

DESCRIPTIVE NOTES

The Caledonia Mountains of pre-Carboniferous rocks extend across the northwestern part of the area and are flanked on the seaward side by a lowland underlain by softer Carboniferous sedimentary rocks. The upland surface lies 1,000 to 1,250 feet above sea-level, and is gently rolling but is deeply dissected by V-shaped valleys that pass gradually into gentle, swampy depressions in their upper reaches. The southeast side of the Mountains is for the most part steep, and its margin coincides with the edge of the area of pre-Carboniferous rocks. The part of the bordering lowland lying north of Shepody River slopes irregularly seaward, rising to form conspicuous hills at a few places. South of Shepody River the lowland ridges and intervening valleys trend northeasterly. The valleys are marshy and are only slightly above sea-level.

The oldest rocks (1) of Caledonia Mountains are similar to the rocks underlying the Cambrian in the southwestern part of Saint John, and are believed to be Precambrian in age. They consist of an unknown thickness of acid, and basic lavas, and tuffs that are for the most part highly schistose. Small thicknesses of quartzite, conglomerate and quartz sericite schists of sedimentary origin occur as narrow belts associated with the volcanic rocks, as if interbedded with them in one series. The widest of these belts is about 1/2 mile in width and extends slightly south of west across Fortyfive and Upper Salmon Rivers.

The bodies of quartz diorite (2) and albite granite (3) occurring on Caledonia Mountains are pre-Carboniferous and may be either of Precambrian or Palaeozoic, possibly Devonian age. In places the diorite grades into the granite but in other places granite dykes cut the diorite. Two types of granite are about equally prevalent. One type contains nearly 20 per cent biotite and hornblende whereas the other is practically free from ferromagnesian minerals. The intrusive rocks are foliated and in places are schistose. In places and more particularly near the larger intrusive bodies, the volcanic rocks have been invaded by numerous sill-like, granitic bodies. Dark, augite andesite dykes cut the other pre-Carboniferous rocks.

The earliest Carboniferous rocks (4) belong to the Windsor series. They comprise limestone and gypsum, probably interbedded with red shale and are poorly exposed in a limited area near Lockhart Lake. The Windsor series is overlain by the red shales and sandstones of the Maringouin formation (5) and probably the two are conformable as they are in Maringouin peninsula a few miles to the east. The Maringouin is conformably succeeded by the Shepody (6), Enragé (7) and Boss Point (8) formations. The base of the Shepody is arbitrarily placed immediately below the lowest bed of grey sandstone. Fine-ribbed *Calamites* with *Estheria* and *Lepta* occur sparingly in the Shepody and indicate that the formation is of Pennsylvanian age. The Boss Point formation carries a *Whitlessya desiderata-Neuropteris schlehani* flora of early Westphalian and lower Pottsville age. The Enragé formation is non-fossiliferous, about 500 feet thick and is poorly exposed. The grey sandstones and associated strata of the Boss Point are of uniform character throughout the district except for a slight increase to the northeast of quartz pebble conglomerate interbeds in the basal part. Sedimentation seems to have been continuous from Windsor into Boss Point time during which interval the marine sedimentation of the Mississippian epoch gave way to non-marine deposition. This does not appear to have been the case closer to the edge of Caledonia Mountains. There the pre-Carboniferous rocks are bordered either by the Boss Point formation or by the Hopewell strata, a few miles northeast of Albert, in Hillsborough map-area, are believed to rest unconformably on Windsor beds north of Shepody Mountain. Their relations to the Windsor strata or to the Maringouin and Shepody formations cannot be determined in Albert map-area. The Hopewell beds are succeeded, apparently conformably, by Boss Point strata but it may be that sedimentation was interrupted. In Hillsborough map-area, the Hopewell in one locality carries thin limestone interbeds holding marine fossils considered to be Upper Windsor in age. The strata of this group probably vary in age from place to place. In some localities deposition appears to have commenced in late Windsor time, in others it may have commenced in Maringouin, Shepody, or even Enragé time. The Hopewell strata were deposited in an area adjacent to Caledonia Mountains where sedimentation appears to have been interrupted as a result of uplift of the Caledonian massif, while to the east and south sedimentation continued uninterrupted from early Windsor into Boss Point time.

The Triassic rocks (10) are bright red and loosely cemented. The conglomerates contain small well-rounded pebbles of white quartz, granite and volcanic rocks. The Triassic strata are apparently faulted down against the Carboniferous rocks but the faults are concealed by sand and gravel.

The unconsolidated deposits of the area are ground moraine, fluvio-glacial sands and gravels and recent tidal deposits. Ground moraine and in places fluvio-glacial sands and gravels cover most of the rocks except along streams and the coast and in road cuts. Cross-bedded sands and gravels occur along the north side of Shepody valley.

