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THE

# ZOOLOGICAL RECORD

VOLUME THE FORTY-SECOND

BEING

## RECORDS OF ZOOLOGICAL LITERATURE

RELATING CHIEFLY TO THE YEAR

# 1905.

BY D. SHARP, R. LYDEKKER, R. BOWDLER SHARPE, IGERNA B. J. SOLLAS,  
W. T. CALMAN, E. R. SYKES, E. A. SMITH, HELEN M. KEMP, F. SILVESTRI,  
A. R. HIRST, MARGARET GRANT, CORA B. SANDERS, E. A. MINCHIN, AND  
H. M. WOODCOCK.

EDITED (FOR THE ZOOLOGICAL SOCIETY OF LONDON) BY

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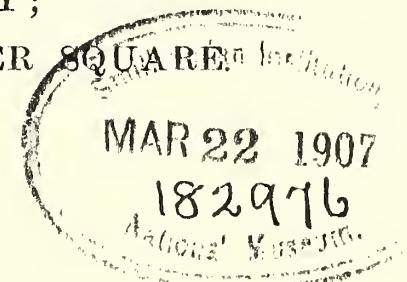
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M.DCCCCVI.



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The Editor thanks those Societies and individuals who have forwarded works and papers for the purposes of the Record, and suggests that Societies publishing Zoological Papers would much facilitate the work of the Recorders by forwarding a separate copy of each Zoological Memoir they publish to the Editor for the use of the Recorder. This is preferable to sending the entire volume, because each paper can go directly to the Recorder it concerns.

CAMBRIDGE:  
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## PREFACE.

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THE appearance of the forty-second Volume of the Zoological Record has been a little delayed in consequence of the arrangements for provisional amalgamation with the Zoology Section of the International Catalogue of scientific literature.

The following passage, extracted from the Report of the Council of the Zoological Society for the year 1905 explains this amalgamation as follows:—

"The annual issues of the 'Zoological Record' have long been regarded as amongst the most important services to Zoological Science rendered by the Society. The magnitude of the task has been increasing annually, and in recent years the Zoology Volumes of the International Catalogue of scientific literature, issued by an International Bureau under the auspices of the Royal Society, have to a certain extent covered the same ground. The Council have arranged for a provisional amalgamation of the two undertakings for a period of five years, beginning with the literature for the year 1906, to be published in 1907, and hope that the union will lead to increased efficiency and economy. The 'Zoological Record' Committee will remain responsible for the scientific side of the work, and the conjoint Volumes will be issued with numbers and title pages in series with the existing 'Zoological Record,' so that, at the end of the period of five years, the Zoological Society may resume its independent control, if the amalgamation be not successful."

In conformity with this announcement our Volume for 1906 will be a joint production of the International Catalogue organisation and of the Record Committee of the Council of the Zoological Society of London. It will be continued on the same general lines as the later Volumes of the Zoological Record, and will be made uniform with the Volumes of the International Catalogue by similar typography and other details.

The Editor of the Record anticipates that the hope of greater efficiency expressed by the Council in the paragraph quoted above will be realised.

The usefulness of the Record hitherto has been chiefly due to the amount of work carried out by the Recorders. Of late years their task has been too great. Under the new arrangement it should be considerably reduced. And as we may anticipate that the expert knowledge that has been placed at the disposal of the Record Committee will still be continued; we have good reason for sanguine anticipations.

It is intended that the Annual Volume shall equal the present Zoological Record in arrangement and facility of use, and that it shall by the efforts of the Regional bureaus of the World be made superior in completeness to anything that has yet appeared.

The Volume will appear at the customary period of the year; and no change will be made in the arrangements by which the Subscribers to the Zoological Record receive, and pay for, the Annual Volumes.

D. SHARP.

CAMBRIDGE.

December 15th, 1906.

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ALPHABETICAL INDEX OF NEW NAMES OF GENERA AND SUBGENERA.  
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ALPHABETICAL LIST  
OF THE  
ABBREVIATIONS  
USED IN THE  
ZOOLOGICAL RECORD, VOL. XLI, 1904,  
FOR THE  
TITLES OF THE JOURNALS, TRANSACTIONS, ETC.  
THAT CONTAIN ZOOLOGICAL PAPERS;  
WITH INDICATIONS OF SOME OF THE PRINCIPAL  
LIBRARIES  
IN WHICH THE BOOKS ARE CURRENT.

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THE primary object of this list is to enable those using the Record to find with ease the full title of a Journal they see quoted in an abbreviated form. The arrangement is therefore a simple alphabetical list of the abbreviations, uncomplicated by syllabic or verbal limitations.

The list has also to serve the Recorders and others as a list of Journals, and for this purpose it is important that it should be fairly complete as regards current periodicals. In order to increase the utility of the list, the abbreviations have been made on a uniform system; but a few exceptions have, in practice, been found necessary. The chief points that have been kept in view in constructing the abbreviations may be briefly stated as follows:—

The words selected as distinctive in each title are reduced in most cases to three or four.

A distinct abbreviation is used for each different word, and the same abbreviation for the same word is used throughout the list.

Accents are omitted. As a rule the first word of the title is represented by an abbreviation, but this rule is departed from in the case of articles and prepositions, and occasionally in the case of adjectives that are useless for distinctive purposes. Thus "Annual Report" becomes "Rep.," and "Occasional Papers" becomes "Pap." Such adjectives as "New" and "Royal" are omitted, except when necessary for distinctive or other purposes.

The consecutive order of the words of the title is maintained in the abbreviation, except in a few cases where the arrangement of the words in the title is very unusual or faulty.

As an example of the form of abbreviation that is aimed at, we may take Bull. Soc. Moscou. The name of the locality is given at greater length than the more frequently used portions of the abbreviation.

After the titles, the place of publication is given, and this is followed by letters indicating some of the principal libraries in which the works may be consulted. The explanation of these letters is as follows:—

- N. = British Museum Natural History: general library.
- Nz. = " library, zoological department.
- Ng. = " geological "
- K. = Science library; Victoria and Albert Museum.
- R. = Royal Society library.
- Z. = Zoological Society library.
- L. = Linnean
- C. = Cambridge University library.
- C, p or (C) p = Cambridge Philosophical Society library.
- b, or g, or y, or z, after C, or (C) = Cambridge Balfour, or Sedgwick Museum, or Physiological, or Zoological libraries respectively.
- O. = Radcliffe library, Oxford.
- § is prefixed to titles added since the last list, and to changes of titles when important.

*Abeille*—L'Abeille: Journal d'entomologie publié par la Société entomologique de France. (Paris, 8vo.) Nz. C.

*Abh. Ak. Berlin*—Abhandlungen der königlich Preussischen Akademie der Wissenschaften zu Berlin. (Berlin, 4to.) N. K. R. Z. L. C, p. O.

*Abh. Bayer. Ak.*—Abhandlungen der mathematisch-physikalischen Classe der königlichen Bayerischen Akademie der Wissenschaften. (München, 4to.) N. K. R. Z. L. C, p. O.

*Abh. Böhmisch. Ges.*—Abhandlungen der mathematisch-naturwissenschaftlichen Classe der k. Böhmischen Gesellschaft. [Called also] Rozpravy trídy mathematico-přírodněcké královské Ceske společnosti Nauk. (Prag, 4to.) N. K. R. L. C, p.

*Abh. deutsch. Seefisch.-Ver.*—Abhandlungen des deutschen Seefischerei-Vereins. (Berlin, 4to.) Nz. C.

*Abh. geol. Karte Elsass*—Abhandlungen zur geologischen Spezial-Karte von Elsass-Lothringen. (Strassburg, 8vo.) Ng.

*Abh. geol. Landesanst. Darmstadt*—Abhandlungen der grossherzoglich Hessischen geologischen Landesanstalt zu Darmstadt. (Darmstadt, 8vo.) Ng.

*Abh. geol. Reichsanst.*—Abhandlungen der Kaiserlich-Königlichen geologischen Reichsanstalt. (Vienna, 4to.) Ng. R. L. C.

*Abh. Ges. Görlitz*—Abhandlungen der naturforschenden Gesellschaft zu Görlitz. (Görlitz, 8vo.) N. K. R.

*Abh. Ges. Götting.*—Abhandlungen der königlichen Gesellschaft der Wissenschaften zu Göttingen. Mathematisch-Physikalische Klasse. Neue Folge. (Göttingen, 4to.) N. R. Z. L. C, p. O.

*Abh. Ges. Halle*—Abhandlungen der naturforschenden Gesellschaft zu Halle. (Halle, 4to.) N. K. R. Z. L. C. O.

*Abh. Ges. Isis*—Sitzungsberichte und Abhandlungen der naturwissenschaftlichen Gesellschaft 'Isis' in Dresden. (Dresden, 8vo.) N. K. Z. C.

*Abh. Ges. Konigsb.*—[Part of Schr. Ges. Konigsb., q.v.]

- Abh. Ges. Nürnberg*—Abhandlungen der naturhistorischen Gesellschaft zu Nürnberg. (Nürnberg, 8vo.) N. K. C.
- Abh. Ges. Wien*—Abhandlungen der K. K. zoologischen-botanischen Gesellschaft in Wien. N. K. R. Z. L. C. O.
- Abh. Hamburg. Anst.*—[Part of *Jahrb. Hamburg. Anst.*, q.v.]
- Abh. Mus. Dresden*—Abhandlungen und Berichte des königlichen zoologischen und anthropologisch-ethnographischen Museums zu Dresden. (Berlin, 4to.) Nz. Z. C.
- Abh. Preuss. geol. Landesanst.*—Abhandlungen der königlich Preussischen geologischen Landesanstalt [Neue Folge]. [Formerly *Abh. geol. Speciakarte von Preussen und den Thüringischen Staaten.*] (Berlin, 8vo.) Ng. K. C.
- Abh. Sachs. Ges.*—Abhandlungen der k. Sächsischen Gesellschaft der Wissenschaften. (Leipzig, 4to.) N. K. R. C, p.
- Abh. Schweiz. pal. Ges.*—Abhandlungen der Schweizerischen paläontologischen Gesellschaft. Mémoires de la Société Paléontologique suisse. (Basel, &c., 4to.) Ng. R. Z. (C) g. O.
- Abh. Senckenb. Ges.*—Abhandlungen herausgegeben von der Senckenbergischen naturforschenden Gesellschaft. (Frankfort a.-M., 4to.) N. K. R. Z. L. C. O.
- Abh. Ver. Bremen*—Abhandlungen herausgegeben vom naturwissenschaftlichen Verein zu Bremen. (Bremen, 8vo.) N. K. R. Z. L. C.
- Abh. Ver. Hamburg*—Abhandlungen aus dem Gebiete der Naturwissenschaften herausgegeben vom naturwissenschaftlichen Verein in Hamburg. (Hamburg, 4to.) N. K. R. Z. L. C, b.
- Abh. Ver. Karlsruhe*—[Vide *Verh. Ver. Karlsruhe.*]
- Abh. Ver. Kassel*—[Issued with *Ber. Ver. Kassel*, q.v.]
- Abh. Ver. Lotos*—Abhandlungen des deutschen naturwissenschaftlich-medicinischen Vereines für Böhmen “Lotos.” (Prag, 4to.) N. C.
- Acta Ac. German.*—N. Acta Academiæ Cæsareæ Leopoldino-Carolinæ Germanicæ naturæ curiosorum. [Called also] Verhandlungen der k. Leop.-Carol. deutschen Akademie der Naturforscher. (Halle, 4to.) N. K. R. Z. L. C, p. O.
- Acta Ac. Cordoba*—Actas de la Academia nacional de Ciencias en Córdoba. (Buenos Aires, 4to.) N. R. Z. L.
- Acta Soc. Faun. Fenn.*—Acta Societatis pro Fauna et Flora Fennica. (Helsingfors, 8vo.) N. R. L. C.
- Acta Soc. Lund.*—Acta regiæ Societatis physiographicæ Lundensis. [Published as part of *Acta Univ. Lund.*, q.v.]
- Acta Soc. Sci. Fenn.*—Acta Societatis Scientiarum Fennicæ. (Helsingfors, 4to.) N. K. R. Z. (C) p.
- Acta Soc. Upsal.*—Nova Acta regiæ Societatis Scientiarum Upsaliensis. (Upsala, 4to.) N. K. R. Z. L. C, p.
- Acta Univ. Lund.*—Acta Universitatis Lundensis. [Called also] Lunds Universitets Årsskrift, [and includes] Acta regiæ Societatis physiographicæ Lundensis, [also called] Kongl. fysiografiska Sällskapets i Lund Handlingar. (Lund, 4to.) N. K. R. L. C, p.
- Actes Mus. Rouen*—Actes du Muséum d'histoire naturelle de Rouen. (Rouen, 8vo.) N. L.

- Act. Soc. Bordeaux*—Actes de la Société Linnéenne de Bordeaux. (Bordeaux, 8vo.) N. Z. C.
- Act. Soc. Chili*—Actes de la Société scientifique du Chili. (Santiago, 4to.) N. R. Z.
- Act. Soc. ent. Bohem.*—Acta Societatis entomologicae Bohemiae. [Called also Časopis České Společnosti entomologické.] (Praze, 8vo.)
- Act. Soc. Espan.*—Actas de la Sociedad española de historia natural. (Madrid, 8vo.) N. R. Z. C.
- Act. Soc. Helvet.*—Actes de la Société Helvétique des Sciences naturelles. [Called also Verhandlungen der schweizerischen naturforschenden Gesellschaft. (Basel, &c., 8vo.)] N. K. R. L. C. O.
- Afh. Mus. Lund.*—E Museo Lundii. En Samling af Afhandlinger. (Kjobhnavn, 8vo.) N. K. R. Z. L.
- Agric. Gaz. N. S. W.*—The Agricultural Gazette of New South Wales. (Sydney, 8vo.) Nz. R.
- Agric. Ledger*—The Agricultural Ledger. (Calcutta, 8vo.) Nz.
- Allatt. Kozl. Magyar Tars.*—Allattani Közlemények a K. M. Természettudományi Társulat állattani szakosztályának folyóirata. (Budapest, 8vo.) N.
- Allg. Naturf. Zeit.*—Allgemeine Naturforscher Zeitung. (Berlin)
- Amer. Geol.*—The American Geologist, a Monthly Journal of Geology and allied Sciences. (Minneapolis, 8vo.) Ng. (C) g. K. O.
- Amer. J. Anat.*—The American Journal of Anatomy. (Baltimore, 8vo.) (C) b.
- Amer. J. Physiol.*—The American Journal of Physiology. (Boston, 8vo.) N. K. R. (C) y. O.
- Amer. J. Sci.*—The American Journal of Science. (New Haven, 8vo.) N. K. R. Z. C, p. O.
- Amer. Micr. J.*—The American Monthly Microscopical Journal. (Washington, 8vo.) N. O.
- Amer. Mus. J.*—The American Museum Journal. (New York, 8vo.) N. Z.
- Amer. Natural.*—The American Naturalist. (Philadelphia, 8vo.) N. K. Z. L. C. b. O.
- An. Ac. Habana*—Anales de la real Academia de ciencias medicas, fisicas y naturales de la Habana. (Habana, 8vo.) N. R.
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- Annuar. Mus. Univ. Napoli*—Annuario del Museo zoologico della R. Universita di Napoli. (Nuova Serie.) (Napoli, 8vo.) Z.
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- Ann. Univ. Lyon*—Annales de l'Université de Lyon. [Nouvelle série.] I. Sciences, Médecine. (Paris, 8vo.) N. R. C, p.
- Ann. Univ. Toscane*—Annali delle Università Toscane. (Pisa, 4to.) N.
- An. Soc. Argent.*—Anales de la Sociedad científica Argentina. (Buenos Aires, 8vo.) N.
- An. Soc. Espan.*—Anales de la Sociedad Española de historia natural. (Madrid, 8vo.) N. R. Z. C.
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- Anz. Ak. Wiss.*—Anzeiger der k. Akademie der Wissenschaften. Mathematisch-naturwissenschaftliche Classe. (Wien, 8vo.) N. R. L. Z. C.
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*Zeitschr. Ornith.*—Zeitschrift für Ornithologie und praktische Geflügelsucht, Organ des Verbandes der ornithologischen Vereine Pommerns. (Stettin, 8vo.) Nz. Z.

*Zeitschr. Sinnesorgane*—Zeitschrift für Psychologie und Physiologie der Sinnesorgane. (Hamburg und Leipzig, 8vo.) R. C. y. O.

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- Zool. Res.*—Collectio brevium dissertationum novarumque investigationum ad universas zoologicas doctrinas spectantium. (Roma, 8vo.)
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- Zool. Zentrbl.*—[Vide *Zool. Centrbl.*]
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An asterisk prefixed to a quotation signifies that the Recorder has not seen the journal or work referred to.



# THE ZOOLOGICAL RECORD

## FOR 1905.

### I. GENERAL SUBJECTS.\*

BY

D. SHARP.

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\* It will be understood that papers recorded here may also be found under the various classes, II—xviii. They are included here because of their bearing on general questions, which, if not obvious, will be made apparent in the Subject-Index.

## INTRODUCTION.

THE number of titles this year is 786, being about 200 less than last year. This diminution is probably chiefly due to a more rigid exclusion of papers that are included in our special Records, and of those Plankton papers, the interest of which is chiefly faunistic.

RÁDL (567) gives us the first part of a history of biological theory in modern times. He, however, really starts with Aristotle, and the portion before us of the work extends only to Lamarck. It is an useful and well executed work.

In text-books, we record the completion of GROBBEN's edition of Claus (272) and the second volume of SEDGWICK's work (654). Both works are highly spoken of.

The general work of Father Wasmann recorded last year [Zool. Rec. 1904, Gen. Sub. Title 919] has given rise to a polemic in which the scientific position is excellently stated by Prof. FOREL (229). WASMANN replies in (740).

GIGLIO-TOS (257) has published the third part of his work dealing with the most difficult subjects of biology. It is devoted to fecundation and heredity. He considers all the cytological processes in ontogeny as forms of "biomolecular addition."

CRAMPTON (147) suggests a theory of adaptation and selection. In Physiology we have the republication in book form of 38 memoirs by Prof. JACQUES LOEB (419).

The present state of the physiology of sex differentiation is lucidly discussed by R. HERTWIG (318) and SCHAUDINN (615), whose decease is so widely regretted, has given a concise sketch of sex-processes in Protozoa and a diagrammatic demonstration of the nuclear changes.

The works on heredity are again very numerous, and amongst many others include a hypothesis as to its nature by HATSCHEK (296); the relation of chromosomes to heredity, HEIDER (301); and general reviews of the subject by STRASBURGER (686) and by ZIEGLER (782).

HILL (324) calls fresh attention to the extraordinary nature of the maturation phenomena in *Alcyonium*.

Miss STEVENS (680) informs us that in the parthenogenetic generation of *Aphis* reduction in the number of chromosomes is dispensed with.

CONKLIN (143) finds that, in Ascidian eggs, isolated blastomeres do not give rise to a whole embryo but only to those parts of a larva that would arise from them in normal conditions.

WIERZEJSKI's work (756) on the embryology of *Physa* appears to be of considerable importance as a study of the earliest organogeny. His view as to the light cell-lineage throws on organ-formation is opposed to that of Conklin for Ascidiants.

McCLUNG has a paper (463) on the accessory chromosome of *Orthoptera*, in which he discusses the relations of chromosomes to heredity and Mendel's laws; and WILSON's papers (759-761) on chromosomes of other insects are interesting and important.

CHILD (120) informs us, as the result of regeneration experiments, that regulation of form is a problem of development; and that with regard to heredity and morphogenesis physiological conceptions must be substituted for morphological.

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2. ADAMS, CHAS. C. The Postglacial dispersal of the North American Biota. Biol. Bull. ix, pp. 53-71, 1 text-fig.
3. ADLOFF, —. Über das Gebiss im Lichte der Entwickelungslehre. Schr. Ges. Konigsb. xlvi, pp. 54, 55.
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8. —. A new code of nomenclature. Op. cit. xxi, pp. 428-433.
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- ANDERSSON, J. G. [See NORDENSKJÖLD & ANDERSSON (511).]
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Noticed, Zool. Zentrbl. 1906, p. 160.
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786. —. Über das Winterplankton der Wolga bei Romanow-Borisoglebsk. T. c. pp. 344-346.

