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NEW BRUNSWICK MINES DIVISION DEPARTMENT OF NATURAL RESOURCES

DESCRIPTIVE NOTES

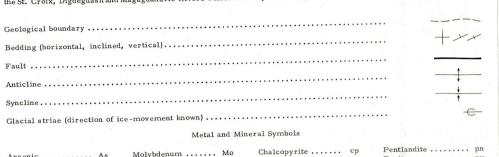
Almost all of the map-area is underlain by Palaeozoic rocks that range in age from Early Ordovician to Late Devonian. Predominantly mafic volcanic rocks in the extreme southeastern part of the map-area are tentatively correlated with the Coldbrook Group rocks of probable Proterozoic age. The northwestern third of the map-area is underlain by a widespread sequence of undifferentiated lower Palaeozoic light to dark slates, argillites and impure underlain by a widespread sequence of undifferentiated lower Palaeozoic light to dark slates, argillites and impure underlain by a widespread sequence of undifferentiated lower Palaeozoic light to dark slates, argillites and impure underlain by a widespread to the Dark Argillite and Pale Argillite Divisions of the Charlotte Group as quartities. Units (2) and (4) correspond to the Dark Argillite and Pale Argillite Divisions of the Charlotte Group as described by MacKenzie and Alcock (1960). On Cookson Island in Oak Bay, black slates of known Lower Ordovician by Silurian conglomerate (5a). Elsewhere, the ages and relative stratigraphic positions age are unconformably overlain by Silurian englower and Elsewhere, the ages and relative stratigraphic positions of Lower Palaeozoic strata are in considerable doubt and it is possible that post-Ordovician rocks have been infolded or downfaulted into Ordovician strata. The rocks of unit (4) have been assigned to the Ordovician (MacKenzie and Alcock, 1960), Ordovician to Silurian (Clark, 1961), Ordovician and/or Silurian (Larabee et. al., 1965), Devonian (Bailey and Matthew, 1872), and Devonian to Mississippian (MacKenzie, 1940).

Silurian rocks in the vicinity of Passamaquoddy Bay have been subdivided into predominantly sedimentary units (5) and predominantly volcanic units (6) on the basis of recent work by Hay (1967) and De Carle (1966). In the Oak Bay region, the base of the Silurian is marked by a belt of conglomerate (5a) that grades upward into an assemblage of greywacke, quartzite, siltstone and argillite (5b). Early Devonian Eastport-type sedimentary rocks (7) may be included in unit (5b) in the Chamcook Lake area. Andesite, rhyolite, trachyte and basalt flows, breccias and tuffs predominate in the upper parts of the Silurian section between Bocabec Bay and Lake Utopia. Volcanic and sedimentary units on the Mascarene-Letite Peninsula are highly deformed and intensely sheared in contrast to generally less deformed, unmetamorphosed rocks of similar lithology in the area northwest of the Magaguadavic River.

The Upper Devonian Perry Formation (10) consists of extensive terrestrial deposits of red conglomerate and sandstone, and minor intercalated basalt flows. Conglomerates containing granitic boulders and clasts of Silurian and pre-Silurian rocks are in most cases undeformed and rest unconformably on older rocks or in fault contact with them.

Peridotite-gabbro bodies (3) that intrude sedimentary rocks of unit (2) in the St. Stephen area are generally considered to be of Ordovician age. Biotite from the St. Stephen gabbro body yielded a 462 m.y. K/Ar date (Wanless et. al., 1965). Middle Devonian granitic batholiths and stocks (9) intrude the lower Palaeozoic volcanic-sedimentary units. The large St. George batholith dominates the northeastern part of the map-area and is composed mainly of granite, quartz monzonite and adamellite. Three smaller isolated plutons of similar composition intrude the lower Palaeozoic quartz monzonite and adamellite. Three smaller isolated plutons of similar composition intrude the lower Palaeozoic quartz monzonite and intrude the lower Palaeozoic additional process of unit (2). Biotite from the St. George batholith has yielded a 380 m.y. K/Ar date (Tupper and sedimentary rocks of unit (2). Biotite from the St. George batholith has yielded a 380 m.y. K/Ar date (Tupper and sedimentary rocks immediately east of Oak Bay are intimately associated with gabbro, diorite and diabase (8) that are similar to but may significantly post-date the gabbro intrusives of the St. Stephen area. Silurian and Devonian sedimentary and volcanic rocks are extensively intruded by gabbro and diabase.

The region has been heavily glaciated and eskers, glacial striae and stoss and lee slopes indicate a general southeasterly direction of ice movement. Double sets of striae in the area south of St. George reflect at least two ice advances. An older set bearing 145 degrees is combined with a younger set that averages 110 degrees. Thick deposits of glacial till and fluvioglacial sands and gravels cover most of the area and have markedly altered the pre-Pleistocene of glacial till and fluvioglacial sands and gravels cover most of the area and have markedly altered the pre-Pleistocene drainage pattern on the lower part of the Magaguadavic River. Raised marine terraces and river mouth waterfalls on the St. Croix, Digdeguash and Magaguadavic Rivers reflect a complex history of shoreline submergence and emergence.



INDEX TO MINING PROPERTIES AND PROSPECTS

- 1. Atlantic Nickel (Rodgers Farm): cp, po, pn. 10. Mt. Blair: cp, fl, mal, hem.
 11. Oliver - Cameron: qtz, cp, Bi, Au, Ag, mal.
 12. Tha. Dick: qtz, py, cp, po, gn. 2. Clark Farm ('A' Zone): cp, po.
 3. Hall Carroll: po, cp.
 4. Dennis Stream ('N' Zone): cp, po.
- Grant Farm: cp, po.
- 13. Letite: qtz, po, cp, gn. 14. Simpson: sp, gn, py.
 15. Daniel Hatt Farm: qtz, cp, po, gn. 'C' Zone: cp, po.
 Union Bridge - St. Croix River: cp, po.

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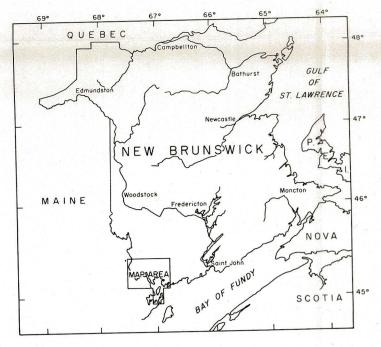
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Compiled by W. J. Wolfe and R. R. Potter, 1966



Published, 1967 Copies of this map may be obtained from the Mines Division, Department of Natural Resources, Fredericton, New Brunswick