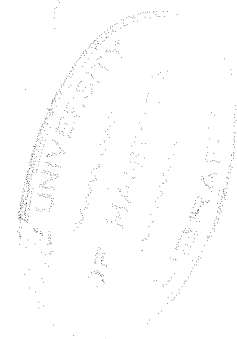


GEOLOGICAL INVESTIGATIONS OF THE LYNN LAKE
BASIC INTRUSIVE BODY NORTHERN MANITOBA

A Thesis
Presented to
the Faculty of the Graduate School
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Master of Science

by
Hugh Edwards Hunter
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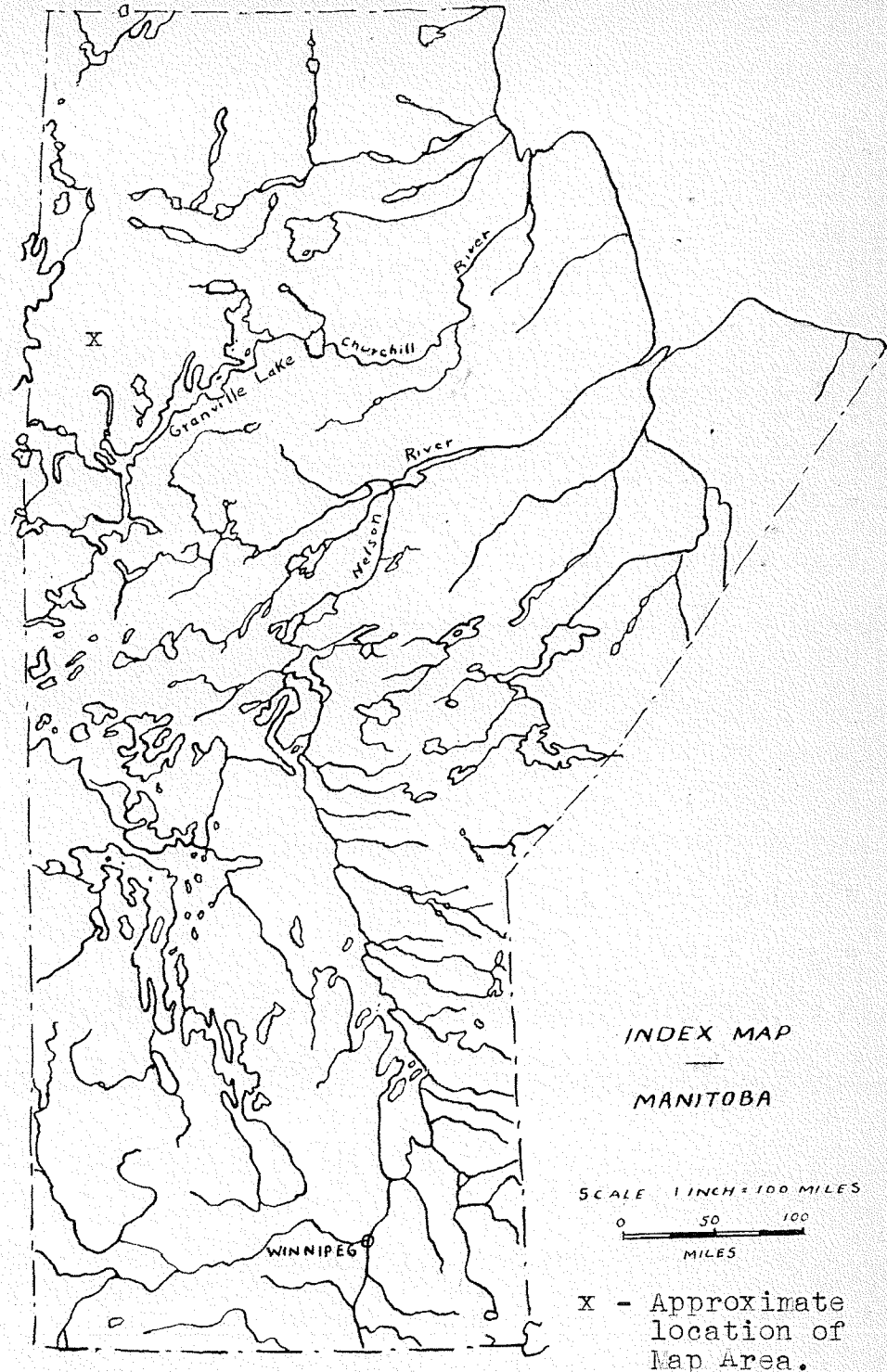


