

coarse and pebbly, and occasionally in thick massive beds. Several of the beds of shale contain concretions of limestone, in one case forming a nearly continuous bed, and with no fossils except a few casts of a *Cythere*. In one of the lower beds of sandstone seen on Carribou River there are concretions of grey copper, and fossil trunks of trees penetrated by this mineral; and some of the fossil trees found in the sandstones on the coast are partly mineralized with sulphate of baryta.

The only material difference in mineral character is that red beds become more prevalent toward the upper part of the section, where the general character of the beds is precisely that of the supposed Upper Coal-formation rocks at Miminigash, Governor's Island, and Gallas Point in Prince-Edward Island, and on the coast of New Brunswick at Cape Jourimain*.

The following statements, reduced from my sectional lists, will serve to illustrate these points of mineral character.

In the whole section the sandstones, including the argillaceous sandstones, are to the shales in the proportion of about two to one in vertical thickness, and the grey and buff sandstones are about equal to those which are brown and red, while the red and mottled shales greatly preponderate over those which are grey.

In the lower half of the section, extending to the mouth of Toney River, the grey sandstone, red sandstone, and shales (mostly red) are in the proportions of $4\frac{1}{2}$, 3, $6\frac{1}{2}$. In the upper half of the section they are in the proportions of $4\frac{1}{2}$, $5\frac{1}{2}$, 3; so that red sandstones become decidedly more prevalent in the upper part, where there is also a greater proportion of coarse pebbly sandstones and of light-red shale with greenish stains.

If we compare this with the upper part of the Joggins section as given in Sir William Logan's lists, we find a thickness of 2267 feet; and if we regard the Ragged-Reef Sandstones as equivalent to the heavy sandstones at the base of the Pietou section, it is possible that the upper part of the latter is not represented at the Joggins. Taking the proportions of sandstones and shales at the latter place, we find them to be grey sandstone 12, red and brown sandstone 1, shale 10; so that here the proportions of sandstones to shales are not very dissimilar to those in the lower part of the Pietou series, but the grey sandstones are greatly more prevalent. Like those in the upper part at Pietou, some of the upper beds at the Joggins are coarse and pebbly, a character not observed, in either Coal-field, in the sandstones of the Middle Coal-formation.

If, on the other hand, we turn to Prince-Edward Island, the geological relations, and especially the fact that the outcrops on Prince-Edward Island correspond with the extension of two of the New-Brunswick Carboniferous anticlinals, would lead us to believe that the upper Coal-formation beds seen at Gallas Point, and amounting to about 800 feet in vertical thickness, must belong to the upper part of the Pietou series, or may even reach some way above its summit. Accordingly we find the proportions of the

* Report on Prince-Edward Island.