Section D.—Belfast, 1902.]

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Invertebrate Zoology
(Crustacea) - WOLFENDEN
1903

Occupation of a Table at the Zoological Station at Naples.—Report of the Committee, consisting of Professor W. A. Herdman (Chairman), Professor E. Ray Lankester, Professor W. F. R. Weldon, Professor S. J. Hickson, Mr. A. Sedgwick, Professor W. C. McIntosh, and Professor G. B. Howes (Secretary).

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Owing to circumstances which transpired in the interval between application and the intended commencement of work for which the grant for 1902 was obtained, Messrs. Wallace and Gurney were both rendered incapable of fulfilling their task, Mr. Gurney having been forbidden by his medical adviser to journey afield under risk of injury to his health. Your Committee report the securing of substitutes whose names are given above, and whose work has been in each case a success. And they are desired by Mr. Wallace to say that he renews his application with the certainty of carrying it out in the coming year, and that he proposes to study 'Variation and Gestation in the Selachii.'

In a letter received from Dr. Anton Dohrn, special mention is made of his ability to endorse his surmise of 1901 as to his intention of erecting and equipping a new laboratory for comparative physiological research. He informs your Committee that the Town Council of Naples have unanimously voted an area of land of 600 square metres, in immediate proximity to the two historical buildings now in use, as a site for the laboratory aforementioned; and it is with satisfaction that your Committee are enabled to report that funds sufficient for the undertaking are guaranteed, through the generosity of personal friends of Dr. Dohrn, and that plans for the building are now prepared.

The work of construction will be commenced in autumn, and it is expected that the laboratory will be finished and fully equipped by

Easter, 1904.

Dr. Dohrn lays stress on the fact that for a very considerable contribution to the cost of the new building he is indebted to an English friend, and your Committee re-echo his hope that this may further cement the tie with the British Association, and that the range of the work of those who in future may visit the Station on its behalf shall be commensurate with the Station's increased facilities and growth.

In presenting the reports of the occupants of the Table during the

they are not stopped in their development just at the right moment. Therefore algae preserved in alcohol are much easier to study and dissect.

At the same time as I sketched the Barbadian algae of the Dictyota family I had fresh dictyota brought to me from the Bay of Naples, so as to be able to compare the structure of these plants with the West Indian species. The Barbadian dictyota and those of the West Indies in general are not very well known, the species being numerous and somewhat mixed up one with another; it will therefore be an interesting task to study them more perfectly and try to arrive at a system of classifying them

more easily, which is not a slight task.

I asked at Naples for rare species of the Golfe Algæ, principally Rhodophycæ, and they brought some specimens of Chrysymenia ventricosa and Platoma cyclocolpa or Nemastoma cyclocolpa. Thus I was able to continue my study of the algæ of the Bay of Naples at the same time that I worked at my principal object of study. It is a good thing to have plenty of work on hand, for it would be too monotonous to work all the time on dry material without getting a few fresh algæ now and then. The sea was often rough and stormy, as it generally is in winter at Naples, and the fresh material could not always be reached, so I was often very glad to have my own material to fall back upon when the other was wanting.

I once more thank the British Association for the permission granted me to work at the Association Table: it has been a great boon to me, and I hope that my work will turn out to be satisfactory to the algological world. It is a difficult one, but I am greatly helped and encouraged by Monsieur Bornet, without whose aid I would not have

had the courage to undertake such a task.

Report on the Occupation of the Table during April and May 1902.

d. On the Copepod Sub-family Ætidiinæ, with a proposed Revision of the Classification. By R. Norris Wolfenden, M.D. Cantab., F.Z.S.

The Faroe Channel is especially rich, amongst Copepods, in examples of the sub-family Atidina. Several of these are new species, and during the author's plankton investigations in this region, extending over a period of three years, he has met with several forms of great interest. While the author's results remain as yet unpublished, pending the conclusion of his work, Professor G. O. Sars has lately published an important work dealing with the Crustacean fauna of Norway, in which he describes some of these new Copepod forms. It appeared to the author that the large sub-family Ætidiinæ required revision, and through the courtesy of the Council of the British Association and of Professor Dohrn he was in May 1902 allowed the privilege of occupying the Association Table at the Naples Zoological Station, where he had the opportunity of examining in detail the Copepod preparations made by Dr. Giesbrecht and comparing with his own Faroe collections. To Professor G. B. Howes and Drs. Anton Dohrn, Eisig, and Giesbrecht the author's warmest thanks are due.

