

Namurian and early Westphalian stratigraphy of western and southwestern Cape Breton Island

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The post-Windsor Group succession of western Cape Breton Island comprises the Hastings and Pomquet formations of the Mabou Group, overlain unconformably by the Port Hood Formation (latest Namurian/Westphalian A) of the Cumberland Group. The Port Hood Formation is overlain unconformably by the Inverness Formation (Cumberland Group) in northwestern outcrop areas, and by strata of uncertain affinities of Westphalian B and C age in the Port Hood area. In the Strait of Canso area, post-Windsor beds were assigned by Belt to the Hastings Formation, the Pomquet Formation comprising both a Grant Point Tongue and a Glengarry Tongue, and the Emery Brook Formation, all part of Belt's Mabou Group. The Emery Brook Formation separates the two tongues of the Pomquet Formation in Belt's Mabou Group, and is characterized by abundant grey and black shales with associated sandstone and thin coals.

Correlation of the upper part of the Port Hood Formation (Cumberland Group), here informally termed the Colindale member, with Belt's Emery Brook Formation (Mabou Group) of the Strait of Canso succession, is suggested on both litho- and biostratigraphic grounds. The Emery Brook Formation, like the Colindale member of the Port Hood Formation, contains thin coal seams and is here assigned to the Cumberland Group applying currently accepted definitions at the group level. The underlying Grant Point Tongue contains, in its upper parts, thick channel sandstones closely comparable to those of the lower Port Hood Formation. In practice, workers in the Strait of Canso area have not used Belt's stratigraphic

subdivisions, but have followed earlier workers in that area in using these thick channel sandstones to mark major lithostratigraphic boundaries. Historical data support this practice, and allow close comparison of the Strait of Canso succession with that of western Cape Breton Island. Re-assignment of the upper part of Belt's Grant Point Tongue of the Pomquet Formation to the Cumberland Group is suggested by regional correlation with the Port Hood Formation. The lower portion of Belt's Grant Point Tongue should be re-assigned to an undivided Pomquet Formation. The Glengarry Tongue of the Pomquet Formation should be abandoned, and the strata overlying the Emery Brook Formation in the Strait of Canso area re-assessed.

Palyno-stratigraphic assessment of Belt's Grant Point Tongue is not presently possible, but is essential to ascertain the possible presence of a basal 'Westphalian A' unconformity. The latter is known in the Loch Lomond area of southeastern Cape Breton Island, and in western Cape Breton Island, and is strongly suspected in the Strait of Canso area as well.

Black shales of the Emery Brook Formation, the Colindale member of the Port Hood Formation, the Parrsboro Formation and the Joggins Formation of the Cumberland Basin are regionally correlative. Together, they establish an important Westphalian A marker horizon within the thick fill of the western Maritimes Basin and attest to widespread similarity in depositional setting in the latest Namurian - early Westphalian.