

CHAPTER I

INTRODUCTION

Introductory Statement

This report is intended to direct attention to areas in Antigonish, Pictou, Guysborough and Cumberland Counties where commercial grades of limestone and dolomite occur, and to indicate briefly, in part, the potential that still exists for outlining additional economic deposits. Diamond drilling will be necessary in most locations for further investigation.

This coverage of the four counties involves both a surface examination of known and previously unknown limestone and dolomite occurrences and preliminary diamond drilling programs. This work constitutes part of a full inventory of occurrences in areas underlain by these limestones and dolomites throughout mainland Nova Scotia, to be published at a later date.

The limestones described in this report follow the format proposed by Bell (1929). He introduced five main subzones, A, B, C, D, and E, with Subzone A being the base of the Windsor Group of rocks and the E Subzone being the youngest limestone bed in the succession. The subzones are based on the fossil content of the individual limestone beds. Stacy (1953) later modified Bell's work and divided the subzones even further, i.e., A₁, A₂, B₁, B₂, B₃, etc. These were divided on the basis of fossil content or on some particular characteristic which is restricted essentially to a specific limestone bed.

Some of these later divisions by Stacy (1953) cannot be considered strict time boundaries, but are more likely due to a change in environmental conditions within an area. These divisions, however, are useful for describing different limestone beds in this report.

Purpose of Survey

The primary purpose of this inventory of limestones and dolomites is to produce an assessment of Antigonish, Pictou, Guysborough and Cumberland Counties comparable to that which has been completed on Cape Breton Island (Bulletin No. 2, 1969). Pertinent data covering location, extent, structure and characteristics are recorded herein. To these data have been added results of the analyses of all samples taken.

A preliminary drilling program to supplement the surface inventory was carried out in selected areas, guided primarily by economic considerations.

Sampling Procedure

Analyses of a total of 89 surface samples taken from limestone and dolomite occurrences constitute part of this report and are included in the section dealing with

individual outcrops and occurrences.

Some samples were omitted from this report because of their high silica content. Deletion of these causes a break in the sampling sequence in some locations.

All samples collected and analyzed are coded; first by letters indicating the area from which the sample was taken, followed by two numbers. The first number denotes the occurrence and the second number denotes the number of samples taken from that occurrence. As an example, consider sample SAH-1-2. The code indicates that this sample was taken in the Southside Antigonish Harbour area, on the first occurrence examined and second sample taken. All locations of samples taken are recorded by longitude and latitude in Appendix B with reference to the National Topographic Series, scale 1:50,000.

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Scope of Investigation

The investigation of limestone and dolomite occurrences in Antigonish, Pictou, Guysborough and Cumberland Counties began during the latter part of 1966 and was completed during 1968. Field work was directed primarily towards surface inventory of known and previously unknown occurrences. Samples taken from these various occurrences or outcrops were analyzed, each showing described and the geology studied. Where good quality stone was found with possible tonnages of significance, a preliminary drilling program consisting of two or more drill holes was undertaken. Drilling has been done only in Antigonish and Pictou Counties. All limestone and dolomite cores from such holes were analyzed and then stored at the Department of Mines building in Stellarton.

Preliminary data and regional geological references were obtained from the old and new series geological maps and reports published by the Geological Survey of Canada.

Field staff involved in this survey consisted of one two-man party which carried out all preliminary field work. Personnel making up this field crew were Department of Mines staff and geology students employed from universities in Nova Scotia.