The subantarctic islands of New Zealand. Reports on the geo-physics, geology, zoology, and botany of the islands lying to the south of New Zealand, based mainly on observatiohs and collections made during an expedition in the government steamer "Hinemoa" (Captain J. Bollons) in November, 1907.

Wellington, N.Z.,Printed by J. Mackay, govt. printer,1909.
https://www.biodiversitylibrary.org/bibliography/11810

v.1 (1909): https://www.biodiversitylibrary.org/item/44371

Article/Chapter Title: Preliminary report on two Hirudinea from the Subantarctic Islands of New Zealand
Author(s): William Benham
Subject(s): annelida, hirudinea, taxonomy
Page(s): Page 372, Page 373, Page 374, Page 375, Page 376

This page intentionally left blank.

ARTICLE XVI.—PRELIMINARY REPORT ON TWO HIRUDINEA FROM THE SUBANTARCTIC ISLANDS OF NEW ZEALAND.

By W. B. Benham, D.Sc., F.R.S.

Time does not permit me to give a detailed anatomical account of the two leeches collected during the expedition. To await the arrival of the necessary literature from Europe would delay the issue of this volume, in which it has been deemed desirable to include them; so that the present account must be regarded as merely a preliminary one, and the names as provisional, which may need correction in a further article, in which the internal structure will be discussed.

Order RHYNCHOBDELLIDA.

Fam. ICHTHYODELLIDAE.

Notobdella, gen. prov.

Notobdella nototheniae, sp. nov.

It is not without much misgiving that I bestow a new generic name on this little fish-leech, which was collected, while at the Snares, from the skin of *Notothenia microlepidota* which Mr. Waite caught with a line from the rocks; for although this leech agrees generally with *Trachelobdella*, Diesing (*Calliobdella*, v. Beneden), it is totally unprovided with the characteristic vesicular gills, and thus resembles *Piscicola*, Blainville, which, however, occurs as a parasite on fresh-water fishes only. Van Beneden and Hesse* used the title *Ichthyobdella* for leeches of similar form occurring on marine fishes, but Blanchard† points out that this is a synonym of *Piscicola*, and therefore cannot be employed; but he does not suggest any new generic name for gill-less marine fish-leeches—at any rate, in this article. Possibly he has done so in a later paper which is not available here (see Remarks on p. 374). I have therefore given a provisional name to the present species.

Dimensions.—When newly caught I noted that they are, "when fully extended, about 1 in. in length, or rather more." But the largest of them when preserved is only 15 mm. in length, with a greatest diameter of 2·25 mm., and a height of 1·75 mm. at the middle of the trunk. The neck measures 4 mm., the anterior sucker 1 mm., and the posterior sucker 1·75 mm. in diameter.

---

* P. J. van Beneden and Hesse, "Recherches sur les Bdellodes et les Trematodes marins," 1862.
† R. Blanchard, Boll. Mus. Zool. Torino, ix, 1894.

External Anatomy.

The body, apart from the two terminal suckers, is distinguishable into two well-marked regions—neck and trunk. The anterior or buccal sucker is subcircular, or perhaps rather longer than wide, cup-shaped, and attached excentrically to the neck, from which it is separated by a constriction. It is marked by grooves into 12 annuli, in addition to the prostomial lobe. There is a pair of eyes on the 9th annulus; each is a crescent of black pigment, open posteriorly.

The neck is cylindrical, about one-fourth of the total length of the animal. Its hinder third is very evidently modified as a clitellum; here the annuli are less distinct, the diameter is rather greater, the ground-colour is lighter and without spots.

The trunk (or abdomen) is subcylindrical, rather wider than its height, with rounded sides.

It is absolutely without any trace of gills. My note, written at the time of capture, reads, "I see no gills"; and after a careful examination of the preserved specimens I cannot detect the slightest sign of any being retracted. There is no interruption of the surface of the body, so far as superficial observation allows me to judge; at the same time, I should state that I have not yet cut sections, which alone would be absolutely decisive.