The character of the sub-family Ætidiinæ are sufficiently well set

forth in Dr. Giesbrecht's great work ('Fauna ü. Flora Neapel').

It is, however, evident that the segmentation of the feet cannot be employed as a definite factor in the classification of genera. For instance, in the genus *Ætideus*, which comprises the well-known species *Ætideus* 

armatus, we must now recognise a species of southern or Mediterranean origin, in which the endopodite of the second feet consists of only one segment, while in the Faroe Channel and northern regions a species very closely congeneric has a definitely biarticulate endopodite. Other points of difference exist in the character of the rostrum and the spiny prolongations of the last thoracic segments, both of which in the southern species are much stronger. Possibly a third species of Atideus exists in the examples recorded by Brady from the Indian Ocean and described in the 'Challenger' reports; but this species must for the present remain in doubt, since it has not been met with again. The author would remark that in a collection of Copepods made by Mr. J. Stanley Gardiner in the Maldive Islands and forwarded to him for examination he has not met with a single example of Atideus.

Similarly in the genus Gaidius (Giesbrecht) there is one species having an uniarticulate endopodite of the second foot, and another species in which this ramus is biarticulate. The exopodites of the first feet also show irregularity in their segmentation. For instance the genera Ætideus, Bradyidius, Bryaxis, Chiridius, have this appendage triarticulate, while in Gaidius and Gaetanus it is biarticulate, or in one

species of the latter (G. armiger) three jointed.

The appendages of the first basal joint of the fourth feet become of importance generically. In his original description of the genus Gaidius Giesbrecht had already remarked upon the peculiar transformation of the bristles of this joint into lamellar appendages, as transitional to the spines of Euchirella. These modified bristles, which appear to be hollow tubes, are very characteristic of the genera Gaidius and Gaetanus. They are replaced by spines and teeth in the genus Euchirella. The character of the rostrum and its presence or absence appear to form a satisfactory basis for the classification of the genera of the sub-family Etidiina, and

is adopted in the present scheme.

Recently Professor Sars has expressed the opinion that the genus Gaidius (Giesbrecht) should be abolished, and he has considerably extended the genus Chiridius by inclusion of three species (Ch. tenuispinus, Ch. obtusifrons, and Ch. armatus). But the genus as originally proposed by Giesbrecht, to include the only species known as yet, viz., \*Ch. poppei, appears to differ very considerably from Sars' genus Chiridius, and one of the latter species, viz., Ch. tenuispinus, Sars, is undoubtedly identical with Giesbrecht's Gaidius. One essential point of generic difference is the absence of a rostrum in Giesbrecht's genus Chiridius, and its presence in two at least of Sars' species (Ch. tenuispinus and Ch. armatus). Professor Sars lately had the kindness to forward to me examples of these three Copepods from his own collections, and from a comparison of Giesbrecht's preparations I have no doubt in affirming that Chiridius tenuispinus, Sars, is identical with Giesbrecht's Gaidius, and with specimens which the author had described previously as Gaidius.1 In addition to the presence of a rostrum, the bristles of the first basal joint of the fourth feet are modified into tubal processes exactly as in Gaidius pungens (Giesbrecht).

The genus Chiridius, as at first proposed by Giesbrecht ('Fauna ü. Flora Neapel,' v. 19), included only one species. It differs from all other genera of this group, in the fact of the outer branch of the posterior antennæ being twice as long as the inner, and in the presence of only light bristles

<sup>1</sup> See Journ. Brit. Marine Biol. Assoc., 1901.

on the exopodite of the maxilla. It is further without any trace of rostrum, and is a small creature of only 1.8 mm. length. It appears to be so generically distinct from the northern forms included by Sars in this genus (one of which is undoubtedly a Gaidius) that it appears more satisfactory to retain the generic name Chiridius for the one species (Ch. poppei, Gbt.) for which it was originally created, and to place the northern forms, all of which are two or three times the size of the Mediterranean species, in another genus. These various genera will group themselves naturally in the following manner:—

A. With a two-pointed rostrum.

Ætideus, Brady, Pseudætideus (nov. gen.), Bradyidius, Gbt.

