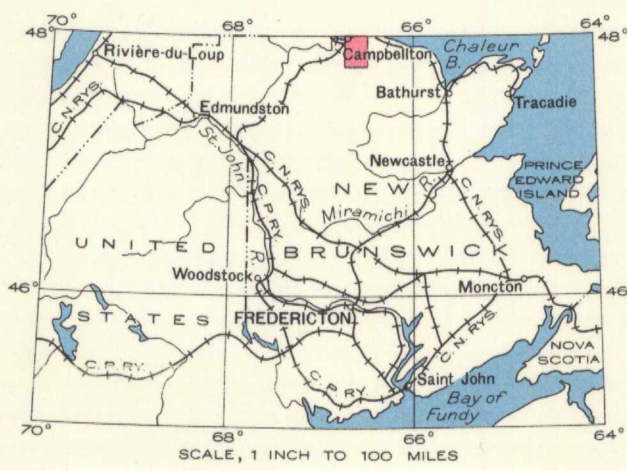


LEGEND

- CARBONIFEROUS**  
**PENNSYLVANIAN (?)**
- 7 **BONAVENTURE FORMATION:**  
red conglomerate, sandstone and shale
- DEVONIAN**  
**MIDDLE DEVONIAN**
- 6 **GASPE FORMATION:**  
sandstone and conglomerate
  - 5 Granite, porphyry
- LOWER DEVONIAN**
- 4 Mainly andesite and dacite, allied tuffs and intrusives; minor, associated sediments
  - 3 Mainly shale and limestone; associated volcanic rocks and related intrusives
- SILURIAN**
- 2 **CHALEUR BAY SERIES**  
Limestone, shale, sandstone
- ORDOVICIAN**  
**UPPER ORDOVICIAN**
- 1 Limestone, slate, quartzite
- MATAPEDIA GROUP**

- Heavily drift-covered area .....  
 Bedding (inclined, horizontal) .....  
 Glacial striae .....  
 Fossil locality .....  
 Observed rock outcrop or area of outcrop .....  
 NOTE. An observed rock outcrop may be indicated by a cross, x, or by a symbol for bedding, fossil locality, glacial striae, volcanic rocks, or volcanic and sedimentary rocks vs.
- Provincial highway (with number) .....  
 Road and buildings .....  
 Bush road or trail .....  
 Abandoned railway grade .....  
 Power transmission line .....  
 Church .....  
 School .....  
 Post Office .....  
 Cemetery .....  
 Parish boundary (position approximate) .....  
 Triangulation station .....  
 Wharf .....  
 Lake and stream (position approximate) .....  
 Marsh .....  
 Height in feet above Mean sea-level ..... 22'

Geology by F.J. Alcock, 1930, and 1931.  
 Base-map prepared by the Topographical Survey, 1939, from information supplied by the Geological Survey. Cartography by the Drafting and Reproducing Division, 1940.



DESCRIPTIVE NOTES

The northern part of the map-area is a region of hills and ridges, composed of hard volcanic rocks, rising rather abruptly above Restigouche River valley. To the south, the remaining part of the area is a gently rolling upland region, about 1,000 feet high, underlain, mainly, by sedimentary formations. The region is marked by a number of lakes and occupies the headwaters of several branches of the Eel and North Charlo rivers which flow east to Chaleur bay and Popelogan brook which drains south into the Upsalquitch. These streams have their source in broad shallow basins but within a short distance downstream they become steeply entrenched and swift flowing. Evidently a mature topographic stage was reached as the result of prolonged erosion. Later uplift rejuvenated the streams and caused subsequent valley cutting.

Most of the area is covered by a light mantle of drift. Stratified gravel deposits occur locally. In a lake near the Balmoral road, at the eastern edge of the map-area, a deposit of Recent, light grey to white marl has been used for fertilizer. No other mineral deposits of consequence have been found.

The pre-Carboniferous formations are folded into a broad anticline pitching northeast and striking northeasterly across the middle of the area. The northern limb of this anticline is the southern limb of the Restigouche syncline which lies partly on the Gaspé side of Restigouche river.

The rocks of the Matapédia group (1) resemble beds which, near Matapédia, have yielded Upper Ordovician fossils. Their chief structural feature is a cleavage which strikes northeast.

The Silurian sediments (2) are, on the whole, much less deformed than the Ordovician strata. They carry fossils in places and, apparently, belong to the Clemville formation of the Chaleur Bay series.

The Lower Devonian formations (3 and 4) are best exposed along the coast at Dalhousie to the east of the map-area where highly fossiliferous bands of limestone and shale are interbedded with volcanic tuffs and flows. In the map-area the lower division (3), consisting mainly of bluish shales and shaly limestone, locally fossiliferous, succeeds the Silurian beds conformably. In the eastern part of the area, near the west of the anticline, the dips are low and the belt has a broad surface expansion. Similar flat or low dips occur on Narrows brook and mark the trough of an adjoining major syncline. The volcanic rocks (4, mainly) consist largely of andesites and dacites. Some masses evidently had their origin as volcanic rocks. Sugarloaf mountain, for example, is composed of massive porphyritic rock and in the region surrounding it are flows of similar rock and also volcanic tuffs. The tuffs are particularly well exposed along the highway and railway west of Campbellton. At the top of the Lower Devonian succession about half a mile west of Campbellton railroad station, black shale beds associated with hackly argillite carrying masses of pyrite overlie massive volcanic rocks and are succeeded by grey arkose. The shales have yielded plant remains, several species of Lower Devonian fish, and a number of invertebrate remains including two species of gastropods, artemostraca, fragments of a large pterygotus, and a spirorbis.

The formations of Lower and pre-Devonian age are intruded by dykes and small masses of feldspar porphyry and granite (5). The largest bodies are of fine-grained reddish granite.

Along the shore of Restigouche river, between Old Mission point and Campbellton, are a few exposures of Gaspé beds (6) dipping to the north. A wider band of the same rocks borders the opposite or Gaspé side of the river. Near the eastern border of the map-area sandstone beds, dipping at about 60 degrees, outcrop in low cliffs along Restigouche river. They rest on Lower Devonian volcanic rocks and shale and are overlain by flat-lying Bonaventure beds. The sandstones are grey to buff and are locally conglomeratic. In other areas the formation has yielded fossils of Middle Devonian age. The use of the term "Gaspé formation" is here restricted to what has been formerly called the "Gaspé sandstone."

The Bonaventure formation (7) is widely exposed along the coast east of the map-area, both in New Brunswick and on the Gaspé side of Chaleur bay. The beds have a characteristic deep red colour and lie horizontally. No fossils were found in these rocks in the Campbellton map-area but fragmentary plant material collected near Percé on the Gaspé coast, from beds of probably the same formation, indicate a Carboniferous, and probably a Pennsylvanian age.

MAP 621A  
**CAMPBELLTON**  
 RESTIGOUCHE COUNTY  
 NEW BRUNSWICK

Scale, 63,366 or 1 Inch to 1 Mile  
 Miles  
 Approximate magnetic declination, 24°45' West.

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621A