

**Preliminary geological map of the Little River, Tomogonops River map area  
(21 P/4 west), Bathurst Camp, northern New Brunswick**

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The centre of the 21-P/4e,f map area is approximately 20 km southeast of the Heath Steele Mine and 33 km south of the Brunswick No. 12 Mine, in northern New Brunswick. Most of the map area is underlain by Early and Middle Ordovician rocks of the Miramichi and Tetagouche groups. These rocks were deposited in an ensialic, and later ensimatic, back-arc basin that developed on the eastern margin of the Iapetus Ocean. They were later incorporated into an accretionary wedge complex during closure of the basin in the Late Ordovician and Early Silurian. The map area is divis-

ible into three domains. The northwest domain comprises mainly Tetagouche Group volcanic rocks, and the southwest domain comprises mainly Miramichi and Tetagouche groups sedimentary and volcanoclastic rocks. The eastern domain is dominated by the Tomogonops formation and Carboniferous cover rocks. The contacts between the various groups and formations are typically conformable, but may be gradational, abrupt, or disconformable.

A new formation, informally named the Tomogonops formation, has been outlined in the southeastern part of the

study area. It comprises a coarsening-upward sequence of calcareous lithic- and quartz-wacke, grey slate, and autoclastic conglomerate. The conglomerate contains clasts of both the Tetagouche and Miramichi groups. The Tomogonops formation is believed to represent a Late Ordovician or Early Silurian flysch, deposited in front of a southward-advancing thrust-front associated with closure of the back-arc basin.

Five generations of folds, designated  $F_1$  to  $F_5$  on the basis of overprinting relationships, are recognized in the study area; however, it is mainly the  $F_1$ ,  $F_2$ , and  $F_4$  folds, as well as later brittle faults, that govern the macroscopic distribution of the rocks.