GRANDYS LAKE, WEST HALF (110/15)

by

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Mapping on a 1:50,000 scale in the Grandys Lake area was initiated in mid-August, but only small segments of the area have been traversed. The project area lies to the southeast of the Long Range-Cabot Fault; 1:50,000 scale mapping of the Carboniferous terrain area northwest of the fault has been completed (Knight, 1975).

The map area is not accessible by road, although paths ascend the Long Range escarpment from Doyles and South Branch in the Codroy Valley; also, from the highway along the south coast.

The Grandys Lake area was included in a 1:250,000 scale helicopter reconnaissance and compilation map (Gillis, 1972). The map areas to the south (110/10) and southwest (110/11) have been mapped on a 1:50,000 scale (Brown, 1976, 1977).

GENERAL GEOLOGY

The upland area between the Long Range-Cabot Fault and the Cape Ray Fault is underlain by mafic, ultramafic, and subordinate semipelitic rocks cut by tonalitic and granitic rocks. The area southeast of the Cape Ray Fault is underlain by semipelitic and amphibolitic schist cut by granite, granodiorite, tonalite, quartz veins, and pegmatite. These two terranes, separated by the Cape Ray Fault, will be referred to in this report as the Long Range and Port aux Basques zones respectively. The younger Windsor Point Group, a bimodal volcanic and sedimentary assemblage, occurs along the fault zone.

Long Range Zone

The mafic and ultramafic rocks in this zone belong to the Long Range Mafic-Ultramafic Complex (1) (Brown, 1977). Layered and massive coarse grained metagabbro, metadiabase, and serpentinite with locally developed white felsite stringers were observed in the areas traversed this summer. This complex was intruded by equigranular tonalite (4) which contains abundant amphibolite screens and xenoliths away from the main mafic masses. Semipelitic garnet-biotite and biotite schist (3) near the western side of the project area was also cut by white tonalite and/or granodiorite and pink, gneissic granite (4). A highly deformed, porphyritic granite (6) was observed cutting the tonalite/amphibolite terrane. Red, equigranular, biotite granite (8a), similar to the Isles aux Morts Brook Granite (Brown, 1976), cuts all of the older rocks posttectonically, but is itself sheared and fractured along the Cape Ray Fault zone. Thin quartz-sanidine porphyry dykes (8b) cut the tonalite/amphibolite terrane posttectonicallly northwest of Grandys Lake.

Port aux Basques Zone

The semipelitic, pelitic, and amphibolitic schists (3) of this zone are lithologically correlative with components of the Bay du Nord Group in the La Poile River area (Chorlton, 1979); they are also compatible with the latter in structural and metamorphic history. For instance, coarse grained staurolite-garnet-biotite (±kyanite)

schist and acicular amphibole-bearing feldspathic schist, occupying a belt along the south side of the Cape Ray Fault, occur in an analogous position in the La Poile River map area. Likewise, amphibolite is abundant south of this zone in both map areas. The rocks are pervasively intruded by both equigranular, pink, biotite to muscovite granite and equigranular, white tonalite to granodiorite (5), possible equivalents to the Port aux Basques Granite and the Rose Blanche Granite (Brown, 1976), respectively. These granitoid rocks are penetratively foliated, and minor folds of this foliation are common. Several thick, boudinaged quartz veins were developed along northeast-trending shear zones.

Windsor Point Group (Unit 7)

The Windsor Point Group was defined by Brown (1976, 1977) as a series of metasedimentary and metavolcanic rocks that overlies the Cape Ray Fault. It is exposed from Cape Ray in the Port aux Basques area to the centre of the present map area, where it is either pinched out or dies out along the fault southwest of Grandys Lake. Similar rocks reoccur in the fault zone to the east in the La Poile River area (Chorlton, 1979). A zone of mylonitization marks its contact with the rocks of the Port aux Basques zone to the south. The presence of Long Range zone granitoid fragments in Windsor Point Group conglomerates in the Port aux Basques area indicates that the sequence unconformably overlies at least the oldest Long Range zone rocks (Brown, 1977).

