

have been referred to the lower division of the Cambrian and has been designated as the "*Atlantic Coast series*" or *Acadian* 'group' or 'division' of this system.

This series constitutes the productive gold belt of the Acadian region. Staurolite-schist, mica-schist, andalusite-schist, quartzites, and slates, occur in this series in Guysborough, Queens, Halifax, Lunenburg, Shelburne, and Yarmouth counties of Nova Scotia. The gold-bearing quartz veins and accompanying strata of Nova Scotia have been thrown into a series of plications or folds, consisting of anticlines and synclines, by a number of important intrusive masses.

Surrounding these masses of intrusive rocks, the slates and quartzites which still maintain their relative position as lower and upper members of the "Lower Cambrian" appear as two metamorphosed or altered series of sediments, and constitute a "metamorphic series" according to Messrs. H. Fletcher and E. R. Faribault. To the "quartzite group" of the gold-bearing series of Nova Scotia the designation *Guysborough* formation appears to be appropriate, whilst the term *Halifax* formation is proposed for the "slate group" of the gold-bearing series. A remarkable feature in the mode of occurrence of the gold is that it appears usually in the axis of the anticlines, and inasmuch as mining in Nova Scotia has revealed the presence of many anticlines superimposed one upon the other, at different depths and intervals, it is calculated that the gold-bearing veins or saddles will be found to hold out and continue to a great depth. Deep mining in the gold-bearing rocks of Lower Cambrian age in Nova Scotia will thus likely prove of great value and importance. The productive gold-bearing deposits of Victoria and New South Wales in Australia may be of similar age, and appear to be of similar structure to those of Nova Scotia.

Overlying and newer than the gold-bearing rocks of Nova Scotia, we find shales and limestones holding abundance of fossil organic remains. Below McAdam's brook, Escasonie river, near McFee's point, Bras d'Or river, and along Mira river in Cape Breton, and at Barachois (constituting the *Mira* series or formation), beds referred to the Upper and Neo-Cambrian have proved highly fossiliferous. These are now undergoing revision and the systematic classification of the various formations and zones of fossiliferous Cambrian will no doubt soon be made known.

In New Brunswick, through the researches of Dr. G. F. Matthew, the characteristic fossils of the various strata constituting the Cambrian system, which was also called the "*St. John group*" have been carefully described, and include for present purposes the *Etcheminian* series also. At Loch Lomond, in St. John county, on Caton's island, King's county,