

*Mode of increase by Buds the same in recent
and fossil Cycadeæ.*

The *Cycas revoluta* figured in Pl. 58* possesses a peculiar interest in relation to both our

of vessels seem to partake of the laminated disposition of the woody circle within the trunk.

An agreement is found also in the longitudinal sections of the Petioles of recent and fossil Cycadeæ. Pl. 62, Fig 1, is the longitudinal section of part of the base of a Petiole of *Zamia spiralis*, magnified to twice the natural size. It is made up of cellular tissue, (f), interspersed with gum vessels, and with long bundles of vascular fibres, (c) proceeding from the trunk towards the leaf. On the lower integument, (b') is a dense coating of minute curling filaments of down or cotton, (a) which being repeated on each scale, renders the congeries of scales surrounding the trunk, impervious to air and moisture.

A similar disposition is seen in the longitudinal section of the fossil Petiole of *Cycadites microphyllus* represented at Pl. 62, Fig. 2, and magnified four times. At f, we have cellular tissue interspersed with gum vessels, h. Beneath c, are longitudinal bundles of vessels; at b, is the integument; at a, a most beautiful petrification of the curling filaments of down or cotton, proceeding from the surface of this integument.

In the vascular bundles within the fossil Petioles, (c) Mr. Brown has recognized the presence of spiral, or scalariform vessels (*Vasa scalariformia*) such as are found in the Petioles of recent Cycadeæ; he has also detected similar vessels, in the laminated circle within the trunk of the fossil Buds next to be described. The existence of vessels with discs peculiar to recent Cycadeæ and Coniferæ, such as have been described in speaking of fossil Coniferæ, has not yet been ascertained.

* This plant had been living many years, in Lord Grenville's conservatory at Dropmore. In the autumn of 1827, the external part of the scales was cut away to get rid of insects: in the fol-