LEGEND

PROTEROZOIC

d G Diabase and Gabbro: dykes of diabase (d) and gabbro (G) and small stocks of gabbro-diorite (G); bodies vary 1 to 100 metres thick and comprise olivine+augite (5 to 15% alteration), or pigeonite+green hornblende (40 to 70% alteration); alteration is subgreenschist to lower greenschist facies;

G, gabbro (actual size shown)

d^3, diabase dyke 3 metres thick

d, diabase dyke, width unspecified

d^1, diabase or gabbro dyke, interpreted

PROTEROZOIC OR ARCHEAN

6 Kanairiktok intrusive suite: tonalite, granodiorite and minor granite; foliated, leuco- to mesocratic, grey to pale pink, medium to coarse grained; middle greenschist assemblages include actinolite, muscovite, epidote, chlorite, calcite, quartz, albite and altered oligoclase-andesine

6a: migmatite; undivided mixture of rocks of unit 1 and 6

5 Meta-ultramafic suite: serpentinite, metapyroxenite and minor metagabbro; rare asbestos

Florence Lake group: middle greenschist assemblages include actinolitic-tremolitic and cummingtonitic amphibole, epidote, chlorite, muscovite, biotite and possibly garnet; contact metamorphic assemblages include retrogressed garnet, biotite, muscovite, andalusite, cordierite and staurolite

4 Lise Lake formation: felsic (colour index <15-20) tuff, lapilli tuff, lapillistone; poorly sorted, locally banded; generally not reworked; disseminated sulphides and rare cherty pyrite horizons; generally grades to aphanitic members containing blue quartz clasts (4a);

4b: impure limestone (marble) and calc-silicates;

formation includes 20% intermediate rocks

3 Adlatok formation: intermediate (colour index 15-20 - 35-40) pyroclastic rocks with minor argillaceous sandstone and siltstone; tuff, lapilli tuff, volcanic breccia; poorly sorted but locally finely layered; porphyritic sills;

3a: impure limestone (marble) and calc-silicates;

formation includes 50% mafic and felsic rocks

2 Schist Lakes formation: mafic (colour index 35-40 - 70) layered flows and sills intercalated with 20% intermediate and felsic rocks; sills reflect composition of host rocks; minor ferruginous metachert sulphide facies;

2a: pillowed flows

2b: impure limestone (marble) and calc-silicates

ARCHEAN

1 Layered gneiss: includes undivided Maggo gneiss, Weekes amphibolite and unspecified homogeneous gneiss;

tonalite gneiss: layered, leucocratic, medium grained, granoblastic gneiss with abundant lit par lit and discordant veins of aplite and hornblende-bearing pegmatite; mafic granoblastic quartz-andesine-hornblende dykes; coarse grained remnants of amphibolite;

layered amphibolite: includes garnet, hornblende, actinolite, and plagioclase

homogeneous grey gneiss: grey, granoblastic, biotite-hornblende gneiss with sparse garnet

Geological boundary

Limit of mapping

Layering, transposed bedding (vertical, inclined)

Schistosity/cleavage (vertical, inclined)

Gneissosity (vertical, inclined)

Gneissic layering (vertical, inclined)

Folds (antiform, synform)

Fault (inferred from topographic lineament)

Mineral occurrence, py = pyrite, cpy = chalcopyrite

Area of outcrop (observed); small outcrop

Area of extensive drift cover

Geology (1978) and interpretation (1978-79) by I.F. Ermanovics and M. Raudsepp; geological cartography by I.F. Ermanovics (1979).

The geology of this map is discussed in a report by Ermanovics and Raudsepp (1979).

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GEOLOGICAL SURVEY OF CANADA
DEPARTMENT OF ENERGY, MINES AND RESOURCES

ADLATOK BAY — FLORENCE LAKE MAP-AREA
(Parts of 13N/1,2 and 13K/15)

Notes

The area was mapped with helicopter support during the summer of 1978 from camps located at the southern ends of Adlatok and Ugjoktok Bays and from Florence Lake. Larger lakes and most river valleys are underlain by glacial debris and extensive deposits of sand are exposed along deeply eroded banks of the Kanairiktok River.

