ART. XX.—*Notes on some New Zealand* Polychaetes.

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

[*Read before the Otago Institute, 1st December, 1914.*]

THE identification and description of the marine Annelids from our shores was undertaken by the veteran zoologist Dr. E. Ehlers,* of Gottingen University, some years ago, and for that purpose I sent him representatives of all the species that I had collected up to that date. To this list I added a few more species as a result of the study of material obtained during the trawling expedition of the s.s. "Nora Niven"† and during the expedition to the subantarctic islands.‡ I hope to add to our knowledge of the group from time to time as I work out the large amount of material which I have accumulated in recent years.

On the present occasion I wish to make some remarks on three of the species described by Ehlers, for, as a result of an examination of more abundant material than was available to him, I have come to a somewhat different conclusion on certain points which affect the nomenclature.

After having found that I was unable to agree with Dr. Ehlers in regard to these points I wrote to him on the subject; and he was good enough to reply to me to the effect that, as I had at my disposal a more extensive series of specimens than he had, he was prepared to accept most of my conclusions.

Fam. SYLLIDAE.

Odontosyllis suteri sp. nov.

Eurymedusa picta Ehlers *partim* (Neuseeland. Anneliden, 1904, p. 21); *nec Eurymedusa picta* Kinberg, 1865.

I have examined specimens of a worm which agrees closely with the account given by Ehlers of *Eurymedusa picta* of Kinberg.§ The present specimens were collected by me at Portobello, in the Otago Harbour, and at Port Pegasus, in Stewart Island, and they are similar to that I sent to Ehlers from Tasman Bay. These agree precisely in their external features with Ehlers' description and figures, so that it came as a surprise to me to find that the pharynx is armed with a row of teeth which is characteristic of the genus *Odontosyllis*.

The long gizzard which extends from the 10th to 25th segment is preceded by a thick-walled pharyngeal tube (reddish in specimens preserved in formalin), the entrance to which is provided with a thick band of chitin stretching across the ventral margin, which bears 6 backwardly directed teeth. This band is rounded on its free surface, and on each side, beyond the row of teeth, is bent abruptly on itself, forming a rounded knob, from which there projects into the cavity a process which I at first took for a tooth in accordance with Ehlers' account, but further examination showed that it is merely the free end of the elastic band. Of the six teeth, the

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* Ehlers. Neuseelandische Anneliden in Abhndl. Kgl. Gesell. Wiss. Gottingen, 1904, and pt. ii, 1907.

† Benham. Annelida, Sci. Results N.Z. Govt. Trawling Exped., 1907, in the "Records Canterbury Museum," vol. 1, 1909, p. 71.

‡ Benham. "Report on the *Polychaeta*, Subantarctic Islands of New Zealand," 1909, p. 236.

§ Kinberg. Annulata nova in Ofversigt af k. Vet. Akad. Forhandl., 1865, p. 249.

central four are similar to one another; the rectangular base of each is produced into a sharp narrow conical tooth; the lateral tooth on either side has a longer base, which is produced outwards towards the bay formed by the reflexed end of the chitinous band.

In one individual (preserved in formalin) the pharyngeal tube is widely open at its anterior end, and these teeth were fully exposed to view; but in another (preserved in alcohol) the entrance to the pharyngeal tube was

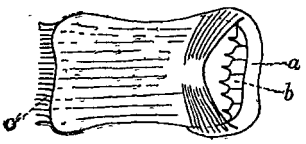

FIG. 1.

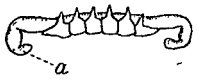

FIG. 2.

FIG. 1.—The pharynx of *Odontosyllis suteri* (enlarged). *a*, the chitinous band along the ventral margin of the entrance; *b*, the teeth; *c*, the junction with the gizzard.

FIG. 2.—The band, with its teeth. *a*, the reflected end.

closed, the anterior margin was reflected over it, and, owing to a right and left compression, the entrance was reduced to a narrow vertical cleft, so that the teeth were only rendered evident when the tube was slit open and the walls spread out.

