

C. entomorrhiza differs from all in the far longer articulations of the sporidia.

4. *CORDYCEPS RAVENELII*, *Berk. & Curtis*; fusca, stipite elongato flexuoso sulcato compresso glabriusculo, capitulo cylindrico attenuato longiore; peritheciis superficialibus. *Curt.* no. 3080, *Rav.* no. 1272. (*Plate I. fig. 4.*) On larvæ of *Ancylonychia*, Dejean, or *Rhizotrogus*, Latreille, buried one or two inches in the earth. Spring and Summer. South Carolina. *Rev. M. A. Curtis and H. W. Ravenel, Esq.*

Brown. Stem 2 inches or more high, flexuous, compressed or grooved, at first minutely tomentose, at length smooth; head $\frac{3}{4}$ inch long, cylindrical, but slightly attenuated at either end. Perithecia free, ovate; asci very long; sporidia very long, filiform, breaking up into joints $\frac{1}{100000}$ of an inch long.

This species has very much the habit of *C. sinensis*.

5. *CORDYCEPS PALUSTRIS*, *Berk. & Broome*; carnosio-suberosa, sordidè carneo-fusca; stipite cylindrico sursum bifido trifidove, capitulis clavatis subcylindricis ex ostioliis asperulis; sporidiis filiformibus in articulos minimos globosos solvendis. *Rav.* no. 718. (*Plate I. fig. 5.*)

On moist putrid logs, undoubtedly attached to larvæ. Northampton Swamp, South Carolina. May. *H. W. Ravenel, Esq.*

From 1-2 inches high, about half as much when dry, of a dull brownish-purple or flesh-colour; carnosio-suberose; stem cylindrical, pulverulent, divided above, about as long as the clavate head, but scarcely so thick. Head rough with the mouths of the globose perithecia. Asci long, flexuous, filled with moniliform strings of globose, extremely minute grains, at length discharged in the form of white flocci. Articulations of the sporidia not exceeding $\frac{1}{200000}$ of an inch in diameter.

The extremely minute articulations or sporidiola, without any other character, separate this curious species, which has moreover a peculiar habit.

Note on a Monstrosity of the Flowers of *Saponaria officinalis*, L.

By MAXWELL T. MASTERS, Esq. Communicated by the Secretary.

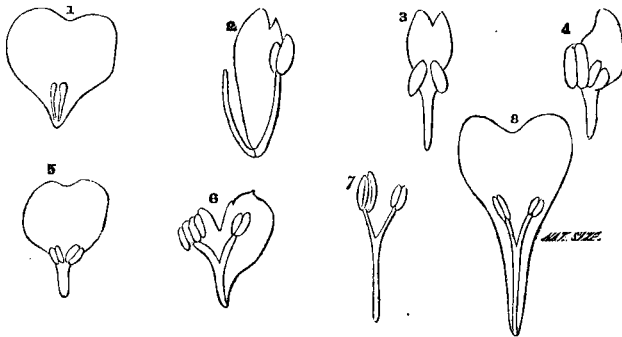
[Read Nov. 18th, 1856.]

MUCH discussion has from time to time arisen among Morphologists, as to the exact nature of the scales found on the petals of so many of the *Caryophyllæ*. The early botanists were content to call them nectaries, scales of the corona, appendages to the petals, &c., without attempting to explain them further. M. Dunal and the supporters of the theory of transverse chorisis, consider them to afford good illustrations of that process. This notion has also the support of Dr. Asa Gray, who institutes a comparison between

the combined intrapetiolar stipules of *Melianthus*, and the two-cleft adnate appendages to the petals in the *Caryophylleæ*. Another view is that taken by a writer in Hooker's Journal of Botany for 1849, where they are considered to be in most cases deformed glands, the writer adducing, among other reasons for so considering them, the fact of "their gradual passage into anthers in some flowers," in accordance with his notion that the formation of anthers is due to the conversion of the glands of the staminal leaf into those organs.

Without wishing to enter into the question of the morphological import of the so-called glands in general, the object of the present communication is to bring forward evidence to show that the scale on the petals of the *Caryophylleæ* is in reality a double organ, consisting of two abortive stamens united together. The double nature of the scale is very manifest. In *Dianthus* there are two plates projecting from the claw of the petal. In most of the species of *Silene* the two plates are quite detached one from the other, and from the petal itself at the point of junction between the claw and the blade; hence in systematic works the appendage is described as bifid, while in some species, as *S. cerastoides*, *Cucubalus bacciferus*, &c. &c., the appendage is quadrid,—an indication, as it were, of two two-lobed anthers. The double nature of the scales is almost equally obvious in the flowers of the *Sapindaceæ*, particularly in certain species of *Cupania* and *Urvillea*.

