GEOLOGICAL SURVEY OF CANADA
DEPARTMENT OF MINES AND TECHNICAL SURVEYS

PRELIMINARY SERIES

SHEET 36A

LEGEND

CENOZOIC — QUATERNARY

11 Drift

PRECAMBRIAN

10 Gabbro

9 Crystalline limestone; minor quartzite

8 Hornblende gneiss; amphibolite

7 Biotite gneiss, migmatitic in part

6 Pyroxene gneiss

5 Garnet-biotite gneiss, schistose in part

4 Graphite-biotite schist and gneiss

3 Quartz-feldspar gneiss

2 Garnet-quartz-feldspar granitoid gneiss

1 Quartz-feldspar granitoid gneiss

N.B. Stratigraphic sequence not implied except in case of units 10 and 11

Geological boundary (approximate, assumed) . . . . . U

Limit of geological mapping, unmapped area . . . . . U

Foliation (inclined, vertical, dip unknown) 111

Trend lines (in part from air photographs) . . . . .

Lineament (from air photographs) . . . . .

Magnetite occurrence . . . . .

Anticline . . . . .

Syncline, syncline overturned . . . . .

Glacial striae (direction of ice-movement known, unknown) . . . . .

Esker . . . . .

Raised beach (elevation in feet) B240

Geology by R.G. Blackadar, 1960

Cartography by the Geological Survey of Canada, 1961

Intermittent stream . . . . .

Marsh . . . . .

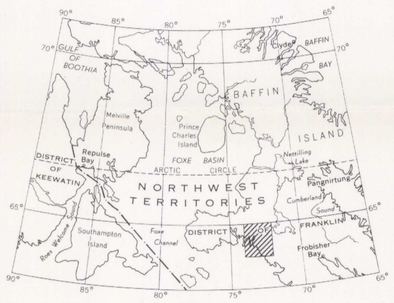
Base-map prepared by the Surveys and Mapping Branch

Approximate magnetic declination, 48° 03' West

Geographical names subject to revision

Air photographs covering this area may be obtained through the National Air Photographic Library, Topographical Survey, Ottawa

In response to public demand for earlier publication, Preliminary Series maps are issued in this simplified form and will be clearer to read if all or some of the map-units are hand-coloured



INDEX MAP

DESCRIPTIVE NOTES

The area is accessible by float- or ski-equipped aircraft at all times of the year except for 2 or 3 weeks during break-up from mid-June to early July, and during freeze-up which usually lasts from late September to mid-November. The tidal inlets are free from ice in late June or early July, the larger lakes by mid-July, and the coasts are approachable by ship from mid-July to mid-October.

There are no settlements within the area and at present no permanent Eskimo camps. Cape Dorset, about 100 miles to the west, is the trading and administrative centre for southern Baffin Island. Its facilities include a private commercial radio station, medical services, and a Hudson's Bay Company trading store.

The area is part of the Baffin or Frobisher upland and embraces several physiographic subdivisions. West of Keltie Inlet lie the Chorkbak hills, an area of rugged but relatively low hills characterized by many elongate lakes and deep inlets. Seaward, the submergence of this rugged area produces innumerable islands and reefs; inland maximum elevations are about 1,000 feet above sea-level and drift cover is widespread. East of Keltie Inlet the hill region merges with the Frobisher plateau—a highly dissected plateau that forms the backbone of Meta Incognita Peninsula. In Mingo Lake map-area the maximum elevation of the plateau is about 1,200 feet but farther east elevations of up to 3,000 feet have been recorded. Drift deposits are widespread on the plateau surface, as are large areas of felsenmeer and boulder fields, and bedrock is commonly limited to scattered glacier-scoured knobs. South of the plateau is a coastal belt about 10 miles wide, similar in many respects to the plateau region but of lower elevation and almost devoid of drift cover. To the northeast of Chorkbak hills and Frobisher plateau, the land surface drops abruptly to Mingo plain. Sedimentary rocks of presumed Ordovician age are known to underlie this unit but most of the surface is covered by limestone-clay till.

Widespread glaciation in the map-area is evinced by numerous striated surfaces, perched boulders, moraines, and extensive drift deposits. A movement from the northeast is suggested by striae. Glacial features such as moraines and eskers are particularly well developed along the sides of the valley extending northeast from the head of Keltie Inlet. Raised beaches were observed as high as about 300 feet above present sea-level.