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## II. MAMMALIA.

BY

R. LYDEKKER.

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## INTRODUCTION.

THE number of papers recorded falls only a little short of that of last year. Among noticeable work, reference may be made to MITCHELL's investigations on the mammalian cæcum, to those of ASSHETON and of ASSHETON & STEVENS on the placenta, and those of EGGELING on the lacteal and sudoriferous glands of the Marsupials. In connection with the latter, reference may also be made to other work on Marsupials and Monotremes in "Semon's Reise." SCHLAGINHAUFEN's study of the papillary ridges and folds on the hands and feet of the *Primates* likewise claims a foremost place. BARDELEBEN's views on the compound structure of the mammalian lower jaw, if substantiated, revolutionize our conceptions of this part of the skeleton.

In systematic work MEARN'S paper on Philippine Mammals and ANDERSEN's Chiropteran studies are noteworthy, as is THOMAS's description of a new genus of Old World Cricetine Mouse. Reference may also be made to ELLIOT's synopsis of American Mammals, to the completion of the supplementary edition of TROUESSART's "Catalogue," and to the issue of the second volume of British Mammals by MILLAIS. RIDGWAY'S work on the Thoroughbred Horse is also one which has attracted much attention.

In paleontology SCOTT has added largely to our knowledge of the Patagonian Tertiary Mammal fauna; while the new Ruminants from Californian caves described by SINCLAIR and others are of the highest interest.

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## II. GENERAL BIOLOGY (INCL. ANATOMY).

[+ prefixed to a paragraph indicates that it relates, in part or altogether, to extinct forms: when the sign is placed before a specific name it indicates that the species referred to is extinct.]

### GENERAL AND COMPARATIVE ANATOMY.

#### A. GENERAL.

- Helictis*; BEDDARD (49).  
*Phocæna*; BRAUN (69).  
*Otocyon*; CARLSSON (92).  
*Rhinoceros* (viscera); BURNE (78).

## B. TEGLUMENTARY SYSTEM.

Skin; JAPHA (202); RIJNBERK (341).  
 Papillary ridges, etc.; SCHLAGINHAUFEN (373).  
 Glands; MOLISSON (297).  
 Mammary do.; EGGEILING (124); WILLEY (465).

## C. NERVOUS SYSTEM; SENSE ORGANS.

General; SMITH & DUCKWORTH (397).  
 Brain; BEDDARD (48); BIANCHI (52); BRADLEY (66); HRDLIČKA (194); CAMPBELL (84); KRAUSE & KLEMPNOR (221); LECHE (228); LONGO (239); MELLUS (284); POL (326); TAKASU (421); WHITEHEAD (464); WITT (468).  
 Nerves; BARNANO (41); DOGEL (117); FOX (146); MACOCCHI (267); SCHUMACHER (376); SCHUSTER (377); WALENBERG (455); HUNTINGDON (197).  
 Ganglia; CAJAL (83); STREETER (412).  
 Sympathetic; BROEK (73).  
 Eye; FUCHS (148); SWEET (420).  
 Ear; BAUM & DOLIERS (45); GAUFINI (154); GRAY (171); KAMPEN (210).

## D. MYOLOGY.

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## E. OSTEOLOGY.

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 Interarticular cartilages; RETTERER (333-335).

## F. ALIMENTARY SYSTEM.

a. *Dentition.*

ABEL (3); ADLOFF (4); COLYER (104); DYBOWSKI (122); HILZHEIMER (186); LAMBE (224); LÖNNBERG (238); RÖRIG & BÖRNER (348); STACH (405); STEHLIN (406); THOMAS (437); ZIELER (477).  
 Gilt teeth; MAJOR (270).

b. *General.*

Palatine rugæ; LINTON (235).  
 Stomach; VERSON (451).  
 Liver; DEFLANDRE (110); ILLING (200).  
 Cloaca; DISSE (116).  
 Cæcum; MITCHELL (293).  
 Bile-ducts; MILLER (291A).

## G. CIRCULATORY AND RESPIRATORY SYSTEMS.

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 Veins; BELL (50); LEWIS (233); SOULIÉ & BONNE (398).

Lymphatics; LEWIS (232); SABIN (359).  
 Blood-corpuscles; JOLLY (206 & 207).  
 Leucocytes; JOLLY & ACUNA (208).  
 Thymus; GOODALL (163).  
 Cardiac glands; HAANE (175).  
 Lungs; BIZZOZERO (54); OPPEL (306).  
 Pleural cavity; KEITH (213).  
 Laryngeal sac; ZUCKERKANDL (481).  
 Tonsils; ZARRIA (482).

### H. URINO-GENITAL ORGANS.

General; BOHM (56); GERHARDT (156); PERRIER (314).  
 Testicle; BOUIN & ANCEL (63).  
 Urethral glands; CITELLI (99).  
 Membranes; GIANNELLI (158).  
 Uriniferous tubules; HULIER (196).  
 Kidney; FUHRMANN (149); HILL (185); SRDINKO (404).

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 Ovum, Ovulation, Ovary; BOINVILLE (57); CLAYPON (102); FISCHER (139); HEAPE (181); HERMANN (184); MARSHALL & JOLY (277); STRICHT (413).  
 Corpus luteum; MARSHALL (278).  
 Umbilical chord; FRANKL (147).  
 Impregnation; RUBASCHKIN (356).  
 Spermatozoa; ADOLPHI (5).  
 Of lymphatics; SABIN (359).  
 Of veins; SOULIÉ & BONNE (398); LEWIS (233).  
 Of skeleton; WALKHOFF (454).  
 Of teeth; ADLOFF (4).  
 Of ear; BAUM & DOLIERS (45); GRAY (171).  
 Of eye; FUCHS (148).  
 Of brain; BRADLEY (66).  
 Of cloaca; DISSE (116).  
 Of kidney; HILL (185).  
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 Habits; COWARD (105); KAMMERER (209); OLDHAM (304 & 305); ALLAN (9); MOFFAT (295).  
 Breeding do.; WARD (457A); WHITAKER (463).  
 Coloration; BONHOTE (59); HARPER (180); WOOD (470); POCOCK (325).  
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 Longevity; LYDEKKER (247).  
 Fertility; MARSHALL (275); SCHUSTER (377); IWANOFF (201).  
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## GEOGRAPHICAL DISTRIBUTION.

### 1. EASTERN HOLARCTIC.

British Isles; MILLAIS (289); REES (331); SMITH, Lincolnshire (396); FORREST, Shropshire (144); MARTIN (278A); WATT, Scotland (462); WATERSTON, St Kilda (460).  
 Spain; GRAINO (168); SEABRA (385).  
 Italy; LUCIFERO (243).  
 Switzerland; FATIO (134).  
 Transcaspia; SATUNIN (365).  
 Kashmir; WARD (456).  
 China; HILZHEIMER (187).  
 Japan; THOMAS (426, 430).

### 2. AFRICA and MADAGASCAR.

Africa as a distributional centre; FERENEZ (136).  
 General; THOMAS (427); THOMAS & SCHWANN (439 & 440); ROTHSCHILD (350).  
 Tunisia; CHAIGNON (95); TROUESSART (447).  
 Egypt and Sudan; LORTET (242); REZSO (339); SCHWANN (379).  
 E. Africa; RADCLIFFE (329); SCHILLINGS (371).  
 Angola; SEABRA (384).  
 Liberia; JOHNSTON (204).  
 W. Africa; BATES (43).  
 Madagascar; SEABRA (386).

## 3. S.E. ASIA and ASIATIC ARCHIPELAGO.

Sumatra; SCHNEIDER (375).  
 Philippines; MEARNS (282).

## 4. NORTH AMERICA.

General; ELLIOT (127).  
 Dodge County; SNYDER (397A).  
 Texas; BAILEY (38).  
 Utah; ALLEN (10).  
 Alaska; ANON (29).  
 California; STONE (408).  
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## 5. SOUTH AMERICA.

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## 6. ANTARCTICA.

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†*Fossil Faunas.*

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 Norfolk Forest-bed; DUBOIS (120).  
 English counties; LYDEKKER (246).  
 Ireland; SCHARFF (368).  
 France; BOULE (64); DELAMBRE (113); PARAT (313).  
 Holland; DUBOIS (119).  
 Switzerland; ROLLIER (349); STEHLIN (406).  
 Pomerania; DEECKE (109).  
 Germany; VOIGHTS & OUDEMANS (453).  
 Styria; HOFMANN & ZDARSKY (191).  
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 Egypt; BEADNELL (44); STROMER (414).  
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 Maryland; CASE (94).  
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 Patagonia; GAUDRY (152 & 153); SCOTT (381 & 382); SINCLAIR (391).

## III. SYSTEMATIC.

## I. PRIMATES.

Variation in sternum and vertebral column; ADOLPHI, Morphol. Jahrb. xxxiii, p. 39; mechanics, etc. of skeleton, WALKOFF (454); vestiges of *paniculus carnosus*, RUGE, Morphol. Jahrb. xxxiii, pp. 348 & 379, BASCHO, t. c. p. 274; plantar papillary ridges and grooves, especially

as distinctive between the Old and New World groups, SCHLAGINHAUFEN, Morphol. Jahrb. xxxiii, p. 576 and xxxiv, p. 1; Brain, KRAUSE & KLEMPNOR, Abh. Ak. Berlin 1904, arts 1 & 3, and Zeitschr. Morphol. ix, p. 59; embryos, KIEBEL, Rep. Brit. Ass. 1904, p. 596; cervical plexus, HUNTINGDON, Tr. N. York Ac. xvi, p. 82, 1897.

### ANTHROPOIDEA.

Revision of the species and races of *Simiidæ* (exclusive of *Hylobates*), with redistribution and amendment of the generic names, ROTHSCHILD, P. Zool. Soc. London 1904, ii, p. 413.

*Homo sapiens*, heredity in digital malformation, FARABEE, Papers Peabody Mus. iii, p. 69; segmental structure displayed by dermal vascular system of chest, GROSSER, Morphol. Jahrb. xxxiii, p. 555.

Application of the names *Simia*, *Pongo*, and *Satyrus*, JOHNSTON, P. Zool. Soc. London 1905, ii, p. 70.

*Simia* [= *Anthropopithecus*] *pygmæus rarispinosus*, French Congo, ROTHSCHILD, P. Zool. Soc. London 1904, ii, pp. 422 & 428; note on names *Simia*, *Gorilla*, etc., EASTMAN, Science xxii, p. 24.

*Anthropopithecus troglodytes*, papillary ridges, KIDD, P. Zool. Soc. London 1904, ii, p. 263; semi-lunar cartilages, RETTERER, C.R. Soc. Biol. lviii, p. 476; digastric muscle, CHAINE, op. cit. lix, p. 623; sp. cf. *gorilla*, large male from the Congo, HAMY, Nature (La), July 29, p. 129; *gorilla* at Breslau, GRADOWSKY, Verh. Ges. Breslau lxxxvi, p. 253.

*Simia satyrus*, behaviour under reduced atmospheric pressure, AGGAZOTTI, Atti Acc. Lincei xiv, p. 706, and Arch. ital. Biol. xliv, p. 39; brain, KRAUSE & KLEMPNOR, supra.

*Hylobates hainanus*, colour-change with age, and nomenclature, POCOCK, P. Zool. Soc. London 1905, ii, p. 169.

*Colobus palliatus cottoni*, Qugo, Central Equatorial Africa, LYDEKKER, Ann. Nat. Hist. (7) xvi, p. 432, n. subsp.

*Semnopithecus tsenensis*, Tertiary, Casino, Tuscany, STEFANI, Ann. Soc. geol. Belgique xviii, p. 334, foot-note, 1891, n. sp.

*Cercopithecus crossi*, Cameroons, Nature lxxii, p. 630, n. sp., identified with *C. preussi* MATSCHIE, op. cit. lxxiii, p. 319, FORBES.

*Macacus nemestrinus*, throat-sac, ZUCKERKANDL, Zeitschr. Morphol. ix, p. 145.

*Cynomologus mindanensis*, Mindanao, p. 428, *apoensis*, Mt. Apo, p. 429, *suluensis*, Sulu, p. 430, *cagayanus*, Cagayan, p. 431, MEARNS, P. U. S. Mus. xxviii, n. spp. & subsp.

*Cynopithecus niger*, brain, BEDDARD, P. Zool. Soc. London 1905, i, p. 22.

*Cebidae*, double discoidal placenta, STRAHL, Anat. Anz. xxvi, p. 425.

*Cebus curtus*, Gorgona Id., Colombia, BANGS, Bull. Mus. Harvard xlvi, p. 91, n. sp.

### LEMUROIDEA.

Extinct forms, especially those of Madagascar, GRANDIDIER, Arch. Mus. Paris (4) vii, p. 1.

*Nycticebus tardigradus hilleri*, figure, LYDEKKER, P. Zool. Soc. London 1904, ii, pl. xxiii.

*Loris gracilis*, presence of four mammae, WILLEY, Spolia Zeylan. iii, p. 159; *L. g. zeylanicus*, Ceylon, LYDEKKER, P. Zool. Soc. London 1904, ii, p. 346, n. subsp.

*Galago demidoff poensis*, Fernando Po, THOMAS, P. Zool. Soc. London 1904, ii, p. 186 (Abstr. 1904, No. 10, p. 12), n. subsp.

*Tarsius spectrum*, primordial cranium, FISCHER, P. Ac. Amsterdam 1905,

p. 397.

†*Megaladapis edwardsi*, osteology; LORENZ, Denk: Ak. Wien lxxvi, p. 451.

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## III. AVES.

BY

R. BOWDLER SHARPE, LL.D., &amp;c.

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## INTRODUCTION.

Three important works have been finished in Germany during the past year, viz. HENNICKÉ's new edition of Naumann's 'Vögel Mittel-Europas,' REICHENOW's famous 'Vögel Afrikas,' and REY's 'Eier der Vögel Mittel-Europas.' The amount of periodical literature devoted to Birds continues to increase, and to tax the patience of the Recorder, but in this portion of the work he has once more received the assistance of his friend and coadjutor, Mr Charles Chubb.

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Ostriches and their allies; BEEBE, Ann. Rep. New York Zool. Soc. ix, pp. 203–229.

*Struthio masaicus*, arterial system of the brain; BEDDARD, P. Zool. Soc. London 1905, i, pp. 102–104, text-fig. 15: *S. sp.* Sub-fossil remains of an egg, from India; BIDWELL, Bull. B. O. C. xv, p. 72: PYCRAFT, t. c. pp. 72 & 73.

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*Rhynchotus rufescens catingæ*, n. subsp., Rio Paranahyba, Brazil; REISER, Anz. Ak. Wiss. 1905, No. xviii, p. 324.

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 Bol. Soc. zool. Ital. (2) vi, pp. 247-256.  
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- Chrysolophus pictus*, notes on the variations of plumage ; FINN, Avicul. Mag. (2) iii, pp. 102-106 : *C. amherstiae*, in Upper Burma ; COMBER, J. Bombay Soc. xvi, pp. 512 & 753.
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- Argusianus grayi* as food ; FINSCH, Notes Leyden Mus. i, pp. 140-142.
- Numida ptilorhyncha* var. *inermis*, n. subsp., Upper Congo ; DUBOIS, Ann. Mus. Congo i, pp. 18 & 19 : *N. ptilorhyncha* and its allies ; ERLANGER, J. Ornith. 1905, pp. 137-139.
- Guttera*. Revision of the genus ; GHIGI, Mem. Acc. Bologna (6) ii, pp. 189-198, Tav. i : *G. barbata*, n. sp., Madagascar, *G. lividicollis*, n. sp., Zambesia ; id. t. c. p. 196.

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- Turnix lepurana*, breeding in confinement ; BUTLER, Avicul. Mag. (2) iii, pp. 217-222 : *T. suluensis*, n. sp., Jolo Is., off Sulu, Philippine Is. ; MEARNS, P. Soc. Washington xviii, pp. 83 & 84 : *T. nigricollis*, notes on the breeding in captivity ; BUTLER, Avicul. Mag. (2) iii, pp. 195-203 ; *T. varia*, breeding in confinement ; SETH-SMITH, Bull. B. O. C. xvi, p. 19 : id. Avicul. Mag. (2) iii, pp. 295-301 cum tab.

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Catalogue of the collection in the Wiesbaden Museum ; LAMPE (375).

- Pterocles exustus*, breeding in confinement ; PYCRAFT, Knowledge 1905, p. 15 : *P. decoratus ellenbecki*, n. subsp., S. Somali Land and Witu ; ERLANGER, J. Ornith. 1905, pp. 92 & 93, Taf. iii, figg. 1a [♂], 1b [♀] : *P. decoratus*, figured ; id. t. c. Taf. iii, figg. 2a [♂], 2b [♀] : *P. lichtensteini*, figured ; id. t. c. Taf. iv, figg. 1a [♂], 1b [♀] : *P. lichtensteini hyperythrus*, n. subsp., S. Somaliland ; id. t. c. p. 94, Taf. iv, figg. 2a [♂], 2b [♀].

#### Order COLUMBIFORMES.

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List of the species known to inhabit the Malay Peninsula ; ROBINSON, J. Federated States Mus. i, pp. 45-57.

*Phapitreron leucotis*, remarks on the nest and eggs ; McGREGOR, Bureau Govt. Labs. Manila, No. 34, pp. 6 & 7, pl. iii.

*Muscadivora* Schlegel vice *Carpophaga* Auct. (nec Billberg) ; MEARNS, P. Soc. Washington xviii, p. 84, note ex Richmond MSS. : *M. lanyhornei*, n. sp., West Boloe Is., Basilan, Philippine Is. ; id. t. c. pp. 84 & 85.

*Ptilocolpa mindanensis*, n. sp., E. Mindanao ; GRANT, Bull. B. O. C. xvi, p. 16.

*Columba unicincta* in Uganda ; SETH-SMITH, Bull. B. O. C. xv, p. 75 : *C. guinea* and its allies ; ERLANGER, J. Ornith. 1905, pp. 112-114 : *C. palumbus*, numbers in Herts. in autumn of 1905 ; HARTERT, Bull. B. O. C. xvi, p. 38 : *C. palumbus azorica*, n. subsp., Azores, HARTERT, Nov. Zool. xii, p. 93 : *C. intermedia*, note on ; LÖNNBERG, Arkiv Zool. ii, p. 16 : *C. philippinæ*, notes on ; ROTHSCHILD & HARTERT, Nov. Zool. xii, p. 245.

*Turturæna iriditorques* from Sierra Leone ; KEMP, Ibis 1905, p. 216.

