stray specimen or two have appeared, and I have now been breaking open the sound cocoons, and find that great numbers of the moths have perished in the pupa when fully formed and coloured; and this I have no doubt occurred in the first spring, when they had not sufficient warmth to enable them to burst the pupal envelope.

There is another point—the curious double cocoons, from which nothing ever emerges. These are not divided inside, but are formed by two larvæ uniting their efforts, and producing a broad cocoon the size of the *whole material* of two single ones. Thus, two sides being saved, it is larger than the two single ones would be.

Could anybody expect anything to emerge from this? In the first place, a larva, when assuming the pupa state, requires the most perfect liberty from interference or annoyance. How, then, could *either* of two larvæ, wriggling off their skins in the same cocoon, be expected to succeed? The only chance would be by one dying in the larva state. But then the survivor would have too much room, —would have, in fact, no "purchase" anywhere by which to burst open the lid of the cocoon.

Fortunately an example occurred among my lot; and I found, on opening it, that one larva shrivelled up without attempting to cast its skin, that the other changed, and in due time the moth emerged from the pupa skin, but never left the cocoon. I found it crumpled up and dead, of course. To this large cocoon three others were slightly attached: from one the moth emerged, and in the other two they died when ready to emerge from the pupa.

C. G. Barrett.

Melicerta ringens are absent; but there are two tentacles armed with setæ, and attached in the usual manner. The pellet with which the animal builds its tube is formed in a kind of sac, situated

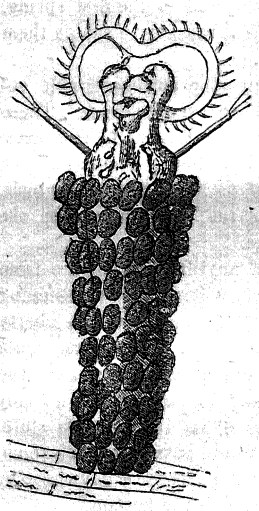


Fig. 3. *Melicerta socialis* (dorsal view).

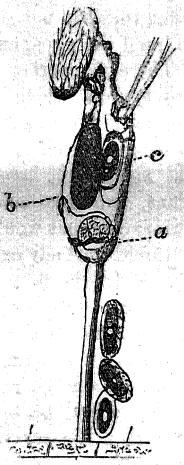


Fig. 4. Ditto, when out of its tube.
a, Pellet. *b*, Cloaca. *c*, Egg and ovary.

at the lower extremity of the abdomen, below the intestines and ovary; it is discharged through the cloaca, the creature raising itself, before expelling it, so as to bring the cloaca to a level with the rim of the tube. The egg is deposited in the tube, and remains there until the young is hatched. Length of the adult, about $\frac{1}{10}$ of an inch, Found in shallow ponds, usually attached to moss. Named *Socialis* because groups of four or five are often found attached to the same leaflet.

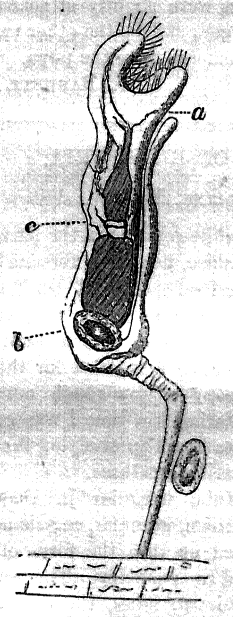


Fig. 5. *Floscularia trilobata*.
a, Cloaca, with long canal leading from (*b*) ovary, &c.
c, Position of the jaws.

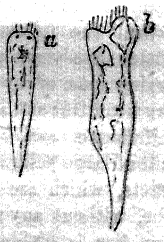


Fig. 6.
a, *Flosculi* just hatched.
b, ditto, thirteen hours after.

Floscularia trilobata.—Tube generally absent; rotatory organ divided into three lobes (whence its name), somewhat similar in appearance to those of *Floscularia campanulata*. The dorsal lobe is frequently much larger than the other two; and when such is the case, it is commonly curved forwards over the funnel-shaped mouth, and presents a somewhat hooded appearance. The setæ are not only much shorter than in other floscules, but they are also differently arranged, being placed between the lobes as well as on their summits, forming a kind of unbroken fringe along the entire margin of the disc; the interlobular setæ are, however, much shorter and finer than those on the summits of the lobes. Two cervical eyes are present only in the young. Vibratile cilia are seen distinctly along the course of the pharynx, as far as the maxillary apparatus, which latter organ, occupying the same position as in other floscules, is armed with three pairs of teeth. The ovary is large. The egg, when expelled, remains attached. The cloaca is situated unusually high in the body, and there is a long canal leading from the intestine and ovary to it. The foot is of great length, and much wrinkled. This is the largest of the floscules; its total length is about the $\frac{1}{40}$ of an inch. It is very rare, being found in only one small pool in the parish of Sandhurst during the years 1864, '65, and '66. It is usually attached to moss.