Two northwest-trending belts of quartz-feldspar gneisses (3) characterize the map-area. Between these lies a belt of lithologically diverse and structurally complex schists and gneisses. Unit 3 comprises an assemblage of white to pale yellowish brown weathering, quartz-feldspar granoblastic rocks varying in composition from granitic to dioritic. Banding may be well developed, but with decreasing mafic content the rocks become less gneissic and grade imperceptibly into unit 1—an assemblage of medium-grained pinkish to yellowish brown granitoid gneiss and biotite granitic gneiss. A massive medium- to coarse-grained, garnet-bearing granitic gneiss (2) is commonly in gradational contact with units 1 and 3. Lenses and schlieren of well-bedded biotite-quartz-feldspar or hornblende-quartz-feldspar gneiss are locally abundant, interbedded with unit 1. These may represent layers of once more extensive rocks similar to those of units 7 or 8.

Gradational contacts are found between unit 5 and units 3, 4, and 7. Depending on biotite content, unit 5 may be schistose but is more commonly gneissic. Locally, dusky-red garnet may exceed 50% of the mineral content. The graphite-bearing rocks of unit 4 are generally very rusty; finely disseminated pyrite is present in many outcrops.

Bands of medium-grained white to grey crystalline limestone interbedded with gneissic rocks roughly parallel the south contact of the zone of garnetiferous gneisses and related rocks. Although commonly in well-defined bands 10 to 100 feet wide, the limestone may be random in distribution. On the west shore of Keltie Inlet, where the limestone band crosses the inlet, scores of limestone bands 2 inches to 1 foot wide are interbedded with the gneisses. Minerals associated with the crystalline limestone include pale green diopside, biotite, graphite, phlogopite, sphene, magnetite, and hornblende. Here and there, thin quartzite bands are associated with the limestone.

Pyroxene gneiss (6) contains large crystals (up to an inch across) of dark green pyroxene in a light-coloured matrix of quartz and feldspar. The mafic mineral may make up 40% of the mineral content. Like most other units in the map-area, the pyroxene gneiss grades into other types, mostly into unit 3. It was not observed except in the northwestern part of the area.

Several northwest-trending gabbro dykes cut all consolidated rocks in the area. Although most are several hundreds of feet wide, there are zones where the dykes split into many small dykelets varying in width from a few inches to tens of feet. Contact effects are limited to a chilled marginal zone, and in the large bodies a coarse-grained centre may be present. These rocks weather to a moderate brown colour and are readily distinguishable from the country rocks.

Although locally complex, the map-area is dominated by northwest-trending structures within which are numerous roughly circular dome-and-basin structures. Broad, open folds are more typical of those areas underlain by units 1-3 whereas more complex folds are found within areas of units 4-9. Here and there, well-defined drift-filled linears are present, particularly in rocks of unit 3. Shattered zones of chloritized, granitoid, quartz-feldspar rock are found in some of these but evidence for movement is lacking.

Dykes, veinlets, and irregular masses of quartz-feldspar pegmatite cut all units except the gabbro dykes. They are most abundant in units 1, 2, 3, and 5 and are mineralogically like the enclosing rocks.

Concentrations of magnetite are found in a garnetiferous biotite-quartz-feldspar gneiss associated with amphibolite bands at the southeast entrance to Keltie Inlet. This is the northwestern extension of a magnetite zone shown on Map 55-1959. A magnetite zone 20 feet thick was found near the base of the amphibolite body at the head of Tinitonito Bay. This parallels the gneissosity of the amphibolite; it was examined for about 1,000 feet along strike without noting any change in thickness. The zone was not however seen on the east side of the basin-like structure. Small segregations of magnetite were examined at the head of Korok Inlet where the mineral forms in crystalline limestone near the contact with quartz-feldspar gneisses.

Claims were staked on some of these deposits in 1956 and 1957, mainly by Ultra-Shawkey Mines Ltd., but at present (1960) there is no activity.

Overlaps Map 55-1959, "Hobart Island"

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MAP 43-1960

GEOLOGY

MINGO LAKE

BAFFIN ISLAND

DISTRICT OF FRANKLIN

NORTHWEST TERRITORIES

Scale: One Inch to Four Miles = $\frac{1}{253,440}$

Miles

4 2 0 4 8 12