

the internal structure of the scales, or bases of leaf stalks surrounding the trunks of our fossil *Cycadites*, with that of the corresponding scales in the recent species.\*

\* In Pl. 61, Figs. 2, 3, represent two vertical sections of a *Cycadites microphyllus* from Portland, converted to Chalcedony. These slices are parallel to the axis of the trunk, and intersect transversely the persistent bases of the Petioles or Leaf-stalks. In each rhomboidal Petiole, we see the remains of three systems of vegetable structure, of which magnified representations are given Pl. 62, Fig. 1, 2, 3. We have, first, the principal mass of cellular tissue (f); secondly, sections of gum vessels (h) irregularly dispersed through this cellular tissue; thirdly, bundles of vessels, (c), placed in a somewhat rhomboidal form, parallel to, and a little within, the integument of each petiole. These bundles of vessels are composed of vascular woody fibres proceeding from the trunk of the plant towards the leaf. See magnified section of one bundle at Pl. 62, Fig. 3, c'.

A similar arrangement of nearly all these parts exists in the transverse section of the leaf stalks of recent *Cycadeæ*. In *Cycas circinalis*, and *C. revoluta*, and *Zamia furfuracea*, the bundles of vessels are placed as in our fossil, nearly parallel to the integument. In *Zamia spiralis*, and *Z. horrida*, their disposition within the Petiole, is less regular, but the internal structure of each bundle is nearly the same. In Pl. 62, Fig. A shews the place of these bundles of vessels in a transverse section of the leaf stalk of *Zamia spiralis*; Fig. A. c' is the magnified appearance of one of the bundles in this section; Fig. B. c'' is the magnified transverse section of a similar bundle of vessels in the petiole of *Zamia horrida*. In this species the vascular fibres are smaller and more numerous than in *Z. spiralis*, and the opaque lines less distinct. Both in recent and fossil *Cycadeæ* the component vascular fibres of these bundles are in rows approximated so closely to each other, that their compressed edges give an appearance of opaque lines between the rows of vascular fibres, (see Pl. 62, Fig. 1, c'. Fig. B, c''. and Fig. 3, c'.) These bundles