

sion 4, Section XII, of the general section, and in the upper part of Coal-group No. 21. It presented several interesting peculiarities. It was about 2 ft. in diameter, near the base, and stood 8 ft. high. As much as 5 ft. of its lower portion was filled with a very irregular mixture of hard arenaceous and carbonaceous matter and vegetable fragments, evidently drifted in by rain-water, while there were also layers and patches of brownish coprolitic matter, largely composed of calcium phosphate, and showing under the microscope innumerable fragments of chitinous matter, probably remains of Millipedes, with numbers of small bones and bony fragments. The great thickness of productive material and the abundance of coprolite indicated that the tree had long remained open, and that some at least of the animals contained in it had subsisted for some time on the bodies of smaller Batrachians and Millipedes which had fallen into their prison. One specimen of *Dendroperpeton*, found near the top of the mass, is the largest yet known, its head being 5 in. in length. The long duration of this tree is, perhaps, accounted for by the unusual thickness of its outer bark. It stood upon a thin, coaly layer resting on an underclay, passing downward into a gray shale, 8 ft. in thickness. The lower part of the trunk was enclosed in alternations of argillaceous shale and flaggy sandstone to the height of about 5 ft., and above this it penetrated for 3 ft. into a thick, compact sandstone, containing a few drifted trunks of trees. It would seem, therefore, either that the current conveying the sand had cleared away 3 ft. of soft deposits surrounding the hollow trunk, or that the animals had found access to the interior by a crevice or hole in the bark of a tree standing 3 ft. above the surface on which they walked.

I may remark here that the beds enclosing erect trees are often very irregular, as if deposited by local inundations, and that the thick beds of reddish, mottled, and greyish sandstones which at the Joggins separate the coal-groups, appear to be of similar origin. The great bivalve shell, *Asthenodonta Westoni*, of Whiteaves,* is found in one of these beds along with drift trees; and as it must have been a freshwater species, it was probably swept from some inland lake or pond by a land flood. This would seem to indicate excessive rains as occurring at intervals in the deposition of the coal-bearing rocks, more especially in the Cumberland coal-field, and this may have been connected with the number of erect trees, and the manner of their burial.

The tree just referred to must have entrapped at least twenty Batrachians, as well as many Millipedes and land snails, embracing most of the species hitherto found in these depositories, and two additional species, which I have named *Hylerpeton intermedium* and *Platystegos loricatum*. Their description is as follows:—

* 'Roy. Soc. of Canada, Trans.,' 1893.