense gray quartzites composed of subangular quartz grains and felsic volcanic fragments in a sericite matrix. Pale green to white quartzitic conglomerates (unit 12c) are present locally. These consist chiefly of felsic volcanic fragments in a pale green quartzitic matrix composed of subangular quartz, smaller rock fragments, feldspars and sericite. Such conglomeratic horizons form ribs traceable for several hundred metres. Their occurrence near thrust slices of Moran Lake Group south of Brown Lake suggests this horizon may be very close to the original unconformity between the Moran Lake and Bruce River Groups which is repeated by reverse faulting.

Pink quartz-feldspar porphyry (unit 13) has intruded the Heggart Lake Formation southwest of Ferguson Lake (Bernazeaud, 1965; Smyth *et al.*, 1975). It consists of subhedral phenocrysts of twinned orthoclase and partially resorbed quartz in a felted quartz-feldspar groundmass. Dikes of this porphyry also cut the pink leucogranite, Junior lake granite, and the Brown Lake Formation.

Coarse grained, massive to variably foliated biotite monzonite and granodiorite (unit 14), named the Otter Lake granite (Ryan and Harris, 1978), intrudes the Moran Lake and Bruce River Groups in the southeast corner of the map area. This granite has yielded a Rb-Sr whole rock age of 1445 Ma (Kontak, 1978). This contact is faulted in part, but dikes of granite cut the Moran sediments, and spotted (andalusite) hornfels are developed locally. Gray leucogranite (14a) is in sheared and mylonitic contact with Brown Lake Formation sandstones along the Gravelly River. This leucogranite appears to be a border phase of the Otter Lake granite, which shows an intrusive contact with the sandstones several kilometres to the south (Ryan and Harris, 1978; Ryan, 1979).

Numerous gabbro and diorite plugs and diabase dikes (unit 15) of variable size cut all rock units in the area. They vary from massive to foliated and are probably of several ages; those believed to be pre-Hudsonian have been designated as unit 5. The basic intrusive rocks vary from fine to coarse grained and are usually massive. However, the gabbro south of Island Pond exhibits igneous layering and contains an anorthositic portion with large poikilitic grains of biotite. A porphyritic olivine gabbro forms two high hills in the swampy area in the northeast corner of the map area.

The Moran Lake Group and the underlying Archean basement of the Kaipokok River valley were deformed during the Hudsonian Orgeny and, east of Boiteau Lake, the Aphebian cover was infolded with strongly reconstituted basement. A composite foliation (S_m), affected by two later folding episodes, is a pervasive feature in these Hudsonian deformed rocks. F_{m+1} folds are tight to isoclinal; a closely spaced fracture cleavage (S_{m+1}) can be recognized in fold closures. A strain slip cleavage (S_{m+2}) and chevron to box folds represent a second deformation superimposed on S_m. The Bruce River Group has undergone Grenvillian deformation which has folded the group into a southwest plunging open syncline (Smyth *et al.*, 1975, 1978; Ryan, 1979). A slaty to fracture cleavage is associated with this folding. Several ages of high angle faults have contributed to the checkerboard pattern of the rock distribution. East-west and north-northeast trending faults are most common; the latter cut the former in the southeastern part of the map area and have a lobate pattern with a reverse sense of movement. The two major faults bordering the Kaipokok River valley appear to be Grenvillian-reactivated Hudsonian features. Slices of Moran Lake Group within the Brown Lake Formation south of Brown Lake appear to be a result of early Grenvillian thrusting.

The Archean rocks have very little mineralization; thin veinlets and disseminated sulfides occur locally. A large pyritic gossan zone occurs in amphibolite east of Copper Pond. Minor pyrrhotite is associated with the pyrite, but assays yield only traces of nickel (Halet, 1946).

The sedimentary rocks of the Moran Lake Group are transected by quartz-carbonate-barite veins up to 0.5 m wide hosting galena, sphalerite and chalcopyrite. These are known from the north side of Moran Lake (Ellingwood, 1958; Piloski, 1958), from Green Pond (Macpherson, 1954), and near the northern extent of the Moran Lake Group (Ryan, 1977). At the latter locality the veins also occur in weathered granite beneath the Moran Lake Group and are commonly zoned, with the quartz at the margins succeeded inwards by pyrite and a central core of intergrown galena and sphalerite. Chip samples from the Green Pond showing, assayed by AMCO, gave combined maximum values of 10.3 percent zinc and 3.5 percent lead, the high zinc being due to an 8 cm vein of sphalerite (Moore, 1954). This mineralization has yeiled a Pb-Pb age of 1685 ± 160 Ma (Cumming *et al.*, 1955).

Numerous base metal showings are known from the Bruce River Group (Smyth *et al.*, 1975). These are mainly disseminated or vein mineralization of apparently local extent. Uranium is known from a shear zone in conglomerate south of Moran Lake, and in sheared conglomerate and sandstone south of Brown Lake. The showings in the sandstones are commonly associated with sheared mafic dikes containing pyrite-chalcopyrite mineralization.

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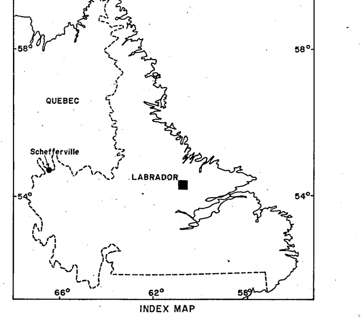

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DETAILS Kaipokok River by A.B. Ryan
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