B. With a one-pointed rostrum.

Gaidius, Gbt., Gaetanus, Gbt., Chirundina, Gbt. Undeuchæta, Gbt., Euchirella, Gbt.

C. Without rostrum.

Chiridius, Gbt., Bryaxis, Sars.

Under this scheme the genus Chiridius (Sars) disappears and a new genus, Pseudætideus, is suggested, which includes Sars' species Chiridius armatus, and another entirely new species discovered by the author in the Faroe Channel. Sars' Chiridius tenuispinus is removed to its true family Gaidius, and his Chiridius obtusifrons should more properly perhaps be regarded as a Chiridius. There does not seem to be sufficient reason to exchange the name Bradyidius (Gbt.) to Undinopsis (Sars), and the former is therefore retained.

Vanhöffen (in Grönland Expedition, 1891–93, Berlin, 1897, Copepoden, vi. Kapitel, p. 279) described very briefly a Copepod captured in Greenland, which he regarded as identical with *Pseudocalanus armatus*, Boeck, but three times the size. Only one male was found in forty-five animals taken. But the prolongation of the last thoracic segment into lateral spines removes it from this genus. The author has met with one 5 example of this Copepod in the Faroe Channel, but feels unable to place it generically, in the absence of \$\parallel{P}\$ examples, which, according to the general rule, may differ widely as regards the rostrum, proportions of the body, and character of the mouth parts.

Of the different genera and species of the sub-family Ætidiinæ the following occur in the Faroe Channel or off the coast of Norway:—

Ætideus tenuirostris a surface form. Pseudætideus armatus found only in deep water, below multiserrata 100 fathoms. Bradyidius armatus bottom forms, in shallow waters. similis. Gaidius pungens . deep water forms, below 100 boreale fathoms. Gaetanus armiger . ditto. miles Euchirella rostrata ditto. carinata a deep water form from 200-800 Chiridius obtusifrons fathoms (Sars). a bottom form from 50-150 Bryaxis brevicornis fathoms (Sars).

Undeuchæta and Chirundina have not yet been met with in northern waters, and Chiridius poppei appears to be exclusively a Mediterranean species. Pseudætideus, Gaidius, Gaetanus, Euchirella appear not to approach the coasts, the only genera which do so being, apparently, Etideus and Bradvidius.

The scheme which follows is the merest outline, and will be more fully elaborated subsequently in a monograph dealing with the Copepoda of the

Faroe Channel.

### A. Head with a two-pointed rostrum.

- I. First joint of exopodite of the first foot without external spines.
  - Last thoracic segment produced into strong spines. Rami of
    mandible and posterior antennæ nearly equal. Basal joints of
    posterior foot-jaw equal and endopodite two-thirds as long.
    Endopodite of first foot one-jointed; of second foot one or
    two jointed; bristles of first basal of fourth foot simple
    =genus Ætideus (Brady).

Three species—Et. armatus, Gbt., Et. tenuirostris (n. sp.),

Æt. Bradyi (Brady).

- II. First joint of exopodite of first foot with an external spine; thoracic spines on last segment.
  - 2. Outer rami of posterior antennæ and mandible longer than inner; second basal of posterior foot-jaw longer than the first, endopodite only one-half to one-third as long as the second basal. Inner ramus of first foot one-jointed, of second two-jointed. Bristle of basal of fourth feet simple=genus Pseudætideus, nov. gen.

Two species—Pseud. armatus (Chiridius armatus, Sars), Pseud.

multiserrata, n. sp.