Now, in Kinberg's diagnosis of his genus *Eurymedusa* we find the passage, "Maxilla unica, margine pyriformi, lateribus dilatatis, medio carinata," &c. There is, then, only a single tooth. It is true that Ehlers, in his account, speaks with some diffidence about the matter, for he says, "At the entrance to the pharyngeal tube is a long non-denticulated ring with a large tooth which appears as a pigmented fold projecting from the wall. Probably, however, this is only the swelling from which the true chitinous tooth has dropped away." His figure (pl. iii, fig. 9) is certainly not very convincing. I suspect that Ehlers mistook for a tooth the reflected end of the chitinous band. He was able to examine Kinberg's type specimen, and though he found certain differences in the character of the chaetae, and though Kinberg does not give a clear account of the peristomial flap which covers the prostomium, and though the state of preservation of the type did not allow him to study the everted pharynx, yet, in spite of these discrepancies, Ehlers identified our worm with Kinberg's.

It may be that the specimen from Laysan collected by Schauinsland and examined by Ehlers is really Kinberg's species; but those from the coast of New Zealand (one of which he received from Mr. Suter, from Christchurch, and others from me, collected at Tasman Bay) are, I have no doubt, identical with those which I have studied from other parts of our coast and from the Kermadec Islands.

Hence, as we have Ehlers' statement that his specimens are identical with Kinberg's, it is necessary to give a new specific name to this New Zealand species. I name it after Mr. H. Suter, who has done so much for New Zealand natural history, not only by his monumental monograph as a culmination to his extended work on our *Mollusca*, but also by his generosity in giving specimens of various animals collected by him to those engaged in the investigation of special groups.

Fam. CHLORHAEMIDAE.

Flabelligera bicolor Schmarda.

Pherusa bicolor Schmarda, Neue Wirbellose Thiere, 1861, p. 21, pl. xx, fig. 169. *Flabelligera lingulata* Ehlers, Neuseelandische Anneliden, 1904, p. 47. *F. semiannulata* Ehlers, *loc. cit.*, p. 150.

I received nine specimens of this species, and am able to add one or two notes to the account of Ehlers.

The two more carefully examined are 30 mm. and 50 mm. in length, with 55 and 58 segments respectively.

The body-wall is pale brown in the preserved state (in formalin), which is distinctly segmented in those specimens which are not distended with food. When this, however, is the case the anterior five or six segments show the segmentation as a prominent ridge at the anterior margin. Then the body commences to enlarge, and from the 8th to 16th the wall, hitherto thick and opaque, is thin and transparent, owing to the great amount of distension allowing the contained viscera to be seen and the muscular fibrillae to be distinguished in the wall itself. From this point the body gradually decreases in diameter towards the anal segment. In such a specimen, which resembles that described by Ehlers under *F. lingulata*, the dimensions of a specimen of 50 mm. in length are: the peristomium is 1·5 mm. wide; the 7th segment about 2·5 mm.; and the greatest breadth is 6 mm., at about the 10th or 12th segment. At the 18th it is 3 mm., and at about four segments from the end 1 mm. wide. It is thus spindle-shaped.

But in those cases in which the gut is not distended the differences are much less; in a 30 mm. individual its width over the greater part is 2 mm., rather less at the peristomium and towards the hinder end.

In the distended state, also, the colour differs, for it loses its brown tint, and becomes, owing to the stretching of the wall, very dark bluish or black in the anterior half, excluding the first 4–5 segments, and, as the gut is loaded with sand, this may be mottled.

In one case in which this distension had attained probably its maximum the segmentation of the body-wall was still indicated by white transverse lines on the dorsal surface in the middle region, while at the anterior and extreme posterior ends the ventral ridges at the anterior end of the segments persist.

The body-wall is enclosed in a jelly of considerable thickness, which, however, diminishes when the specimen is placed in alcohol and left for a time. But the amount of jelly seems to vary in different individuals; in one specimen from Denham Bay the notopodial chaetae do not, or only just, project beyond it. It is traversed by very numerous thread-like papillae, which terminate in a swollen apex. These spring from the entire surface of the body-wall, and are especially abundant and long around the notopodial chaetae.

The dorsal surface of the body is rounded, the ventral flat.