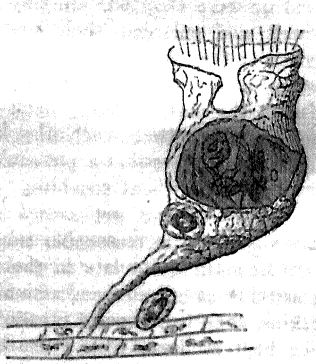
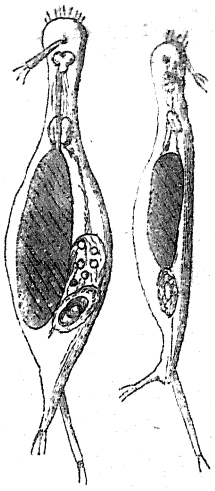


Fig. 7. *Floscularia edentata*.

Floscularia edentata.—This is a doubtful species, and perhaps not a true floscule, but more nearly allied to that genus than to any other. It has no tube. The disc or rotatory organ has a few fine setæ attached to it; it is irregular in form, and is not divided into lobes. The creature has no maxillary apparatus, nor has it any teeth. Its food passes directly through the throat into a very capacious stomach, where a variety of the lower forms of life (some of large size) may be seen undergoing the process of digestion. The foot is short, but of variable length; in one specimen a good deal wrinkled. This form of rotifer is very rare; I have seen only two specimens. Each laid an egg while under observation, which remained attached, but

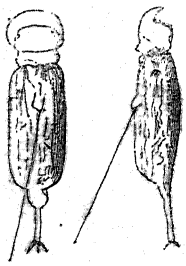
were both unfortunately lost before the young ones were hatched. Length of the animal, about the $\frac{1}{80}$ of an inch. Habitat, same as *Floscularia trilobata*.

Notommata caudata.—Eye single, cervical; head somewhat rounded, connected with the body by a long narrow neck. Attached to the head is a (one only) short, singular, flexible, tube-like appendage (tentacle?), surmounted by setæ.* The body, which is somewhat elliptical, is prolonged posteriorly into a kind of tail, on the dorsal surface of which a rounded prominence is observed, and from its summit there proceeds a small setigenous tube,



a b

Fig. 8.
a, *Notommata caudata*.
b, Lateral view of ditto.



a b

Fig. 9.
a, *Stephanops uniseta*.
b, Lateral view of ditto.

not unlike, in appearance, the one attached to the head. Beneath this so-called tail, but separated from it by the cloaca, a long narrow foot, with two small pointed toes, joins the body. The maxillary bulb is placed high in the neck, and from it a long œsophagus, with a kidney-shaped gland on each side of it, leads to a large stomach. The ovary is large, and contains from eight to twelve germinal vesicles. When magnified up to 350 diameters, water vascular canals are distinctly seen. Total length, $\frac{1}{120}$ of an inch. Habitat, pools in the parish of Sandhurst.

Stephanops uniseta.—Eyes two, small, frontal; anterior portion of the lorica is expanded into a kind of hood, as in *Stephanops muticus*, but much smaller in proportion to the size of the body. This hood is remarkably clear and crystalline; and the body, although the lorica presents a somewhat tesselated appearance, is so transparent that it is impossible to determine the internal structures. The foot is about half the length of the body; it is furnished with three toes,—one, the dorsal, being scarce half as long as the others. A long, tremulous bristle—which is fixed into a kind of socket or tube, situated in the centre of the back at about the juncture of the anterior with the middle third of the body—stands out diagonally, and, projecting for some distance beyond the termination of the foot, is kept, by the rapid movements of this restless creature, in a constant state of vibration. Total length, $\frac{1}{180}$ of an inch. Habitat, Sandhurst, Berkshire, in same pools as the above.

* I could never ascertain the exact point to which this appendage is attached.

MOSSES ABOUT LONDON.

I NOTICE that prizes are offered for the best collections of mosses and Hepaticæ to be made in the neighbourhood of London. Candidates for these prizes may be glad to know where to go, and what to look for, in the district with which I am best acquainted.

On Reigate Heath (a swampy wood at its western end should be carefully examined),—

Sphagnum recurvum, rigidum.
„ *subsecundum, cymbifolium.*
Dicranella cerviculata.
Hypnum cordifolium, stramineum.
Brachythecium albicans, rutabulum (var. *robustum*).
Plagiothecium denticulatum.
Jungermannia curvifolia, platyphylla.
Hypnum imponens was found here some time ago.

At the foot of Buckland Hill:—
Thuidium hystricosum.
Hypnum chrysophyllum.

In the Mole, at the foot of Box Hill:—
Rhyncostegium rusciforme.

On trees by the side of the Mole:—
Barbula mucronata.

On trees at the foot of the hill:—
Cryphæa heteromalla.

On the ground, and at foot of trees in the wood:—
Rhyncostegium tenellum, confertum.
Eurynchium pumilum, crassinervium.
Thamnium alopecurum.

Higher up, on the slopes of the hill:—
Cylindrothecium concinnum.
Thuidium abietinum.
Didymodon rubellus.
Leptotrichum flexicaule.
Seligeria pusilla (on chalk).

On trees in the neighbourhood of Box Hill and Dorking:—
Orthotrichum Lyellii, leiocarpum.

In Gomshall Marsh:—
Mnium rostratum.
Webera albicans.
Physcomitrium pyriforme.
Hypnum cuspidatum.