NOTES.

GRAPE SUGAR AS AN EXCRETION IN PLATYCERIUM.—Nectarial tissues are by no means common among the Vascular Cryptogams, their presence having been only observed in the genera *Cyathea*, *Hemitelia*, *Angiopteris*, and *Pteridium*;¹ their significance remains as yet obscure.

Specimens of *Platycerium grande* in the Tropical Ferneries at Kew afford another instance of nectar-excretory tissues among the Ferns, where in the early hours of the morning (6–9 a.m.) the lower surfaces of the young barren fronds or ‘mantle leaves’ are copiously studded towards their tips with drops of liquid, which disappear later on in the day, and subsequently wholly at the maturation of the fronds.

In *Platycerium alcicorne*, the Stag’s-horn Fern, and *P. biforme*, these exudations occur to a lesser extent, and occasionally on the fertile fronds as well.

These drops have a sweetish taste, and on testing with Fehling’s solution yield the brick-red precipitate characteristic of grape sugar; the presence of ants in their neighbourhood primarily suggested the test.

A microscopic examination of the lower surface of the ‘leaves’ reveals the existence of stellate hairs with pointed ray cells, and others similarly branched with obtuse ray cells, which latter appear glandular. Between these hairs, slight rounded elevations correlated with internal lacunae, which show no definite epithelial layer, but contain a liquid excretion presumably, are visible.

Occasionally these lacunae are below the epithelial layers, but it sometimes happens that the epidermal cells are ruptured, when the lacunae are exposed (Figs. I

¹ Engler and Prantl: Pflanzenfamilien Filicales I, iv, 1899, p. 66.

and II); in the former instance the excretion is apparently able to pass through the cell-walls, as in the case of *Datura*.¹

Although these sugary excretions are to be regarded primarily as of the nature of waste products, nevertheless they may have a subsidiary function to perform in attracting insects whose presence may be of benefit to the plant.

The varied instances of 'Myrmecophily' have been ably expounded by different authors, and Ridley² has alluded to *Platyserium biforme* in this respect. Its 'mantle leaves', with their concomitant of débris, constitute an ideal home for ants in their native habitat, and these sugary excretions, presuming they occur in nature, only regard as an adjunct to an interesting case of mutualism.

R. DÜMMER.

ROYAL BOTANIC GARDENS,
KEW.

¹ Strassburger, Textbook, Engl. Trans., p. 191, 1903.

² Ann. Bot., vol. xxiv, 469, 1910.

CORRECTION BY PROFESSOR BOWER.—There is a sentence in my paper 'On Medullation in the Pteridophyta' which I desire to amend. It is on p. 573, line 17 of the present volume, and it runs as follows:—'The fact of solenostelic structure in such a Fern as *Pteris aquilina* can have no direct bearing upon questions of their medullation, &c.'—that is, the medullation of seed plants. This sentence as it stands may be a stumbling-block to purists in description. It will better stand thus:—'The fact that solenostelic structure exists in the Pterideae, and that a modified derivative of that structure is seen in *Pteris aquilina*, &c.' The argument is unaffected by the change. What is intended is to show that such a type as *Pteris aquilina*, or indeed any of the Pterideae, can be no guide directly to the phyletic origin of the structure seen in seed plants unless it can be shown that the Pterideae had a common ancestry with the seed plants compared, and that that ancestry was already medullated and solenostelic before the two phyla were segregated. Without such evidence, comparison can bring to light nothing more than distant analogies of structure. It is obvious that the argument remains the same whether the Pterideae are quoted as a whole, or a specific case, such as *Pteris aquilina*.

It may be added that phyletically the Pterideae are not a very primitive type of Ferns, while in anatomical as well as in certain other characters *Pteris aquilina* is itself an advanced representative of the family.

GLASGOW,
August, 1911.

Dümmer, R A . 1911. "Grape sugar as an excretion in *Platyserium*." *Annals of botany* 25, 1205–1206. <https://doi.org/10.1093/oxfordjournals.aob.a089368>.

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