The posterior sucker is circular, not much broader than the body shortly in front of it. There are no "eye-like" marks on it. It is uncoloured.

Colour.—I noted that the leech, in life, is "red-brown, with paired oval black spots at intervals." As preserved in formol, the tint is paler, and the spots are deep reddish-brown, instead of black. Of the three specimens, one is without spots; in the other two they are not quite regular in their distribution, but a comparison of these two enables one to recognise two rows on each side—a dorso-lateral, and a ventro-lateral just below the lateral margin of the body; the latter are less numerous and less regularly arranged. On the trunk the dorso-lateral spots occur on every third annulus, except at the hinder end.

The dorsal face of the buccal sucker presents a diffused pigment, and in one individual there are also two spots of darker brown on each side near the hinder border; these are quite distinct from the eyes.

The clitellum is devoid of spots in all three specimens.

Annulation.—The arrangement of these spots on the trunk indicates that the segments are trimerous; but on the neck the spots do not commence till near the clitellum. In one individual, which is a good deal contracted, there are 18 annuli in the neck; in an extended specimen the limits of these annuli are so indistinct that it is difficult to count them accurately, but a comparison of the three specimens gives the following as the constitution of the body:–

There are 18 annuli in the neck, of which 5 form the clitellum. Each of these latter is apparently biannulate, or even triannulate, in a contracted specimen, so that at first one might suppose that the "annuli" are segments; but the position of the genital pores negatives this suppositon.

Paired spots occur on the following annuli: 7, 10, 13, 19, 22, 25, and on every subsequent third annulus up to the 52nd; then on 54 and 56, beyond which there are three annuli, and an imperfect fourth, without spots. Thus the body, without the suckers, consists of 60 annuli.

The buccal sucker, with 12 annuli, consists of presumably 4 segments; the neck of 6 segments; the trunk of 16 segments, the last two of which have only 2 annuli apiece: this gives a total of 26 segments in the body, without counting the posterior sucker, which I have not attempted to analyse, for the above enumeration agrees with that of the *Hirudinea* in general.

The male pore is situated between the clitellar annuli 2/3—*i.e.*, it is behind the 15th annulus of the neck. The female pore is apparently at 18/19, or it may be on the 19th annulus, for the body is so contracted here that without cutting sections it is impossible to be certain.

From the male pore there projects a small penis; behind the female pore there is on the 19th annulus a pair of white swollen papillae close to the middle line, which partially conceal the actual pore.

I am unable to detect the nephridiopore.

Locality.—Snares Island, on *Notothenia microlepidota.*

Remarks.—Blanchard* has described a marine leech from Uschuaia which in several respects bears a resemblance to the above. But this *Ichthyobdella australis* differs in details of annulation, there being 6 annuli to the trunk segment; the coloration and the position of the genital pores are also different, but, like the above species, it seems to be without the gills. The possession of 11 pairs of vesicular gills is included in the diagnosis of the genus, which precedes the account of the species; yet Blanchard does not mention the gills, nor do either of the figures show them. In the diagnosis it is not stated that these structures may be absent. Hence I have created this new genus.

Order GNATHOBDELLIDA.

Fam. HIRUDINIDAE.

Subfam. HIRUDININAE.

ORNITHOBDELLA, gen. nov

Ornithobdella edentula, sp. nov.

The soil of the Snares under and around the nests of penguins, mollymawks, and mutton-birds contains a great number of leeches of some considerable size. They were familiar to our Maori boat-crew, who stated that they suck the blood of the mutton-birds at night. As the young of these birds are captured by the Maoris for food, their attention would naturally be directed to these particular birds, but there can be no doubt that these leeches also suck the blood of the penguins, for the intestine of the individual dissected, which was collected at a penguin-rookery, was gorged with blood. These birds, it is needless to mention, are the only source of food for the leeches, as, except for the seals, which are not likely to be attacked, they are the only animals on the island. I tried to persuade a leech to bite my finger, but it did not, and the reason became clear on dissection: they are

* Blanchard, "Hirudineen der Magalhaensischen Sammelreise," vol. iii.

without teeth on the jaws, for which reason they are not likely to feed on the thick-skinned seals.