The Windsor Point Group is represented in the present map area by felsic and mafic volcanic rocks, and sedimentary rocks. The felsic volcanic rocks include quartz porphyry, aphyric rhyolite or rhyolite tuff, quartz crystal tuff, and siliceous ashflow tuff or agglomerate. A rhyolite band along the southern contact with the late, red, biotite granite (8a) is intensely silicified.The mafic volcanic rocks include mafic flows and/or dikes and mafic tuffs. Although the mafic flows are highly sheared in most places, carbonate-filled vesicles were recognized locally. Chlorite schists exposed in this area contain abundant carbonate and are thought to represent mafic tuffs. Mafic volcanic rocks along the southern contact of the Windsor Point Group are highly sheared by the fault; thus, they could be confused with mylonitized amphibolite from the Port aux Basques zone. The sedimentary rocks contain conglomerate, siltstone, and slate. The conglomerates contain fragments of volcanic rock, fine grained granite, and sedimentary rock. The siltstones are highly siliceous, and thickly bedded. They are associated with ashflow tuff. Slate occurs as interbeds in the conglomeratic and volcanic rocks.

DEFORMATION AND METAMORPHISM

The rocks in the Long Range and Port aux Basques zones have been deformed and regionally metamorphosed before the deposition of the Windsor Point Group. The Windsor Point Group has been deformed by late activity on the Cape Ray Fault.

In the Long Range zone, the semipelitic and some of the mafic units were regionally deformed and metamorphosed to amphibolite facies. However, much of the rock in the cores of large mafic and ultramafic masses were not affected by regional metamorphism, but locally display metamorphic features reminiscent of ocean floor metamorphism (J. Malpas and G. Dunning, personal communication). Internal deformation is taken up in faults and shear zones. Peripherally, the mafic rocks are intruded by tonalite and converted to amphibolite. Late cataclastic deformation, or deformation associated with retrogression, affects most of the rocks in this zone, and is probably related to late movement on the faults.

LEGEND

8 Equigranular, red biotite granite (ILES AUX MORTS BROOK GRANITE?); fine grained quartz-sanidine porphyry dikes.

7 WINDSOR POINT GROUP: Mafic volcanic rocks; chlorite/sericite/carbonate schist; rhyolite, rhyolite tuff; agglomerate, ashflow tuff, volcanic conglomerate; siltstone, mudstone.

