

## Calliobdella lophii, Van Beneden and Hesse.

By

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ON May 12th, 1913, four specimens of the marine leech (*Calliobdella lophii*) were taken by myself whilst working at the Marine Biological Association Laboratory, Plymouth. The leeches were parasitic on the skin of a large angler (*Lophius piscatorius*), just behind the gill covers and in front of the pelvic fins, two on each side. The angler was caught in Jennycliff Bay within a few hundred yards of the shore, about 3.15 p.m., half-ebb, and was taken in a small trawl only just large enough to contain it; shrimps were present in the same catch, but no fish.

*Calliobdella* was previously unknown at Plymouth. The leech was named by van Beneden and Hesse in 1863 from five specimens found in March by Hesse at Brest.\* Some of the external characters alone were described by them. They omit to mention, however, that the genus is characterised by its having six annuli to each body segment, a point which it shares in common with *Ichthyobdella* and *Pontobdella*, but which separates it from other genera. They describe so accurately the beautiful appearance of this leech that their own words suffice:—

“An animal carrying a sucker at each extremity of the body, the posterior very large and simple. The body divided into two distinct regions, a neck region bare, and a region of the body properly so called, this latter carrying laterally rounded tubercles on the segments or cutaneous folds.”

“This species attains a length of five or six centimetres.” (Two of those captured at Plymouth were seven or eight without extreme extension.) “It lives on the angler (fishing-frog), *Lophius piscatorius*. The body is elongated, slightly convex above, flattened below. The skin is tough, with tubercles on the side, and divided into twenty-four segments, of which ten or a dozen belong to the region of the neck, the others to the body properly so called. The neck and the posterior sucker are paler than the rest of the body; the segments of the neck are covered

\* “Recherches sur les Bdellodes ou Hirudinées, 1863.”

with minute black dots; the body is of a clear brownish green, ornamented above with broken, parallel black lines. The body is paler underneath, showing rose-pink markings in the form of a V. It is very noticeable also that the last segment but one of the neck is ornamented with an orange band which encircles it. The movements of this leech are very lively."

They were very lively in captivity, clinging firmly with the posterior sucker to the jar containing them, and seeking eagerly for some fresh host with the anterior end.

They moved occasionally with the usual loop-like movements of a leech, taking great care to place the posterior sucker as exactly as possible in the position previously occupied by the anterior.

Calliobdella is sharply divided by a constriction into a neck and a body. Blanchard,\* who mentions this leech as occurring in the Mediterranean, states that the segments of the body are formed of three to six annuli according as the three primordial rings are more or less divided by choris. All those in my possession have six annuli to the segment. The same author suggests that the animal is flattened when young and rounded when old. Further, he alters the name for orthographical reasons to Callobdella.

On the body, but not on the neck, are lateral protuberances, *eleven* pairs of hemispherical projections on each side of the animal, "rising and falling as if by respiration," as Dalyell† said of a leech he described as "*Hirudo vittata*," and which possibly was the same. These are rudimentary branchiæ, corresponding to the large external branchiæ of Branchellion, and similar to those of the North American and European marine and fresh-water form, *Cystibranchus*.

According to Quatrefages‡ these appendages do not receive the blood contained in the vessels, but only the lymph which becomes diffused, and which makes the respiration truly lymphatic.

Ichthyobdella is without these tubercles, and Pontobdella, which is further distinguished by its warty appearance also. Owing to the six annuli of the segment being formed by choris from three, the first respiratory vesicle is on the first double ring, the second on the fourth double ring, and so on. The anterior half of each double ring carrying the vesicle is spotted.

There are no eyes.

The extreme size of the posterior sucker in *C. lophii*, it being

\* "*Hirudinées de l'Italie*, Boll. Mus. Zool. Torino," Vol. IX, 1894, No. 192.

† "*Powers of the Creator*," Dalyell. Vol. II, p. 9, 1858.

‡ *Ann. Sc. Nat.*, Vol. XVIII, p. 322, 1852.

more than twice the maximum breadth of the body, distinguishes this species from the other (or others). Ludwig Johannson,\* who describes this leech as rare, admits that he has never seen one alive, and states that the one in the museum at Stockholm was taken at Bergen in 1879, also that it occurs on the coast of Norway, and the two specimens he dissected were sent by a fisherman from Helsö in S. Bohuslän. He, adopting the altered name *Callobdella*, characterizes the genus by its possessing a large copulatory organ with a bursa and two seminal vesicles, while in other genera the copulatory organ is without the latter.

\* Johannson. "Die Ichthyobdelliden in Zool. Reichmuseum in Stockholm, 1896."