The head is concealed by a nearly complete circle of long capillary chaetae, which constitute the cephalic crown, which is itself hidden by the jelly and papillae.

The chaetae project for a distance of 5 mm., equal to the length of the peristomium and five or six following segments. These chaetae, which agree in structure with the notopodials, are rooted in a narrow, upstanding, nearly vertical fold of the anterior wall of the peristomium, which forms a con-

tinuous collar (fig. 3); but the chaetae are in reality in four distinct fan-shaped groups, two on each side, which touch one another; though the two dorsal and two ventral groups are separated slightly in the median lines. Each group is contained in its own chaetophore, the lips of which project slightly beyond the collar, as a dorso-ventrally extended fold, parallel with its margin. The bases or roots of each of the four bundles of chaetae can be seen converging as golden lines within the collar to a point deeply removed from the margin.

These chaetae are not of uniform length, those on the sides being longest, those on the ventral being shorter than the dorsal ones. The chaetae are

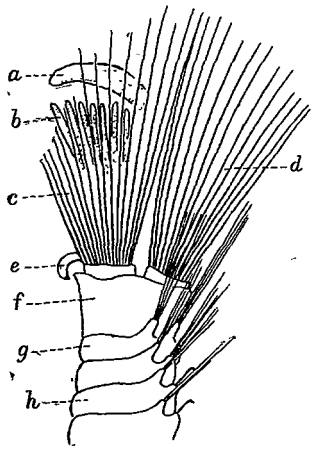

FIG. 3.

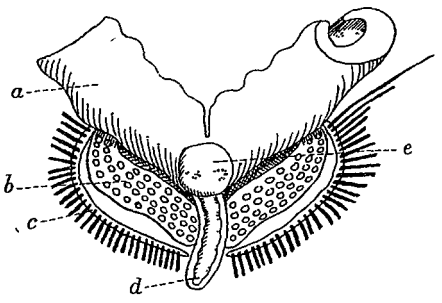

FIG. 4.

FIG. 3.—Side view of the anterior end of *F. bicolor* (enlarged). The surrounding jelly is not indicated. *a*, the tip of the palp (or subtentacle of Ehlers); *b*, tips of a few of the tentacles; *c*, dorsal bundle of peristomial chaetae; *d*, ventral bundle; *e*, median dorsal tentacle, or "lingula"; *f*, peristomium (the "chaetigerous lamella" projects beyond its edge); *g*, the 1st chaetigerous segment; *h*, the 3rd chaetigerous segment, bearing the hook in the ventral lobe of the *parapodium*.

FIG. 4.—View of the head from above, after the removal of the cephalic crown of bristles; the palps are cut across, and on the right side of the figure the groove along its ventral surface is represented. *a*, the palp; *b*, the tentacular platform from which the tentacles have been removed; *c*, the peristomial chaetigerous lamella bearing the bases of the bristles; *d*, the median dorsal tentacle, or "lingula"; *e*, the cerebral region of the prostomium, with pigment spots.

so closely placed at their origin from the chaetophores that they touch one another, and form a palisade through which it is almost impossible to see the enclosed tentacles and palps. The dorsal gap is wider than the ventral, except in very much contracted specimens, when the right and left groups overlap; but in less contracted condition the dorsal median tentacle projects through this gap as a tongue-shaped organ, or "lingula." At other times it may be found upright within the crown of chaetae. When this cephalic crown is pressed aside or cut away the organs of the head are exposed.

The tentacles, or branchiae, are numerous delicate filaments, densely crowded together in two dorsal groups, one on each side of the middle line. They are shorter than the palps, which are about three-quarters the length of the cephalic crown. Each group contains about 50 tentacles,

and when these are removed—they only too readily fall away when touched —it is found that they spring from a crescentic platform, which passes round within the collar from one lateral line to the other, outside the palp (fig. 4). In some cases the upper surface of the platform is nearly flat; at others this surface is directed inwards, and lies nearly in a vertical plane, due to the retraction of the apparatus. In one case in which the platform was flat I counted the bases of the tentacles: these are arranged in 4 concentric rows; the outermost, longest, presented about 20 attachment-spots; the next row 15; then 8; and the innermost 5. All these rows commence close to the dorsal mid-line, but only the two outer rows extend laterally outside the palp.