The soil in which the leeches live is moist, and saturated with excrementitious matter from the birds' nests, and, as a rookery contains thousands or, may be, hundreds of thousands of birds, it will be evident that the surroundings are not pleasant to the nose.

It may be that I am not justified in forming a new genus for this leech, but it does not agree with any diagnosis to which I have access.

Dimensions.—The specimens before me measure from 28 mm. by 9 mm. to 95 mm. by 15 mm., but the majority are about 90 mm. by 10 mm. They are much contracted by the preservative, and in life attain a length of 6 in. even when only partially extended. The greatest breadth is near the hinder half of the body. The posterior sucker is of moderate size; in a 90 mm. specimen it is 7 mm. in diameter.

Colour.—In life the ground-colour is a dark cocoa-brown, with black reticular markings on the dorsal and on the ventral surface. In the preserved state (formol) the tint is naturally paler, and the black has become a sienna brown; while in alcohol the ground-colour has changed to a buff.

Along the median dorsal line is a narrow streak deprived of the dark pigment; otherwise the whole dorsal surface is marked with dark network. In some parts of the back the reticulation is fine, with wide meshes; in others coarser, with small meshes; so that the depth of colour varies. The ventral surface is also pigmented in the same manner, but less deeply.

External Anatomy.

The eyes are arranged precisely as in *Hirudo*. The segments of the body are pentamerous, with the usual abbreviations at each end. I am unable to detect any segmental sensillae, each annulus bearing numerous small and large papillae, without any regularity in arrangement; but the 17 pairs of nephridiopores occupy the same position as in *Hirudo*. The 4th and 5th annuli, though distinct dorsally, coalesce at the sides; the same is the case with the 7th and 8th, so as to form in each case a single annulus on the ventral surface. In fact, the only notable difference from *Hirudo*, so far as the external features are concerned, is the shifting of the female pore one annulus further back; the genital pores, being at annuli 30/31 and 36/37 respectively, are thus separated by 6 annuli instead of by 5.

From the male pore there issues a blunt, short, conical penis, quite different from the filamentous cirrus of the common medicinal leech. The clitellum is visible in the largest individual in my collection; it is paler in colour, and the body is here wider than elsewhere; it commences at the 25th, and extends to the 35th annulus—*i.e.*, from the 2nd annulus of segment ix to the end of the 2nd annulus of segment xi.

Internal Anatomy.

The roof of the buccal sucker is deeply grooved; the jaws are small and quite toothless.

The gut and nephridia, so far as is to be seen in the dissected specimen, agree with those of *Hirudo*, but the genital organs present points of difference which are

possibly of generic importance. The epididymis is a large compact mass of coiled tube. The ductus ejaculatorius arises as a thick muscular duct, soon becoming thinner, before entering the anterior face of the rounded muscular penial sac. There is no "cirrus sac" nor prostate gland. The penial apparatus recalls that of *H. antipodum*, Benham.*

The ovisac is large; the wide oviducts open into a small "albumen-gland," whence the long muscular utero-vaginal canal passes backwards in an undulating manner to the female pore.

Locality.—Snares Island (W. B. B.; H. Browne; Professor Kirk).

* Benham, "Two New Species of Leech in New Zealand," Trans. N.Z. Inst., xxix, p. 180.

MYRIAPODA.

Several specimens of Myriapods were obtained under and in logs, &c., at the Auckland Islands, and a few were collected by Dr. Chilton and Mr. Chambers on Campbell Island. These have not yet been identified, but it is intended to ask Professor Sylvestri, of Portici, to examine them.

There is one species of the Chilopod *Cormocephalus*, and one, or perhaps two, species of a Diplopod belonging to the family *Polydesmidae*.

These are all very similar to the New Zealand species, but as the necessary literature for the work is wanting in the Dominion, and much has been done on the group since the paper by Hutton on our Myriapods, it is thought better not to attempt the task of naming them.

W. B. Benham.