 Anterior antenne with thick basal joints, tapering distally, twenty-four-jointed, and densely clothed with long crossringed bristles. Endopodite of posterior foot-jaw little more than half as long as the second basal=genus Bradyidius, Gbt.

Two species—B. armatus, Gbt. (Undinopsis Bradyi, Sars), B. similis (Und. similis, Sars).

## B. Head with a short one-pointed rostrum.

- I. Last thoracic segments produced into spines or angular processes.
  - 4. Outer rami of posterior antennæ and mandible longer than inner, second basal of posterior foot-jaw three to four times as long as endopodite, outer ramus of first feet of only two or of three segments; inner rami of second feet one or two jointed, first basal of fourth feet with bristles replaced by tubal processes=genus Gaidius, Gbt.

Two species—G. pungens Gbt., G. boreale (n. sp.) (Chiridius

tenuispinus, Sars).

 Head with characteristic dorsal spine; other characters like Gaidius = genus Gaetanus, Gbt.
 Two species — G. armiger, Gbt, G. miles, Gbt.

The species diagnosis is omitted in this Report.

6. Last thoracic segment produced into blunt angles, not spines. Outer branch of posterior antennæ twice as long as inner, endopodite of posterior foot-jaw only quarter as long as second basal; first basal of fourth feet almost naked = genus Chirundina, Gbt.

One species—Ch. Streetsii, Gbt.

- II. Last thoracic segments rounded, not produced into spines or angles.
  - 7. Head with or without a crest, outer rami of posterior antennæ not twice as long as inner, exopodite of the maxilla small, and its middle bristles the shortest. Endopodites of first and second feet one-jointed=genus *Undeuchæta*, Gbt.

Two species—U. major, Gbt., U. minor, Gbt.

8. Rostrum sometimes absent. Outer rami of posterior antennæ two to four times as long as inner. Head sometimes with a crest. Endopodite of first and second feet one-jointed. First basal of fourth feet armed with characteristic spines = genus Euchirella, Gbt.

Species-Vide Giesbrecht u. Schmeil, 'Thierreich,' p. 35.

#### C. Head without rostrum.

9. Outer branches of posterior antennæ and mandibles twice as long as inner; endopodite of posterior foot-jaw not half the length of second basal; exopodite of maxilla with eight to ten bristles; exopodite of first foot with three segments, first segment with bristle; endopodite of first feet one-jointed, of second one-jointed (trace of articulation); third and fourth feet three or two jointed; basals of fourth feet with simple basis=genus Chiridius, Gbt.

Two species—Ch. poppei, Gbt., Chiridius obtusifrons (Sars).

10. Thorax ending in acute upturned lappets. Anterior antennæ shorter than thorax, densely bristled. Inner ramus of posterior antennæ more than twice the length of outer, and only six-jointed. Posterior foot-jaws with sensory appendage on first basal=genus Bryaxis, Sars.

One species—B. brevicornis, Sars.

II.—A List of Naturalists who have worked at the Zoological Station from the end of June 1901 to the end of June 1902.

Num-	Naturalist's Name	State or University	Duration of Occupancy			
ber on List	Naturalist's Name	whose Table was made use of	Arrival	Departure		
1255	Prof. A. Dogiel	Russia	July 6, 1901	July 8, 1901		
1256	Dr. J. Rioja y Martin	Zoolog. Station .	,, 11, ,,	Mar 10, 1902		
1257	Prof. S. Apáthy .	Hungary	,, 26, ,,	Sept.13, 1901		
1258	Dr. V. Ariola	Italy	,, 30, ,,	Oct. 9, "		
1259	Prof. F. Raffaele .	,,	,, 30, ,,	Nov. 17, "		
1260	Dr. F. Bottazzi	,,	Aug. 5, ,,	Sept.15, ,,		
1261	Dr. J. Boeke	Holland	,, 8, ,,	Nov. 2, ,,		
1262	Stud. E. Wolff	Würtemberg	,, 21, ,,	Sept.20, ,,		
1263	Dr. E. Crisafulli .	Italy	,, 15, ,,	May 23, ,,		
1264	Dr. A. Kouliabko .	Russia	,, 23, ,,	Sept.14, "		
1265	Dr. F. Mazza	Italy	,, 26, ,,	,, 15, ,,		
1266	Dr. A. Bethe	Strassburg	,, 28, ,,	Oct. 24, ,		