- Turtur lhasae*, n. sp., Tibet; WALTON, Bull. B. O. C. xv, p. 92 : *T. shelleyi* and allies, remarks on; KLEINSCHMIDT, J. Ornith. 1905, pp. 157 & 158. *T. senegalensis* and its allies; ERLANGER, t. c. pp. 116-119, Taf. v, figg. 1-3 : *T. semitorquatus* and its allies; id. t. c. pp. 120-126, Taf. vi, figg. 1-3 : *T. s. minor*, n. subsp., S. Somali Land; id. t. c. p. 125, Taf. vi, fig. 3 : *T. s. intermedius*, n. subsp., S. Abyssinia, Galla Land, to Equat. and S. Africa; id. t. c. p. 124, Taf. vi, fig. 2 : *T. decipiens griseiventris*, n. subsp., N. Somali Land; id. t. c. p. 126, Taf. vi, fig. 6 : *T. decipiens* (fig. 5), *T. d. ambiguus* (fig. 7), *T. d. perspicillatus* (fig. 8), figured; id. t. c. Taf. vi : *T. damarensis*, figured; id. t. c. p. 123, Taf. vi, fig. 9 : *T. d. tropicus* (fig. 10), *T. d. capicola* (fig. 11), figured; id. t. c. Taf. vi : *T. d. somalicus*, n. subsp.; id. t. c. p. 127, Taf. vi, fig. 12 : *T. risorius*, figured; id. t. c. Taf. vi, fig. 13 : *T. r. decaocto* (fig. 14), *T. r. roseogriseus* (fig. 15), figured; id. t. c. Taf. vi : *T. vinaceus* (fig. 16), *T. reichenowi* (fig. 17), figured; id. Taf. vi : ERLANGER, J. Ornith. 1905, p. 126, Taf. vi, fig. 2b : *T. ambiguus permixtus*, n. subsp., E. Africa, from the Victoria Nyanza to the Zambezi; REICHENOW, Vög. Afrikas iii, Nachtrag, p. 868 : *T. reichenowi* Erl., N. E. Africa (Dolo to Gobwen), figured; ERLANGER, J. Ornith. 1905, Taf. vi, fig. 6.
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- Claravis pretiosa livida*, n. subsp., Rio Cauca, Colombia; id. t. c. p. 153.
- Oena capensis anonyma*, n. subsp., Kilimanjaro district, E. Africa; OBERHOLSER, P. U. S. Mus. xxviii, pp. 843 & 844.
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- Chalcopelia chalcospilos somalica*, n. subsp., S. Somali Land; ERLANGER, J. Ornith. 1905, p. 134, Taf. vii, fig. 2b: *C. afra* (fig. 1) and *C. chalcospilos chalcospilos* (fig. 2a), figured; id. t. c. Taf. vii.
- Chalcoptaphs natalis*, egg; MUNT, Bull. B. O. C. xv, p. 51.
- Petrophassa albipennis*, eggs described; NORTH, Rec. Austral. Mus. v, p. 269.
- Lophophaps plumifera* and *L. ferruginea*, notes on nomenclature; HARTERT, Nov. Zool. xii, pp. 197 & 198.
- Ocyphaps lophotes*, in captivity; ROBERTS, Emu iv, pp. 182-184.
- Aploelia larvata* from Kilimanjaro; OBERHOLSER, P. U. S. Mus. xxviii, p. 847.
- Columbigallina passerina exigua*, n. subsp., Mona Island, Porto Rico; RILEY, P. U. S. Mus. xxix, pp. 171 & 172: *C. passerina granatina* and *C. rufipennis*, nests and eggs described; ALLEN, Bull. Amer. Mus. xxi, p. 280.
- Leptoptila jamaicensis*, figured; SETH-SMITH, Avicult. Mag. (2) iii, pl. to p. 87: *L. verreauxi*, nest and eggs described; ALLEN, Bull. Amer. Mus. xxi, pp. 279 & 280: *L. chloroauchenia*, nesting in confinement; ALDERSON, Avicult. Mag. (2) iii, pp. 130-134.
- Geotrygon martinica digressa*, n. subsp., Guadeloupe, Lesser Antilles; BANGS, P. Soc. Washington xviii, pp. 153 & 154.
- Phlogænas beccarii intermedia*, n. subsp., Solomon Islands; ROTHSCHILD & HARTERT, Nov. Zool. xii, pp. 246 & 247: *P. platense*, nest and eggs described; McGREGOR, Bureau Govt. Labs. Manila, No. 34, p. 8, pls. iv-vi.
- Leucosarcia prævisa*, n. sp. [Fossil], Pleistocene of Interior of South Australia; DE VIS, Ann. Queensland Mus. No. 6, p. 8, pl. i, fig. 5a.
- Microgoura meeki*, described; ROTHSCHILD & HARTERT, Nov. Zool. xii, p. 247.
- Didunculus strigirostris*, egg; MUNT, Bull. B. O. C. xv, p. 51.

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- Rallus aquaticus korejewi*, n. subsp., N. E. Turkestan, Amu Darya, Transcaspia, E. Persia ; SARUDNY, Ornith. Monber. xiii, pp. 209 & 210 : from Lenkoran ; LOUDON, t. c. p. 209, note : *R. aquaticus* also in Lenkoran ; LOUDON, t. c. p. 209, note : *R. elegans*, in Massachusetts ; FARLEY, Auk xxii, p. 409.
- Hypotænidia torquata*, abnormal bill ; McGREGOR, Bureau Govt. Labs. Manila, No. 34, p. 9, pl. vii.
- Cabalus modestus*, figured ; BULLER, Suppl. B. New Zealand i, pl. iii.
- Ocydromus scotti*, n. sp., Stewart Island, OGILVIE-GRANT, Bull. B. O. C. xv, p. 78 (1905) : id. Ibis 1905, pp. 550 & 551.
- Crex pratensis*, near Lurgan in winter (Jan.) ; PATTERSON, Irish Natural. xiv, p. 119.
- Porzana maruetta* var. *maculipennis*, n. subsp., Murghab and Herri-rud districts, E. Persia ; SARUDNY, Denkschr. K. Russ. Geogr. Ges. xxxvi, p. 74 (1903). Cf. OTTO, Ornith. Monber. xiii, p. 135 : *P. noveboracensis*, near Springfield, Mass. ; MORRIS, Auk xxii, p. 208.
- Sarothrura bonapartei* from Sierra Leone ; KEMP, Ibis 1905, p. 217.
- Creciscus pileatus* (Wied.) = *C. viridis* (P. L. S. Müll.) ; HELLMAYR, Nov. Zool. xii, p. 304 : *C. viridis subrufescens* Berlepsch & Stolzmann = *C. v. facialis* Tschudi ; BERLEPSCH & HELLMAYR, J. Ornith. 1905, p. 19.
- Porphyriornis comeri* from Gough Island ; CLARKE, Ibis 1905, pp. 258 & 259.
- Gallinula angulata*, breeding in South Somali Land ; ERLANGER, J. Ornith. 1905, p. 90.
- Porphyrio porphyrio* and its allies, notes on ; id. t. c. pp. 88 & 89.
- P. caeruleus*, in Germany ; KLEINSCHMIDT, Falco i, p. 42, footnote.
- Ionornis martinica*, in Massachusetts ; HOWE, Auk xxii, p. 319 : FARLEY, t. c. p. 409.

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*Podiceps cristatus*, nesting in Perthshire ; WHYTE, Tr. Perthsh. Soc. iv, pp. 83-86.

*Colymbus holbælli*, at Englewood, N. J. in June ; HIX, Auk xxii, p. 407.

## Order SPHENISCIFORMES.

- Albino penguins ; CLARKE, Bull. B. O. C. xv, p. 57 : ROTHSCHILD, t. c. p. 57 : WILSON, t. c. p. 57 : GRANT, t. c. p. 57.
- Anthropornis*, n. g. (fossil), Type *A. nordenskjoldii*, n. sp., Seymour Island ; WIMAN, Bull. Geol. Inst. Upsala vi, p. 249, pl. xii, fig. 6.
- Aptenodytes forsteri*, note on ; PYCRAFT, Knowledge 1905, p. 65.
- Catarrhactes chrysocome* and its supposed scratching of the rocks with its feet ; VALLENTIN, Bull. B. O. C. xv, pp. 48-50.
- Eudyptula minor*, observations on the young ; McCCLYMONT, Zoologist 1905, pp. 329-331.
- Pachypteryx*, n. g. (fossil), type *P. grandis*, n. sp., Seymour Island ; WIMAN, Bull. Geol. Inst. Upsala vi, p. 250, pl. xii, fig. 3.
- Eospheniscus*, n. g. (fossil), type *E. gunnari*, n. sp., Seymour Island ; id. t. c. p. 250, pl. xii, fig. 5.
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## Order PROCELLARIIFORMES.

- Procellaria pelagica*, breeding on the Bass Rock; CLARKE, Ann. Scott. Nat. Hist. 1905, pp. 55 & 56: on the Flannan Islands; id. t. c. pp. 85 & 86.
- Oceanodroma leucorrhœa* nesting on the Flannan Islands; CLARKE, Ann. Scott. Nat. Hist. 1905, pp. 85 & 86: on Long Island; MURPHY, Auk xxii, pp. 205 & 206: *O. socorroensis*, notes on; KAEDING, Condor vii, pp. 108 & 109.
- Puffinus anglorum*, at Bromsgrove, Worcestershire; GROUND, Zoologist 1905, pp. 394 & 395: at Great Yarmouth; PATTERSON, t. c. p. 395: notes on; MACKENZIE, Ann. Scott. Nat. Hist. 1905, pp. 141–143: *P. flavirostris* and *P. kuhli*, notes on; HARTERT, Nov. Zool. xii, p. 97: *P. assimilis* in Kent; TICEHURST, Bull. B. O. C. xvi, pp. 38 & 39.
- Ostreleta cervicalis*, figured; BULLER, Suppl. B. New Zealand i, pl. iv.
- Pagodroma nivea*, var. *novegeorgica*? described; REICHENOW, J. f. O. 1905, p. 515.
- Bulweria bulweri*, notes on; SCHMITZ, Ornith. Jahrb. xvi, pp. 66–70.
- Fulmarus glacialis*, notes on the species at St Kilda; MACKENZIE, Ann. Scott. Nat. Hist. 1905, pp. 78–80.
- Daption capense*, egg of; CLARKE, Bull. B. O. C. xv, p. 57.
- Prion dispar*, n. sp., Heard Island; REICHENOW, J. Ornith. 1905, p. 505.
- Diomedea* and *Thalassogeron*, remarks on the species; PARKIN, 12th Ann. Rep. Hastings Soc. pp. 1–4: *D. exulans* and *D. fuliginosa*, anatomy of; ULRICH, deutsch Tiefsee-Expedition, pp. 321–342, pls. xix–xxii: *D. bulleri* and *D. salvini*, heads figured; BULLER, Suppl. B. New Zealand i, pl. v.
- Thalassogeron* = *Diomedea*; ROTHSCHILD, Bull. B. O. C. xv, p. 45. *T. carteri* or an allied form from Gough Island; id. t. c. p. 45: CLARKE, t. c. pp. 44 & 45: *T. layardi* Salvin = *Diomedea cauta* Gould; GRANT, Ibis 1905, pp. 558 & 559: *T. eximius* on Gough Island; CLARKE, Ibis 1905, p. 256: *Thalassogeron*, sp. incog.; id. t. c. p. 265.
- Phabetria cornicoides* Hutton distinct from *P. fuliginosa*; GRANT, Ibis 1905, p. 560: notes on; CLARKE, t. c. p. 265.
- Macronectes*, n. nov. pro *Ossifraga* H. & J. nec Wood, 1835; RICHMOND, P. Soc. Washington xviii, p. 76.
- Dyspetornis*, n. nov. for *Hydrornis* Milne-Edw. nec. Blyth; OBERHOLSER, Smithson. Collect. quart. xlviii, p. 60.

## Order ALCIFORMES.

- Plautus impennis*, note on a specimen and three eggs in the Thayer Museum; THAYER, Auk xxii, pp. 300–302, pls. xiii & xiv.
- Alca torda* in Saxony; MUSHACKE, Ornith. Monber. xiii, p. 112.
- Uria troile californica*, nesting habits; FINLAY, Condor vii, pp. 165–169.
- Gavia lumme*, in South-eastern Michigan; SWALES & TAVERNER, Auk xxii, p. 88.
- Mergulus alle*, notes on the species in Spitzbergen; INGRAM, Avicult. Mag. (2) iii, pp. 356–358.
- Alle alle*, on the coast of North Carolina; THAYER, Auk xxii, p. 310.

## Order LARIFORMES.

- Inca*, Jard. vice *Nenia* Boie; OBERHOLSER, Smithson. Collect. quart. xlviii, p. 61.
- Sterna macrura*, in Herefordshire; LLOYD, Tr. Woolhope Club 1904, p. 147: *S. cantiaca*, note on the breeding in Cumberland; ELLISON, Mem. Manchester Soc. xlix, pp. xiv & xv cum tab.: *S. fluvialis* and

- S. minuta*, notes on; PATTERSON, Zoologist 1905, pp. 258-262: *S. caspia*, in South Carolina; WAYNE, Auk xxii, p. 395: on the coast of Western Germany; BARTELS, Ornith. Monber. xiii, pp. 73 & 74: *S. fuliginosa*, on the banks of the Lower Loire; BUREAU, Bull. Soc. Ouest France iv, pp. 225-256, pls. ix & x.
- Xema sabini*, in Montana; CAMERON, Auk xxii, p. 76.
- Larus marinus* and *L. fuscus*, notes on the species at the Bass Rock; EVANS, P. Phys. Soc. Edinb. xvi, pp. 42-51: *L. minutus*, notes on; CHRISTENSEN, Vid. Medd. 1905, pp. 245-250, pl. vi: *L. kumlieni*, in Massachusetts; ALLEN, Auk xxii, p. 205: *L. ridibundus*, anatomy of; REX, Morphol. Jahrb. 1905, pp. 109-347, pls. iii-ix, text-figg. 1-60.
- Leucophaeus scoresbii*, note on; SCLATER, Knowledge 1905, p. 130.
- Rissa tridactyla* feeding on a Blackbird; TEGETMEIER, Bull. B. O. C. xv, pp. 88 & 89.
- Lestris pomatorhinus*, in Italy; SALVADORI, Avicula ix, p. 151.
- Stercorarius pomatorhinus*, in Herefordshire; LLOYD, Tr. Woolhope Club 1904, p. 148: *S. crepidatus*, in Hungary; CSATO, Ornith. Jahrb. xvi, pp. 70 & 71.
- Megalestris antarctica falklandica*, n. subsp., Falkland Is.; LÖNNBERG, Wiss. Erg. Schwed. S. P. Exped. v, Lief. 5, p. 8 (1905).

#### Order CHARADRIIFORMES.

See PEOLA (501).

- Hæmatopus palliatus*, note on; REED, Revist. Chilena ix, pp. 49 & 50, fig. 2.
- Vanellus vanellus*, necrosis of the foot; NICHOLS, Irish Natural. xiv, pp. 32 & 33: *V. vulgaris*, nesting habits; KELSO, Zoologist 1905, pp. 108 & 109.
- Eudromias morinellus*, at Fowness Island; LAVER & CORNISH, Essex Natural. xiv, p. 71.
- Oxyechus vocifera*, in the Hawaiian Islands (Maui); BRYAN, Pap. B. P. Bishop Mus. ii, p. 56.
- Aegialitis vocifera*, note on; KOPMAN, Auk xxii, pp. 209 & 210.
- Recurvirostra americana*, in New Jersey; BRAISLIN, Auk xxii, p. 78.
- Limosu limosa*, note on; LÖNNBERG, Archiv Zool. ii, No. 9, p. 14.
- Catoptrophorus* Bonap. (Ann. Lyc. New York ii, p. 323), is the proper name for the Willet: *Sympheeria* Rafinesq. is synonymous with *Ereunetes*; RICHMOND, P. Soc. Washington xviii, p. 75.
- Totanus totanus eurhinus*, note on; LÖNNBERG, Arkiv Zool. ii, pp. 12 & 13: *T. solitarius* nesting (in a tree in old nests of other birds) in N. W. Canada; JOURDAIN, Ibis 1905, pp. 158-161.
- Helodromas ochropus*, note on; LÖNNBERG, Arkiv Zool. ii, p. 13.
- Pavoncella pugnax*, at Camden, Maine; THAYER, Auk xxii, p. 409: in Indiana; YOUNG, t. c. p. 410: North American records; DEANE, t. c. p. 411.
- Bartramia longicauda* in Cornwall; BONHOTE, Bull. B. O. C. xv, p. 32.
- Limonites minutus*, from Mindanao, Philippine Is.; MEARNS, P. Soc. Washington xviii, p. 89.
- Actodromas vice Limonites* Kaup (nec Dalman, *Lepid.*); OBERHOLSER, P. U. S. Mus. xxviii, p. 839.
- Tringa canutus*, discovery of the nest and eggs; OTTOSSON, Ornith. Jahrb. xvi, p. 72: nesting in Iceland; id. Ibis 1905, pp. 105 & 106: eggs from the Taimyr Peninsula and New Siberian Islands; BIANCHI, Bull. B. O. C. xv, p. 92: *T. solitaria* Wils. is not a *Helodromas* but a *Rhyacophilus*; OBERHOLSER, P. U. S. Mus. xxviii, p. 838: *T. subarquata*, on the Dee Marshes in February; CUMMINGS, Zoologist 1905, pp. 145 & 146.

- Gallinago australis*, obtained at Lord Howe Island; NORTH, Rec. Austral. Mus. v, p. 338: *G. major*, in Shropshire; POTTER, Field, Sept. 9, 1905; PYCRAFT, Knowledge 1905, p. 255: in Shetland; id. t. c. p. 64: *G. sabinei*, in Cambridgeshire; id. t. c. p. 15.
- Scolopax sabini* in Cambridgeshire; PYCRAFT, Ibis 1905, pp. 289–291.
- Rostratula bengalensis* nesting in S. Somali Land; ERLANGER, J. Ornith. 1905, pp. 78 & 79.
- Phalaropus hyperboreus*, in Shropshire; FORREST, Rec. Caradoc Club xiv, p. 36: *P. fulicarius* in Dalmatia; RÖSSLER, Ornith. Monber. xiii, p. 74.
- Hydralector gallinaceus*, from Southern Mindanao, Philippine Is.; MEARNS, P. Soc. Washington xviii, p. 89.
- Ortyxelus meiffreni*, habits; A. L. BUTLER, Ibis 1905, pp. 386 & 387.
- Pluvianus aegyptius*, breeding habits; PYCRAFT, Knowledge 1905, p. 229: its eggs; BUTLER, Ibis 1905, pp. 399 & 400.
- Cursorius gallicus* and allies; ERLANGER, J. Ornith. 1905, pp. 57 & 58, Taf. 1, *C. gallicus littoralis*, n. subsp., S. Somali Land; id. t. c. p. 58, Taf. 1, fig. 3: *C. somalensis littoralis*, n. subsp., S. Somali Land; ERLANGER, J. Ornith. 1905, p. 58, Taf. 1, fig. 3; REICHENOW, Vög. Afrikas iii, Nachtrag iii, p. 801.
- Rhinoptilus*, synopsis of the species, *R. africanus sharpei*, n. subsp.; id. t. c. pp. 60 & 61: in Italy; GRIFFOLI, Ávicula ix, p. 159: *R. bisignatus hartingi* from Somali Land is distinct from typical *R. bisignatus*; OBERHOLSER, P. U. S. Mus. xxviii, p. 839.
- Glareola fusca limbata* is the form of Pratincole in N. E. Africa and W. Africa; REICHENOW, Vög. Afrikas iii, p. 800.
- Ædicnemus*, notes on the African species; ERLANGER, J. Ornith. 1905, pp. 68–74: *Æ. ædicnemus*, near Lahej, S. Arabia; id. t. c. p. 70: *Æ. gularis*, distinct from *Æ. vermiculatus*; id. t. c. pp. 71 & 72: *Æ. capensis dodsoni*, notes on; id. t. c. pp. 73 & 74: *Æ. capensis* var. n. *psammochrous*, Togo Land: var. n. *damarensis*, Damara Land; REICHENOW, Vög. Afrikas iii, Nachtr. p. 801.
- Ocyptanus*, n. gen. [fossil] type *O. præses*, n. sp., Pleistocene of Interior of South Australia; DE VIS, Ann. Queensland Mus. No. 6, pp. 8 & 9, pl. i, fig. 5 b.
- Otis tarda korejewi*, n. subsp., Turkestan; SARUDNY, Ornith. Monber. xiii, pp. 163 & 164: *O. tetrax*, near Eisleben; KLEINSCHMIDT, Ornith. Monber. xiii, p. 64: *O. canicollis canicollis* figured, Taf. ii, fig. 1: *O. c. somaliensis*, n. subsp., N. Somali Land; ERLANGER, J. Ornith. 1905, p. 82, Taf. ii, fig. 2 = *O. canicollis*; REICHENOW, Vög. Afrikas iii, Nachtr. i, p. 802: *O. c. erlangeri*, n. sp., S. Somali Land to Iringa, E. Africa; id. t. c.: *O. macqueeni*, note on; HEATH, J. Bombay Soc. xvi, pp. 372 & 373.
- Syphoëtis bengalensis*, its winter plumage; WALL, J. Bombay Soc. xvi, pp. 388 & 389.
- Eupodotis arabs* in the forest of Marmora, Marocco; MEADE-WALDO, Ibis 1905, pp. 161–164: notes on; BUTLER, Ibis 1905, pp. 392 & 393.
- Lissotis notophila*, n. sp., Natal; OBERHOLSER, P. U. S. Mus. xxviii, p. 836: *L. lovati* Grant, is the true *L. melanogaster* (Rüpp.); id. t. c. p. 836.

