## GEOLOGICAL RELATIONS OF NOVA SCOTIA MINERALS.

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mic value. The associated sandstones, red and friable, yield no building stone of value, and as yet have furnished to the miner only a few tors of manganiferous ochre.

Permo-Carboniferous.—In the great mass of sediments covering large areas in Pictou, Colchester, and Cumberland counties, and presenting fossil evidence of a transition from the Carboniferous to the Permian, there are few minerals of economic value. A few thin seams of coal are met, with fire-lays. At numerous points the sandstones and shales present irregular bedded masses and layers of copper-ores, principally gray sulphurets, with films and coatings of carbonate. These ores are associated with fossil plants to whose presence their deposition is to be attributed. Hitherto, attempts to find these ores in workable amounts have not been successful. A sample from Carribou, near Pictou, gave :\*

											er cent.
Copper,				•	•		•				40.00
Iron,									۰.		11.06
Cobalt,										•	2.10
Manganes	se,	•									0.50
Sulphur,	•									•	25.42
Lime,			•	•			•••	÷.,			0.92

Admirable varieties of building stone, variously tinted sandstones and free stones have been quarried from these measures.

Upper Coal Measures.—These strata in general resemble those noticed in the preceding section. There is however more coal; and layers of clay iron-stone are frequently met.

Productive or Middle Coal Measures.—The principal mineral of this formation is coal, which is worked in Cape Breton, Pictou, and Cumberland counties. Deposits are known in five other counties, but have not been worked to any extent. The production last year was about 1,700,000 tons. The coal is bituminous, and the writer is not aware of the occurrence of any hard coal, although several discoveries of graphitic shale have been heralded as anthracite mines. Speaking in general terms the Cape Breton coal is the most bituminous, that of Cumberland less so, while the Pictou coals rather approach the semi-bituminous or steam variety. All the districts furnish coke of fair quality.

The following average of an analyses, from a paper on Canadian coals, read before the Montreal meeting of the British Association, will serve to show the variation in quality :

\* Acadian Geology.