

NOTES.

ON CORTICAL FIBRO-VASCULAR BUNDLES IN SOME SPECIES OF LECYTHIDEAE AND BARRINGTONIEAE.—

The following abstract requires a word of prefatory explanation. In 1883 I noted the peculiarity described in two species of *Gustavia* growing and fruiting in the plant-houses at Cork. Having obtained seedlings I made a fairly full study of the anatomy of these plants in 1884, and kept my results by me in the hope of being able to extend them to all the types of the group. I soon found this impossible at Cork, and learning that Dr. Lignier¹ (now Professor at Caen, then assisting Professor Bertrand at Lille) was at work on the Myrtaceae, with ampler opportunities, I handed him over my materials, only publishing enough to show my chief results and deductions at the Birmingham meeting of the British Association in 1886. Since then I have been repeatedly asked for copies of my note, and as Lignier does not fully adopt my view as to the origin of the bundles, I have thought it advisable, with the kind sanction of the Editors of the 'ANNALS OF BOTANY,' to disinter it from the Report and reprint it here with a few slight emendations all clearly marked off within square brackets.

'On Cortical Fibro-vascular bundles in some species of Lecythideae and Barringtonieae.—Accessory fibrovascular bundles are usually connected with abnormalities of vegetation, and probably serve chiefly to ensure continuity of the phloem under pressure [the abnormality of arborescent sp. of *Strychnos* is to be regarded as due to reversion from climbing ancestors]: hence it is interesting to note their occurrence where this explanation is inadmissible. In *Gustavia* and *Lecythis* belonging to the sub-order Lecythideae of Myrtaceae there is a complete system of cortical bundles external to the pericycle, anastomosing with the leaf-tracks [of the central cylinder] at the nodes. These

¹ Recherches sur l'anatomie comparée des Calycanthées, Melastomacées, et Myrtacées, Archives Botaniques du Nord de la France, iii. 1887.

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bundles have often a complete circle of exogenous wood, without pith, and a crescent of phloem on the outer side; they are all but concentric [and may become so by the extension of the phloem]; in the petiole it is impossible to distinguish the bundles [proceeding from the central cylinder]¹ from the cortical set owing to the anastomoses in the nodes. The section of the petiole with its scattered bundles recalls that of a monocotyledonous stem, but there is no pericycle.

'In *Stravadium dracemosum*, belonging to the closely allied Barringtonieae, there are similar bundles, but the orientation of the liber is reversed, and the bundle [derived from the central cylinder]² retains its distinctness in the petiole.

'The explanation is suggested by the following facts. The cataphyllary first leaves of *Gustavia* [and *Lecythis*] are decurrent to the node below, so that the stem is winged, and the wings contain one or two pairs of accessory common bundles. Higher up the wings are lost, but their vascular bundles remain to give rise to this system of accessory bundles [I therefore refer the bundles to the decurrent wings probably present in the ancestral forms, but which have merged into the stem in existing forms save in the first formed internodes of the seedling]. *Napoleona* has a similar system of cortical bundles; [this confirms the view that its proper systematic position is next the Barringtonieae].'

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VAUCHERIA-GALLS.—Professor D. Oliver has been kind enough to call my attention to an item in the literature of this subject overlooked both by Benkö and myself (Annals of Botany, vol. iv. No. 13), viz., a paper by Professor Oliver in the 'Transactions' of the Tyneside Naturalists' Field Club, vol. iv for 1860, p. 263, with an admirable plate. The species of *Vaucheria* is not given; the imprisoned animal is stated, on the authority of the late Mr. Gosse, to be probably *Rotifer vulgaris*. Morren's paper, in the Bull. Roy. Acad. Bruxelles, vol. vi. No. 4, is also illustrated: there is a translation, but without the figures, in Ann. Nat. Hist., vol. vi. p. 344.

In a paper read before the Liverpool Microscopical Society in

¹ By a slip I wrote here 'common bundles.'

² 'Common bundle' in the original.



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