to be found, but there are lines running from the base of the petioles, partly round the branches, which might be taken for the scars of fallen stipules or the decurrent margins of the petiole.

Fortunately I have been able to examine young shoots from a plant growing at Kew, and I suspect that the organs termed stipules by Van Tieghem are really bud-scales, but I have not been able to examine them so thoroughly as to give a positive opinion, though possibly he has. They are deltoid, acute bodies 2–3 lines long, situated more or less within the axils of the leaves, but falling away as the leaves above them develop. Occasionally they lodge in the axil of a leaf long after organic connexion has ceased to exist, sometimes even until the leaf above is fully developed.

I may add here that Mr. T. F. Cheeseman, Curator of the Museum at Auckland, New Zealand, has obligingly sent to Kew several flowering specimens and a quantity of flowers in alcohol of *Corynocarpus laevigata*, in order to give me further opportunities of examining the staminodes. It may not be remembered, perhaps, that there was a doubtful point in this connexion. I explained in my former paper, p. 744 (and Fig. 7, Pl. 46), that Banks and Solander described and figured the staminodes as three-toothed at the apex, whereas all the staminodes of *C. laevigata* examined by myself and others, including Cheeseman, were irregularly and minutely toothed or fringed from about the middle upwards and around the top. I have examined a number of the flowers sent by Mr. Cheeseman and they all presented the same kind of staminode, except that the toothing or fringe in some instances extended almost to the base. But in none of these did I find a second carpel, or traces of a second, though there was a slight obliquity in the one present.

With regard to the Maori name *karaka*, I have the authority of Mr. Cheeseman[1] that it is applied to *Elaeocarpus rarotongensis*, Hemsl., by the natives of Rarotonga. What connexion there may be, I cannot even suggest, but the foliage is somewhat similar to that of *Corynocarpus* and the fruit is a drupe. As mentioned before, some writers have endeavoured to prove that the Maoris migrated from 'Hawaiki' by way of Rarotonga to New Zealand.

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THE VASCULAR SUPPLY OF STIGMARIAN ROOTLETS.—In Vol. XVI of these Annals I described the course and termination of certain vascular branches of Stigmarian rootlets, which had first been observed but wrongly interpreted by M. Renault. Instead of supplying lateral roots as Renault had supposed, the vascular branches terminate in the outer cortex in wide spirally thickened cells, resembling in appearance the transfusion-cells of leaves. These cells I figured in transverse and longitudinal sections of rootlets (Pl. XXVI, Figs. 4 and 5), and also in surface view (Fig. 2 c). But this latter figure was not very clear, as the section was somewhat oblique and slightly compressed at c, and, as I stated in my paper, 'it is difficult to ascertain what was the size and distribution of these patches

[1] *Trans. Linn. Soc.*, 2nd series, Bot. vi, p. 275, t. 31.

of spirally marked cells of the outer cortex.' The patches were apparently of some breadth, but only a tangential section near the surface of the rootlet could show clearly the extent and arrangement of these cells. Such a section I have found on a slide (prepared by the late Mr. J. Spencer) kindly lent me by Dr. Scott from his collection. Its cabinet number is 1527. This slide has two rootlets cut tangentially through the outer cortex, and from the better one of the two the accompanying drawing has been made with the camera lucida. The rootlet could hardly have been cut in a better direction or at a better depth for revealing the details of the vascular

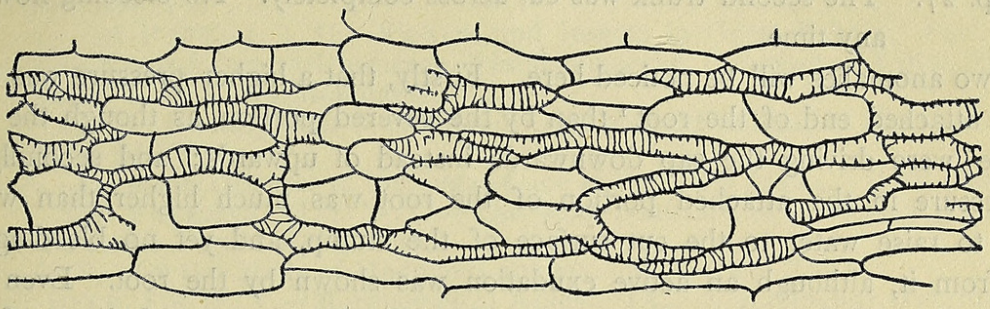

FIG. 34.

elements of the cortex. As will be seen from the Fig. 34, they form a complete network, over a width of six or seven cells, and greatly resemble the termination of the vascular bundles in the leaf. Between the spirally thickened cells are found wide thin-walled elements from which water could readily pass into the spiral elements and thence through the vascular branch into the stele of the rootlet.

At one or two points where the spiral elements are shown in the drawing in an incomplete condition, it is obvious from the difference in focussing that the spiral cells were there connected with a vascular branch lying at a different level and not in the plane of the section. In the other rootlet seen on the slide there seemed to be a slight difference between the cells at the ends of the ramifications and the connecting tracheids. The latter were slightly narrower and had a closer spiral marking than the former which were of greater width.

I must express my indebtedness to Dr. Scott, who has placed at my disposal this excellent preparation which throws further light on the curious vascular supply of the Stigmarian rootlets.

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ROOT-PRESSURE IN TREES.—The following observations made upon the Wych Elm (*Ulmus montana*) appear to be of some interest. The tree used was over thirty feet high, and branched at the base into two main trunks.

Feb. 20. The larger trunk was sawn across. No bleeding now or subsequently.

Mar. 15. The second trunk was ringed, from eight to ten annual rings of wood being removed, which formed one half of the alburnum. Flowering and foliation in April were hardly at all delayed.