



GEOLOGICAL
SURVEY
OF
CANADA

DEPARTMENT OF MINES
AND TECHNICAL SURVEYS

PAPER 64-4

NOTES ON AN ULTRAMAFIC BODY NEAR
PAYNE BAY, NEW QUEBEC

Part of 25 SW

(Report and one figure)

I. M. Stevenson

This document was produced
by scanning the original publication.

Ce document est le produit d'une
numérisation par balayage
de la publication originale.



GEOLOGICAL SURVEY
OF CANADA

PAPER 64-4

NOTES ON AN ULTRAMAFIC BODY
NEAR PAYNE BAY, NEW QUEBEC
Part of 25 SW

By
.
I. M. Stevenson

DEPARTMENT OF
MINES AND TECHNICAL SURVEYS
CANADA

ABSTRACT

A peculiar elliptical-shaped body of peridotite and related gabbroic-type rocks intrudes a syncline of metamorphosed volcanic and sedimentary rocks near Payne Bay, New Quebec. The intrusive body contains some copper and nickel sulphides.

NOTES ON AN ULTRAMAFIC BODY NEAR
PAYNE BAY, NEW QUEBEC

The presence of a peculiar elliptical structural feature near the mouth of Payne River, immediately northeast of the Hudson's Bay Company post at Payne Bay, New Quebec, is indicated by regional gravity studies of the Dominion Observatory in this area. This elliptical feature is shown as a high positive anomaly on the regional gravity map that will accompany a report now in press¹. Subsequent examination of air photos and ground studies have outlined a northwest-trending, oval-shaped body of intrusive rock exposed at the surface over an area of some 30 square miles.

Late in August, 1963, two north-south traverses were flown across the feature by helicopter at the conclusion of Operation Leaf River². Because of extremely inclement weather, examination of the intrusive body was limited to several landings and the collections of a few specimens of bedrock.

The most prominent rock-type is apparently a dense, massive, dark green to black peridotite that weathers a dull brown on the surface. Under the microscope, the principal minerals are identified as olivine (40%), clinopyroxene (50%), and plagioclase (10%). Locally, the peridotite varies to massive gabbro. The outstanding feature of the peridotite is the extreme freshness of the olivine, relative to that in ultramafic bodies found elsewhere in "Trough" rocks to the south.

The ultramafic body has intruded a syncline of metamorphosed sedimentary and volcanic rocks of Proterozoic age, previously described by Gross³.

Several gossan zones were noted in the basic intrusive rocks. A semi-quantitative analysis by X-ray fluorescence of a grab sample from one of these zones yielded the following values: Ni (0.7%); Cu (0.1%); Co (0.05%); Fe (high).

The feature warrants additional investigation, and a joint examination of the area by the Dominion Observatory and the Geological Survey is planned during the 1964 field season.

- ¹The Gravity Anomaly Field in the Ungava Region of New Quebec; Gravity Map Series, Nos. 5 and 6, Dominion Observatory, Jan. 1964 (in press).
- ²Stevenson, I.M.: Operation Leaf River; in Summary of Activities; Field, 1963, compiled by S.E. Jenness; Geol. Surv. Can., Paper 64-1, pp. 57-58 (1964).
- ³Gross, G.A.: Iron Formations and the Labrador Geosyncline, Quebec-Newfoundland; Geol. Surv. Can., Paper 60-30, 1960.

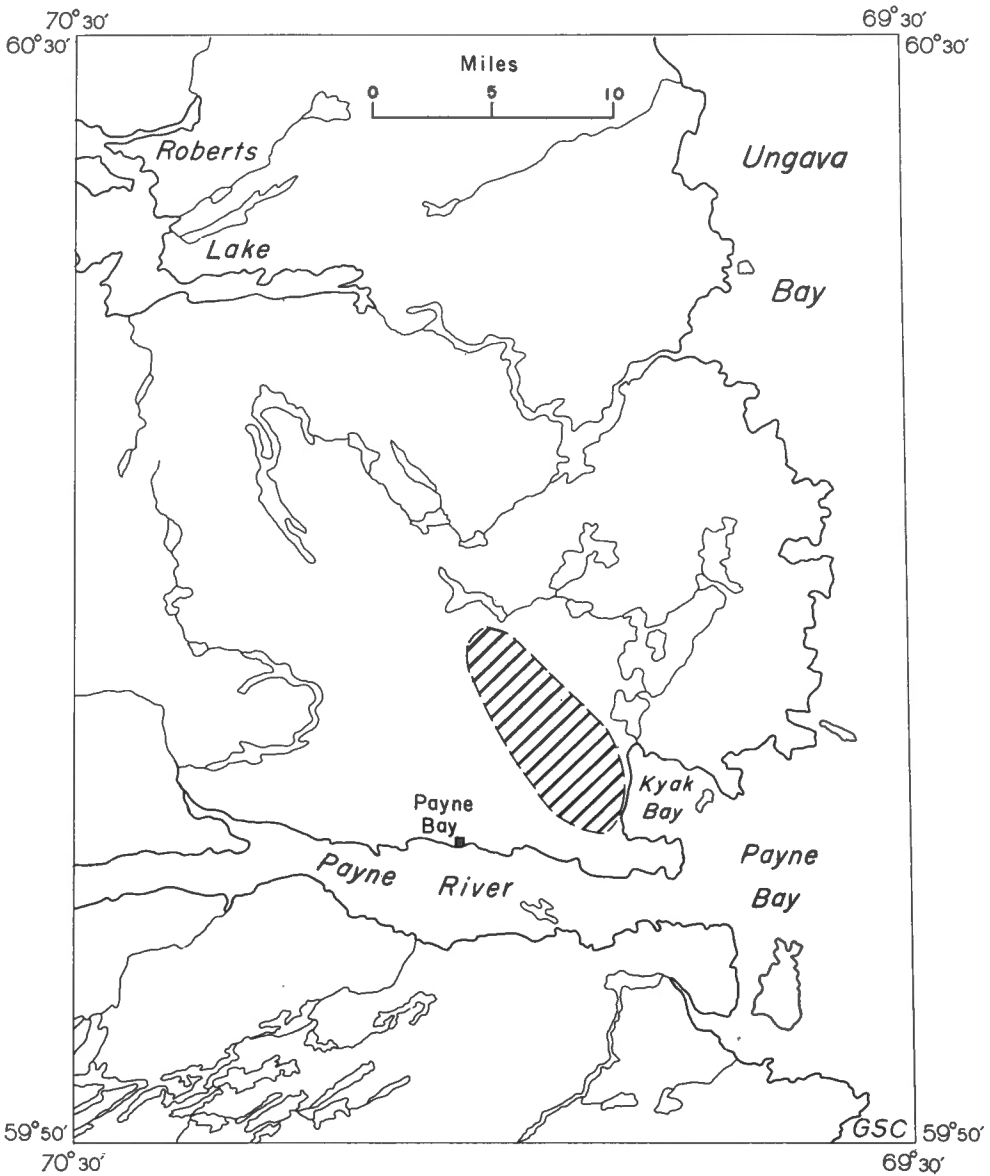


Figure 1. Sketch map showing location of ultramafic body near Payne Bay, New Quebec

ROGER DUHAMEL, F. R. S. C.
QUEEN'S PRINTER AND CONTROLLER OF STATIONERY
OTTAWA, 1964

Price 35 cents Cat. No. M44-64/4