

A study of carbonate rocks from the late Visean to Namurian Mabou Group, Cape Breton Island, Nova Scotia

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The Mabou Group, attaining a maximum thickness of 7620 m, lies conformably above the marine Windsor Group and unconformably below the fluviatile Cumberland Group. It comprises a lower grey lacustrine facies and an upper red fluviatile facies. The grey lacustrine facies consists predominantly of grey siltstones and shales with interbedded sandstones, gypsum, and carbonate rocks. The red fluviatile facies contains red with minor green and grey sandstones, siltstones, shales, and pedogenic carbonates. Together these rocks record lacustrine and marginal lacustrine sedimentation in an arid to semi-arid environment. Strata of the Mabou Group, previously assigned to the Canso Group, can be traced throughout the western portion of Cape Breton Island and within the Sydney and Loch Lomond basins of eastern Cape Breton Island. From west to east there appears to be a decrease in the overall thickness of the Mabou Group, notably the red facies, although the basic lithology remains the same.

Carbonate rocks, although not plentiful, are important con-

stituents of the lower Mabou Group. The types of carbonate rocks present include laminated lime boundstones (stromatolites), floatstones, and grainstones. The stromatolites occur predominantly as planar laminated stratiform types and as laterally linked hemispheroids, some having a third order crenate microstructure. Flat-pebble conglomerates, or floatstones, containing fragments of neighbouring stromatolites, are often found associated with the stromatolites. Grainstones present contain ooids, serpulids, coated grains, and algal debris, or stromatolite fragments, as major constituents. The carbonate rocks and their relationship with associated lithofacies of the lower Mabou Group provide important indicators suggesting deposition in a shallow, agitated, subaqueous environment undergoing periods of subaerial exposure. Due to lateral discontinuity of the carbonate rocks, they are not good tools for local lithostratigraphic correlation. Their ubiquitous presence in the lower part of the Mabou Group is, however, a useful indicator of stratigraphic position.