## Order GRUIFORMES.

- Grus nesiotes*, n. sp., Isle of Pines; BANGS & ZAPPEY, Amer. Natural. xxxix, pp. 193 & 194.
- Antigone sharpei*, from Luzon; McGREGOR, Bureau Govt. Labs. Manila, No. 34, p. 29.
- Rhinochetus jubatus*, notes on; CAMPBELL, Emu iv, pp. 166–168, pl. xii.

## Order ARDEIFORMES.

- Ibis* (?) *conditus*, n. sp. [fossil]. Pleistocene of Interior of South Australia ; DE VIS, Ann. Queensland Mus. No. 6, pp. 10 & 11, pl. ii, fig. 2 a, b.
- Theristicus olivaceus* and its allies, *T. cupreipennis*, *T. splendidus*, *T. rarus*, notes on ; REICHENOW, Vög. Africas iii, Nachtrag, pp. 803-805, cum figg.
- Comatibis eremita*, eggs described ; ROTHSCHILD, Bull. B. O. C. xvi, pp. 15 & 16.
- Plegadis fulcinellus*, notes on ; SCLATER, Knowledge 1905, pp. 48 & 49 : in Herefordshire ; LLOYD, Tr. Woolhope Club 1904, p. 148 : from Mindanao ; MEARNS, P. Soc. Washington xviii, p. 89.
- Ciconia alba*, distribution in the Rhine Provinces during the breeding season ; SCHUSTER, Jahrb. nassau. Ver. 58, pp. 191-194 : at North Wotton ; PYCRAFT, Knowledge 1905, p. 255 : nesting in Bavaria ; GENGLER, Verh. Orn. Ges. Bayern v, pp. 45-64.
- Dissöura*, 4 species recognised, *D. neglecta*, n. sp., Java, Sumbawa, Lombok, Celebes, Philippines ; FINSCH, Ornith. Monber. 1904, p. 94 : id. Notes Leyden Mus. xxvi, pp. 150-154 (1905).
- Xenorhynchopsis*, n. gen. [fossil]. Type, *X. tibialis* and *X. minor*, n. spp. Pleistocene of Interior of South Australia ; DE VIS, Ann. Queensland Mus. No. 6, pp. 9 & 10, pl. i, figg. 6 a, b, c, pl. ii, figg. a, b.
- Xenorhynchus nanus*, n. sp. [fossil]. Pleistocene of Interior of South Australia ; id. t. c. p. 9.
- Mycteria senegalensis*, notes on habits ; BUTLER, Ibis 1905, pp. 379-381, cum fig. (Juv.).
- Balaeniceps rex*, notes on habits ; id. t. c. pp. 373-377.
- Ardea repens*, n. sp., Isle of Pines ; BANGS & ZAPPEY, Amer. Natural. xxxix, p. 186.
- Herodias timoriensis* from Mindanao, Philippine Islands ; MEARNS, P. Soc. Washington xviii, pp. 89 & 90.
- Florida cærulea* in Connecticut ; McCOOK, Auk xxii, pp. 76 & 77 : in Massachusetts ; ALLEN, t. c. p. 77 : HORN, t. c. p. 319.
- Nycticorax manillensis*, note on ; McGREGOR, Bureau Govt. Labs. Manila, No. 34, pp. 10 & 11 : *N. griseus* at Pevensey, Sussex ; NICOLL, Zoologist 1905, p. 267.
- Butorides javanica*, note on ; McGREGOR, Bureau Govt. Labs. Manila, No. 34, p. 11, pl. viii.
- Ardetta neoxena* from Michigan ; TAVERNER, Auk xxii, pp. 77 & 78.
- Zebrilus pumilus*, notes on plumage of sexes ; HELLMAYR, Ornis xiii, pp. 56-58.
- Nannocnus ijimai*, n. sp., Islands between Kiushu and Formosa ; OGAWA, Annot. zool. Japon. v, pp. 215 & 216, pl. xi.
- Botaurus stellaris* in Ireland ; JOHNSTON, Irish Natural. xiv, p. 119 : *B. stellaris* from Luzon ; McGREGOR, Bureau Govt. Labs. Manila, No. 34, p. 29.

## Order PHÆNICOPTERIFORMES.

- Phœnicopterus ruber*, notes on the life history ; CHAPMAN, Bull. Amer. Mus. xxi, pp. 53-77, text-figg. 1-16 : former status in the Lesser Antilles ; CLARK, Auk xxii, pp. 318 & 319 : breeding habits ; CHAPMAN, Century Magazine, December 1904 : PYCRAFT, Knowledge 1905, p. 15.

## Order PALAMEDEIFORMES.

- Chauna cristata*, breeding in the Zoological Gardens, SCLATER, Ibis 1905, p. 143.

## Order ANSERIFORMES.

MILLAIS, J. G., on hybrid ducks. Bull. B. O. C. xv, p. 89 : BONHOTE, t. c. pp. 88 & 89.

*Archaeocygnum*, n. gen. [fossil]. Type *A. lacustris*, n. sp. Pleistocene of Interior of South Australia ; DE VIS, Ann. Queensland Mus. No. 6, pp. 11-13, pl. iii, figg. 2 a, b, 3, 4, 6 a, b, 7 a, b.

*Sarcidiornis melanonota*, figured ; BAKER, J. Bombay Soc. xvi, pl. xxii.

*Chenopsis nanus*, n. sp. [fossil]. Pleistocene of Interior of South Australia ; DE VIS, Ann. Queensland Mus. No. 6, pp. 13 & 14, pl. ii, figg. 3, 5-7.

*Bernicla leucopsis*, near Warkworth ; PYBUS, Tr. Soc. Northumb. (2) i, p. 301.

*Branta bernicla leucogastra*, note on the nest and eggs ; THAYER, Auk xxii, p. 408.

*Chen rossi* breeding in confinement ; BLAAUW, Ibis 1905, pp. 137 & 138.

*Nettapus egrensis*, n. sp. [fossil]. Pleistocene of Interior of South Australia ; DE VIS, Ann. Queensland Mus. No. 6, p. 16, pl. iv, fig. 9.

*Casarca casarca* in Dalmatia ; KÖSSLER, Ornith. Monber. xiii, p. 74.

*Tadorna radjah rufitergum*, n. subsp., Arnhem Land, N. Australia ; HARTERT, Nov. Zool. xii, p. 205.

*Anas (Nettium) strenua*, n. sp. [fossil]. Pleistocene of Interior of South Australia ; DE VIS, Ann. Queensland Mus. No. 6, p. 15, pl. iv, fig. 6 :

*A. gracilipes*, n. sp. [fossil]. Pleistocene of Interior of South Australia ; DE VIS, t. c. pp. 14 & 15, pl. iv.

*Anas boscas*, nesting in a tree ; SMITH, Irish Natural. xiv, p. 200 : nesting in a tree (60 feet from the ground) ; FISHER, Wilts. Mag. xxxiv, p. 109 : *A. boscas spilogaster*, notes on ; SCHIOLER, Vid. Medd. 1905, pp. 127-148, 239 & 240, pls. ii-iv : *A. superciliosa pelewensis* is the form inhabiting the Pelew Islands, Samoa, Fiji, and the Solomon Islands, in place of the true *A. superciliosa* from Australia and New Zealand ; ROTHSCHILD & HARTERT, Nov. Zool. xii, p. 248 : *A. boscas* × *A. pectorrhyncha* ; BONHOTE, P. Zool. Soc. London 1905, Vol. i, pp. 147-149 : *A. superciliosa* × *Dafila acuta* ; id. t. c. pp. 147-149.

*Chaulelasmus streperus*, near Springfield, Mass. ; MORRIS, Auk xxii, p. 207.

*Mareca penelope* at Sandusky, Ohio ; DEANE, t. c. p. 206.

*Spatula clypeata*, a brood of albinos ; id. t. c. pp. 408 & 409 : figured ; BAKER, J. Bombay Soc. xvi, pl. xxi : *S. clypeata* × *Querquedula discors* ; DEANE, Auk xxii, p. 321.

*Netta rufina* in Holland ; OORT, Notes Leyden Mus. xxvi, pp. 196-199.

*Fuligula cristata* breeding on Lough Conn ; WARREN, Irish Natural. xiv, p. 165.

*Aythya valisneria* in Colorado ; FELGER, Auk xxii, p. 421.

*Nyroca effodiata*, n. sp. [fossil]. Pleistocene of Interior of South Australia ; DE VIS, Ann. Queensland Mus. No. 6, pp. 15 & 16, pl. iv.

*Nyroca nyroca* from Tianshan ; LÖNNBERG, Arkiv Zool. ii, Nö. 9, p. 3 : *N. africana*, figured ; BAKER, J. Bombay Soc. xvi, pl. xx.

*Œdemia nigra* breeding in Ireland ; TREVELYAN, Field, July 15, 1905 : PYCRAFT, Knowledge 1905, p. 207 : *Œ. deglandi* and *Œ. perspicillata*, in South-Eastern Michigan ; SWALES & TAVERNER, Auk xxii, p. 88.

*Somateria mollissima* and its allies ; ROTHSCHILD, Bull. B. O. C. xv, pp. 43 and 44 : blackish V-shaped markings on the throat ; SAUNDERS, t. c. pp. 69 & 70 : in the Adriatic ; ANGELIN, Boll. Soc. Ital. (2) vi, pp. 101-103.

*S. v-nigrum* in the Orkney Islands ; STUBBS, Bull. B. O. C. xv, pp. 32 & 33 ; CLARKE, Zoologist, p. 74 : STUBBS, t. c. pp. 142 & 143 : ROBINSON, t. c. p. 143 : OLDHAM, t. c. p. 185.

- Biziura lobata*, osteology ; PYCRAFT, Bull. B. O. C. xv, p. 100 : *B. exhumata*, n. sp. [fossil]. Pleistocene of Interior of South Australia ; DE VIS, Ann. Queensland Mus. No. 6, p. 14, pl. iv, figg. 1-3.  
*Mergus albellus*, notes on ; BONHOTE, Avicul. Mag. (2) iii, pp. 120-124.  
*Merganser castor*, note on ; PRIMROSE, J. Bombay Soc. xvi, pp. 378 & 379 : *M. australis*, figured ; BULLER, Suppl. B. New Zealand ii, pl. vi.

#### Order PELECANIFORMES.

- Phalacrocorax*, notes on the New Zealand Cormorants and allied forms. Key to the species ; GRANT, Ibis 1905, pp. 566-576 : *P. brandti*, notes on the nesting ; FINLAY, Condor vii, pp. 161-165 : *P. gregorii* and *P. vetustus*, n. spp. [fossil]. Pleistocene of Interior of South Australia ; DE VIS, Ann. Queensland Mus. No. 6, pp. 18-25, pl. v-ix, *Plotus laticeps*, n. sp. [fossil]. Pleistocene of Interior of South Australia ; DE VIS, t. c. pp. 17 & 18, pl. vi.  
*Sula bassana* in Italy ; FOA, Avicula ix, pp. 5-8 ; SALVADORI, t. c. pp. 33 & 34.  
*Pelecanus sula* Gm. = *Sula piscator* vice *Sula sula* auct. (= *Sula leucogastra*, Bodd.) ; NELSON, P. Soc. Washington xviii, pp. 121 & 122.  
*Sula etesiaca*, n. sp., Gorgona Island, Colombia ; THAYER & BANGS, Bull. Mus. Harvard xlvi, pp. 92 & 93.  
*Fregata aquila* at San Pablo Bay, California ; GIFFORD, Auk xxii, p. 408.  
*Phaethon americana* at Phoenix, Arizona ; BRENNINGER, t. c. p. 408.  
*Pelecanus grandiceps* and *P. proavus*, n. spp. [fossil]. Pleistocene of Interior of South Australia ; DE VIS, Ann. Queensland Mus. No. 6, pp. 16-18, pl. v, figg. 1-5 : *P. sharpei* from the Lower Congo ; DUBOIS, Ann. Mus. Congo i, p. 21 : *P. fuscus*, arterial system of the brain ; BEDDARD, P. Zool. Soc. London 1905, i, p. 109, text-fig. 17.

#### Order CATHARTIFORMES.

- Sarcophampus patruus*, n. sp. [fossil], Tarija, Bolivia ; LÖNNBERG, Bull. Geol. Inst. Upsala vi, pp. 1-11, text-figg. 2 & 4.  
*Cathartes aura*, in Maine ; DEANE, Auk xxii, pp. 78 & 79 : in Michigan ; SWALES, t. c. p. 413 : in Western Massachusetts ; MORRIS, t. c. p. 413 : *C. a. septentrionalis* (Wied.) is the North American species, true *C. aura* (Linn.), with which *C. burrovianus* Cassim is identical, being the southern form ; NELSON, P. Soc. Washington xviii, pp. 123-125.  
*Catharista urubu brasiliensis* (Bp.) is distinct from the northern form, from the United States ; ALLEN, Bull. Amer. Mus. xxi, pp. 275 & 276.

#### Order ACCIPITRIFORMES.

- Classification of the Accipitres ; SUSHKIN (674).  
Eggs of the birds of Europe ; DRESSER (179).  
*Circus cineraceus*, at Rainworth, Notts ; WHITAKER, Zoologist 1905, p. 266.  
*Parabuteo unicinctus*, from Margarita Island ; CLARK, Auk xxii, p. 79.  
*Micrastur melanoleucus*, in Sinaloa, note on ; MILLER, Bull. Amer. Mus. xxi, p. 345.  
*Melierax niger*, a melanistic form of *M. gabar* ; A. L. BUTLER, Ibis 1905, p. 369.  
*Astur palumbarius*, notes on ; PILLEY, Tr. Woolhope Club 1904, pp. 361 & 362 : *A. fasciatus* Vig. & Horsf. vice *A. approximans* Vig. & Horsf. ;

- HARTERT, Nov. Zool. xii, p. 207 : *A. sphenurus* from Sierra Leone ; KEMP, Ibis 1905, p. 220.
- A. etorques rubianæ*, n. subsp., Solomon Islands (Rubiana, Rendova, Gizo) ; ROTHSCHILD & HARTERT, Nov. Zool. xii, p. 250 : *A. e. bougainvillei*, n. subsp., N. Solomon Islands, Shortland group, Bougainville Island ; iid. t. c. p. 251 : *A. holomelas* Sharpe, *A. woodfordi* Sharpe, *A. versicolor* Ramsay = *A. albicularis* (Gray) ; ROTHSCHILD & HARTERT, Nov. Zool. xii, p. 249 : *A. sparsimfasciatus aceletus*, n. subsp., Taveta, Brit. E. Africa ; OBERHOLSER, P. U. S. Mus. xxviii, p. 829.
- Accipiter velox rufilatus* Ridgw. = *Nisus pacificus* Less., *Accipiter velox pacificus* (Less.) the correct name ; NELSON, P. Soc. Washington xviii, p. 122 : *A. buettikoferi* from Sierra Leone ; KEMP, Ibis 1905, p. 220.
- Buteo vulgaris*, curious nesting habit ; VAN KEMPEN, Bull. Soc. zool. France xxx, p. 151.
- B. zimmermannæ*, in Holland ; SNOUCKAERT, Ornith. Monber. xiii, p. 58 : *B. borealis calurus*, nesting habits ; FINLAY, Condor vii, pp. 1-7 cum figg. : *B. buteo insularum* Floerike, in the Azores ; HARTERT, Nov. Zool. xii, pp. 111 & 112.
- Rupornis magnirostris*, nest and eggs described ; ALLEN, Bull. Amer. Mus. xxi, p. 280.
- Urubitinga subtilis*, n. sp., Gorgona Is., Colombia ; THAYER & BANGS, Bull. Mus. Harvard xlvi, p. 94 : *U. ridgwayi* and *U. anthracina*, in S. Sinaloa ; MILLER, Bull. Amer. Mus. xxi, pp. 345 & 346 : *U. anthracina*, from the Island of Santa Lucia, West Indies ; CLARK, Auk xxii, p. 210 : *U. gundlachii* (Cabanis), is a distinct species ; BANGS, Auk xxii, pp. 307-309.
- Taphäetus lacertosus*, n. sp. [fossil]. Pleistocene of Interior of S. Australia ; DE VIS, Ann. Queensland Mus. No. 6, pp. 4-6, pl. i, figg. 1 & 2.
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- Pithecopaga jefferyi* in Mindanao ; MEARNS, P. Soc. Washington xviii, p. 73.
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- Falco peregrinus*, notes on ; KLEINSCHMIDT, Falco i, pp. 1-8 : note on ;

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- Pandion haliaetus carolinensis*, former status in the Lesser Antilles ; CLARK, Auk xxii, pp. 318 & 319.

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- Asio maculosus amerimmas*, n. subsp., Natal to German E. Africa ; OBERHOLSER, P. U. S. Mus. xxviii, pp. 856 & 857 : *A. otus*, laying in old nests of *Pica pica* and *Cerchneis tinnunculus* ; SCHUSTER, Ornith. Monber. xiii, pp. 111 & 112 : notes on ; GYNGELL, Zool. 1905, pp. 183 & 184 : MOFFAT, t. c. pp. 233 & 234 : WARREN, t. c. pp. 234-236, 264-266 : HARVIE-BROWN, t. c. pp. 264, 313 : OLDHAM, t. c. pp. 311-313 : GURNEY, t. c. p. 392 : *O. sylvestris*, from the Tertiary formations of Mainz ; SCHUSTER, Jahrb. Nassau. Ver., Jahrg. lvi, pp. 33-43, 1903 : *A. accipitrinus*, from the Pleistocene of Derbyshire ; ARNOLD-BEMROSE & NEWTON, Quart. J. Geol. Soc. 61, p. 56.
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- Bubo bubo nikolskii*, n. subsp., Arabistan ; id. t. c. p. 142.
- B. magellanicus deserti*, n. subsp., Joazeiro, Brazil ; REISER, Anz. Ak. Wiss. 1905, No. xviii, pp. 324.
- Huhua leucosticta* (Hartl.), figured ; DUBOIS, Ann. Mus. Congo i, p. 19, pl. xi.
- Otus romblonis*, n. sp., Romblon Is., Philippines ; McGREGOR, Bureau Govt. Labs. Manila, No. 25, pp. 12 & 13.
- Pisorhina scops turanica*, subsp. n., Transcaspia and Buchara ; LOUDON, Ornith. Monber. xiii, pp. 129 & 130.
- Sceloglaux rufifacies*, figured ; BULLER, Suppl. B. New Zealand ii, pl. vii.
- Ninox rufa*, distinct from *N. strenua* ; HARTERT, Nov. Zool. xii, p. 210.
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- Ciccaba squamulata*, in S. Sinaloa ; MILLER, Bull. Amer. Mus. xxi, p. 347.
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*Stringops habroptilus*, figured ; SALVADORI, Gen. Av. Part III, pl. to *Stringopidae*, figg. 1, 1 a—1 e.

Yellow variety of *Stringops*, head figured ; id. t. c. pl. to fig. 2.

*Nestor septentrionalis*, figured ; id. t. c. Part IV, pl. figg. 1, 1 a : *N. notabilis*, figg. 2, 2 a : *N. productus*, fig. 3 : *N. meridionalis*, figg. 4, 4 a, 4 b : *N. esslingi*, figured ; BULLER, Suppl. B. New Zealand ii, pl. viii.

*Cacatua goffini*, figured ; SALVADORI, t. c. Part V, pl. to *Cacatuidæ*, figg. 1, 1 b : *C. ducorpsi*, head figured ; id. t. c. fig. 2 : *C. triton*, head figured ; id. t. c. pl. ii, fig. 2 : *C. rosicapilla*, head figured ; id. t. c. pl. ii, fig. 3.

*Calyptorhynchus banksi*, head figured ; id. t. c. fig. 3.

*Microglossus aterrimus*, head figured ; id. t. c. fig. 4.

*Callocephalum galeatum*, head figured ; id. t. c. pl. i, fig. 5.