The dorsal median tentacle, or "lingula," is a greyish structure, grooved on its upper surface (really its inner face when not projecting outwards); it is a median thickening of the tentacular platform, beyond which it projects as a tongue-shaped organ, and is much wider than a branchial tentacle, and, unlike that, not readily detached.

The extent to which the "lingula" is visible depends on the state of preservation and consequent degree of contraction of the head organs. When these are strongly contracted and the whole head retracted it is almost impossible to detect the "lingula" without recourse to dissection.

Traced inwards this "lingula" is seen to pass on to the central or cerebral region of the prostomium, on which are two large pigment patches (? eyes) of variable size and irregular form. Beyond this again, towards the ventral surface, spring the pair of palps, which are longer than the tentacles, grooved on the ventral surface, with the lateral margins crinkled and overhanging. This groove leads into the mouth.

Following the peristomium, with its crown of chaetae, is a couple of chaetigerous lobes on each side, notopodium and neuropodium, directed forwards; these carry long capillary chaetae, which lie close alongside the crown. In the following segments the notopodium carries similar chaetae, but the neuropodium carries a hook.

The next two bundles of capillaries are also directed forwards. The notopodial and neuropodial lobes are short but distinct columns, the former provided with chaetophoral lips.

The notopodial chaetae are usually about 5 or 6 in number, which may be increased to 9 in the anterior bundles, but all are not of equal length or thickness; in the more posterior feet about four longer and one or two shorter. These chaetae are long, slender, and beautifully iridescent, rather brownish in colour when seen under the microscope, but on the body (seen by reflected light) are of a pale yellow, or silvery brass colour. They are finely and closely striated longitudinally, and crossed at intervals by distinct lines. Towards the apex these intervals are very long, but as the base is approached the lines become very close together.

The peristomial chaetae have the same appearance and structure, but differ in that the joint-lines are farther apart at the apex; the longest of them are about twice the length of the notopodial chaetae of the body.

The neuropodial hooks are solitary; only here and there in any of the worms do I find a second hook, either of equal length or only just protruding beyond the surface.

Viewed under a lens they are shining silvery yellow, with a dark-brown hook-shaped end, bent at nearly a right angle to the shaft, which projects far out of the body in all the specimens.

The plane of the hook is not in that of the shaft; it is "warped," as it were; the axis of the hook is itself bent, so that the tip lies in a different plane from the rest; hence when it is mounted and covered some distortion is almost sure to occur, if not even a slight rupture at the angle where the hook passes into the shaft.

The shaft is crossed by transverse lines or grooves at fairly regular and close intervals in the distal region, but lower down they are more widely distant. It is also densely striated in a longitudinal but slightly oblique

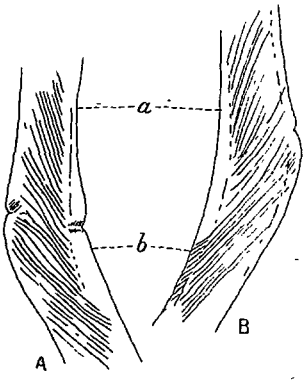

FIG. 5.

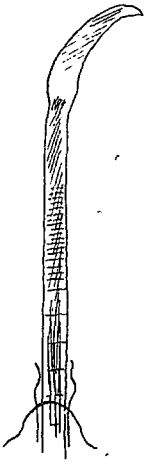

FIG. 6.

FIG. 5.—Portions of two hooks which were lying close together in a preparation (very highly magnified). The direction of the striations of the substance of the chaeta is disturbed in A, and at the margins the material is slightly ruptured, giving the impression of an articulation when seen under a lower magnification. The delicacy of these lines can scarcely be reproduced. *a*, shaft; *b*, the claw of the hook.

FIG. 6.—One of the ventral hooks from a Kermadec specimen, with the minute capillary bristles at its base. The "sheath" has been omitted. (All the figures of hooks were drawn by aid of the camera lucida.) This hook resembles Ehlers' fig. 5, pl. vii, of "*F. lingulata*."

direction; these striae do not reach the surface of the chaeta. The claw-like end is similarly obliquely striated, and at the angle of bending a disturbance of the direction of these striations occurs (fig. 5). Sometimes there is a small notch on one or on both sides at this point; in other cases this is absent.