Maggo gneiss, Weekes amphibolite and Kanairiktok intrusive suite are subdivisions defined here to replace parts of what is commonly called Hopedale gneiss (e.g. Taylor, 1977). The older division comprises Maggo gneiss and Weekes amphibolite and is not well exposed in this map-area. However, large areas of these two units were mapped between Weekes Lake and Kanairiktok River in adjacent sheets 13K/11 and 10 where the amphibolite was tentatively interpreted (Ermanovics and Raudsepp, 1979) to be the lithostratigraphic equivalent of rocks of the Hunt River amphibolite belt described by Jesseau (1976). The gneiss and amphibolite are in upper amphibolite facies and are overprinted by middle greenschist metamorphism. They probably represent rocks of an early Archean volcano-plutonic cycle. Maggo gneiss is characterized by medium grained, granoblastic mafic quartz-andesine-hornblende lenses interpreted as dykes.

The younger division (younger volcano-plutonic cycle) is here informally called the Florence Lake group of volcanic rocks and the Kanairiktok intrusive suite of tonalite/granodiorite intrusions which have been folded and metamorphosed to middle greenschist facies. Contact metamorphic assemblages, developed at margins of the Florence Lake belt during intrusion of the Kanairiktok suite, were retrograded during this last regional greenschist metamorphism in the map-area.

The Florence Lake volcanic succession was deposited on Archean Maggo gneiss and Weekes amphibolite that record polyphase deformation and metamorphism prior to deposition of the Florence Lake group. This relationship was also recorded by Sutton (1971). The Florence Lake group comprises a bimodal succession of basal(?) mafic flows and sills (Schist Lakes formation) with upward(?) development of intermediate (Adlatok formation) and felsic (Lise Lake formation) pyroclastic rocks and sills. Sills reflect host compositions and those in mafic flows develop layers that may have cumulate textures. Pyroclastic rocks include tuff, lapilli tuff, lapillistone and volcanic breccia, generally rich in calcite. Although rare occurrences of limestone, siltstone and sandstone were noted, the succession lacks epiclastic rocks and flows less mafic than andesite. A suite of meta-ultramafic rocks intrudes Florence Lake group and Weekes amphibolite. The volcanic environment is seen as one with calc-alkaline flows with two-thirds to one-half pyroclastic and fumarolic activity. Although pyroclastic rocks locally have well developed layering (bedding), they are generally poorly sorted and not reworked.

In several localities massive pyrite and pyrite-rich beds are present in intermediate tuffs intercalated with mafic volcanics. A massive bed of pyrite 1.2 metres thick (90% pyrite, 10% quartz and schist, trace of chalcopyrite) is well exposed at the northernmost Ugjoktok Bay locality. Several zones of gossan, 0.5 to 1.0 metre thick, developed from pyrite with traces of chalcopyrite, occur on both sides of the Adlatok River just west of Ugjoktok Bay (Sutton, 1971). Felsic rocks generally carry disseminated sulphides and pyrite-rich beds. Quartz veins with pyrite and green malachite-stained chalcopyrite were noted, particularly near the margins of the belt. The stratabound massive pyrite and pyritic gossans in volcanic rocks may be syngenetic and together with ubiquitous carbonate throughout the volcanic succession suggest the presence of exhalative-fumarolic deposits. Cu-mineralization in quartz veins appears to represent late stage hydrothermal concentration, probably resulting from contact and regional greenschist metamorphism of disseminated sulphides and stratabound deposits.

Diabase and gabbro dykes in the area may be of at least two ages. The older swarm contains pigeonite rimmed with green hornblende (with rare biotite and actinolite) and exhibits an altered mineralogy (40-70% altered) indicative of subgreenschist facies. The apparently younger suite (5 to 15% altered) typically contains mauve-beige titaniferous augite and 10 to 20% olivine; this mineralogy is also characteristic of the Paleohelikian Harp Lake dykes described by Meyers and Emslie (1977).

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ELEVATIONS IN METRES ABOVE MEAN SEA LEVEL

CONTOUR INTERVAL ..... 20 METRES

NORTH AMERICAN DATUM 1927

TRANSVERSE MERCATOR PROJECTION

LABRADOR NORTH DISTRICT
NEWFOUNDLAND

Scale 1:50,000 Échelle

Miles 1 0 1 2 3 Milles

Metres 1000 0 1000 2000 3000 4000 Mètres

Yards 1000 0 1000 2000 3000 4000 Yerges

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GEOLOGICAL SURVEY
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