

# RP 403(A)

PRELIMINARY REPORT ON AGUANISH AREA, SAGUENAY ELECTORAL DISTRICT

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P. R. NO. 403

PROVINCE OF QUEBEC, CANADA  
DEPARTMENT OF MINES  
HON. W. M. COTTINGHAM, MINISTER  
GEOLOGICAL SURVEYS BRANCH

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PRELIMINARY REPORT  
ON  
AGUANISH AREA  
SAGUENAY ELECTORAL DISTRICT

BY

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QUEBEC  
1959

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Saguenay Electoral District

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INTRODUCTION

The Aguanish area was mapped during the summer 1958. It is bounded on the south by the St. Lawrence river and on the north by latitude  $50^{\circ}30'$ . The eastern and western boundaries are longitudes  $61^{\circ}55'$  and  $62^{\circ}10'$  respectively. The area, which covers approximately 215 square miles includes most of La Richardière and Goynish townships and a small part of Costebelle township as well as a six-mile-wide strip of undivided territory along the northern boundary, all in Saguenay electoral district.

Two villages are located within the area: Aguanish,  $2\frac{1}{2}$  miles east of the western boundary, and Michon  $3\frac{1}{2}$  miles east of Aguanish.

The southern limit of the area can be reached by fishing boats from Natashquan, which is serviced regularly during the navigation season by ships of the Clark Steamship Company Limited, sailing from Montreal and Quebec.

Travel by canoe is difficult within the area and requires considerable portaging. The southwestern part may be reached from Nabisipi river through the west branch of Aguanus river. Aguanus river crosses the area in a northeasterly direction and provides access to the central and the northern parts. Numerous lakes in the northern half of the area provide suitable landings for float-planes based at Havre St. Pierre and Mingan, 65 and 85 miles, respectively, west of the area.

Topography

The area is relatively flat. The highest point is 586 feet above sea-level and the maximum local relief is about 200 feet.

The area can be divided into two distinct topographic units: the southern coastal belt and the northern half. The coastal belt extends 4 to 7 miles inland and is relatively featureless. The shoreline is intricately indented with numerous small islands and off-shore reefs. Exposures of bedrock occur on the points and islands. Flat terraces consisting of sand underlain by clay are prominent in the coastal belt. Between the terraces along the coast and the northern part of the area the surface is flat except for a few rocky hills. The northern part of the area, underlain mainly by granitic rocks, has a gently undulating surface sloping to the south. The deeper depressions are occupied by lakes, the shapes of which reflect the structure of the underlying rocks. The tops of the hills are bare. The valleys are partly filled by glacial clay, sand and gravel.

### Drainage

Aguanus river drains the central and northeastern parts of the area and Nabisipi river the northwestern and western parts. The main rivers are broad and shallow, particularly in the north, making canoe travel difficult in the drier periods of the summer. The numerous lakes are joined by a series of short falls and rapids.

### GENERAL GEOLOGY

All the consolidated rocks of the area are of Precambrian age. Excluding the large covered sections in the southern part of the area, where little information on the nature of the basement is available, granitic, highly metamorphosed and complexly folded rocks predominate. This complex is intruded by several irregular bodies of massive granite and a few small sills and stocks of gabbro. Pegmatite dykes and sills cut all the rocks and in several places have formed extensive tabular bodies.

TABLE OF FORMATIONS

Pleistocene and Recent		Clay, sand, gravel, erratic boulders
Precambrian	Intrusive Rocks	Pegmatite
		Pink massive granite Microperthite granite
		Gneissic granite Augen granite gneiss
		Gabbro and ortho-amphibolite
	Wakeham Group	Grey micaceous quartzite White quartzite Conglomerate
	Metasedimentary rocks and associated igneous rocks  "Grenville Type"	<u>Banded granitic gneiss</u> Ortho- and para-amphibolite Quartz-mica schist Garnet-biotite schist  Paragneisses with small lenses of crystalline limestone

## Metasedimentary and Associated Rocks

Metamorphosed sedimentary rocks appear to be the oldest rocks of the area. They occur along the coast and the lower sections of Aguanus river. They are either highly granitized or contain a large proportion of igneous material in the form of dykes, sills, lenses, and irregular bodies.

