

## NOTES.

**ON ABNORMAL FLOWERS IN ONCIDIUM SPLENDIDUM.**—The examples of abnormal flowers in Orchids are very numerous, and if I venture in this note to add yet another to the long list of recorded monstrosities, I do so because I think the case may serve to illustrate some points of interest.

During the present year I observed a spike of *Oncidium splendidum* on which two of the flowers were abnormal, all the others being normal. The lower of the two flowers (which were on the same orthostichy) exhibited an increased number of perianth-leaves. The

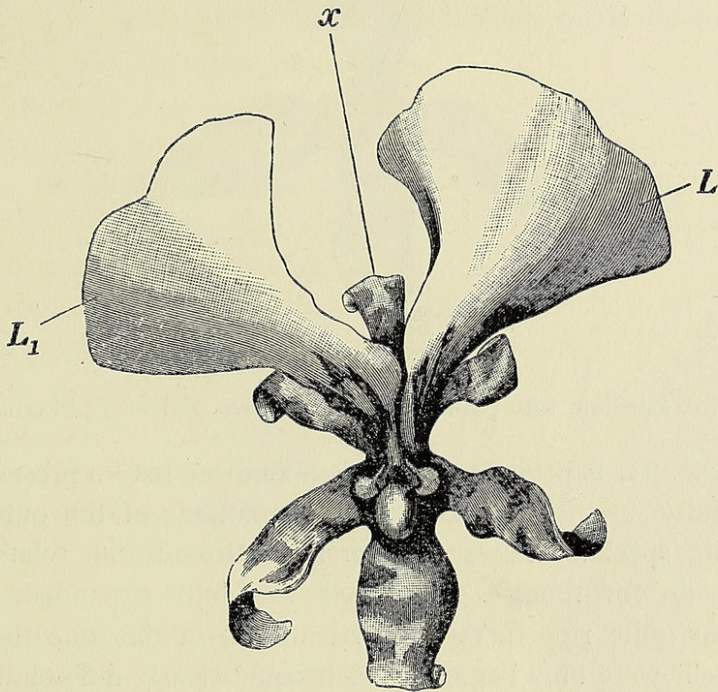


Fig. 3.

*L L<sub>1</sub>*. Lobes of the split labellum. *x*. The new perianth-leaf.

ordinary flower possesses five sepaloid perianth-leaves, and a bright yellow labellum, but the flower in question showed six sepaloid leaves and a double labellum (see Fig. 3). It will be noticed that the labellum is split completely down to the base, and each half exactly resembles, on a slightly smaller scale, the labellum of an ordinary



flower. The new perianth-leaf arises in the space left by the diverging halves of the labellum, but slightly behind them, whilst it is also decidedly internal to the two posterior sepals on each side of it. Probably, therefore, it represents a later development, which arose in the space left vacant by the splitting of the primordium of the labellum and the divergence of its two lobes. The flower was normal in all other respects.

The second flower (Fig. 4) on the other hand exhibited a reduction in the number of its perianth-leaves. The two posterior sepals had coalesced, and had assumed a median position. The labellum was only very slightly developed, especially on one side, on which it bore

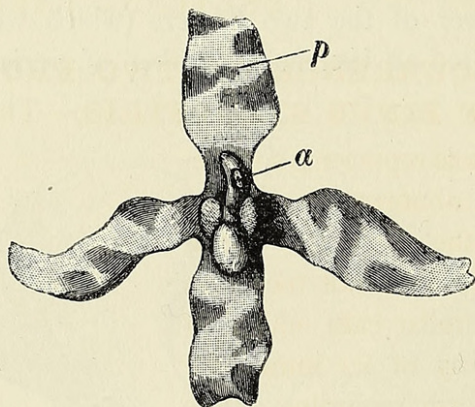


Fig. 4.

*a*, Abortive labellum with pollen-sac. *p*. The two coalesced posterior sepals.

a pollen-sac. It is probable that this pollen-sac may represent one of the normally suppressed postero-lateral stamens of the outer whorl. One of its special features of interest consists in its relatively late development, for though the flower was fully expanded, and the pollen was quite ripe in the normal anther, in this one the pollen-mother-cells were only beginning to become clearly differentiated.

Possibly the arrested development of the labellum may be due to the appearance upon it of the sporangium; just as the normally vegetative leaf of *Botrychium* assumes the contracted appearance of the sporophyll of this plant when sporangia occur upon it; or as the expanded petals of *Nymphaea* become contracted and filamentous as the pollen-sacs become more and more prominent. It may, however, be urged that the reduction in size is entirely due to the lack of space wherein to grow, owing to the coalescence of the posterior



sepals; but against this it may be said that the somewhat fleshy consistence, which characterises the reduced labellum, renders it difficult to see how one can account for its small size on this supposition, since its actual shape demands more room than if it had developed normally. On the whole, then, the former hypothesis seems the more likely one, namely, that the diminution of size of the labellum is the result of the occurrence of the pollen-sac or sporangium upon it; and this view is borne out by many other teratological facts connected with the abortion or alteration of ovules and pollen sacs in other flowers, as well as by the characters of fern-sporophylls, whenever they differ from the vegetative leaves.

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**ON THE OCCURRENCE OF TWO PROTHALLIA IN AN OVULE OF *PINUS SYLVESTRIS*.**—The diagram which

accompanies this note represents a somewhat remarkable abnormality in the development of the ovule of *Pinus sylvestris*; and as I have not met with any notice of a similar case, either in this plant or in any of its immediate allies, it seemed worth recording. The abnormality consists in the occurrence of two distinct endosperms or prothallia in the same ovule. They are separated by a well-marked wall, which runs obliquely between them and is continuous with the lateral walls of the cavity containing them. The upper prothallium (that nearest the micropyle) is somewhat smaller than the other one, but both possess perfectly developed archegonia (*a*, in the diagram), and the protoplasm of the central cell in each archegonium exhibits the frothy vacuolation characteristic of that of a normally formed corpusculum.

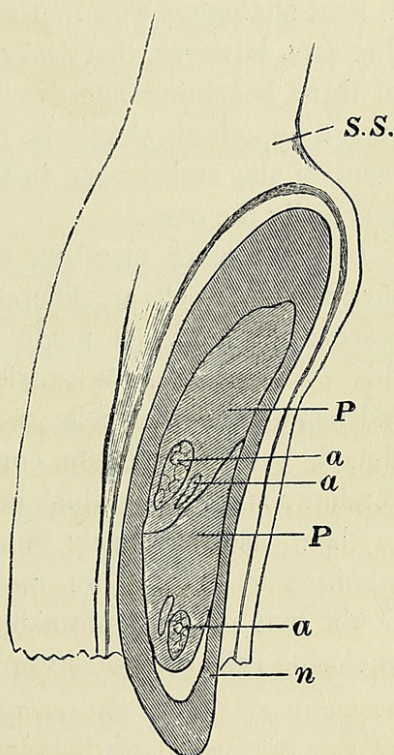


Fig. 5.

The question arises as to how the two chambers, in which the prothallia respectively lie, have been formed. Judging from the



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