

GENERAL GEOLOGY

The Foxe and Committee Fold Belts extend in an east-northeast direction from southern Melville Peninsula to central Baffin Island. They are composed of granitoid gneissic rocks...

The Archean rocks form a basement complex predominantly of granitoid gneiss (Aggn), layered quartz-feldspathic gneiss (Ag1) and foliated granitic rocks (Ag2, Ag3, and Ag4)...

Amongst the gneissic rocks of the complex are presumed to be some that form the basement to the Prince Albert Group but unconformably overlain by the Penrhyn Group...

The Penrhyn Group consists of paragneiss (An, Anq, Anr) and marble (Am) with some quartz-mica schist (Anq) and calc-silicate gneiss (Anq).

The Penrhyn Group appears to lie unconformably on the basement complex. Tectonism has obliterated any angular discordance and unconformable relationships are inferred because of the clear lithologic contrast...

Polypase structures indicating numerous episodes of deformation of the basement complex, the Prince Albert Group and the Penrhyn Group exist throughout the two fold belts...

Later episodes of folding produced prominent meso- and megascopic folds that impose an east-northeast structural grain on the Foxe Fold Belt. Trough to nearly isoclinal recumbent structures are folded by later nearly coaxial, nose open, upright to overturned folds...

In numerous places gneissic bodies of the basement complex can be seen to lie on and possibly within the Penrhyn Group. Such relationships suggest either the presence of large allochthonous nappes or smaller scale, locally overturned folds and thrust faults.

The time of movement of the basement masses is uncertain but as they are folded about north-trending axes, they are presumed to have been emplaced during the early deformation of the Penrhyn Group.

North to northeasterly trending broad transverse flexures alter the plunges of pre-existing folds. Few mesoscopic structures associated with this phase were observed. It may be related to syn- and post-tectonic plutonic intrusion.

Metamorphism is believed to have accompanied all phases of deformation up to the late northeasterly trending open folding. It possibly reached its zenith during the preceding northeasterly trending isoclinal phase, but mineral recrystallization outlasted much of the penetrative deformation.

Available results of radiometric analyses indicate formation of the basement complex prior to 2500 Ma ago, with some events occurring possibly as long as 2200 Ma ago (R.K. Manless, personal communication, 1976). Acid volcanic rocks of the Prince Albert Group on the west side of Melville Peninsula have yielded a preliminary

date of about 2700 Ma (R.K. Manless, personal communication, 1977). Deformation of the basement complex and the Penrhyn Group may have taken place 2150 Ma ago (Jackson and Taylor, 1972) and again during the Huronian orogeny (circa 1700 Ma ago).

Post-tectonic plutons (1600 Ma old, Heywood, 1967) were emplaced into the fold belt late in the orogenic history.

These folds belts suffered polyphase deformation and metamorphism mostly during the Huronian orogeny. Generation and emplacement of plutonic rocks preceded, accompanied and followed deformation.

Diabase dykes of presumed late Proterozoic age cut older rocks. The Archean rocks form a basement complex predominantly of granitoid gneiss (Aggn), layered quartz-feldspathic gneiss (Ag1) and foliated granitic rocks (Ag2, Ag3, and Ag4)...

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LEGEND - LÉGENDE table listing symbols and descriptions for roads, landmarks, boundaries, and relief features.

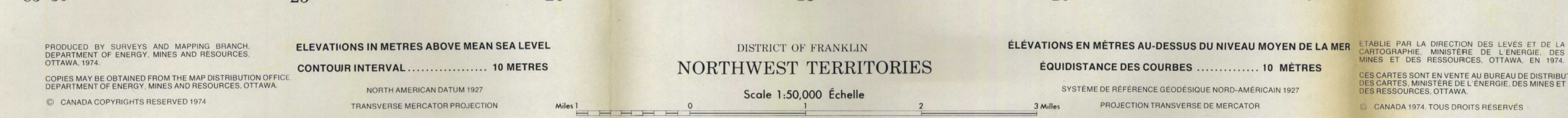
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