Each hook is accompanied by 4 very fine short capillaries, usually two above and two below it (as if it were an aciculum in an errant *Polychaete*). The free ends of these are curved, and lie close to the chaeta, and sometimes they may be concealed by the hook if one happens to cut off too much of the body-wall (fig. 6).

The hook and its satellites are enclosed in a transparent sheath of a cuticle-like structure. This is more readily seen in freshly mounted hooks than in those that have been long in glycerine. The sheath exhibits a corrugation at the surface of the chaeta, but is externally smooth: probably

it is purely cuticular. In one case at least I note that it surrounds the apex of the hook.

Distribution.—New Zealand, Chatham Islands, Kermadec Islands.

Remarks.—I have described this worm at some length, in spite of the clear account given by Ehlers, because in one or two points that account seems to me to require extension. He described two species—*F. lingulata* and *F. semiannulata*—both from the Chatham Islands, and the latter founded on a single individual. And the differences between these two seem to me from a comparison of a large series of specimens from various localities to be individual rather than specific. In the first place, though he does not refer to this explicitly, the presence of the median dorsal tentacle, or "lingula," is not denied for *F. semiannulata;* no mention is made of it, and one may therefore presume its absence. The slight differences that he notes between the general form of the body and the condition of the head are, in my opinion, due to differences in the state of contraction—that is, the head as described for *F. semiannulata* is retracted to such an extent that in fig. 7 the bases of the peristomial chaetae are apparently within the projecting margin of the next segment, and the body as described for *F. lingulata* is much distended with food. I have shown above that this naturally makes a considerable difference in shape and in the clarity of the segmentation. But in his summary at the end of his account of *F. semiannulata* on p. 50 Ehlers lays more stress on the difference in the ventral chaetae, for he found two in each bundle in *F. lingulata*, and only one in the other species. In the latter it is accompanied by capillaries, which he did not find in *F. semiannulata*, and there is some difference in the angle formed by the claw on the shaft; the hook is said to be "far projecting," and the specific name apparently refers to the pseudo-articulation of the hook.

In addition to these specimens from the Kermadec Islands, I have a large number collected from various parts of the coast of New Zealand and from the Chatham Islands (whence Professor Ehlers obtained both his species). Now, all these agree in possessing a single hook (except occasionally here and there in a worm, when two may be present) enclosed in a sheath and of the form figured for *F. semiannulata*, but accompanied by capillary bristles; and also in the presence of a median dorsal tentacle, or "lingula."

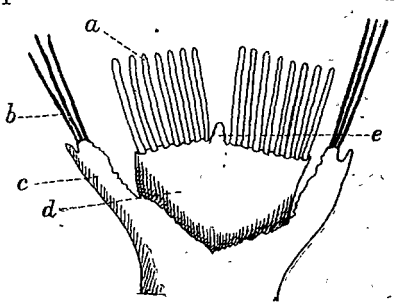

FIG. 7.—A specimen from Auckland. The peristomium has been slit up, so as to expose the tentacular platform and the "lingula." *a*, tentacles; *b*, peristomial chaetae (cut short); *c*, peristomium; *d*, tentacular platform; *e*, "lingula."

Some specimens from Auckland are particularly instructive: they are much contracted, having been preserved in strong alcohol; the head is withdrawn, and the gut protrudes through the mouth. At first I was unable to find the median tentacle, until I slit up the peristomium and reflected the chaetae of the crown; then it is recognizable, though relatively shorter than in uncontracted specimens (fig. 7). These Auckland specimens I had originally labelled "*F. semiannulata*," as they agreed so closely with the general account of that species given by Ehlers; but I find here, too,

that the single hook, which is far projecting and has the form characteristic for that species, is accompanied by the capillaries which are characteristic for *F. lingulata*.

In *F. semiannulata*, Ehlers says that the dorsal bristles are 5 or 6 in the mid and hind segments of the body, but more numerous in the anterior segments. On the other hand, he is less definite for *F. lingulata;* all he says is that they number 10, without any reference to the region of the body.

