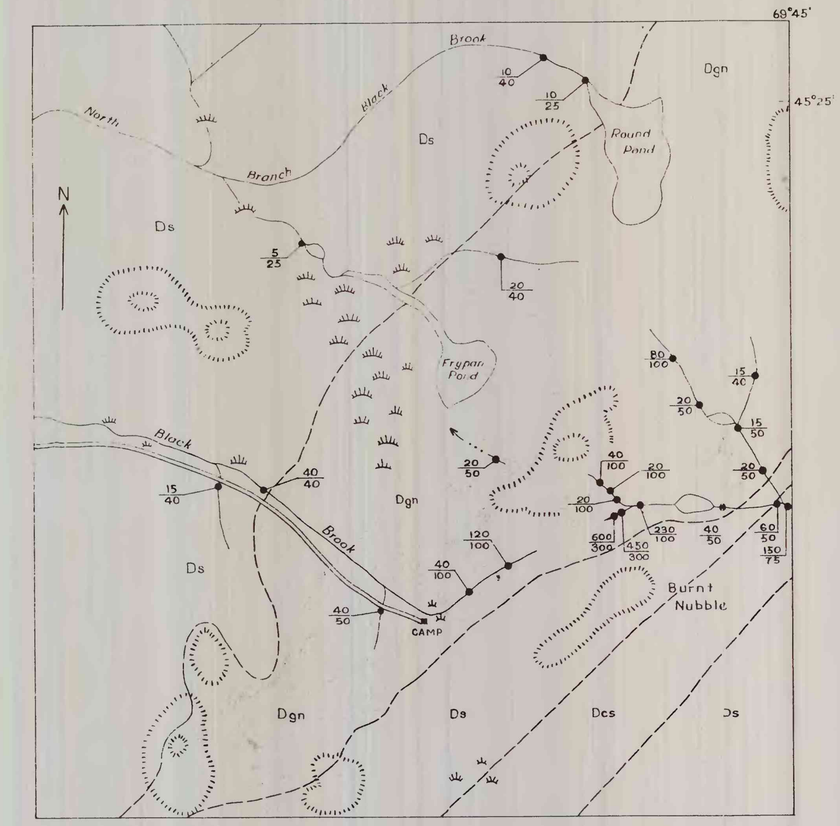


Base adapted from U.S. Geological Survey Topographic quadrangle: The Forks, 1956,

Geochemical sampling by F. C. Canney and E. V. Post. Geology by E. V. Post

EXPLANATION

DEVONIAN(?)

Dgn

Gabbro-norite, principally norite

Ds

Slate and quartzwacke, contact-metamorphosed within 1,000 feet of gabbro

Dcs

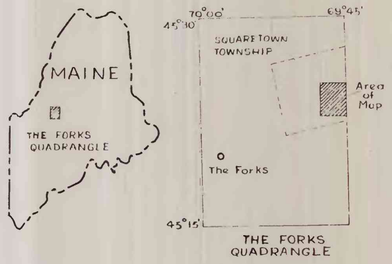
Calcareous slate, calcareous metasiltstone, and noncalcareous slate

Contact
Dashed where approximately located

20
40

Location and metal content of sediment sample
Upper figure is ppm cobalt
Lower figure is ppm nickel
(Analysts: G. A. Nowlan, G. H. Van Sickle, and K. Leong)

Reconnaissance geochemical sampling in The Forks quadrangle in 1960 and detailed sampling in 1962 suggest that a small area north of Burnt Nubble in the southeastern quarter of Squaretown (T. 2 R. 5 B.K.P.E.K.R.) may be above average in mineral potential. This conclusion is based on the discovery of a major cobalt-nickel drainage anomaly in a stream that drains the southeastern margin of a large sheet-like mass of gabbro-norite. The area of the anomaly is considered favorable geologically for the occurrence of a mineral deposit containing nickeliferous and cobaltiferous sulfides. The index maps below show the location of the area covered by this study.



Samples of fine-grained active stream sediment were collected at the sites shown on the accompanying map. After drying, the samples were sieved through a 250-micron sieve and the fines analyzed for copper, lead, zinc, cobalt, nickel, manganese, chromium, cold acid-extractable copper, and citrate-soluble heavy metals. Because the most significant variations are in the cobalt and nickel contents, only these data are shown on the map. The analytical procedures used were those described by Ward and others (1963).

Chemical evidence suggests that the anomalous pattern of cobalt and nickel contents is possibly related to an oxidizing sulfide body, rather than to the erosion of a mass of ultramafic rock with its characteristically high content of cobalt and nickel. This evidence includes: (1) a relatively high cobalt to nickel ratio in the anomalous samples, (2) a high extractable-cobalt to total cobalt ratio, and (3) samples containing anomalous amounts of cobalt and nickel are relatively low in chromium.

Reference

Ward, F. N., Lakin, H. W., Canney, F. C., and others, 1963, Analytical methods used in geochemical exploration by the U.S. Geological Survey: U.S. Geol. Survey Bull. 1152, 100 p.

This report is preliminary and has not been edited or reviewed for conformity with Geological Survey standards or nomenclature.

PRELIMINARY GEOCHEMICAL AND GEOLOGICAL MAP OF PART OF SQUARETOWN, SOMERSET COUNTY, MAINE

BY
F. C. CANNEY AND E. V. POST

1963