The Coal-measures now form patches of what was, in all probability at one time, a continuous outcrop from Judique to Cheticamp. These strata resemble those described in the Sydney district, and contain numerous beds of coal of excellent quality, which, however, have not yet been worked. The Port Hood coals, in their high contents of water, from 3 to 7 per cent., resemble lignite coals, but in all other respects are excellent bituminous coals. The Millstone Grit of this district appears to be limited in extent, and may be represented by some of the strata underlying the coal-beds of Port Hood.

The line between these strata and the Marine Limestone is sharply marked by unconformability and the change in the conditions of deposition. The general characteristics of this subdivision are similar to those already noted, and its distribution may be learned from the map.

Underlying the Limestone series are numerous wide-spread areas of grits, coarse sandstones, and conglomerates, with argillaceous shales and a few beds of limestone. At Judique, Mabou, Broad Cove, Forest Glen, Grand Etang, and Cheticamp these Measures are greatly altered by the intrusion of igneous rocks. In the Judique district these intrusive masses vary greatly in texture, colour, and composition, but are essentially dark, massive, granular, and compact, chloritic, dioritic, and felsitic rocks. At many places little change has been produced in the sedimentary rocks at the point of contact, but frequently the metamorphism has been so great that no line of contact can be observed. At other points these strata are comparatively unaltered, and at Hunter's Mountain, Whyhogomah, and Lake Ainslie they hold bituminous shales with impure coal-beds, show signs of petroleum, and resemble the Lower Coal-Measures of Plaster Cove.

Superficial Geology.

The superficial geology of Cape Breton does not present many points of interest. There are, I believe, no moraines to mark glacial action. The earth-covering varies according to the age and nature of the underlying strata. The Pre-Cambrian rocks are frequently almost bare, and their rugged and steep hill-sides afford soil only for the growth of timber; and rains following forest-fires have frequently denuded large tracts of almost every trace of earth. The more level tracts of the Pre-Cambrian, Silurian, and Devonian measures are diversified by numerous lakes, with slow streams and swamps. The soil is usually thin, clayey, or sandy, with boulders of the subjacent rocks. In the brooks and intervals sands and gravels are met with of recent derivation from the adjacent hills.

In the Carboniferous districts the soils are deeper and often of great fertility. The erratic boulders found over these measures are derived from the neighbouring subdivisions of the felsitic and syenitic series, and have seldom travelled far. In several localities peat and carbonized tree-trunks have been found under these clays, with remains apparently of *Mastodon giganteus* (?). There is a total