*Calopsittacus novæ hollandiæ*, head figured ; id. t. c. pl. ii, figg. 1, 1 a, 1 b.

*Licmetis nasica*, head figured ; id. t. c. pl. ii, fig. 4.

*Chalcopsittacus ater* in confinement ; JOHNSTONE, Avicult. Mag. (2) iii, pp. 147–149, cum tab.

*Trichoglossus nigrogularis*, figured ; HARDING, Avicult. Mag. (2) iv, pl. to p. 21 : *T. forsteni* breeding in confinement ; MICHELL, t. c. pp. 24 & 25.

*Charmosynopsis placensis pallidior*, n. subsp., Bougainville Island, Solomon Archipelago, with notes on *C. placensis* and *C. subplacens* ; ROTHSCHILD & HARTERT, Nov. Zool. xii, p. 253.

*Anodorhynchus purpurascens*, nom. n., Guadeloupe Island, W. I., extinct ; ROTHSCHILD, Bull. B. O. C. xvi, p. 13 : *A. martinicus*, nom. n., Martinique, W. I. ; id. t. c. p. 14.

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*Chrysotis augusta*, egg; MUNT, Bull. B. O. C. xv, p. 51 : *C. guildingi*, note on its approaching extinction; NICOLL, op. cit. xvi, p. 23.  
*Deroptyus accipitrinus fuscifrons*, n. subsp., Pará; HELLMAYR, Nov. Zool. xii, p. 303.  
*Prionopsittacus pileatus*, ♂ ♀ figured; ASTLEY, Avicult. Mag. (2) iii, pl. to p. 351.  
*Pionites vice Caica*; HELLMAYR, Nov. Zool. xii, p. 302 : *P. leucogaster* from Pará; id. t. c. p. 303.  
*Polytelis alexandriæ*, note on; ASTLEY, Avicult. Mag. (2) iii, pp. 248 & 249.  
*Spathopterus alexandriæ*, distribution of; KEARTLAND, Victoria Natural. xxii, pp. 83 & 84.  
*Ptistes erythropterus*, note on; id. t. c. pp. 142-144.  
*Bolbopsittacus mindanensis*, n. sp., S. E. Mindanao; GRANT, Bull. B. O. C. xvi, p. 17 (= *B. mindanensis* Steere; id. t. c. p. 36).  
*Loriculus galgulus* on Cagayan Sulu, Philippine Islands; MEARNS, P. Soc. Washington xviii, p. 90.  
*L. bournsi*, n. sp., Sibuyan Island, Philippines; McGREGOR, Bureau Govt. Labs. Manila, No. 25, p. 16.  
*Cyanorhamphus unicolor*, figured; BULLER, Suppl. B. New Zealand ii, pl. ix.  
*Platycercus xanthogenys* Salvad. notes on; HARTERT, Nov. Zool. xii, p. 212.  
*Neophema bourkei*, figured; ASTLEY, Avicult. Mag. (2) iii, pl. to p. 239.  
*Ognorhynchus* Gray vice *Gnathositta* Cab.; OBERHOLSER, Smithson. Collect. quart. Vol. 48, p. 61.  
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*Euphema* Wagl. vice *Nanodes* Vig. and Horsf.; id. t. c. p. 61.

#### Order CORACIFORMES.

##### Sub-order PODARGI.

- Podargus papuensis* and allied species, notes on; HARTERT, Nov. Zool. xii, p. 216.  
*Podargus*, notes on the Australian species; id. t. c. p. 216.  
*Ægotheles rufa* (olim *rufescens*) Hall = *Æ. leucogaster* Gould; id. t. c. pp. 216 & 217 : *Æ. novæ-hollandiæ*, note on; LEGGE, Emu iv, p. 173.

##### Sub-order CORACIÆ.

- Coracias caudatus* and its allies; ERLANGER, J. Ornith. 1905, pp. 458-460.  
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*E. afer aethiopicus*, n. subsp., Shoa to Kaffa and Gelo River; id. t. c. p. 184: *E. afer suahelicus*, n. subsp., E. Africa; id. t. c. p. 186: *E. afer pulcherrimus*, n. subsp., Angola; id. t. c. p. 186: *E. afer aethiopicus* Neum. t. c. p. 184 = *E. rufobuccalis*; REICHENOW, Vög. Afrikas iii, Nachtrag, p. 825 : *E. calonyx* breeding in S. E. China; LA TOUCHE & RICKETT, Ibis 1905, pp. 48 & 49.

## Sub-order HALCYONES.

*Pelargopsis gouldi*, nesting habits ; McGREGOR, Bureau Govt. Labs. Manila, No. 34, p. 12, pl. ix.

*Alcedo ispida salomonensis*, n. subsp., Solomon Archipelago (Gizo, Rendova, etc.) and Duke of York Island (?) ; ROTHSCHILD & HARTERT, Nov. Zool. xii, p. 255 : *A. meninting* and allied forms ; FINSCH, Notes Leyden Mus. xxvi, pp. 46-49.

*Ceyx dillwynni* and *C. rufidorsa*, notes on ; id. t. c. pp. 49-53 : *C. lepida collectoris* from Central Solomon Islands and *C. lepida nigromaxilla*, n. subsp., from Guadalcanar Island ; ROTHSCHILD & HARTERT, Nov. Zool. xii, p. 256 : *C. goodfellowi*, n. sp., S. E. Mindanao ; GRANT, Bull. B. O. C. xvi, p. 17 : *C. cyanopectus*, sexual differences ; McGREGOR, Bureau Govt. Labs. Manila, No 34, p. 13, pl. x.

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## Sub-order BUCEROTES.

*Bucorvus abyssinicus* nesting in a baobab tree at Rosaires ; BUTLER, Ibis 1905, p. 353.

*Penelopides panini*, nest and eggs described ; McGREGOR, Bureau Govt. Labs. Manila, No. 25, pp. 25-27, pls. viii & ix.

*Lophoceros melanoleucus* and its allies ; NEUMANN, J. Ornith. 1905, pp. 187 & 188 : *L. m. geloensis*, n. subsp., Upper Gelo River, N. E. Africa, *L. m. suahelicus*, n. subsp., E. Africa ; id. t. c. p. 187 : *L. nasutus* and its allies ; ERLANGER, t. c. pp. 439 & 440 : *L. somaliensis* (fig. 1), *L. neumanni* (fig. 2), figured ; REICHENOW, Vög. Afrikas iii, pl. v : *L. granti*, figured ; DUBOIS, Ann. Mus. Congo i, p. 9, pl. v.

*Bycanistes*, remarks on the genus ; id. t. c. p. 6 : *B. leucopygius*, figured ; id. t. c. p. 7, pl. iv ; *B. sharpei* Elliot = *B. fistulator*, ♂ juv.

*Buceros vivi* Grant (nec Dubois), remarks on ; id. t. c. p. 9.

*Ortholophus finschi* = *O. cassini* ; FINSCH, Ibis 1905, pp. 286 & 287.

## Sub-order UPUPÆ.

*Upupa epops* in Greece, *U. e. pallida*, notes on ; PARROT, J. Ornith. 1905, pp. 818-820.

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*Rhinopomastus minor somalicus*, n. subsp., Somali Land ; ERLANGER, J. Ornith. 1905, pp. 461 & 462.

## Sub-order MEROPES.

*Melittophagus pusillus cyanostictus*, notes on ; OBERHOLSER, P. U. S. Mus. xxviii, pp. 852-854 ; *M. oreobates* Sharpe from Mt. Kilimanjaro ; id. t. c. p. 854.

*Merops americanus* P. L. S. Müller antedates *M. bicolor* Bodd. ; McGREGOR, Bureau Govt. Labs. Manila, No. 34, p. 14 : *M. apiaster* in Yorkshire ; ROBINSON, Zoologist 1905, p. 389 : *M. nubicus*, ad. et juv., figured ; ERLANGER, J. Ornith. 1905, Taf. ix : *M. pusillus* and its allies ; id. t. c. pp. 455 & 456 : *M. variegatus* and its allies ; id. t. c. pp. 456 & 457 : *M. variegatus*, figured ; id. t. c. Taf. x, figg. 1, 1a, 1b : *M. v. lafresnayei*, figured ; id. t. c. Taf. x, figg. 2a-c : *M. v. oreobates*, figured ; id. t. c. Taf. x, figg. 3, 3d, 3e.

## Sub-order MOMOTI.

*Momotus momota parensis* and *M. m. ignobilis*, remarks on ; HELLMAYR, Nov. Zool. xii, p. 296.

## Sub-Order TODII.

Fam. *Todidae* ; WYTSMAN, in Wytsman's Genera Avium, Part II, pl. i. *T. viridis viridis* (figg. 1-4), *T. v. subulatus* (fig. 5), *T. v. multicolor* (fig. 6), *T. v. hypochondriachus* (fig. 7), figured ; id. t. c. pl. i.

## Sub-order CAPRIMULGI.

*Chordeiles virginianus hesperis*, n. subsp., Bear Lake, San Bernardino Mts, California ; GRINNELL, Condor vii, p. 170.

*Scotornis climacurus*, *Caprimulgus fossei* and *C. apatelius*, notes on ; NEUMANN, J. Ornith. 1905, pp. 198 & 199.

*Macrodipteryx longipennis* has no power to erect its streamers ; A. L. BUTLER, Ibis 1905, pp. 345-347 : KEMP, Ibis 1905, p. 225.

*Nyctidromus albicollis gilvus*, eggs described ; ALLEN, Bull. Amer. Mus. xxi, p. 281 : *N. derbyanus* Gould, from Central and Southern Brazil, distinguished from *N. albicollis* (Gm.) from Cayenne to N. Brazil ; HELLMAYR, Nov. Zool. xii, p. 297.

*Phalaenoptilus*, study of the anatomy ; MARSHALL, P. Amer. Phil. Soc. xliv, pp. 213-240, pls. iv-vi.

*Antrostomus notabilis*, n. sp., Tamaulipas, Mexico ; NELSON, P. Soc. Washington xviii, pp. 111 & 112 : *A. carolinensis* in Kansas ; COLVIN, Auk xxii, p. 81.

*Caprimulgus inornatus* and *C. fossei apatelius*, eggs described ; ERLANGER, J. Ornith. 1905, pp. 498 & 499 : *C. donaldsoni*, figured ; id. t. c. Taf. xv : *C. affinis mindanensis*, n. subsp., S. Mindanao ; MEARNS, P. Soc. Washington xviii, p. 85.

*C. griseatus*, note on ; McGREGOR, Bureau Govt. Labs. Manila, No. 25, p. 14 : *C. europaeus*, note on ; GURNEY, Zoologist 1905, p. 88 : FARREN, t. c. pp. 182 & 183 : *C. apatelius*, notes on ; NEUMANN, J. Ornith. 1905, p. 198 : REICHENOW, Vög. Afrikas iii, Nachtrag, p. 827 : *C. donaldsoni* from Taveta, E. Africa ; OBERHOLSER, P. U. S. Mus. xxviii, p. 858.

## Sub-order CYPSELI.

*Collocalia francica inexpectata* on Cagayan Sulu, Philippine Is. ; MEARNS, P. Soc. Washington xviii, p. 90.

- Salangana marginata*, nest and eggs described ; McGREGOR, Bureau Govt. Labs. Manila, No. 25, pp. 14 & 15, pl. iii.
- Chætura dubia*, n. sp., Mindoro, Philippines ; id. op. cit. No. 34, pp. 15 & 16, pl. xii : *C. pelagica*, habits ; WETGANT, Cassinia 1904, pp. 6–14 : *C. vauxi*, notes on the nest and eggs ; TAYLOR, Condor vii, pp. 177 & 179.
- Cypseloides niger borealis*, discovery of a second egg ; VROOMAN, Condor vii, pp. 176 & 177.
- Tachornis parvus laemostigma*, n. consp., S. Somali Land ; REICHENOW, Vög. Afrikas iii, Nachtrag, p. 828 : note on ; ERLANGER, J. Ornith. 1905, pp. 672 & 673 : *T. pallidior*, n. sp., Luzon, Philippines ; McGREGOR, Bureau Govt. Labs. Manila, No. 25, pp. 27 & 28.
- Tachynautes*, n. g., type *T. parvus* (Licht.) ; OBERHOLSER, P. U. S. Mus. xxviii, p. 860 : four species recognised ; id. t. c. p. 861.
- Micropus* Wolf vice *Cypselus* Illiger ; id. t. c. p. 861 : *M. myoptilus* (Salvad.) from Mt Kilimanjaro ; id. t. c. p. 861.
- Apus*, notes on the species of the Palæarctic Region. Six species recognised, with eight sub-species ; KOLLIBAY, J. Ornith. 1905, pp. 297–304 : *A. apus carlo*, n. subsp., Tunisia ; id. t. c. p. 302 : *A. melba tuneti*, note on ; TSCHUSI, Ornith. Jahrb. xvi, p. 219.
- A. apus kollibayi*, remarks on ; KOLLIBAY, Ornith. Monber. xiii, p. 145 : *A. unicolor*, breeding on Madeira, Porto Santo, and the Desertas ; SCHMITZ, t. c. pp. 197–200.

### Sub-order TROCHILI.

- Humming-Birds of Argentina ; DE MARCHI, Monit. Zool. Ital. xvi, pp. 229–233.
- Glaucis hirsuta*, nest described ; ALLEN, Bull. Amer. Mus. xxi, p. 281.
- Amazilia beryllina viola*, n. subsp., Sinaloa, Mexico ; MILLER, t. c. pp. 353 & 354.
- Iache latirostris*, notes on ; id. t. c. pp. 354 & 355.
- Orthorhynchus* Lacep. vice *Bellona* Muls. & Verr. ; OBERHOLSER, Smithson. Collect. quart. Vol. 48, p. 59.
- Heliothrix auriculatus phainolæma* Gould, is distinct from *H. auriculatus* ; HELLMAYR, Nov. Zool. xii, p. 297 : ranges of the two forms ; id. t. c. p. 298.
- Selasphorus rufus*, notes on ; FINLEY, Condor vii, pp. 59–62, cum figg.
- Bellona cristatus* is from Barbados, the Grenadines, and Grenada, *B. cristatus cristatus*, from the Grenadines and Grenada, and *B. cristatus emigrans* is restricted to Barbados ; CLARK, Auk xxii, pp. 215 & 216.

### Sub-Order COLII.

- Colius striatus* and allied forms ; ERLANGER, J. Ornith. 1905, pp. 486, 489 : *C. s. leucotis*, eggs described ; id. t. c. pp. 487 & 488.
- Urocolius* Bp. distinct from *Colius* ; OBERHOLSER, P. U. S. Mus. xxviii, p. 863 : 7 species recognised, *U. macrourus syntactus*, n. subsp., Abyssinia ; id. t. c. p. 863.

### Order TROGONES.

- Prionotelus temnurus vescus*, n. subsp., Isle of Pines ; BANGS & ZAPPEY, Amer. Natural. xxxix, pp. 204–206.

## Order COCCYGES.

## Sub-order MUSOPHAGI.

*Turacus*, key to the species ; DUBOIS, Ann. Mus. Congo i, p. 3 : *T. schuetii*, figured ; id. t. c. pl. ii ; *T. emini* (fig. 1), *T. sharpei* (fig. 2), figured ; id. t. c. pl. iii ; *T. livingstonei* and its allies, *T. chalcolopha* from Mpala, Lake Tanganyika ; id. t. c. p. 5 : *T. persa*, egg ; MUNT, Bull. B. O. C. xv, p. 51 : *T. corythaix*, figured, with nest and eggs ; IVY, Journ. S. Afr. Orn., Union i, pl. v.

## Sub-order CUCULI.

*Pachycoccyx validus* (Reichenow), figured ; DUBOIS, Ann. Mus. Congo i, p. 1, pl. i, fig. 2.

*Cuculus canorus*, an attempt to ascertain from the dimensions of the egg if the species is tending to break up into subspecies ; LATTER, Biometrika iv, pp. 363-373 : notes on the mimicry, etc. ; GÉBELL, Aquila xii, pp. 338 & 339 ; BARTOS, t. c. p. 339 : breeding habits ; WILSON, Zoologist 1905, pp. 310 & 311 ; FLEMING, Irish Natural. xiv, p. 164 : id. Zoologist 1905, pp. 232 & 233 : observations on the nestling ; GURNEY, t. c. pp. 164-169 : notes on its eggs ; REY, J. Ornith. 1905, pp. 304-310 : notes on ; RASPAIL, Bull. Soc. zool. France xxx, pp. 29-39, text-figg. 1-4 ; dates of arrival in 1902 ; HUTCHINSON, Tr. Woolhope Club 1904, pp. 46-48.

*Columba pallida* Lath. (ex Latham's "Pale Pigeon") is not *Cuculus variegatus*, as generally assigned ; HARTERT, Nov. Zool. xii, pp. 217 & 218. Cf. also SHARPE, Hist. Coll. Brit. Mus. Birds, p. 145.

*Cacomantis flabelliformis*, note on ; BRENT, Emu v, p. 86.

*Eudynamis orientalis*, n. sp., Solomon Ids. ; ROTHSCHILD & HARTERT, Nov. Zool. xii, p. 257.

*Urodyamis taitensis*, habits of ; FULTON, Rep. Australas. Ass. x, pp. 310-326.

*Centropus anselli* in Camaroons ; SHARPE, Ibis 1905, p. 466.

*Saurothera merlini decolor*, n. subsp., Isle of Pines ; BANGS & ZAPPEY, Amer. Natural. xxxix, pp. 199 & 100.

*Piaya cayana* and its allies, *P. c. guianensis*, and *P. c. cabanisi*, notes on ; HELLMAYR, Nov. Zool. xii, p. 298.

## Order SCANSORES.

## Sub-order INDICATORES.

*Indicator*, notes on the African species ; ERLANGER, J. Ornith. 1905, pp. 464-469.

*Prodotiscus ellenbecki* Erl. and *P. regulus* Sund., geographical range ; ERLANGER, J. Ornith. 1905, pp. 489 & 490, Taf. xiii & xiv : *P. peasei* and *P. zambesiæ* are not identical with *P. regulus* ; GRANT, Ibis 1905, pp. 210 & 211.

## Sub-Order CAPITONES.

*Lybius*, notes on species ; ERLANGER, J. Ornith. 1905, pp. 490 & 491 : *L. abbotti* (Richmond) and its allies ; OBERHOLSER, P. U. S. Mus. xxviii, p. 864.

*Tricholæma*, notes on species ; ERLANGER, J. Ornith. 1905, pp. 491-493.

- Trachyphonus erythrocephalus* and *T. shelleyi*, remarks on ; id. t. c. pp. 469 & 470.
- Viridibucco*, n. gen. type *V. leucomystax* (Sharpe) ; OBERHOLSER, P. U. S. Mus. xxviii, p. 865.
- Barbatula pusilla*, *B. chrysocome* and their allies, notes on ; ERLANGER, J. Ornith. 1905, pp. 494–496.
- B. rubrigularis*, n. sp., Katanga, R. Congo ; DUBOIS, Ann. Mus. Congo i, p. 1, pl. i, fig. 1.
- Xylobucco* Bp. vice *Barbatula* Less. (nec Linck.), *Lignobucco* Reichenow, *Buccanodon* Hartl., and *Cladurus* Reichenow, all = *Xylobucco* Bp., characters of the genera *Stactolaema*, *Smilorhis*, and *Xylobucco* given, with list of species ; OBERHOLSER, P. U. S. Mus. xxviii, pp. 865–868.
- Cyanops franklini*, in confinement ; PHILLIPPS, Avicul. Mag. (2) iii, pp. 323–330 cum tab.

### Sub-order RHAMPHASTIDES.

- Rhamphastos theresae*, n. sp., Rio Paranáhyba ; REISER, Anz. Ak. Wiss. 1905, No. xviii, p. 322.
- Rhamphastos hæmatorhynchus* Berlepsch & Hartert = *R. erythrorhynchus* Gm. ; HELLMAYR, Nov. Zool. xii, p. 299.
- R. levaillanti*, notes on ; id. t. c. p. 299.
- Pteroglossus wiedi* = *P. aracari* ; id. t. c. p. 300.

