

CHALEUR BAY



LEGEND

Concentration of silver, less than 0.5 ppm
in stream sediments..... 1

Concentration of silver, 0.5 to 0.9 ppm
in stream sediments..... 2

Concentration of silver, 1 ppm or greater
in stream sediments..... 3

Location of known mineral occurrences
(Symbols indicate principal metals)

Mining properties (see index below)..... 4

Metal Symbols

Arsenic..... As	Molybdenum..... Mo
Antimony..... Sb	Nickel..... Ni
Barium..... Ba	Silver..... Ag
Copper..... Cu	Tungsten..... W
Gold..... Au	Tin..... Sn
Manganese..... Mn	Zinc..... Zn
Lead..... Pb	Uranium (limonite, pyrite, etc.)..... U

Note: An (A) after the symbol indicates that the mineralization was observed in float. A (?) after the symbol indicates that the location is approximate or uncertain.

- Index to Mining Properties and Prospects**
1. Anacosta Co. (Canada), Ltd.
 2. Great Northern Development Corp., Ltd.
 3. Tetagouche Exploration Co., Ltd. (Orvan Brook)
 4. Anacosta Co. (Canada), Ltd. (Rocky Turn Group)
 5. Anacosta Co. (Canada), Ltd. (Armstrong 'A' deposit)
 6. Anacosta Co. (Canada), Ltd. (Armstrong 'B' deposit)
 7. Quebec Sturgeon River Mines, Ltd. (Hessey and Bush deposits)
 8. Millstream Iron deposit
 9. Boreador copper deposit
 10. Nigadoe River Mines, Ltd.
 11. Keynet mine
 12. East Ventures, Ltd.

Field work by: W. M. Taylor, M. Zimmlin, G. Friedrich, M. Carter, E. Higgins, N. Shufeldt, R. Bourassa, D. Pichay, L. W. LeRoy, P. Martel, W. Warren, W. Taylor, I. Cornier, and E. T. LeVere.

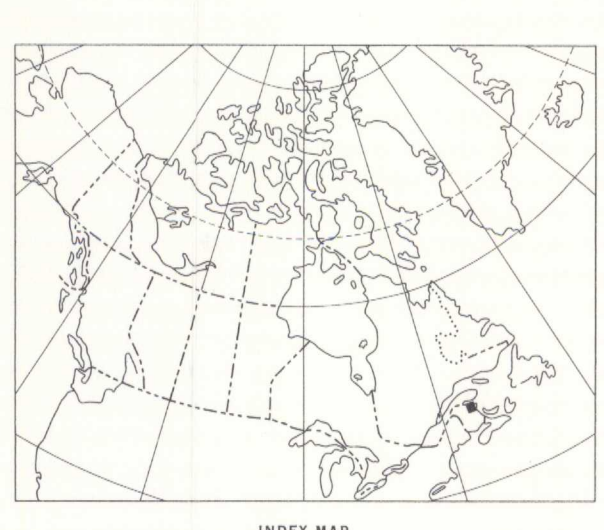
Analyses by: C. Durham

Geological cartography by the Geological Survey of Canada, 1965

- Other roads..... 5**
- Cart track..... 6
- Trail or portage..... 7
- Railway..... 8
- Station and stop..... 9
- Post office..... 10
- Lighthouse..... 11
- Power transmission line..... 12
- Horizontal control point..... 13
- Survey monument..... 14
- County or district boundary..... 15
- Township or parish boundary..... 16
- Indian Reserve boundary..... 17
- Intermittent stream..... 18
- Stream (position approximate)..... 19
- Roadside falls..... 20
- Freshwater, tidal flats..... 21
- Reef, rock or small island..... 22
- Marsh..... 23
- Wharf or pier..... 24
- Sand or gravel..... 25
- Height in feet above mean sea-level..... 26

Base-map compiled and drawn by the Survey and Mapping Branch, 1954, 1956

Approximate magnetic declination, 24° 03' West, decreasing 1.7" annually



DESCRIPTIVE NOTES

Geological

South of a line following the Millstream River and eastward through Tetagouche Lake, the area is underlain mainly by the Ordovician Tetagouche Group comprising a series of completely folded and sheared metasediments, metavolcanics, and metabasic intrusions. These are intruded south of Bathurst by a granitic mass.

North of the Millstream River the rocks are mainly of Ordovician, Silurian, and Devonian age. The Elmer Group, of probable Ordovician age, is composed of folded and contorted metasediments and some metavolcanics which are intruded by a granitic stock in the vicinity of Antwerp Lake. The Silurian and Devonian rocks comprise both sediments and volcanics that are faulted in places, gently folded, and on the whole are less metamorphosed than the older rocks in the district. In the Stibulac Dike area the Silurian rocks are intruded by a granitic stock that has an associated metamorphic aureole in which the rocks are mainly hornfels and schists. Another granitic stock intrudes Silurian volcanic rocks along South Benjamin River.