In some young flower-buds of a semi-double variety of *Saponaria officinalis* that have recently been examined, the scales were found



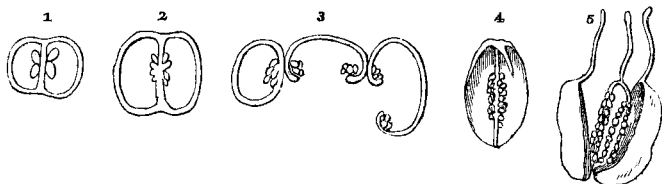
in some instances to be completely divided into two strap-shaped bodies, standing in front of the petal, and quite distinct from it. In one example the scale, single below, was bifurcated above, each subdivision bearing an anther. Several similar scales were found

adherent to the claws of the petals. There were also numerous cases showing an intermediate condition between the ordinary scale and that of two distinct stamens—some of these are drawn in the sketch given below. A careful inspection of some very young flower-buds showed that these scale-like stamens, though formed subsequently to the petals, yet advanced more rapidly in their development than the petals, from which in the first instance they were perfectly distinct.

From these circumstances it seems fair to infer that the scales on the petals of the *Caryophyllææ* are composed of two abortive stamens united together, and in consequence that these bodies do not constitute any real exception to the laws of alternation.

The nature of the scales of the flowers of the species of *Cuscuta* has been explained by Mr. Babington in the *Annals of Nat. Hist.* for 1844 in a similar way, but he does not adduce any positive evidence in support of his opinion.

The flowers of *Saponaria* above alluded to afforded instances of both marginal and free central placentation. In the sketch are represented cross sections of two ovaries (figs. 1, 2), each consisting



of two carpels, and in each there is an evident connexion between the placenta and the walls of the ovary. Other bi-carpellary ovaria, examined at a more advanced period of development, presented a central ovuliferous column, apparently quite unconnected with the walls of the carpels. The most frequent condition of the ovary was that in which there were three carpels, slightly united at their bases, but distinct one from the other for the greater part of their length, open along the ventral suture, and bearing ovules on their margins, as is shown in transverse section in the sketch (fig. 3). Figure 4 shows one of three carpels; the other two bore marginal placentæ, but in this one there was an ovuliferous cord, free from the margins of the carpel, but connected with the style, which is inflexed. Here it seems as if the two placentæ had become detached from the margins of the carpel during growth, while they had remained in union one with the other.

A not unfrequent condition was that in which there were two

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lateral carpels with no ovules on their edges (fig. 5), but between them there was an arched body, bearing a style, and studded with four rows of ovules, two on either side, as if the placentæ of both carpels had become detached, with a portion of the style from each, and had united to form the arch:—or, were there four carpels originally, the anterior and posterior reduced each to a narrow strip bearing ovules and united together above, so as to form a single style?

On a Species of *Pilobolus*.

By FREDERICK CURREY, Esq., M.A., F.L.S. &c.

[Read Dec. 16th, 1856.]

A SPECIES of *Pilobolus* has lately occurred in the neighbourhood of Blackheath, differing in some respects from the only common species, *Pilobolus crystallinus*, and closely resembling, if it be not identical with, *Pilobolus roridus* of Bolton, which has hitherto been considered a doubtful form. Like *Pilobolus crystallinus* it is a most delicate and elegant fungus, although not choice in its habitat, flourishing as it does on the surface of cow-dung. My attention was first attracted by a number of little points of a dull yellow colour, giving a scabrous appearance to the surface of the dung, and an examination with a lens disclosed a very few small, ripe specimens of the *Pilobolus*, not differing much at first sight from ordinary specimens of *Pilobolus crystallinus*. By scraping off a thin layer of the cow-dung and keeping it under a small bell-glass in a moist atmosphere, an abundant crop appeared in a few hours, which was followed by others in continuous succession for a fortnight; after which the soil appeared to be exhausted, and in order to procure further specimens a fresh layer of the cow-dung was necessary. I have thus been enabled to follow out the different phases of the plant and to examine its structure with some minuteness. The yellow points above alluded to become elongated into filiform processes, tapering slightly towards the upper extremity, which frequently assumes a clearer and deeper colour (Pl. II. fig. 1). Subsequently the apex of these threads becomes gradually swollen into the form of a flattened sphere, at which period the plants look like small orange-coloured pins (fig. 2). The swollen heads gradually change colour, becoming first of a dull olive-green, and eventually black; or rather (as appears upon a closer examination) a very deep opaque purple. During the