Chaleurs Group stratigraphy in the Petit Rocher area, northern New Brunswick

Steven R. McCutcheon
New Brunswick Geological Surveys Branch, P.O. Box 50 (495 Riverside Drive), Bathurst, NB, E2A 3Z1
<Steve.McCutcheon@gnb.ca>

Petit Rocher is located approximately 20 km north of Bathurst and 80 km southwest of Port Daniel in southern Gaspé Peninsula, the type area of the Chaleurs Group. It is situated at the northeastern end of the Nigadoo River Syncline, which is part of the much larger Chaleur Bay Synclinorium that extends some 250 km from Hartland (NB) into southern Gaspé (QC). The internal stratigraphy of the Chaleurs Group exhibits significant differences from one locality to another in this Synclinorium, but in general it comprises: 1) lower clastic rocks, 2) a lower limestone unit, 3) middle clastic rocks and/or volcanic rocks, 4) an upper limestone unit, and 5) upper clastic rocks.

The stratigraphic position of rocks along the coast in the Petit Rocher area has been problematic for many years, in particular a recessive-weathering sequence of red, green and grey mudrocks exposed north and south of Pointe Rochette. In 1975, Noble assigned these rocks to a new formation (Petit Rocher), which he considered to overlie the La Vieille Formation, the lower limestone unit in the Chaleurs Group. In 1993, Walker and others showed that the Petit Rocher Formation encompassed more than one mappable unit; they abandoned this name and reassigned rocks in the type locality, north of Pointe Rochette, to the Simpsons Field (middle clastic unit), La Plante (upper limestone unit) and Free Grant (upper clastic unit)formations. The clastic rocks to the south of Pointe Rochette, they assigned to the Clemville and Weir formations, which predate the La Vieille Formation and constitute the two oldest units in the Chaleurs Group.

In 2005, a re-examination of the coastal section near Petit Rocher revealed that changes to the stratigraphic interpretation are required, as follows: 1) there is no Free Grant Formation north of Pointe Rochette – the section ends in La Plante Formation; 2) most of the rocks south of Pointe Rochette are younger than the La Vieille Formation and can be assigned to the Simpsons Field and La Plante formations, with a minor amount of Free Grant Formation; 3) a thin unit of mudrocks, which gradationally underlies the Weir Formation at Pointe Rochette, is correlated with the Clemville Formation;

this unit appears to gradationally overlie dark grey limestone that is tentatively assigned to the Matapedia Group (Upper Ordovician); 4) these pre-La Vieille rocks at Pointe Rochette are unconformably overlain by a limestone-clast conglomerate that probably belongs to the Simpsons Field Formation and if so, provides further evidence of Salinic deformation in northern New Brunswick; 5) this conglomerate and the pre-La Vieille rocks appear to be in fault contact with the section referred to in the second point above, and 6) much of the red colour in the mudrocks is related to Carboniferous weathering.