6 CAPE RAY GRANITE?: Porphyritic granite, foliated.

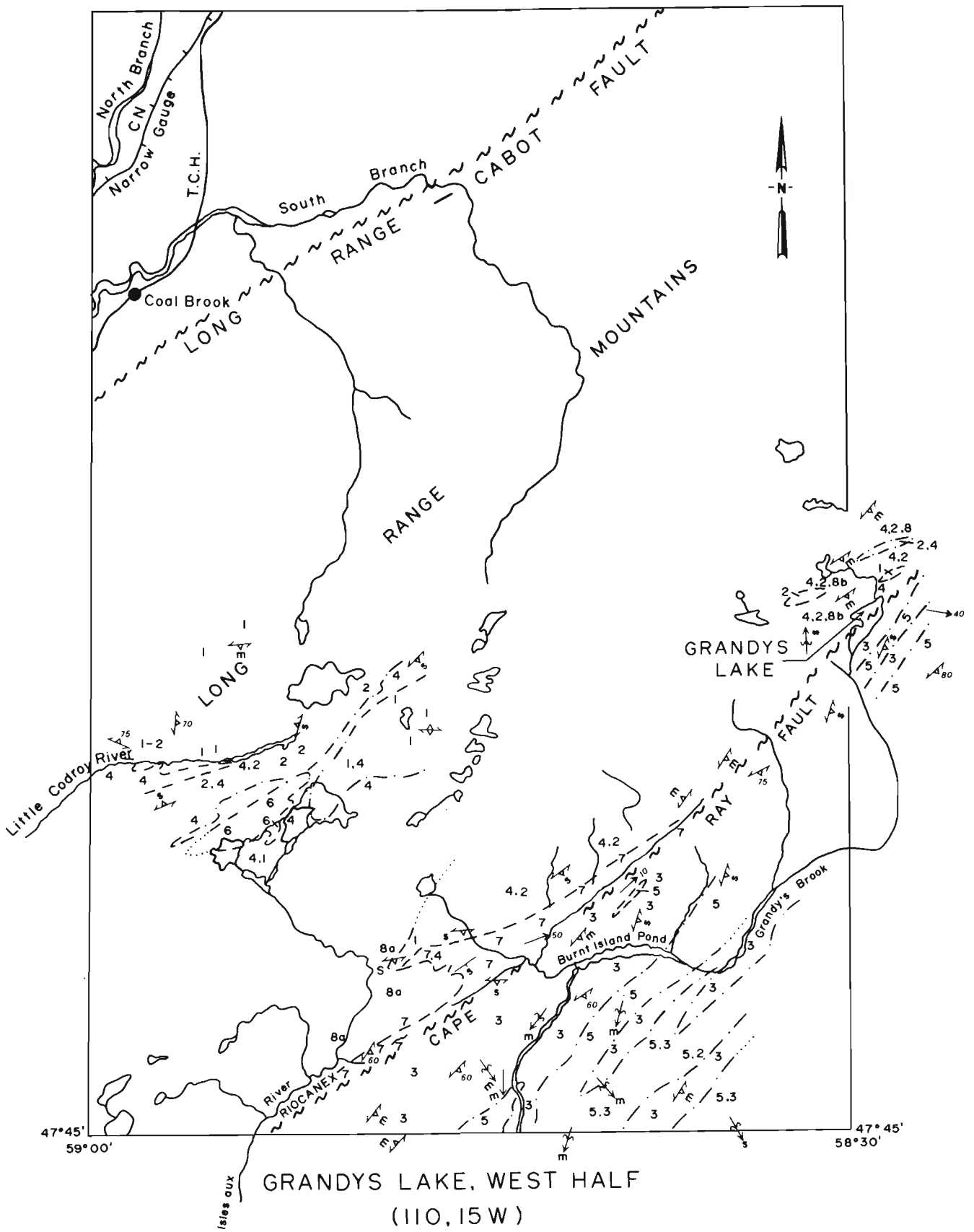
5 ROSE BLANCHE GRANITE - PORT AUX BASQUES GRANITE: Equigranular foliated granitoid rock with locally abundant inclusions; granodiorite, tonalite; (garnet)-muscovite-biotite granite; 5c, pink potassic biotite granite.

4 Long Range equigranular, foliated granitoid rock with locally abundant inclusions; granodiorite, tonalite; pink, potassic biotite granite.

3 BAY DU NORD GROUP - PORT AUX BASQUES GNEISS: Semipelitic and pelitic schist; amphibolite; injection gneiss; quartzite.

2 Long Range schists and gneisses: Semipelitic and pelitic schist, injection gneiss; amphibolite; impure carbonate/calc-silicate.

1 LONG RANGE MAFIC-ULTRAMAFIC COMPLEX: Massive and layered metagabbro; metadiabase, fine grained amphibolite; serpentinite, dunite.



GRANDYS LAKE, WEST HALF
(110, 15W)

In the Port aux Basques zone, all of the rocks mapped to date have been polydeformed and metamorphosed to amphibolite grade. Fresh mylonite zones are concentrated in and around the Cape Ray Fault zone; blastomylonite, possibly resulting from deformation related to the fault, occurs in a broader belt along the south side of the fault.

The Windsor Point Group has been metamorphosed to greenschist facies in the La Poile River area before deformation on the Cape Ray Fault (Chorlton, 1979), but its metamorphic history has not been established in the present area. Activity along the fault has resulted in zones of intense shearing, and kink or chevron folding in these rocks.

MINERALIZATION

The Riocanex gold prospect is located within the Cape Ray Fault zone near Isles aux Morts Brook, but was not examined this summer.

No notable mineralization has been yet found during this mapping project. All of the Windsor Point Group rocks contain low concentrations of disseminated pyrite. A sheared felsite or quartzite in the Port aux Basques zone contains pyritized shear zones at the outlet of Burnt Island Pond.

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