In these specimens from the Kermadec Islands I find the following numbers:—

	Specimen from Kermadec (*F. lingulata*).	Specimen from Auckland (apparently *F. semiannulata*).
Parapodium 1	8 long and 1 short.	8 long and 1 short.
,, 2	7 ,, 1 ,,	8 ,, 1 ,,
,, 3	7 ,, 1 ,,	6 ,, 1 ,,
,, 15	4 ,, 1 or 2 short.	6 ,, 1 ,,
,, 40	4 ,, 1 or 2 ,,	4 ,, 2 ,,

Examination under a dissecting-lens will reveal only the long ones, since the shorter ones are also much finer.

Ehlers had only a single individual of *F. semiannulata* on which to found his diagnostic characters, and it appears to me that he had before him merely a much contracted individual of *F. lingulata*.

When examining mounted preparations of the hooks of the Kermadec specimens I was puzzled to find that in some instances they resembled Ehlers' figure (pl. vii, fig. 5) of those of *F. lingulata*, and in other cases from the same specimen they recall those of *F. semiannulata* (Ehlers' fig. 9). It occurred to me that perhaps the act of covering, and the consequent pressure, might explain this difference. So I examined and drew under camera lucida some hooks mounted in water without a cover-slip; these exactly resemble those of *F. semiannulata*. When the cover was put on, and excess of water drained away, they recall Ehlers' fig. 4—that is, *F. lingulata*. I made several such preparations; in some cases the change was less obvious. I also drew the outlines, under the camera, of hooks from various individuals from the Kermadec and from the Chathams and from New Zealand, with rather surprising results, for sometimes on one and the same preparation (in glycerine-jelly) I found one hook like fig. 5 and another like fig. 9 of Ehlers' memoir. Sometimes the form is intermediate; that is, the angle—which for *semiannulata* is so marked, and for *lingulata* a very open one—is midway between them.

Another interesting case was a mount of a foot of a Kermadec specimen in which there are two hooks—a far-projecting one, and one that only just cuts through (text fig. 9). The longer one resembles Ehlers' fig. 5, the shorter approaches his fig. 9, though, as the hook was not flattened out as in other mounts, owing to the presence of the thick foot, the angle which the claw makes with the shaft is less marked than in Ehlers' fig. 9. Another apparent difference lies in the detailed outline of the claw—in his fig. 9 (of *semiannulata*) there is a slight swelling just above its union with the shaft, as in fig. 5 (for *lingulata*); it is absent in both his fig. 10 (*semiannulata*) and fig. 4 (*lingulata*).

Ehlers, in his second paper on our Annelids (1907, p. 21), quotes my note to him that accompanied the specimens of *F. lingulata* sent to him—that "in life it is partly greenish-blue and partly brown." This agrees with the coloured figure of Schmarda's *Pherusa bicolor*. And he also puts on record

the suggestion that I then made that I was "inclined to regard it as identical with that species." The renewed examination of this series of specimens from various localities and in various states of preservation confirms me in this opinion, so that both Ehlers' specific names must disappear and the older name replace them.

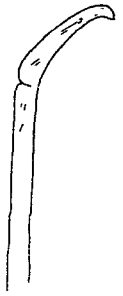

FIG. 8.

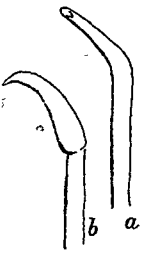

FIG. 10.

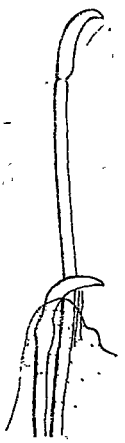

FIG. 9.

