

the leaf-bases prominent, or have an appearance of longitudinal ribbing produced by the expansion of the bark.

Structure of Stem.—This is not perfectly preserved in any of my specimens, but one flattened specimen shows a central medulla with a narrow ring of scalariform vessels surrounding it, and constituting the woody axis. The structure is thus similar to that of *L. Harcourtii*, which I regard as probably the same with the closely allied European species *L. Veltheimianum*.

Leaves.—These are narrow, one-nerved, curving somewhat rapidly outward (Figs. 43, B, C, D). They vary from one to two inches in length.

Roots.—I have not seen these actually attached, but they occur very abundantly in the underclays of some erect forests of these plants at Horton Bluff, and are of the character of *Stigmaria* (Figs. 30, 31). In some of the underclays the long, flattened rootlets are excessively abundant, and show the mark of a central vascular bundle.

Fructification.—Cones terminal, short, with many small, acute imbricate scales. Spore-cases globular, smooth (Fig. 43 C). On the surface of some shales and sandstones at Horton there are innumerable round spore-cases of this tree about the size of mustard-seed (Fig. 43 F). Large slabs are sometimes covered with these, and thin layers of shale are filled with flattened specimens.

This is the characteristic species of the Lower Carboniferous coal-measures, occurring in great profusion at Horton Bluff and its vicinity, also at Sneyd's Mills near Windsor, Noel and Five-Mile River, at Norton Creek and elsewhere in New Brunswick (Matthew's collection), and at Antigonish (Honeyman's collection).

I have received from the lowest Carboniferous beds of Ohio specimens of this species.* According to Rogers and Lesquereux similar forms occur in the Vespertine of Pennsylvania and in the Lower Carboniferous of Illinois. *L. Veltheimianum* of western Europe and *L. glincaum* of Russia are closely allied Lower Carboniferous species.†

A very different type is furnished by a new species from the middle coal-formation of Clifton, New Brunswick.

LEPIDODENDRON CLIFTONENSE, Dawson. — *Habit of Growth.*—Robust, with thick branches, and leaves several inches in length. Terminal branches becoming slender, with shorter leaves.

* "Journal of Geological Society," November, 1862, p. 313.

† For comparisons of these see "Report on Plants of Lower Carboniferous of Canada," p. 21.