#### A LIST OF NATURALISTS—continued.

Num-		State or University	Duration of	Occupancy
ber on List	Naturalist's Name	whose Table was made use of	Arrival	Departure
1267	Prof. P. Francotte .	Belgium	Aug. 29, 1901	Oct. 19, 1901
1268	Dr. P. Enriques .	Italy	,, 30, ,,	,, 18, ,,
1269	Dr. M. Schmidt .	Prussia	Sept. 1, ,,	Sept. 4, ,,
1270	Prof. F. Sanfelice .	Italy	,, 1, ,,	Nov.15, ,,
1271	Prof. A. Russo	,,	,, 2, ,,	Oct. 16, ,,
1272	Prof. J. Czokor	Austria	,, 2, ,,	,, 14, ,,
1273	Dr. F. Marino	Italy	,, 15, ,,	Nov. 7, ,,
1274	Stud. Andreae	Switzerland	,, 19, ,,	Oct. 15, ,,
1275	Stud. Miescher.		,, 19, ,,	,, 15, ,,
1276	Miss N. Stevens .	American Women's	,,, ,,	" "
		Table	Oct. 6, ,,	Apr. 5, 1902
1277	Mr. E. G. Schuster .	Oxford	,, 8, ,,	June 15, ,,
1278	Dr. E. Teichmann .	Prussia	,, 16, ,,	Apr. 12, ,,
1279	Prof. T. Boveri	Bavaria	,, 19, ,,	Apr. 23, ,,
1280	Dr. H. Driesch	Hamburg	,, 25, ,,	,, 12, ,,
1281	Dr. C. Herbst	Baden	,, 25, ,,	,, 20, ,,
1282	Dr. G. Tavaro	Italy	Nov. 1, ,,	Feb. 28, ,,
1283	Baron J. v. Uexküll .	Prussia	,, 9, ,,	
1284	Dr. Schücking	Pyrmont	,, 23, ,,	Jan. 7, ,,
1285	Dr. v. Dungern	Prussia	Dec. 2, "	Apr. 12, ,,
1286	Dr. A. Romano.	Italy	9	Mar. 15, ,,
1287	Dr. Creswell Shearer	Cambridge	,, 3, ,,	
1288	Prof. L. Bolk	Holland	,, 7, ,,	Jan. 22, ,,
1289	Dr. C. H. Kappers .	nonting	0	Mar. 4, ,,
1290	Mr. E. S. Goodrich .	British Association .	10	Jan. 10, ,,
1291	Dr. G. Illig		20	Mar. 3, ,,
1292	Dr. A. Nathansohn .	Saxony	Jan. 1,1902	
1293	Dr. M. Sciuti	Italy	1	
1294	Dr. G. Jatta		1	A
1295	Dr. G. Tagliani	,,	1	1.0=
1296	Dr. V. Diamare		" 1, "	_
1297	Dr. U. Pierantoni .		", 1, ",	_
1298	Prof. T. d'Evant .	"a a training to	", î, ",	_
1299	Dr. G. Rossi		,, 1, ,,	_
1300	Prof. C. Gioffredi .		,, 1, ,,	_
1301	Dr. Presuhn	Prussia :	" î, "	June 1, 1902
1302	Miss A. Vickers .	British Association .	,, 8, ,,	Apr. 18, ,,
1303	Prof. H. Rabl	Austria	10	Mar. 3, ,,
1304	Dr. R. Issel	Italy	00	June 8, "
1305	Mr. L. Doncaster .	Cambridge	Feb. 18, ",	
1306	Dr. A. Ernst	Switzerland	,, 20, ,,	Apr. 10, "
1307	Dr. E. Godlewski	Austria	,, 21, ,,	
1308	Dr. M. Bedot	Switzerland	,, 26, ,,	Mar. 23, "
1309	Dr. R. Magnus	Hesse	Mar. 4, ,,	Apr. 22, ,,
1310	Dr. O. Cohnheim .	Zoolog. Station .	,, 6, ,,	,, 22, ,,
1311	Dr. C. Prentiss	Smithsonian Insti-	,, ,, ,,	,,, ,,
1011	21. 0. 11011110.	tution	,, 7, ,,	
1312	Mr. N. Maclaren .	British Association .	,, 8, ,,	Apr. 22, ,,
1313	Dr. R. Woltereck .	Prussia	,, 14, ,,	,, 9, ,,
1314	Dr. W. Kotzenberg .	Bavaria	,, 15, ,,	,, 14, ,,
1315	Prof. Hess	,,	,, 15, ,,	,, 4, ,,
1316	Prof. O. Zur Strassen	Saxonv	., 18, .,	,, 24, ,,
1317	Dr. H. Winkler	Würtemberg	,, 24, ,,	,, 22, ,,
1318	Dr. J. Tandler	Austria	,, 27, ,,	May 21, ,,
1319	Dr. T. Tobler	Prussia	,, 28, ,,	_ "
1320	Prof. K. Kostanecki .	Austria	Apr. 1, ,,	May 6, ,,
			,, 2, ,,	,, 1, ,,