FIG. 8.—The end of a hook from the individual represented in Fig. 7; it resembles Ehlers' fig. 9, of "*F. semiannulata.*"

FIG. 9.—A ventral lobe of another segment of the same individual, with two hooks. The shorter has a swelling at the base of the claw, and resembles Ehlers' fig. 5, representing *F. lingulata*; the longer one has a "pseudo-articulation," as in his *F. semiannulata.*

FIG. 10.—One and the same hook under different conditions. *a* was drawn mounted in water without a cover-slip; the tip of the claw is recurved, and lies in a different plane from the rest of the claw. *b* was drawn after being covered and some of the water drawn off by blotting-paper, so as to allow the cover-slip to press on the bristle; the apex is now pushed into the same plane as the rest; there is a slight swelling at the base, and a pseudo-articulation has appeared.

I may add that the following considerations have influenced me in arriving at this conclusion: It was the only Chlorhaemid that Schmarda obtained on the coast of New Zealand. He made his collections mainly in the neighbourhood of Auckland Harbour and the Thames. The only Chlorhaemid that I have obtained from that region (and, indeed, from else where on our shores) is identical with those received from the Kermadec Islands. I have three different lots from that neighbourhood, and it would be against the law of chance that Schmarda should have collected any other than this common species and that I should not have received any of his species. Moreover, the dimensions and general form of body agree with *F. lingulata.* He gives 50 segments, with a length of 50 mm. and diameter of 8 mm. (which evidently includes the jelly). The anterior part of the body he describes as dark blue, the hinder as yellow-grey, and when the body is distended that is the coloration of our common species. He represents three bundles of long chaetae as directed forwards, and shows no tentacles or palps (which are drawn in the figures of the other two species on the same plate). This again is in agreement, for the cephalic crown conceals the tentacles, which are stated to be numerous and filamentous; and there are two, if not three, forwardly directed post-peristomial bundles of long

chaetae. He states that the chaetae surrounding the end of the body measured 6 mm. in length and are "*blassgelb*" in colour; the dorsal bundle of chaetae has rarely more than four (which is true when examined under a lens only); there is but a single ventral hook, the figure of which, crude as it is, is sufficiently like that of the present species. The few details that he gives, then, might well refer to our specimens. There is, however, one in which it appears to differ. Schmarda says that the dorsal chaetae are thicker than those of the cephalic crown, and have a greater number of transverse striations, since these are closer together in the former than in the latter. His figure shows no such difference in size, but his account of the striations agrees with what I find.

On the grounds, then, of probability, and of agreement in the general structure, it seems to me we must revive Schmarda's specific name for our common Chlorhaemid.*

Art. XXI.—*Preliminary Report on the Polychaetous Annelids from the Kermadec Islands.*

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

[*Read before the Otago Institute, 8th July, 1914.*]

Although a few deep-water Annelids were obtained by the "Challenger" in the neighbourhood of the Kermadec Group, no littoral forms have hitherto been recorded. Mr. Oliver's collection contains nineteen species belonging to thirteen genera, none of which agree with the species described by McIntosh in the "Report of the 'Challenger' Expedition."

Of these nineteen, only two species occur on the seashores of New Zealand—viz., *Odontosyllis picta* and *Flabelligera bicolor*. Two others have hitherto been found only in the Australian waters—namely, *Lepidonotus simplicipes* and *Amphinome nitida*. Five are widely distributed throughout the Indo-Pacific oceans—*Eunice aphroditois*, *Lysidice collaris*, *Eurythoe complanata*, *Phyllodoce macrolepidota*, and *Lepidonotus glaucus*. There are two others with even a wider distribution—namely, *Eunice siciliensis*, which occurs in the Mediterranean as well as in the Indo-Pacific area; and *Hipponoe gaudichaudi*, originally obtained from the coast of Australia, has been met with as far away as the eastern coast of America. It is a rare species, and there are only three other records since its discovery.

I have found it necessary to found eight new species and one new variety, all of which, however, are more or less closely allied to Indo-Pacific forms.

I have not yet had the time to finish the drawings in illustration of these new species, so that in this preliminary note I refrain from naming them; for I hope to publish a detailed account of this interesting collection elsewhere, with full synonymy and references to literature.

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* I had hoped that before this article was published I should have been able to convince Professor Ehlers of the justice of my conclusion, and while preparing the manuscript I posted a packet, containing samples from various localities, to Ehlers, and a letter asking him to compare them with the types of his two species. Unfortunately, war was declared before the packages reached England, and they were returned to me as "undeliverable."