

5. GEOLOGY.A. REGIONAL GEOLOGY:

Regional geology of the area is covered in detail by Jennings (1963), and will be dealt with in the report on regional exploration. Two 1 inch to 1 mile geological map sheets cover the area: Middlesex, (Jennings and Burns, 1958) and Sheffield, (Jennings et al, 1959).

B. GENERAL GEOLOGY OF AREAS IN THIS REPORT:

The oldest rocks are a sequence of complex Cambrian acid volcanics, pyroclastics and clastic rocks which outcrop just east of the sheet 1 area. They will be dealt with in detail in later reports.

Unconformably overlying the Cambrian succession are Ordovician Roland Conglomerate, Moina Sandstone and Gordon Limestone.

The Roland Conglomerate is a continental or shallow marine rock composed chiefly of cobbles of quartzite with a sandy-silty matrix. It is often silicified.

Moina Sandstone is a shallow marine or near-shore deposited quartz sandstone and siltstone, which passes upwards through about 5 to 10 metres of interbedded limestone, calcareous sandstone and calcareous or dolomitic siltstone into Gordon Limestone.

The Gordon Limestone is a fairly pure bluish grey limestone with some silty layers especially near its base. In the Moina area it shows bedding disturbed by burrowing organisms, and lacks macro fossils. The fluorite skarns of the area are metasomatic replacements of the Gordon Limestone.

The Ordovician rocks have been folded probably during the Silurian into broad open folds with E-W and NW - axes, with an associated series of NW trending fractures.

During the Devonian the Dolcoath Granite was passively emplaced. It outcrops in the Forth River Valley but a gravity survey (Sheehan, 1969) indicates that it extends subsurface in an elliptical shape with Stormont at its north west edge and Campbell's Reward Mine at the south-east edge. The granite is spatially and genetically associated with various types of tin-tungsten-bismuth-fluorite and possibly silver-lead and gold mineralization in the area. It has been dated with K-Ar methods at 345 million years by McDougall and Leggo. (Webb, 1974).