NOVA SCOTIA
DEPARTMENT OF MINES

GEOLOGY AND TRACE ELEMENT STUDIES OF MANGANESE OCCURRENCES IN NOVA SCOTIA

D. G. Bishop and J. D. Wright

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PREFACE

Manganese deposits have been known and worked in Nova Scotia since 1862. A considerable amount of geological and chemical work has been done from time to time in the manganese-bearing districts of Nova Scotia, much of it by geologists of the Geological Survey of Canada, and other geologists and engineers. Many of the manganese deposits were developed by pits, shallow shafts, and trenches. The peak production was reached in 1870 when 1,256 tons of manganese ore was produced.

For several years it has been known that manganese minerals are found in certain geological environments. Some manganese oxides are only found near the surface in a shallow zone in which waters of surface origin circulate; other oxides are deposited in surface basins on the continents or in marine basins; most of the other manganese minerals, carbonates and silicates occur in veins that have formed from hot waters that have risen from depth.

This report is based on field and laboratory investigations commenced in 1967 on the more important manganese occurrences in Nova Scotia. The purpose of the study is to obtain and record information relative to the deposits with a view of establishing geological and other criteria of value in judging the possible extension of ore occurrences.

Recent studies, using several kinds of data, especially the content of trace elements indicated by semiquantitative spectrographic analyses and the assemblages of minerals associated with the manganese oxides, suggest that some of the vein type manganese deposits are not derived from local surficial sources but were deposited by hydrothermal solutions rising from great depths.

It is hoped that the information contained in this report will help in buiding future exploration, evaluation and development of some of the manganese deposits.

F. S. Shea
Director of Mineral Resources
and Geological Services

Halifax, June 12, 1973

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