is justified. As fully explained in my paper, the identity of my specimen (sent to me in log form direct from the forest) is dubious, and the evidence inclines against its belonging to *Q. spicata*. Hence the indication *prima facie* is that my specimen and Bailey's (obtained from Dehra Dun Research Institute) come from two different species. But the evidence is obviously incomplete, and the difference in structure of the two specimens does not necessarily imply that they come from two species, as in other species of *Quercus* transitional stages in the disintegration or integration of multiseriate rays demonstrate that vessels may occur in a region corresponding to one which is devoid of them in annual rings farther inwards or outwards.

PERCY GROOM.

NOTE ON THE ANATOMY OF STRIGA LUTEA, LOUR.¹—A brief description of the general habit of this semi-parasite has been given in the present number of the 'Annals of Botany', in a study of its haustorium,² in connexion with which its anatomical structure has now been investigated. The plant in its mature (flowering) state shows in its aerial stem the general features—the dense, closed woody cylinder, the narrow lumina of the vessels, the absence of medullary rays, &c.—which characterize the majority of the Order Scrophulariaceae.³ Its structure is almost identical with that of *Melampyrum pratense*, as described and figured by Hovelacque,⁴ almost the only difference between the two being the presence of hairs in *Striga*, and the absence of the scattered 'trachées initiales' which are figured as occurring outside the protoxylem in *Melampyrum*. As in the latter, no cork or collenchyma is formed—a fact which may be correlated with its herbaceous habit. The hairy covering consists of both simple and glandular hairs. The former are large stiff glandular hairs, consisting of a single cell with thickened cuticularized wall, mounted on a base of several epidermal cells, and generally sharply recurved towards the apex of the stem. Among these are scattered the smaller glandular hairs, which consist of a short one- or two-celled stalk and a peltate head of three or four cells; similar hairs occur in a number of genera of the same order.⁵ The transition from the aerial to the subterranean stem presents the usual features.⁶ The stem becomes rounded instead of square in outline, the bast fibres disappear, and the width of the cortex increases, while that of the pith diminishes. The closed vascular ring breaks up into separate bundles, four main bundles and two leaf-trace bundles from the node immediately above.

¹ This investigation has been assisted by a grant from the Union Government.

² Stephens, Edith L.: The Structure and Development of the Haustorium of *Striga lutea*. Ann. Bot., vol. xxvi, p. 1067, 1912.

³ Solereder, H.: Systematic Anatomy of the Dicotyledons, vol. i (English Translation). Oxford, 1908, pp. 583-9.

⁴ Hovelacque, M.: Recherches sur l'appareil végétatif des Bigoniacées, Rhinanthacées, Orobanchacées et Utriculariées. Paris, 1888, pp. 384-90.

⁵ Solereder, loc. cit., pp. 584-6.

⁶ Costantin, J.: Tiges aériennes et souterraines. Ann. Sci. Nat., Bot., sér. 6, vol. xvi, 1883, p. 164.

The aerial leaf also presents no distinctive features. It is bifacial, with one or two rows of palisade parenchyma, and four to six of spongy parenchyma. Stomata are found on both surfaces, rather more abundantly on the lower. Hairs of the same character as those on the stem are found on both surfaces, the large simple hairs being always sharply bent backwards towards the apex of the leaf. In the transition to the tooth-like subterranean leaves, the mesophyll becomes less in amount and the palisade parenchyma is no longer differentiated. The stomata and hairs become much less frequent, and, as in the subterranean stem, the simple hairs are here thin-walled and point in any direction.

The root bears no root-hairs, which are seldom or never found on the roots of the Personate parasites.¹ The vascular bundle is diarch in structure; secondary thickening sets in very early. For figures showing the general structure of the root, those given by Hovelacque for the root of *Melampyrum cristatum*² may be consulted, as these show in all respects the same structure as that of *Striga*. I have been unable to demonstrate sieve-tubes in the root, though elongated parenchymatous cells, having the appearance of sieve-tube initials, are present. It is possible that these are sufficient for the purposes of translocation in the delicate tissues of the root, though of course it is equally possible that they may later on develop into sieve-tubes which have escaped notice.

It will be seen that *Striga* in its anatomical structure shows a general resemblance to other members of the order, and a close resemblance to certain other members of the section Rhinanthoideae. Its most distinctive feature is the comparatively feeble development of mechanical tissue, which may be correlated with its small size and partially subterranean habit.

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SOUTH AFRICAN COLLEGE,
August, 1912.

¹ Hovelacque, loc. cit., p. 496.

² Hovelacque, loc. cit., pp. 473, 475.

Stephens, Edith L . 1912. "Note on the anatomy of *Striga lutea*, Lour." *Annals of botany* 26, 1125–1126. <https://doi.org/10.1093/oxfordjournals.aob.a089437>.

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