The Precambrian rocks acted as a solid buttress against which the Carboniferous rocks were folded and faulted. Part of this deformation occurred after the deposition of Boss Point strata and before that of the Grand Anse formation which is of Pennsylvanian age and rests with gentle dips unconformably on folded Boss Point beds at the east side of Shepody Bay. The folds and faults extend northeastward parallel to the Caledonia upland. Near Albert the folds merge into a monoclinical structure that forms the south limb of the Minudie anticline which extends eastward from Albert for at least 25 miles into Cumberland County, Nova Scotia.

The mineral occurrence on Upper Salmon River consists of carbonate veins carrying pyrite, sphalerite, chalcocopyrite, tennantite and galena. The veins are small and lenticular. Small quartz-carbonate veins carrying bornite and chalcocopyrite occur at a beach 12 miles southwest and in quartz diorite 2 1/2 miles southwest of Alma. Elsewhere sheared zones in Precambrian rocks carry pyrite; any of these occurrences that have been tested have been found to carry no more than a trace of gold or silver.

The grey sandstone and calcareous conglomerate of the Shepody formation carry concretions of chalcocite. Deposits of this type have been explored by a shaft at New Horton and by surface work along the southeast side of Shepody River Valley.

LEGEND

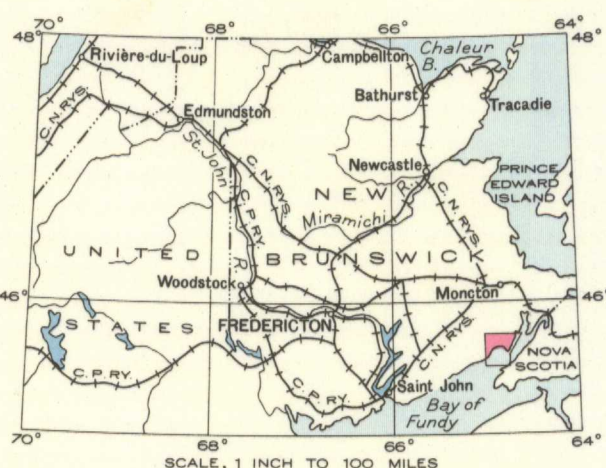
- MESOZOIC**
- 10 Red sandstone, shale, conglomerate
- CARBONIFEROUS PENNSYLVANIAN**
- 8 BOSS POINT FORMATION: grey and red sandstone, quartz-pebble conglomerate, some grey shale and thin coal seams
- 7 ENRAGÉ FORMATION: red shale, some red sandstone and conglomerate
- PALAEZOIC**
- 6 SHEPODY FORMATION: red shale and sandstone with interbeds of grey sandstone
- 5 MARINGOUIN FORMATION: red shale and sandstone
- 4 LIMESTONE, GYPSUM
- 9 Red conglomerate
- PRECAMBRIAN OR PALAEZOIC**
- 3 Albite granite (in part schistose), some quartz diorite, small bodies of volcanic rocks
- 2 Quartz diorite (in part schistose), some granite, small bodies of volcanic rocks
- 1 Schistose, basaltic to rhyolitic, soda-rich lava and tuff, chlorite schist; some schistose sediments; in places invaded by numerous small bodies of granite

Blank areas represent areas where information regarding bedrock geology is not available.

- Tidal deposits
- Rock outcrops (additional to those represented by bedding symbols)
- Bedding (inclined, vertical, overturned)
- Fault (defined, approximate, assumed)
- Mineral occurrences (copper, zinc)
- Provincial highway (numbered)
- Road and buildings
- Road not well travelled
- Bush road or trail
- Church
- School
- Post Office
- Cemetery
- Abandoned building
- Mine Shaft
- Dyke
- Dam
- Wharf
- Lighthouse
- Geodetic triangulation station
- Parish boundary
- Lake and stream (position approximate)
- Intermittent stream
- Fall and rapid
- Marsh

Geology by G.F. Flaherty and G.W.H. Norman, 1930, and 1931. Descriptive notes by G.W.H. Norman.

Base map compiled by the Topographical Survey, 1939, from original surveys in 1930. Cartography by the Drafting and Reproducing Division, 1941.



MAP 648A

ALBERT  
ALBERT COUNTY  
NEW BRUNSWICK

Scale, 63,366 or 1 Inch to 1 Mile

Approximate magnetic declination, 22°45' West.

NOT TO BE TAKEN FROM LIBRARY  
NE PAS SORTIR DE LA BIBLIOTHÈQUE

648A