#### A LIST OF NATURALISTS-continued.

Num-		State or University whose Table was made use of			Duration of Occupancy				
ber on List	Naturalist's Name				Arrival			Departure	
1322	Prof. C. Julin	Belgium .			Apr.	2,	1902	May 22, 1902	
1323	Prof. L. Muskens .	Holland .			,,	4,	,,	Apr. 25, "	
1324	Prof. W. Schewiakoff	Russia .			,,		"		
1325	Dr. W. Schweyer .	,,			,,	7,	,,		
1326	Dr. B. Soukatchoff .	,, .			"	7.	**		
1327	Dr. C. Addaro	Italy .			May	15.	,,	_	
1328	Dr. de Groot	Holland .				24,		June 11, 1902	
1329	Prof. W. Palladine .	Russia .			,,		,,		
1330	Dr. K. Derjugin .	,, ,			June		. ,,	_	
1331	Prof. T. H. Morgan .	Smithsonian	Inst	ti-					
		tution .			,, -	13,		Line	
1332	Dr. R. Dalla Vedova.	Italy .				16,		_	
1333	Stud. S. Awerinzoff .	Russia .				18,	"	_	
1334	Stud. V. Dogiel .	,,	*			21,	"	_	
1335	Mr. E. S. Goodrich .	British Assoc		n.		21.	"	the same of the	

III.—A List of Papers which were published in the year 1901 by the Naturalists who have occupied Tables in the Zoological Station.

H. Przibram		842		Experimentelle Studien über Regeneration. Arch. f. Entw. Mechanik, 11 Bd.
E. Weinland				Zur Magenverdauung der Haifische. Zeitschr. f. Biologie, 41 Bd.
"			•	Ueber den Glykogengehalt einiger parasitischer Würmer. Ibid.
D. Carazzi	•	•	٠	Studi sui Molluschi. Intern. Monatsschrift f. Anat. u. Physiol. 18 Bd.
M. Henze				Ueber ein Vorkommen freier Asparaginsäure im thier- ischen Organismus. Ber. deutsche Chem. Ges. Jgg. 34.
"	•		•	Zur Kenntniss des Hämocyanins. Hoppe-Seyler's Zeitschr. f. Phys. Chemie, 33 Bd.
,,				Ueber den Kupfergehalt der Cephalopodenleber. Ibid.
F. Kopsch	10.00	•		Die Entstehung des Dottersackentoblasts und die Furchung bei Belone acus. Internat. Monatsschr. f. Anat. u. Physiologie, 18 Bd.
A. Ónodi				Das Ganglion ciliare. Anatom. Anzeiger, 19 Bd.
F. Bottazzi	**		•	Contributi alla fisiologia comparata della digestione.
F. Bottazzi			•	Arch. Biologia norm. e patologica, Anno 54.
"	•	*		Ueber die Innervation des Herzens von Scyllium canicula u. Maja squinado. Centralblatt für Physiologie, 1901.
v. Dungern				Die Ursachen der Specietät bei der Befruchtung. Ibid.
"			•	Neue Versuche zur Physiologie der Befruchtung, I. u. II. Zeitschr. f. Allgem. Physiologie, 1 Bd.
F. Capobiano	0			Della influenza di agenti fisico-chimici sovra la eccita- bilità dei nervi e dei muscoli lisci negli Invertebrati. Atti R. Accad. Sc. fis. e mat. Napoli, vol. 10.
C. Herbst				Ueber die zur Entwickelung der Seeigellarven nothwen-
C. Herosy			•	digen anorganischen Stoffe, ihre Rolle und Vertretbar- keit. II. Theil. Arch. f. Entw. Mechanik, Roux. 11 Bd.
"		•	•	Ueber die Regeneration von antennenähnlichen Organen an Stelle von Augen. V. <i>Ibid.</i> 13 Bd.
G. Rossi.		•		Sul sistema nervoso sottintestinale dei Miriapodi. Rendic. R. Acc. Lincei, vol. 10.
				Un nido di Julus. Zool. Anzeiger, 24 Bd.
"	11(0)	100	-	Sulla locomozione dei Miriapodi. Atti Soc. Ligustica,
" .	-			vol. 12.