Figure 1.

from Sherridon during the winter months. A water route for canoe travel extends from Sherridon to Lynn Lake, but the route is long and numerous portages make it impractical.

Topography

The topography of the map area is typical of most of the Precambrian terrain of the region. Relief is low, but alternating ridges and low ground give the country a rugged appearance. Outcrops are few and the ridges are mainly of glacial drift, sand, and boulders. Few of the ridges rise more than 50 feet above the surrounding muskeg except several high ridges of sedimentary rocks in the eastern part. Within the area covered by the intrusive body, the ridges are more or less parallel, and trend generally from north 10 degrees east to north 30 degrees east.

Areas of low ground, swamp, and muskeg lie between the ridges and cover extensive parts of the east and south of the map area. The western part of the intrusive body is marked by low ground, and Lynn Lake lies in the southwest corner of this part.

Within the area of the intrusive body, outcrops are rare and are confined mainly to several large ridges. A few scattered outcrops occur on the smaller ridges and within the muskeg. Outcrops are more plentiful near the north contact, and the area of the bordering volcanic and sedimentary rocks.

History of the Area

In 1940 Austin McVeigh, prospecting for Sherritt Gordon Mines, Limited, found a small occurrence of sulphides on an isolated outcrop about 200 feet north of Lynn Lake. Assays made of the sulphides showed a fair nickel and low copper content.

The discovery was not publicized as it was not possible to secure men, materials, and transport facilities for development in war time. In 1945 claims were staked in the Ralph Lake-Lynn Lake area, and a diamond drill was flown in. A magnetic anomaly outlined by Austin McVeigh near Ralph Lake proved to be magnetite, and the drill was moved to Lynn Lake where a weak magnetic anomaly had been outlined near the original sulphide showing.

The first drill hole encountered low value sulphides and the second was abandoned owing to the difficulty of penetrating the overburden. The third hole intersected 100 feet of ore-grade sulphides. Extensive staking was started and continued over the freeze-up period. After freeze-up, men and materials were flown in, and construction was begun on a 160 mile tractor road from Sherridon. Heavy machinery and building materials, including prefabricated camp buildings, were transported over this route.

Exploration and development have been carried on since 1945. The sinking of a five compartment shaft on the 'A' ore body was begun on June 20th, 1948, and was

completed to a depth of 1024 feet by July 3rd, 1949. To January 1950, a total of 205,000 feet of surface diamond drilling, and 27,100 feet of underground drilling had been done, and 3200 feet of underground workings had been completed. Five ore bodies have been outlined and to date more than 11,000,000 tons of ore have been blocked out.

Previous Geological Work

Prior to 1912, only rapid reconnaissance surveys of the Granville Lake district had been made near the main water routes. After this date more detailed reconnaissance work was done south of the Churchill River. In 1932 a detailed reconnaissance survey of the Granville Lake district was begun by J. F. Henderson and was continued in 1933 by G.W.H.Norman, and in 1935 by D.L.Downie.

The results of the surveys of Henderson, Norman and Downie, were included in the Geological Survey of Canada, Summary Report, 1933, Part 'C', and in Maps 343A and 344A, the west and east half of the Granville Lake Sheet respectively, issued by the Department of Mines, Ottawa, on a scale of 1 inch to 4 miles. The Lynn Lake area is included in the west half of the Granville Lake sheet.

A group of five map sheets, covering an area approximately 47 miles East-West and 17 miles North-South, including the Lynn Lake area and extending eastward, was mapped by the Manitoba Mines Branch during the summers of 1946-48 inclusive. The Lynn Lake area was mapped by J.D.