### Order PICIFORMES.

#### Sub-order BUCCONES.

- Bucco ruficollis*, eggs, found in clay nest of *Furnarius agnatus*, described ; ALLEN, Bull. Amer. Mus. xxi, p. 280.
- Monasa peruviana* Scl., scarcely distinct from *M. morphœus* (Hahn) ; HELLMAYR, Nov. Zool. xii, p. 297.

#### Sub-order PICI.

See LEISEWITZ (388).

- Colaptes auratus*, in Colorado ; FELGER, Auk xxii, p. 421.
- Gecintis viridis innominatus*, n. subsp., Western Persia ; SARUDNY & LÖUDON, Ornith. Monber. xiii, p. 49 : *G. canus* and *G. viridicanus*, remarks on ; KOLLIBAY, t. c. pp. 143–145.
- Dendromus*, notes on, *D. malherbei* and allied species ; ERLANGER, J. Ornith. 1905, pp. 473–477 : *D. mombassicus*, figured ; id. t. c. Taf. xi : *D. nubicus*, figured ; id. t. c. Taf. xii.
- Melanerpes erythrocephalus*, at Detroit, Michigan ; SWALES, Auk xxii, p. 80.
- Dendrocopos major* and its allies ; MARTORELLI, Atti Soc. Ital. xlvi, pp. 153–164 : *D. medius splendidior*, n. subsp., W. Balkans ; PARROT, J. Ornith. 1905, p. 555 : *D. minor danfordi*, in Greece ; id. t. c. p. 556.
- Picus owstoni*, n. sp., Amami-Oshima ; OGAWA, Annot. zool. Japon. v, pp. 203–205, pl. x.
- Dryobates villosus piger*, n. subsp., Great Bahama Island ; ALLEN, Auk xxii, pp. 124–126.
- Picoides arcticus*, at Melrose, Middlesex County, Mass. ; WRIGHT, t. c. p. 80.

- Dendropicos*, notes on various species ; ERLANGER, J. Ornith. 1905, pp. 477-480 : *D. lafresnayei* (fig. 1), *D. pœcilocæmus* (fig. 2), *D. stierlingi* (fig. 3) figured ; REICHENOW, Vög. Afrikas iii, pl. vi.
- Mesopicus griseocephalus kiwuensis*, n. subsp., Lake Kiwu, E. Africa ; id. Vög. Afrikas iii, Nachtrag, p. 824.
- Chrysocolaptes xanthopygius*, n. sp., Sumatra and Borneo ; FINSCH, Notes Leyden Mus. xxvi, pp. 34-36 : *C. montanus*, n. sp., S. E. Mindanao ; GRANT, Bull. B. O. C. xvi, p. 16 : *C. gutticristatus* and *Tiga shorei*, similarity of plumage ; GRANT, op. cit. xv, pp. 68 & 69.
- Campephilus principalis*, unusual plumage ; WAYNE, Auk xxii, p. 414.
- Ceophlaeus pileatus abieticola*, in Massachusetts ; BRIDGE, t. c. p. 414.
- Iynx pectoralis* and its allies, notes on ; ERLANGER, J. Ornith. 1905, pp. 471 & 472.

#### Order EURYLÆMIFORMES.

Contributions to the osteology and remarks on the systematic position ; PYORRAFT, P. Zool. Soc. London 1905, vol. ii, pp. 30-56, pl. ii, text-figg. 13-15.

- Fam. *Eurylæmidæ* ; HARTERT, in Wytsman's 'Genera Avium,' pp. 1-8, pl. i : *Serilophus lunatus rothschildi*, figured ; id. t. c. pl. i, fig. 5 ; *Psarisomus dahousiae*, tail figured ; id. t. c. pl. i, fig. 7 ; heads of *Corydon*, *Eurylaimus*, *Cymbirhynchus*, *Calyptomena*, *Sarcophanops*, figured ; id. t. c. pl. i, figg. 1-4, 6.
- Corydon sumatrana*, nest and eggs described ; GRANT, Fascic. Malay. Zool. iii, p. 79.
- Cymborhynchus macrorhynchus*, nest and eggs described ; GRANT, t. c. pp. 96 & 97.

#### Order MENURIFORMES.

*Menura victoriae*, distribution and life history ; KITSON, Emu v, pp. 57-67, pls. v-x.

#### Order PASSERIFORMES.

##### Family PTEROPTOCHIDÆ.

The family name should be *Hylactidæ* ; MENEGAUX & HELLMAYR, Bull. Mus. Paris 1905, p. 378.

*Scytalopus acutirostris* and *S. griseicollis*, notes on ; iid. t. c. p. 19 : *S. niger*, distinct from *S. magellanicus*, of which *S. albifrons* Landb., is a synonym ; iid. t. c. pp. 378-380.

*Pteroptochus femoralis* Tschudi, and *P. acutirostris* Tschudi, referred to *Scytalopus* ; the former perhaps a young bird of *S. magellanicus* ; BERLEPSCH & HELLMAYR, J. Ornith. 1905, pp. 17-19.

*Scytalopus macropus* and allies, remarks on ; iid. t. c. p. 18.

##### Family CONOPOPHAGIDÆ.

*Conopophaga*, notes on the genus ; MENEGAUX & HELLMAYR, Bull. Mus. Paris 1905, pp. 374-378 : *C. nigrogenys* Less. and *C. dorsalis* = *C. melanops* (V.) ; iid. t. c. p. 376 : *C. perspicillata* (Licht.), distinct ; iid. t. c. p. 377 ; *C. roberti*, n. sp., Pará ; HELLMAYR, Bull. B. O. C. xv, p. 54 : further notes on ; id. Nov. Zool. xii, p. 292.

*Corythopis humivagans* Tacz. = *C. torquata* Tschudi ; BERLEPSCH & HELLMAYR, J. Ornith. 1905, p. 16 : *C. torquata* Tschudi and *C. t. anthoides* Pucher., notes on ; iid. t. c. pp. 16 & 17.

## Family FORMICARIIDÆ.

*Thamnophilus olivaceus* Tschudi, is an ally of *Dysithamnus mentalis*, and is to be called *D. m. olivaceus*; BERLEPSCH & HELLMAYR, J. Ornith. 1905, pp. 14 & 15: *D. olivaceus* auct. (nec Tschudi), from Brazil, is *D. affinis* Pelz., allied to *D. spodionotus* Salv. & Godm.; iid. t. c. p. 15. *T. simplex* Scl. (= *T. incertus* Pelz.), *T. schistaceus* D'Orb. and *T. plumbeus* Neuwied referred to the genus *Dysithamnus*; HELLMAYR, Nov. Zool. xii, pp. 284 & 285: *T. inornatus* Ridgw. = *D. schistaceus*; id. t. c. pp. 284 & 285: *T. melanotus*, nest and eggs described; ALLEN, Bull. Amer. Mus. xxi, pp. 289 & 290: *T. axillaris* Tschudi is a *Herpsilochmus*; BERLEPSCH & HELLMAYR, J. Ornith. 1905, p. 16: *H. puncticeps* Tacz. = *H. axillaris*; iid. t. c. p. 16: *T. gorgonæ*, n. sp., Gorgona Is., Colombia; THAYER & BANGS, Bull. Mus. Harvard xlvi, p. 95: *T. camopiensis*, n. sp., Camopi river, French Guiana; MENEGAUX, Bull. Mus. Paris 1904, pp. 175 & 176.

*Thamnomanes cæsius* from Pará; HELLMAYR, Nov. Zool. xii, p. 285.

*Cercomacra sclateri*, nom nov., Upper Amazonia (Chavetas) and *C. brasiliiana*, nom. nov., Rio. Review of the species; HELLMAYR, Nov. Zool. xii, pp. 286-289.

*Gymnopithys cristata* (Pelz.), notes on; BERLEPSCH & HELLMAYR, J. Ornith. 1905, p. 33.

*Hypocnemis vidua*, n. sp., Pará; HELLMAYR, Nov. Zool. xii, p. 290.

*Formicivora intermedia*, nest and eggs described; ALLEN, Bull. Amer. Mus. xxi, p. 289.

*Myrmeciza hemimelaena pallens*, n. subsp., Matogrosso, C. Brazil; BERLEPSCH & HELLMAYR, J. Ornith. 1905, pp. 32 & 33.

*Formicarius ruficeps amazonicus*, n. subsp., Pará; HELLMAYR, Nov. Zool. xii, p. 292.

## Family DENDROCOLAPTIDÆ.

*Aphrastura fulva*, n. sp., Chili; ANGELINI, Boll. Soc. Ital. (2) vi, pp. 227-230.

*Synallaxis griseiventris*, n. sp. (nec Allen), Bahia; REISER, Anz. Ak. Wiss. No. xviii, pp. 323 & 324: renamed *S. hellmayri*; id. Ornith. Monber. xiii, p. 210.

*Anabates montanus* is a *Philydor*; BERLEPSCH & HELLMAYR, J. Ornith. 1905, p. 13: *Philydor montanus striaticollis* (Scl.), not an *Anabazenops*; iid. t. c. p. 13: *A. variegaticeps* and *A. temporalis* referred to the genus *Philydor*; iid. t. c. p. 13: *A. ochrolæmus* Tschudi is an *Automolus*; iid. t. c. p. 13: *A. o. turdinus*, notes on; iid. t. c. p. 14: *A. melanorhynchus* Tschudi is an *Automolus*, *A. striaticeps* Scl. & Salv. is synonymous, *A. subulatus* (Spix) is a distinct species; iid. t. c. p. 14.

*A. concolor* Pelz. = *Automolus rectirostris* (Wied.); BERLEPSCH & HELLMAYR, t. c. pp. 28 & 29: *A. rubidus* Scl. = *A. rectirostris*; iid. t. c. p. 29: *A. dimidiatus* Pelz. is a *Philydor*; iid. t. c. p. 29: *A. infuscatus* Pelz. = *Philydor amaurotis* (Temm.); iid. t. c. p. 31.

*Anumbius ferrugineigula* is a *Thripophaga*; iid. t. c. pp. 27 & 28: *T. sclateri* is synonymous; iid. t. c. p. 28.

*Thripophaga berlepschi*, n. sp., Leimabamba, N. Peru; HELLMAYR, Nov. Zool. xii, p. 503.

*Philydor amaurotis* and *P. lichtensteini*, notes on, with synonymy; BERLEPSCH & HELLMAYR, J. Ornith. 1905, pp. 30-32.

*Automolus cinnamomeigula*, n. sp., Bogotá; HELLMAYR, Bull. B. O. C. xv, p. 55.

- Megaxenops*, n. g., type *M. parnaguæ*, n. sp., Paranagua, Brazil; REISER, Anz. Ak. Wiss. 1905, No. xviii, pp. 322 & 323.  
*Dendrornis fraterculus* Ridgw. = *D. spixi* (Less.) ; HELLMAYR, Nov. Zool. xii, pp. 282 & 283.  
*D. insignis*, n. sp., Samiria, Upper Amazonia; id. Bull. B. O. C. xv, p. 56.  
*Xiphorhynchus* Swains. vice *Dendrornis* Eyton ; OBERHOLSER, Smithson. Collect. quart., vol. xlviii, pp. 62 & 63.  
*Xiphornis*, nom. nov. pro *Xiphorhynchus* auct. nec Swains. ; id. t. c. pp. 63 & 64.

### Family TYRANNIDÆ.

- Copurus funebris* = *C. colonus* ; HELLMAYR, Bull. B. O. C. xv, pp. 72 & 73.  
*Rhynchoeculus flaviventris*, nest and eggs described ; ALLEN, Bull. Amer. Mus. xxi, p. 284.  
*Todirostrum fumifrons penardi*, n. subsp., Surinam ; HELLMAYR, Bull. B. O. C. xv, pp. 90 & 91 ; *T. nigriceps*, nest and eggs described ; ALLEN, Bull. Amer. Mus. xxi, p. 286.  
*Euscarthmus rufipes* Cab. and *E. pelzelni* Scl. & Salv. = *E. margaritaceiventer* (D'Orb. & Lafr.), *E. m. wuchereri*, from Bahia district ; BERLEPSCH & HELLMAYR, J. Ornith. 1905, pp. 10 & 11 : *E. impiger*, nest and eggs described ; ALLEN, Bull. Amer. Mus. xxi, p. 286.  
*Serpophaga subcristata*, its food and migration ; GOELDI, Ibis 1905, pp. 169-179.  
*Phyllomyias reiseri*, n. sp., Piauhy, S. E. Brazil ; HELLMAYR, Bull. B. O. C. xv, p. 73 : *P. lividus* Pelz. and *P. berlepschi* Scl. = *P. incanescens* (Wied.) ; BERLEPSCH & HELLMAYR, J. Ornith. 1905, pp. 24 & 25 : *P. burmeisteri* and *P. bolivianus paulistus* Ihering = *P. virescens* (Temm.) ; iid. t. c. p. 25.  
*Acrochordopus*, n. gen., type (1) *Phyllomyias subviridis* (Pelz.) and (2) *Tyranniscus leucogonyx* Scl. & Salv. ; BERLEPSCH & HELLMAYR, J. Ornith. 1905, pp. 26 & 27.  
*Myiopatis semifusca*, mischievous as a disseminator of seeds of the parasitic Loranthaceæ ; GOELDI, Ibis 1905, pp. 169-179, text-figg. 12-14.  
*M. superciliaris* Reinh. = *Phœomyias murina* (Spix) ; BERLEPSCH & HELLMAYR, J. Ornith. 1905, pp. 2 & 3 : *P. semifusca* Scl. = *P. murina incomta* (Cab. & Heine) ; iid. t. c. p. 3 : *P. modesta* Reinh. and *P. platyrhyncha* Scl. & Salv. = *Sublegatus fasciatus* (Thunb.) ; iid. t. c. pp. 4 & 5.  
*Tyranniscus frontalis* Berlepsch & Stolzmann = *T. viridiflavus* (Tschudi) ; iid. t. c. p. 11.  
*Elainea*, notes on the species ; iid. t. c. pp. 1 & 2 : *E. lundii* Reinh. = *E. albivertex* Pelz. juv. ; iid. t. c. pp. 1 & 2 : *E. sororia* Bangs = *E. albivertex* ; iid. t. c. p. 2 : *E. modesta* Tschudi = *E. albiceps* Lafr. & D'Orb. (pt.) and *E. gigas* Scl. (pt.) ; iid. t. c. p. 12 : *E. brevirostris* Tschudi = *Sublegatus fasciatus* (Thunb.) ; iid. t. c. p. 12 : *E. gracilis* Tacz. = *Sublegatus fasciatus* (Thunb.) ; iid. t. c. p. 5 : *E. viridiflava* is a *Tyranniscus* ; iid. t. c. pp. 11 & 12 : *T. frontalis* Berl. & Stolz. = *T. viridiflavus* ; iid. t. c. p. 11 : *E. pagana*, nest and eggs described ; ALLEN, Bull. Amer. Mus. xxi, p. 285.  
*Phœomyias*, notes on the two species, *P. murina* (Spix), and *P. m. incomta* (Cab. & Heine), *P. semifusca* (Scl.) = *P. incomta* ; BERLEPSCH & HELLMAYR, J. Ornith. 1905, p. 3.  
*Sublegatus incanescens* Salv. & Godm., Ibis 1880, p. 124 = *Phyllomyias griseiceps* (Scl. & Salv.) ; iid. t. c. p. 5 : *S. fasciatus* (Thunberg, 1822),

- its synonymy [*Muscipeta brevirostris* Lafr. & D'Orb., *Phyllomyias modesta* Reinh., *P. platyrhyncha* Scl. & Salv., *Sublegatus griseocularis* are synonyms] ; iid. t. c. pp. 4 & 5 : *S. frontalis* Salvad. and *Elainea gracilis* Tacz. = *S. fasciatus* (Thunb.) ; iid. t. c. p. 5.
- Myiozetetes similis colombianus*, nest and eggs described ; ALLEN, Bull. Amer. Mus. xxi, pp. 284 & 285.
- Myiodynastes audax nobilis*, nest and eggs described ; id. t. c. pp. 283 & 284.
- Megarhynchus pitangus*, nest and eggs described ; id. t. c. p. 383.
- Myiobius nævius furfurosus*, n. subsp., Saboga Is., Bay of Panamá ; THAYER & BANGS, Bull. Mus. Harvard xlvi, pp. 152 & 153.
- Empidochanes albirostris* Cab. *E. vireoninus* Ridgw., *E. cabanisi canescens* Chapm. = *E. fuscatus cabanisi* (Léot.) ; BERLEPSCH & HELLMAYR, J. Ornith. 1905, p. 21 : notes on *E. fuscatus* (Wied), *E. euleri* Cab. and *E. f. bimaculatus* ; iid. t. c. pp. 21-23.
- Empidochanes argentinus* is an *Empidonax*, *E. brunneus* Ridgway, probably = *E. euleri* or *E. argentinus* ; iid. t. c. p. 23 : *E. pacilocercus* and *E. pæciliurus*, characters of the two species ; iid. t. c. p. 27.
- Empidonax insulicola* Oberh. = *E. difficilis* ; GRINNELL, Condor vii, pp. 51 & 52.
- Horizopus richardsoni richardsoni*, from S. Sinaloa ; MILLER, Bull. Amer. Mus. xxi, p. 356.
- Contopus brachytarsus*, nest and eggs described ; ALLEN, t. c. pp. 282 & 283.
- Myiarchus erythrocercus*, nest and eggs described ; id. t. c. p. 282.
- Tyrannus melancholicus satrapa*, nest and eggs described ; id. t. c. p. 281 : *E. verticalis*, breeding habits ; HUNTER, Condor vii, p. 53.

#### Family PIPRIDÆ.

- Pipra exquisita*, n. sp., C. Peru ; HELLMAYR, Bull. B. O. C. xv, pp. 56 & 57 : *P. opalizans*, notes on ; id. Nov. Zool. xii, p. 294.
- Chiroxiphia lanceolata*, nest and eggs described ; ALLEN, Bull. Amer. Mus. xxi, p. 288.
- Manacus manacus abditivus*, nest and eggs described ; id. t. c. pp. 287 & 288.

#### Family COTINGIDÆ.

- Tityra cayana* from Pará ; HELLMAYR, Nov. Zool. xii, p. 294 : *T. intermedia* Cab. and Heine = *T. brasiliensis* ♀ ; id. t. c. pp. 294 & 295.
- Pachyramphus cinereiventris*, nest and eggs described ; ALLEN, Bull. Amer. Mus. xxi, p. 287.
- Lathria cinerea* and *L. plumbea*, notes on ; HELLMAYR, Nov. Zool. xii, p. 295.
- Lipangus* [potius *Lipaugus*] *holerythrus rosenbergi*, n. subsp., S. W. Colombia and N. W. Ecuador ; HARTERT, Bull. B. O. C. xvi, p. 12.
- Hæmatoderus militaris* from Pará, notes on ; HELLMAYR, Nov. Zool. xii, pp. 295 & 296.

#### Family XENICIDÆ.

- Acanthidiositta citrina* (Gm.) distinct from *A. chloris* (Sparrm.). Both from South Island, N. Z. ; GRANT, Bull. B. O. C. xv, pp. 82-84 ; id. Ibis 1905, pp. 594-597 : anatomy ; PYCRAFT, t. c. pp. 603-621, pl. xiii.
- Xenicus longipes* (fig. 1) and *X. stokesi* (figgs. 2 & 3) figured ; GRANT, Ibis 1905, pl. xii : *X. gilviventris* Pelz. distinct ; id. t. c. p. 594 : *X. stokesi*, figured ; BULLER, Suppl. B. New Zealand ii, pl. xi.
- Traversia insularis*, figured ; id. t. c. pl. x.