Quartz-biotite paragneiss is the most abundant member of these rocks. It crops out mainly around the village of Michon, and is distinguished from the sedimentary rocks of the northern part of the area by its composition, higher grade of metamorphism, distinct foliation, and pronounced granulose texture. Several small, highly-contorted bands and lenses of crystalline limestone and bands of garnetiferous mica schist occur with the paragneisses in the southern corner of the area.

Banded granitic gneisses are found in the central and southwestern sections of the area, along Aguanus and Nabisipi rivers. They are pinkish grey to medium grey, and have a pronounced gneissic structure formed by alternating quartzofeldspathic layers and thin layers or streaks of hornblende and biotite. In places, innumerable thin sills and lenses of pegmatite accentuate the layering.

### Wakeham Group

Wakeham group rocks occur in the northern part of the area. Grey micaceous quartzite is the predominant member, much of it being in thick massive beds. Several beds of fine-grained, white vitreous quartzite occur north of Le Gal lake. Conglomerate was observed at only one locality, one mile west of the large island on Aguanus river. The rock is a highly weathered, impure quartzite containing pebbles of fine-grained quartz and sericite schist. The pebbles average  $\frac{1}{2}$  inch in diameter.

### Gabbro and Amphibolite

Numerous sills, between 25 and 1,000 feet thick, of hornblende gabbro occur within the Wakeham quartzites. The gabbro is greenish black, massive, and medium- to coarse-grained.

The gabbros occurring in the areas of granitic gneisses are highly altered and schistose. These bodies are generally less continuous than those that intrude the quartzites.

### Gneissic Granite

Gneissic granite is the most abundant rock type in the area. A variety with augen texture occurs in the centre

of the area, around the Nabisipi river, and in several localities along the coast. A gradation from paragneiss through banded granite gneiss to augen gneiss and gneissic granite was observed. The similarity in composition of the paragneisses and the various granitic gneisses suggests that the latter are recrystallized sediments which have been injected and permeated to varying degrees by pegmatitic material.

#### Microperthite Granite

This coarse-grained, deep reddish rock occurs along the coast  $3\frac{1}{2}$  miles east of Michon. It is foliated and, in places, is strongly gneissic. Fluorite is a typical accessory mineral.

#### Massive Granite

A pink, medium-grained, massive granite cuts all the above-mentioned rocks. It occurs usually as small stocks and sills. Quartz, potash feldspar, plagioclase feldspar and biotite are the essential constituents.

#### Pegmatite

Pegmatites are abundant in the area and are of two ages. The earlier intrusions are in lenses and bands along the foliation planes of the granitic gneisses. The later intrusions cut across the older pegmatites; they are coarser grained than the older group and frequently contain 15 to 20 per cent muscovite.

#### STRUCTURAL GEOLOGY

Two major folds were outlined in the area. In the northern part a syncline extends eastward from the western border of the area to Aguanus river, a distance of 7 miles. In about the same latitude, at the eastern border of the area, a possible synclinal structure trends southwest. Interpretation of the relationships here may not be correct; if correct, the stratigraphic succession would differ from that established by earlier workers to the west in other North Shore areas.

Another fold, also synclinal, trends northwest in the west-central part of the area. Its core consists of augen gneiss with a surrounding belt of granitic gneiss.

#### ECONOMIC GEOLOGY

Small crystals of fluorite were observed in the microperthite granite east of Michon.

Magnetite occurs in pegmatites as nodules up to 2 inches in diameter.

Small, disseminated grains of pyrite were noted about  $2\frac{1}{2}$  miles east of Michon. The mineralized zone occurs in quartz paragneiss and is about 15 feet wide and 2,000+feet long. An assay (2) of the zone gave values of 0.002 oz. gold and 0.054 oz. silver per ton and 0.07 per cent copper.

No important mineral occurrences were found in the area. However, the presence of mineralization in a variety of sedimentary and igneous rocks indicates that the area warrants some attention.

#### REFERENCES

- (1) Blais, R., (1955) Pashashibou Area, Drucourt and Costebelle Townships, Saguenay County. Que. Dept. Mines, Preliminary Report No. 316.
- (2) Claveau, J., (1950) North Shore of the St. Lawrence from Aguanish to Washicoutai Bay, Que. Dept. Mines, Geol. Rept. 43, p. 35.