East of Sturgeon River the area is underlain by the Pennsylvanian Bathurst Formation. These rocks are mainly siltstones, sandstones, shales, and conglomerates that dip gently eastward.

Flat-lying conglomerates and sandstones (Boreador Formation), mostly of Triassic age, underlie Heron Island and fringe the coast in the Jacques River area.

Glacial till, sand, and gravel mantle the whole district, and recent post-glacial sands and clays cover much of the area around Bathurst Harbour and occur in the shore section at Jacques River.

The principal mineral deposits in the area are massive, vein, and disseminated deposits containing essentially iron, zinc, lead, and copper sulphides. Tetrahedral and galena are the principal silver-bearing minerals in these deposits. Malachite occurrences are associated with the Bathurst, Nicholas Wap, and Antwerp Lake granitic bodies. The text of the paper accompanying this map should be consulted for further details on the geology and economic geology of the district.

Geochemical

The analyses recorded on this map were done on samples of sediment collected from the channels of rivers and streams and from rivulets flowing from springs. Where possible the active channels were sampled, but in a few cases the residual sediment of dried-up streams was used. In muskeg areas and in streams where beaver workings are present the sediment contained abundant decomposed organic matter, to 150 mesh, and analyzed for silver by the spectrographic method outlined in the text of the paper accompanying this map. The values are expressed in parts per million. The subdivisions used on the map are arbitrary and based on experience in the district. The lowest subdivision can be taken to represent the background.

All streams and rivers were traversed on foot, and the stream sediments were collected, where possible, at intervals of 1,000 feet.

The silver content of the sediments ranges from less than 0.5 to 200 ppm. The background for the whole district is less than 0.5 ppm.

Only a few of the known sulphide deposits in the district are marked by higher than normal amounts of silver in the neighbouring stream sediments. Examples are Rocky Brook (Quebec Sturgeon River Mines) and Elmer River (Keynet mine).

Numerous examples of streams with sediment containing higher than average amounts of silver occur in virgin areas and are unaccounted for by known deposits or containing agencies. Some of these may indicate the presence of sulphide deposits containing silver minerals. A few of the more important streams that should receive further investigation are the tributaries of Forville Brook, stretches of the South Tetagouche River, the upper part of Middle River, a number of streams and tributaries of the Nigadoe, Millstream, and Elmer River systems, Fourrier Brook, Galt Brook, Quillard Brook, Hendry Brook, stretches of Bellefleur River, and its tributaries, the streams in the St. Berns Lake area, Hays Gulch, and Falls Gulch Brook. Many of the anomalous dispersion trains of silver are short, and a number of isolated anomalies occur throughout the district.

There is a general correlation of the silver contents of the sediments with those for arsenic and a frequent correlation with lead, zinc, copper, antimony, and manganese.

The presence of abundant manganese hydroxides and oxides (Map 44-1965) may be a factor in the localization of silver in some of the anomalous streams. Manganese hydroxides (and oxides) adsorb and/or incorporate silver and hence may give false anomalies. There are also indications that silver is strongly adsorbed by organic matter, and many of the isolated high values may be due to this phenomenon. Both these features should be carefully considered when evaluating all anomalies on this map.

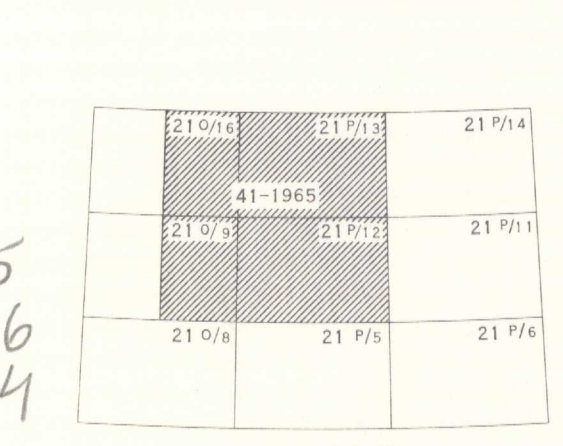
The silver contents of the stream and spring sediments shown on this map should be compared with those for heavy metals in water on Map 23-1965, and also with the contents of individual elements in stream sediments on Maps 34-1965 to 44-1965 inclusive.

Published, 1966. Copies of this map may be obtained from the Director, Geological Survey of Canada, Ottawa.

MAP 41-1965
PAPER 65-42
**SILVER CONTENT OF STREAM AND SPRING SEDIMENTS
BATHURST-JACQUET RIVER DISTRICT
NEW BRUNSWICK**
Scale 1:63,360
1 inch to 1 mile
Kilometres 1 2 3 4 5 Kilometres

ESIC CIST
OCT 8 1966
Earth Sciences Sector
Secteur des sciences de la Terre

MAP LIBRARY / CARTOTHEQUE
MAY 29 1967
BRANCH 41-1965
MAP LIBRARY



41-1965