## Family HIRUNDINIDÆ.

- Chelidon urbica*, notes on ; FISCHER-SIGWART, Mt. Aargau, Ges. x, pp. 1-154.
- Riparia arabica*, n. sp., S. Arabia ; REICHENOW, Vög. Afrikas iii, Nachtrag p. 828 : *R. cincta erlangeri*, n. subsp., S. Abyssinia ; REICHENOW, J. Ornith. 1905, p. 673.
- Hirundo rustica* in snow ; OTTO, Ornith. Monber. xiii, p. 11 : nesting habits ; CUMMINGS, Zoologist 1905, pp. 121-123 : MILLS, t. c. pp. 180 & 181 : RUSSELL, t. c. p. 181 : OLDHAM, t. c. pp. 181 & 182 : *H. rustica* and other species, migration ; SCHUSTER, Zool. Garten xlvi, pp. 300-307 : *H. lucida subalaris*, n. subsp., Congo ; REICHENOW, Vög. Afrikas iii, Nachtrag, p. 829 : *H. lucida* and *H. emini* near Adis Abeba, Abyssinia ; ERLANGER, J. Ornith. 1905, p. 676 : *H. puella abyssinica* (Guér.) distinct from the true *H. puella* which is from West Africa ; OBERHOLSER, P. U. S. Mus. xxviii, p. 933 : *Hirundo rustica rustica*, from Pantar, Mindanao, Philippine Is. ; MEARN, P. Soc. Washington xviii, p. 90.
- Progne subis*, decrease in numbers on Long Island ; KOBBE, Auk xxii, p. 211 : *P. subis hesperia*, date of arrival at Stockton, California ; BELDING, Condor vii, p. 113.
- Petrochelidon lunifrons lunifrons*, distribution in Utah ; GOODWIN, Condor vii, p. 52.
- Psalidoproene holomelæna massaica* Neum. = *P. holomelæna* (Sund.) ; REICHENOW, Vög. Afrikas iii, Nachtrag, p. 829 : *P. petiti* and *P. reichenowi*, notes on ; id. t. c. p. 829.

## Family MUSCICAPIDÆ.

- Micræa pallida*=*M. assimilis* ; HARTERT, Nov. Zool. xii, p. 219.
- Alseonax murinus* and its allies, notes on ; NEUMANN, J. Ornith. 1905, pp. 206-208 : *A. m. djam-djamsensis*, n. subsp., Djam-djäm district, N. E. Africa ; id. t. c. p. 206.
- Bradyornis griseus*, var. *erlangeri*, Somali Land ; REICHENOW, Vög. Afrikas iii, Nachtrag, p. 830 : its eggs ; ERLANGER, J. Ornith. 1905, pp. 680 & 681.
- Dioptrornis chocolatinus*, its eggs ; id. t. c. pp. 681 & 682 : *D. kiwuensis*, n. sp., Lake Kiwu ; REICHENOW, Vög. Afrikas iii, Nachtrag, p. 830.
- Muscicapa grisola* harrying bee-hives ; CSÖRGEY, Aquila xii, pp. 331-334 : at the Flannan Islands ; CLARKE, Ann. Scott. Nat. Hist. 1905, p. 244 : its habits ; SCHUSTER, Ornith. Monber. xiii, pp. 205-207 : *M. g. neumannii* Poche= *M. grisola* ; NEUMANN, J. Ornith. 1905, p. 206 : *M. atricapilla* and its allies, *M. a. semitorquata* and *M. a. speculigera*, notes on ; PARROT, J. Ornith. 1905, pp. 539-542.
- Butalis grisola* var. *pallida*, n. subsp., E. Persia ; SARUDNY, Denkschr. K. Russ. Geogr. Ges. xxxvi, p. 363 (1903) ; Cf. OTTO, Ornith. Monber. xiii, p. 135.
- Ficedula* Briss. vice *Hedymela* Sundev. ; OBERHOLSER, Smithson. Collect. quart. xlviii, pp. 65 & 66.
- Cichlomyia*, n. gen., Type *Butalis cærulescens* Hartl. ; OBERHOLSER, P. U. S. Mus. xxviii, p. 908.
- Arizelomyia*, n. gen., Type *A. latirostris* (Raffl.) ; id. t. c. p. 910.
- Muscicapa*, *Ficedula*, *Alæonax* and *Dioptrornis*, characters of the genera and list of species ; id. t. c. pp. 909-911.
- Melanodryas picata* distinct from *M. bicolor* ; HARTERT, Nov. Zool. vii, p. 220.
- Muscicapula montigena*, n. sp., Mount Apo (6000 feet), Mindanao, Philippine Is. ; MEARN, P. Soc. Washington xviii, p. 8.

*Gerygone flavigula* Ramsay is distinct from *G. personata* Gould; DE VIS, Ann. Queensland Mus. No. 6, pp. 41 & 42: *G. fusca*, note on; id. t. c. p. 44: *G. rhizophorae*, n. sp., Mindanao; MEARNS, P. Soc. Washington xviii, p. 7: *G. cinerascens* from N. W. Australia; HARTERT, Nov. Zool. xii, p. 221.

*Pseudogerygone igata* from the South Island, New Zealand, distinct from *P. flaviventris* of the North Island; GRANT, Bull. B. O. C. xv, pp. 80 & 81: *P. albofrontata*, figured; BULLER, Suppl. B. New Zealand ii, pl. xii, fig. 1.

*Chasiempis gayi*, nest and eggs described; BRYAN, Pap. B. P. Bishop Mus. ii, pp. 40-44, figg. i & ii.

*Pecilodryas* and *Eopsaltria* belong to the *Muscicapidae* and not to the *Laniidae*; HARTERT, Nov. Zool. xii, p. 231: *P. cinereiceps*, n. sp., N. Australia; id. t. c. p. 231.

*Chloropeta batesi*, n. sp., Cameroons, W. Africa; SHARPE, Ibis 1905, p. 468: *C. kenya* Sharpe = *C. similis* Richmond; OBERHOLSER, P. U. S. Mus. xxviii, p. 912: *C. minulla*, n. sp., Usambara, German East Africa; REICHENOW, Ornith. Monber. xiii, p. 181.

*Batis orientalis* and *B. o. minor*, nests and eggs; ERLANGER, J. Ornith. 1905, pp. 284 & 285: *B. mixta* and *B. dimorpha*, notes on; OBERHOLSER, P. U. S. Mus. xxviii, pp. 912 & 913: *B. diops*, n. sp., Ruwenzori Range, Equatorial Africa; JACKSON, Bull. B. O. C. xv, p. 38.

*Hypodes* Cass. distinct from *Parisoma*; REICHENOW, Vög. Afrikas iii, p. 523.

*Diaphorophyia blissetti* in Sierra Leone; KEMP, Ibis 1905, p. 229: *D. ansorgei*, n. sp., Benguela; HARTERT, Bull. B. O. C. xv, p. 74.

*Platystira peltata* from S. Somali Land; ERLANGER, J. Ornith. 1905, p. 685: *P. cyanea albifrons*, and its allies; NEUMANN, t. c. pp. 210 & 211: REICHENOW, Vög. Afrikas iii, p. 832: *P. c. nyansæ*, n. subsp., Victoria Nyansa; NEUMANN, t. c. p. 210: *P. c. æthiopica*, n. subsp., Shoa to the Omo River; id. t. c. p. 211: *P. cryptoleuca*, n. sp., Useri River, E. Africa; OBERHOLSER, P. U. S. Mus. xxviii, p. 913.

*Smithornis capensis albicularis* Hartert = *S. capensis* (Smith); REICHENOW, Vög. Afrikas iii, Nachtrag, p. 831: *S. camarunensis*, n. sp., Cameroons, W. Africa; SHARPE, Ibis 1905, p. 469.

*Artomyias fuliginosa*, nestling plumage; id. t. c. p. 470.

*Hypothymis occipitalis*, nest and eggs described; McGREGOR, Bureau Govt. Labs. Manila, No. 34, pp. 18 & 19, pl. xiii.

*Trochocercus bivittatus* in S. Somali Land; ERLANGER, J. Ornith. 1905, p. 686: *T. reichenowi* in Sierra Leone; KEMP, Ibis 1905, p. 230.

*Rhipidura albina* allied to *R. cockerelli*; ROTHSCHILD & HARTERT, Nov. Zool. xii, p. 260.

*Terpsiphone speciosa* Cass. figured; DUBOIS, Ann. Mus. Congo i, p. 11, pl. vii, fig. 1: *T. melanura* Reichenow, figured; id. t. c. p. 12, pl. vii, fig. 2: *T. ignea* Reichenow, figured; id. t. c. p. 13, pl. vi, fig. 2.

*Tchitrea melanura* may be only a phase of plumage of *T. viridis*; ERLANGER, J. Ornith. 1905, p. 688: *T. viridis ferreli*, notes on; NEUMANN, J. Ornith. 1905, pp. 211-213: nestling described; SHARPE, Ibis 1905, p. 470.

*Elminia longicauda*, nestling plumage; id. t. c. p. 470.

*Rhinomyias goodfellowi*, n. sp., S. E. Mindanao; GRANT, Bull. B. O. C. xvi, pp. 17 & 18.

*Myiagra ferrocyanæ ferrocyanæ* and *M. f. feminina*, notes on; ROTHSCHILD & HARTERT, Nov. Zool. xii, p. 261.

*Cryptolopha umbrovirens*, nest and eggs; ERLANGER, J. Ornith. 1905, pp. 683 & 684: and its allies; NEUMANN, J. Ornith. 1905, pp. 208 & 209: *C. u. omoensis*, n. subsp., Omo River; id. t. c. p. 208: *C. umbrovirens dorcadichroa* Reichenow and Neumann, notes on the species

- and on *C. u. mackenziana*; OBERHOLSER, P. U. S. Mus. xxviii, pp. 916 & 917.
- Abrornis schwaneri* Blyth and *A. vordermanni* (Bütt.) = *A. superciliaris* (Tick.); FINSCH, Notes Leyden Mus. xxvi, pp. 62 & 63.
- Miro traversi*, figured; BULLER, Suppl. B. New Zealand ii, pl. xii, fig. 2: *M. bulleri*, n. sp., South Is., New Zealand, SHARPE, in Buller, B. N. Z. ii, p. 124.
- Piezorhynchus florenciae* Sharpe = *Monarcha richardsii* (Ramsay); ROTHSCHILD & HARTERT, Nov. Zool. xii, p. 263.
- Monarcha kulambangrae meeki*, n. subsp., Rendova Island, Solomon Archipelago; iid. t. c. p. 262: *Pomarea ribbei* = *M. castaneiventris erythrosticta* (Sharpe); iid. t. c. p. 263.
- Conopothorax*, n. gen., vice *Chenorhamphus* Oust. (nec Gray); OBERHOLSER, Smithson. Collect. quart. xlvi, p. 66.

### Family CAMPOPHAGIDÆ.

- Artamides mindorensis*, nest and eggs described: McGREGOR, Bureau Govt. Labs. Manila, No. 34, p. 19, pl. xiv.
- Grauculus welchmani*, remarks on; ROTHSCHILD & HARTERT, Nov. Zool. xii, p. 263: *G. pusillus ombriosus*, n. subsp., Solomon Islands (Gizo, Rubiana, Kulambangra, Rendova); iid. t. c. p. 264: *G. pusillus nigrifrons*, notes on; iid. t. c. p. 264; *G. holopolius* Sharpe is an *Edoliisoma*; iid. t. c. p. 265: *G. melanops*, in New Zealand; HUTTON, Tr. N. Zealand Inst. (2) xx, pp. 350 & 351.
- Edoliisoma elusum*, n. sp., Mindoro, Philippines; McGREGOR, Bureau Govt. Labs. Manila, No. 34, pp. 19 & 20.
- Pericrocotus johnstoniae*, n. sp., S. E. Mindanao; GRANT, Bull. B. O. C. xvi, p. 18.

### Family PYCNONOTIDÆ.

- Hypsipetes*, notes on the Japanese species; *H. amaurotis magnirostris*, n. subsp., S. Dionisio, Volcano Islands; HARTERT, Bull. B. O. C. xv, p. 46.
- Andropadus roehli*, n. sp., Usambara, German East Africa; REICHENOW, Ornith. Monber. xiii, p. 181.
- Pyconotus barbatus schoanus* Neumann, Ornith. Monber. 1905, p. 77 is a race of *P. arsinoe*, unde *P. a. schoanus*; REICHENOW, Vög. Afrikas iii, Nachtrag, p. 840: *P. a. somaliensis*, n. subsp., N. Somali Land; id. t. c. p. 840: *P. spurius*, n. sp., Ennia Galla Land; id. t. c. p. 841: *P. arsinoe schoanus* and *P. a. somaliensis*, *P. dodsoni*, eggs described; ERLANGER, J. Ornith. 1905, pp. 712-715: *P. xanthorrhous*, nesting in Upper Burma; HARRINGTON, J. Bombay Soc. xvi, pp. 740 & 741: *P. robinsoni*, n. sp., Tanjong, Patani, Malay Peninsula; GRANT, Fascic. Malay. Zool. iii, pp. 85 & 86.
- Poliolophus nieuwenhuisii*, n. sp., Upper Kajan, Dutch Borneo; FINSCH, Notes Leyden Mus. xxvi, p. 96, Taf. i.
- Thapsinillas* n. g., Type *T. affinis* (Homb. et Jacq.); OBERHOLSER, Smithson. Collect. quart. iii (2), pp. 161 & 162.
- Acritillas* n. g., Type *A. ictericus* (Strickl.); id. t. c. pp. 162 & 163.
- Arizelocichla* n. g., Type *A. nigriceps* (Shelley); id. t. c. pp. 163 & 164.
- Calyptocichla*, n. nom. pro *Trichites* Heine (nec Lycett); id. t. c. pp. 165 & 166.
- Charitillas* n. g., Type *C. gracilis* (Cab.); id. t. c. p. 168.
- Stelgidocichla* n. g., Type *S. latirostris* (Strickl.); id. t. c. pp. 168 & 169.

- Trichophorus* Temm. vice *Criniger*; id. t. c. pp. 150-152.  
*Idiocichla* n. g., Type *I. notatus* (Cassin); id. t. c. p. 153.  
*Thescelocichla* n. g., Type *T. leucopleurus* (Cassin); id. t. c. pp. 154 & 155.  
*Atimastillas* n. g., Type *A. flavicollis* (Swains.); id. t. c. pp. 155 & 156.  
*Prophorocichla* n. g., Type *P. scandens* (Swains.); id. t. c. pp. 156 & 157:  
*P. scandens acedis*, n. subsp., Ogobai river, Gaboon; id. t. c. pp. 157  
& 158.  
*Argaleocichla* n. g., Type *A. icterinus* (Bonap.); id. t. c. pp. 160 & 161.  
A key to the genera treated in the above paper; id. t. c. pp. 170-172.

### Family TIMELIIDÆ.

- Babax yunnanensis*, n. sp., W. Yun-nan, and *B. victoriae*, n. sp., Mt. Victoria, S. Chin Hills; RIPPON, Bull. B. O. C. xv, pp. 96 & 97: *B. waddelli* from Tsampo Valley, Tibet; DRESSER, P. Zool. Soc. London 1905, i, p. 54, pl. iv.  
*Argya rubiginosa* and *A. aylmeri*, eggs described; ERLANGER, J. Ornith. 1905, pp. 738 & 739.  
*Pomatorhinus mearsi*, n. sp., Upper Chindwin River; GRANT, Bull. B. O. C. xv, p. 39.  
*Garrulax tibetanus*, n. sp., Tsangpo Valley, Tibet; DRESSER, P. Z. S. 1905, pp. 54 & 55, pl. v, fig. 2 [= *Trochalopteron henrici* Oust.]; GRANT, Bull. B. O. C. xv, p. 94.  
*Crateropus cordofanicus*, n. sp., Kordofan; BUTLER, Ibis 1905, p. 330, pl. vii: *C. buxtoni* Sharpe = *C. cinereus* Heugl.; REICHENOW, Vög. Afrikas iii, p. 658: *C. platycercus togoensis* Neum. = *C. platycercus* Sw.; REICHENOW, t. c. p. 660: *C. smithi* (fig. 1), *C. squamulatus* (fig. 2), *C. hypoleucus* (fig. 3), figured; id. t. c. pl. xxiv.  
*Phyllanthus* Less. distinct from *Crateropus*; REICHENOW, t. c. p. 667.  
*Calamanthus albitoris*, n. sp., Victoria, Australia; CAMPBELL, Emu iv, p. 122.  
*Pseudotharrhaleus griseipectus*, n. sp., Mount Apo (6,200 feet), Mindanao, Philippine Is.; MEARNS, P. Soc. Washington xviii, pp. 2 & 3.  
*Macrosphenus flavicans* (fig. 3) and *M. zenkeri* (Reichenow) (fig. 4) figured; REICHENOW, Vög. Afrikas iii, pl. xxii.  
*Turdinus albipectus* figured; id. t. c. iii, pl. xxx, fig. 3: *T. batesi* Sharpe is an *Alethe*; id. t. c. p. 749.  
*Amaurocichla* Sharpe belongs to the Certhiidæ; id. t. c. p. 508.  
*A. kempi*, n. sp., Sierra Leone; SHARPE, Bull. B. O. C. xv, p. 38: figured; KEMP, Ibis 1905, p. 231, pl. v.  
*Alcippe abyssinica*, eggs described; ERLANGER, J. Ornith. 1905, p. 750: *A. stierlingi* figured; REICHENOW, Vög. Afrikas iii, pl. xxviii, fig. 1.  
*Parophasma*, n. gen., type *P. galinieri*; id. t. c. p. 743: *P. galinieri*, habits; ERLANGER, J. Ornith. 1905, pp. 750 & 751.  
*Zosterornis nigrocapitatus*, from Luzon; McGREGOR, Bureau Govt. Labs. Manila, No. 34, p. 29.  
*Macronus mindanensis montanus*, n. subsp., Mount Apo (4000 feet), Mindanao, Philippine Is.; MEARNS, P. Soc. Washington xviii, p. 4.  
*Horizillas*, nom. nov. pro *Malacopterum* auctt. (nec Serville); OBERHOLSER, Smithson. Collect. quart. xlvi, pp. 64 & 65.  
*Leonardina*, n. gen. [nom. emend. pro *Leonardia* Mearns, P. Soc. Washington xviii, pp. 1 & 2, nec Tapparone-Carelli, 1890], Type *L. woodi*, n. sp., Mt. Apo, Mindanao; MEARNS, P. Soc. Washington xviii, p. 88.  
*Myiophonus robinsoni*, n. sp., Selangor; GRANT, Bull. B. O. C. xv, p. 69: id. J. Federated States Mus. i, p. 104.  
*Brachypteryx mindanensis*, n. sp., Mount Apo (6000 feet), Mindanao; MEARNS, P. Soc. Washington xviii, pp. 3 & 4.

- Ixops poliotis*, n. sp., Mt. Victoria, S. Chin Hills; RIPPON, Bull. B. O. C. xv, p. 97.  
*Liothrix luteus*, in the London Parks; FINN, Avicult. Mag. (2) iii, pp. 317 & 318.  
*Suthora ripponi*, n. sp., Mt. Victoria, S. Chin Hills; SHARPE, Bull. B. O. C. xv, p. 96.  
*S. brunnea*, nesting in Upper Burma; HARRINGTON, J. Bombay Soc. xvi, p. 740.

### Family PANURIDÆ.

*Panurus biarmicus*, in confinement; ST QUINTIN, Avicult. Mag. (2) iii, pp. 149 & 150: breeding in confinement; FARRER, t. c. pp. 318 & 319.

### Family TROGLODYTIDÆ.

- Heleodytes griseus*, nest and eggs described; ALLEN, Bull. Amer. Mus. xxi, p. 294.  
*Telmatodytes palustris* in the tidal swamps of the Delaware Valley; HUNT, Cassinia 1904, pp. 14–16: *Cistothorus stellaris* in E. Pennsylvania and New Jersey; HOLMES, t. c. pp. 17–25.  
*Troglodytes*. Ranges of South American species; HELLMAYR, Nov. Zool. xii, p. 270: *T. audax* Tschudi = *T. musculus*, juv.; BERLEPSCH & HELLMAYR, J. Ornith. 1905, p. 6.  
*Cistothorus stellaris*, in South-eastern Michigan; SWALES & TAVERNER, Auk xxii, pp. 88 & 89.  
*Troglodytes parvulus subpallidus*, n. subsp., Mts. of N. E. Persia; SARUDNY & LOUDON, Ornith. Monber. xiii, p. 107: *T. p. hyrcanus*, n. subsp., Caspian Provinces of Persia (Ghilan, Masanderan, Asterabad); iid. t. c. pp. 107 & 108. *T. parvulus*, nesting habits; BENTHAM, Zoologist 1905, p. 107: BUTTERFIELD, t. c. pp. 140 & 141: STEELE-ELLIOTT, t. c. p. 141: ELLISON, t. c. pp. 141 & 142: WALTON, t. c. p. 179.  
*Anorthura tibetana*, n. sp., Khamba Jong, Tibet; WALTON, Bull. B. O. C. xv, p. 93.  
*Henicorhina hilaris bangsi*, nest and eggs described; ALLEN, Bull. Amer. Mus. xxi, pp. 293 & 294.