H. Jordan	Die Physiologie der Locomotion bei Aplysia limacina. Dissertation, Zeitschr. Biolog. 41 Bd.
T. H. Morgan	The factors that determine Regeneration in Antennularia. Biological Bulletin, Boston, vol. 2.
P. Bottazzi and P. Enriques.	Ueber die Bedingungen des osmotischen Gleichgewichts bei Wasserthieren. I. Die osmotischen Eigenschaften der Magenwand der Aplysien. Arch. Anat. u. Physiol., Physiol. Abth. 1901.
A. Russo	Sullo sviluppo dell' apparato madreporico di Antedon. Nota, Zool, Anzeiger, 24 Bd.
V. Diamare	Cisti epiteliali nel cosidetto pancreas dei Petromizonti. Rendic, Conv. Unione Zoolog. Ital. Napoli, 1901.
U. Pierantoni	Sopra una nuova specie di Oligochete marino. (Enchy- træus macrochætus). <i>Ibid</i> .
R. Woltereck	Ueber den feineren Bau der Polygordinslarve der Nordsee, etc. Habilitationsschrift, Leipzig, 1901.
M. Siedlecki	Sur les rapports des Grégarines avec l'épithélium. Comptes Rendus Hebd., Soc. de Biologie, Tome 53.
E. Meyer .	Studien über den Körperbau der Anneliden. Mitth. Zool, Station, Neapel, 14 Bd.
J. von Uexküll . W. Straub	Die Schwimmbewegungen von Rhizostoma pulmo. <i>Ibid</i> . Zur Physiologie des Aplysienherzens. Archiv f. d. ges. Physiologie, 86 Bd.
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H. Miehe	Crapula intrudens, ein neuer mariner Flagellat. Ber. deutsche Botan. Ges. 19 Bd.
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V. Ariola F. S. Monticelli and S. Lo Bianco	La pseudogamia osmotica nel Dentalium entalis. <i>Ibid.</i> Communicazioni sui Peneidi del Golfo di Napoli. Monitore Zoologico Italiano, Anno XII.
F. S. Monticelli L. Doncaster	Uova e larve di Solenocera siphonocera. Phil. <i>Ibid.</i> Notes on the development of Sagitta. Proc. Cambridge
	Phil. Soc., vol. 11.

# A List of the Publications of the Zoological Station during the year ending June 30, 1902.

1. 'Fauna und Flora des Golfes von Neapel,' monograph List, Mytilidæ, to be published in the autumn, 1902.

2. 'Mittheilungen aus der zoologischen Station zu Neapel.' Vol. xv. parts 1 to 3, with 19 plates.

3. 'Zoologischer Jahresbericht' for 1900.

4. 'Guide to the Aquarium.' A new English edition has been published.