### Family CINCLIDÆ.

- Cinclus*, geographical distribution of the species; STEJNEGER, Smithson. Collect. quart. xlvi, pp. 421–430.  
*C. cinclus britanicus* Tschusi = *C. gularis* (Lath.); id. t. c. p. 429.  
*Cinclus*, notes on Asiatic species; BIANCHI, Bull. B. O. C. xv, pp. 91 & 92: *C. przewalskii*, n. sp., E. Tibet; id. t. c. p. 91: *C. saturatus* Dresser, and *C. kiborti* Madar. = *C. bilkevitschi* Sarudny; id. t. c. p. 92: *C. younghusbandi*, n. sp., Khamba Jong, Tibet; WALTON, Bull. B. O. C. xv, p. 93.

### Family MIMIDÆ.

- Cichlherminia coryi*, n. subsp. ? Martinique, Lesser Antilles; RIDGWAY, Smithson. Collect. quart. ii (1), p. 112.  
*Cinclocerthia ruficauda tenebrosa*, n. subsp. St Vincent, Lesser Antilles; RIDGWAY, t. c. pp. 112 & 113: *C. ruficauda pavida*, n. subsp., St Christopher, Lesser Antilles; id. t. c. p. 113.

- Mimus gilvus guatemalensis*, n. subsp., Highlands of Guatemala; RIDGWAY, Smithson. Collect. Quart. ii (1), p. 113 : *M. gilvus tolimensis*, n. subsp., Tolima, Colombia; id. t. c. p. 113.  
*Toxostoma rufum*, wintering in New York City; LEWIS, Auk xxii, pp. 314 & 315.

### Family TURDIDÆ.

Remarks on the family; PYCRAFT, Ibis 1905, pp. 1-24, pl. ii.

*Myiadestes genibarbis cherriei*, n. subsp., Haiti, W. I.; RIDGWAY, Smithson. Collect. quart. ii, p. 112.

*M. elizabeth retrusus*, n. subsp., Isle of Pines; BANGS & ZAPPEY, Amer. Natural. xxxix, p. 208.

*Turdus roehli*, n. sp., Usambara, German East Africa; REICHENOW, Ornith. Monber. xiii, p. 182 : *T. merula*, peculiar variety; READ, Bull. B. O. C. xvi, p. 36 : in Tunis; KOLLIBAY, Ornith. Monber. xiii, p. 141 : *T. merula algirus* and its allies; WITHERBY, op. cit. xv, p. 48 : id. Ibis 1905, p. 181 : *T. iliacus* from the Pleistocene of Derbyshire; ARNOLD-BEMROSE & NEWTON, Quart. J. Geol. Soc. 61, p. 56.

*T. merula azorensis*, n. subsp.; HARTERT, Nov. Zool. xii, p. 116.

*M. boulboul* in confinement; BUTLER, Avicult. Mag. (2) iii, pp. 243-247 : *M. kelleri*, n. sp., Mount Apo (6000 feet), Mindanao, Philippine Is.; MEARNS, P. Soc. Washington xviii, pp. 6 & 7 : *M. celænops yakushimensis*, n. subsp., Yakushima; OGAWA, Annot. zool. Japon. v, pp. 180-182 : *M. grayi lurida* and *M. albiventris fusca*, nests and eggs described; ALLEN, Bull. Amer. Mus. xxi, pp. 294 & 295.

*Oreocincla varia* in Assam; MOORE, J. Bombay Soc. xvi, p. 502.

*Ixoreus naevius*, notes on; SOLLOWAY, Condor vii, pp. 18-22 : notes on the nesting; BROOKS, Auk xxii, pp. 214 & 215.

*Geocichla major*, n. sp., Amami-Ōshima; OGAWA, Annot. zool. Japon. v, pp. 178 & 179.

*G. litsitsirupa simensis*, eggs described; REICHENOW (ERLANGER), J. Ornith. 1905, p. 170 : *G. camaronensis*, n. sp., Cameroons, W. Africa; SHARPE, Ibis 1905, p. 472 : *G. batesi*, n. sp., Cameroons; id. Bull. B. O. C. xvi, p. 36 : *G. cinerea*, notes on; McGREGOR, Bureau Govt. Labs. Manila, No. 34, p. 21, pl. xv.

*Turdus deichleri* Erlanger, notes on; KOLLIBAY, Ornith. Monber. xiii, pp. 141-143 : *T. pelios centralis*, n. subsp., Lake Regions of Equatorial Africa; REICHENOW, Vög. Afrikas iii, p. 690 : *T. abyssinicus* and *T. pelios*, eggs described; ERLANGER, J. Ornith. 1905, p. 741 : *T. tephronotus* in S. Somali Land and Arussi Galla Land; id. t. c. pp. 742 & 743 : *T. pilaris* in the Kurische Nehrung; THIENEMANN, Ornith. Monber. xiii, pp. 48 & 49 : *T. atrigularis* in the Kurische Nehrung; id. t. c. p. 48 : *T. torquatus* near Khartoum in December; A. L. BUTLER, Ibis 1905, p. 337 : *T. alpestris*, range in Germany; BERGE, Ornith. Monber. xiii, pp. 150 & 151 : *T. musicus*, curious semi-detached nests; PRATT, Bull. B. O. C. xv, p. 69.

*Hypocolius* referred to the *Turdinae*; REICHENOW, Vög. Afrikas iii, p. 677.

*Accentor*, review of the genus and a key to the species; TSCHUSI, Ornith. Jahrb. xvi, pp. 127-140 : *A. collaris collaris*, male, female and young described; id. t. c. pp. 128-131 : *A. c. subalpinus*, described; id. t. c. pp. 132-134 : *A. c. hypanis*, n. subsp., Kuban district, Caucasus; id. t. c. pp. 135 & 136.

*Tharrhaleus modularis*, white eggs [with egg of Cuckoo]; LOAT, Bull. B. O. C. xv, p. 78.

- Accentor modularis*, note on the nesting ; GURNEY, Zoologist 1905, p. 165 : BUTTERFIELD, t. c. p. 236.
- Ruticilla titys* at the Flannan Islands ; CLARKE, Ann. Scott. Nat. Hist. 1905, pp. 243 & 244.
- Phoenicurus familiaris falkensteinii*, figured ; REICHENOW, Vög. Afrikas iii, pl. xxx, fig. 1.
- Luscinia* Forster vice *Aedon* Forster ; OBERHOLSER, P. U. S. Mus. xxviii, p. 895. [Cf. SCLATER, infra.]
- Lusciola golzi* near Khartoum in September ; BUTLER, Ibis 1905, p. 337.
- Philomela* Link. (1806) has precedence over *Aedon* Forster (1817) for the Nightingale ; SCLATER, Bull. B. O. C. xvi, pp. 49-41.
- Daulias philomela*, remarks on its occurrence in England ; HARTERT, Bull. B. O. C. xv, p. 47.
- Aedon luscinia* in Bavaria ; GENGLER, Ornith. Monber. xiii, pp. 157-163.
- Erythacus rubecula*, notes on ; WITHERBY, Ibis 1905, p. 184 : feeding on moths ; SCHUSTER, Ornith. Monber. xiii, pp. 110 & 111 : in the Azores ; HARTERT, Nov. Zool. xii, p. 117 : *E. rubecula* (?) from the Pleistocene of Derbyshire ; ARNOLD-BEMROSE & NEWTON, Quart. J. Geol. Soc. 61, p. 56 : *E. cyanecula* near Hastings ; TICEHURST, Bull. B. O. C. xvi, p. 34.
- Tarsiger* belongs to the *Turdidae*, *T. orientalis* F. & R. = *T. cucullatus* Blyth ; OBERHOLSER, P. U. S. Mus. xxviii, p. 897.
- Cossypha* has a scutellated tarsus, and should be removed from the *Turdidae* ; id. t. c. p. 894 : *C. gutturalis*, eggs ; DRESSER, Bull. B. O. C. xv, p. 76 : *C. albicularis* (fig. 2), *C. polioptera* (fig. 3), figured ; REICHENOW, Vög. Afrikas iii, pl. xxviii.
- Cichladusa rufipennis* (Sharpe) = *C. guttata* (Heugl.) ; id. t. c. p. 766.
- Erythropygia leucoptera*, its eggs ; ERLANGER, J. Ornith. 1905, pp. 754 & 755 : *E. quadrivirgata erlangeri*, n. subsp., S. Somali Land ; REICHENOW, Vög. Afrikas iii, p. 770 : *E. brunneiceps soror*, n. subsp., E. Africa ; id. t. c. p. 774.
- Cuphopterus dohrni* is an *Alethe* ; id. t. c. p. 750.
- Alethe fülleborni usambarae*, n. subsp., Usambara, German East Africa ; REICHENOW, Ornith. Monber. xiii, p. 182.
- Pratincola axillaris* and *P. sybilla*, notes on ; OBERHOLSER, P. U. S. Mus. xxviii, pp. 895 & 896 : *P. maura* near Cley in Norfolk ; SAUNDERS, Bull. B. O. C. xvi, p. 10 : in N. E. Africa ; ERLANGER, J. Ornith. 1905, pp. 748 & 749.
- Pinarochroa sordida erlangeri*, n. subsp., S. Somali Land, N. E. Africa ; REICHENOW, Ornith. Monber. xiii, p. 25 : figured ; ERLANGER, J. Ornith. 1905, Taf. xx : *P. s. schoana*, n. subsp., Shoa ; NEUMANN, Ornith. Monber. xiii, pp. 78 & 79 : *P. s. djamdjamenensis*, n. subsp., Djambjam Mts, E. of Lake Abaya, N. E. Africa ; id. t. c. p. 79 : figured ; REICHENOW, J. Ornith. 1905, Taf. xx.
- Oreicola jerdoni* nesting in Upper Burma ; HARINGTON, J. Bombay Soc. xvi, p. 741.
- Saxicola bifasciata* is a *Thamnolæa* ; REICHENOW, Vög. Afrikas iii, p. 704 : *S. ænanthe* in the Egyptian Soudan in winter (November to April) ; BUTLER, Ibis 1905, p. 338 : *S. æ. leucorrhœa* in Cuba ; ROBINSON, Auk xxii, p. 315 : in the Azores ; HARTERT, Nov. Zool. xii, p. 117 : *S. borealis* Kleinschmidt (i.e. *S. ænanthe* Linn.), an essay on the Common Wheatear and its [supposed] allies ; KLEINSCHMIDT, Berajah, Lief. i, pp. 1-22, Taf. i—ix : *S. seebohmi*, notes on ; id. Falco i, pp. 30-35 : *S. stapazina* in Sussex ; NICOLL, Bull. B. O. C. xvi, p. 22 : *S. melanoleuca*, melanism ; KOLLIBAY, Ornith. Monber. xiii, p. 143 : *S. stapazina melanoleuca* and *S. aurita*, notes on ; PARROT, J. Ornith. 1905, pp. 626-633, 666 : *S. lugens halophila*, notes on ; WITHERBY, Ibis 1905, p. 182 : *S. albicollis caterinæ*, notes

on; id. t. c. p. 183: *S. rostrata* H. & E., and *S. libanotica* H. & E., notes on; KLEINSCHMIDT, Ornith. Monber. xiii, pp. 165 & 166: *S. schalowi*, figured; REICHENOW, Vög. Afrikas iii, pl. xxx, fig. 2. *Catharus fuscater sanctæ-martæ*, n. subsp., Santa Marta, Colombia; RIDGWAY, Smithson. Collect. quart. ii, p. 112. *Zeledonia coronata* is a Turdine form; PYCRAFT, Ibis 1905, pp. 1-24: figured; id. t. c. pl. i.

## Family SYLVIIDÆ.

Eggs of the Warblers of Europe; DRESSER (179).

*Locustella styanii*, n. sp., S. E. China; LA TOUCHE, Bull. B. O. C. xvi, p. 21.

*Acrocephalus* divisible into three sub-genera, *Acrocephalus* Naum. (type *A. turdoides*), *Muscipeta* Koch (type *M. phragmitis*), *Tatare*, Less. (type *T. otaitensis*), *Acrocephalus orinno*, nom. emend. pro *A. macrorhynchus* Hume, nec Müller; OBERHOLSER, P. U. S. Mus. xxviii, pp. 897-901.

*Notiocichla*, n. gen., type *N. bæticata* (Vieill.); id. t. c. pp. 900 & 901.

*Anteliocichla*, n. gen., type *A. bistrigiceps* (Swinh.); id. t. c. p. 901.

*Acrocephalus palustris* breeding in Kent; INGRAM, Bull. B. O. C. xv, p. 96; PYCRAFT, Knowledge 1905, p. 207: *A. turdoides* at Bexhill, Sussex; NICOLL, Zoologist 1905, p. 268: *A. aquaticus* in Sussex; NICOLL, Bull. B. O. C. xvi, pp. 22 & 23: in the Isle of Wight; WITHERBY, t. c. pp. 23 & 24: *A. streperus* and *A. palustris*, notes on; HARTERT, Ornis xiii, p. 61: *A. phragmitis* at the Flannan Islands; CLARKE, Ann. Scott. Nat. Hist. 1905, p. 244.

*Dybowskia kemoensis* Oust. = *Heliolais erythroptera* (Jard.); REICHENOW, Vög. Afrikas iii, p. 570.

*Chætops kilimensis* Madarasz = *Melocichla mentalis orientalis* Shelley; id. t. c. p. 538.

*Cisticola semitorques* and *C. cinerascens*, note on; ERLANGER, J. Ornith. 1905, p. 721: *C. calamoherce*, n. sp., Kilimanjaro district, N. to Lake Abassi, etc.; REICHENOW, Vög. Afrika iii, p. 549: *C. hindei* Sharpe = *C. brunneascens* Heugl.; REICHENOW, t. c. iii, p. 559.

*C. nigrifrons*, n. sp., German East Africa; id. t. c. p. 560: *C. robusta massaica*, n. subsp., Masai Land (between Mt Kilimanjaro and the eastern shores of the Victoria Nyanza); NEUMANN, Ornith. Monber. xiii, pp. 77 & 78: *C. lugubris nyansæ*, n. subsp., coast-region of the Victoria Nyanza; id. t. c. p. 78: *C. l. suahelica*, n. subsp., German East Africa (Usequa to Ummugwe and Uniamwesi); id. t. c. p. 78: *C. l. haematocephala*, and *C. erlangeri*, notes on, *C. robusta*, eggs described; ERLANGER, J. Ornith. 1905, pp. 718-720: *C. l. nyansæ* and *C. suahelica*; NEUMANN, Ornith. Monber. 1905, p. 78 = *C. lugubris* Rüpp.; REICHENOW, Vög. Afrikas iii, Nachtrag, p. 842: *C. robusta massaica* Neumann, Ornith. Monber. 1905, p. 77 = *C. robusta* (Rüpp.); id. t. c. p. 842: *C. semifasciata*, n. sp., Nyasa Land to Shoa; REICHENOW, Vög. Afrikas iii, p. 544: *C. prinioides* and its allies; OBERHOLSER, P. U. S. Mus. xxviii, p. 902: *C. harrisoni*, n. sp., El Bolossa Swamp, Moranda-River, British E. Africa; STONE, P. Ac. Philad. 1905, p. 771: *C. argentea*, n. sp., S. Somali Land: *C. schillingsi*, n. sp., E. Africa; REICHENOW, Ornith. Monber. xiii, p. 25.

*Bradypterus mariae*, n. sp.; MADARASZ, Ann. Mus. Hungar. iii, pp. 401 & 402: *B. rufoflavidus* Reichenow & Neumann = *B. barratti*; OBERHOLSER, P. U. S. Mus. xxviii, pp. 903 & 904.

*Calamonastes stierlingi*, figured; REICHENOW, Vög. Afrikas iii, pl. xx, fig. 3:

- C. simplex*, eggs described ; ERLANGER, J. Ornith. 1905, pp. 722 & 723.
- Hypolais polyglotta*, note on ; CARPEGNA, Bol. Soc. zool. Ital. (2) vi, p. 262 : *H. icterina* in the Isle of Wight ; WITHERBY, Bull. B. O. C. xvi, p. 24.
- Sylvia curruca* near Berwick ; BOLAM, Hist. Berwick. Club xix, p. 68 : *S. orpheus* in Sussex ; TICEHURST, Bull. B. O. C. xvi, p. 35 : *S. undata* nesting in Sussex ; MORRIS, Zoologist 1905, p. 309 : *S. delicatula* from S. Somali Land ; REICHENOW, Vög. Afrikas iii, Nachtrag, p. 842.
- Phylloscopus sibilatrix flavescens* = *P. sibilatrix* ; WITHERBY, Ibis 1905, p. 186 : *P. tristis* believed to occur in Switzerland ; FATIO, Arch. Sci. Nat. (4) xx, pp. 588 & 589.
- Acanthiza modesta*, n. sp., Charleville, Interior of Queensland ; DE VIS, Ann. Queensland Mus. No. 6, p. 43 : *A. katherina*, n. sp., Bellenden Ker Range ; id. t. c. pp. 43 & 44.
- Sericornis tyrannula*, n. sp., Charleville, Interior of Queensland ; id. t. c. pp. 42 & 43.
- Oreoscopus*, n. gen., type *O. gutturalis* (De Vis) ; NORTH, Agric. Gaz. N. S. W. xvi, p. 247.
- Apalis griseiceps*, figured ; REICHENOW, Vög. Afrikas iii, pl. xx, fig. 1 : *A. thescela*, n. sp., Mt Kilimanjaro, E. Africa ; OBERHOLSER, P. U. S. Mus. xxviii, pp. 904 & 905 : *A. erlangeri*, n. sp., S. Somali Land ; REICHENOW, Ornith. Monber. xiii, pp. 24 & 25 : id. Vög. Afrikas iii, p. 602 : eggs described ; id. J. Ornith. 1905, p. 727 : figured ; Taf. xix, fig. 1 : *A. chariessa* (fig. 2), *A. porphyrolæma* (fig. 3), figured ; REICHENOW, Vög. Afrikas iii, pl. xxi : *A. rufifrons*, eggs described ; ERLANGER, J. Ornith. 1905, p. 726 : *A. melanocephala* in S. Somali Land, figured ; id. t. c. p. 728, Taf. xvii ; *A. malensis*, eggs described ; id. t. c. pp. 729 & 730 : *A. æquatorialis* Neum. = *A. golzi* Neum. ; REICHENOW, Vög. Afrikas iii, p. 611 : *A. malensis*, n. sp. (ex Neum. MSS.), Galla Land and S. Somali Land ; id. t. c. p. 612 : *A. flava* *malensis*, n. subsp., Male Land, N. of Lakes Rudolf and Stephanie ; NEUMANN, Ornith. Monber. xiii, p. 78 : *A. ansorgei*, n. sp., Angola ; HARTERT, Bull. B. O. C. xv, p. 95.
- Euprinodes* generically distinct from *Apalis* ; OBERHOLSER, P. U. S. Mus. xxviii, p. 906 : *E. leucogaster* Sharpe = *Apalis schistacea* (Cass.) ; REICHENOW, Vög. Afrikas iii, p. 603.
- Sylviella toroensis*, n. sp., Kibera River, Toro ; JACKSON, Bull. B. O. C. xv, p. 38.
- Sylvietta erlangeri*, n. sp. ; REICHENOW, Vög. Afrikas iii, p. 626 : eggs described, ERLANGER, J. Ornith. 1905, p. 731 : *S. rufescens ochrocara*, n. subsp., Damara Land ; OBERHOLSER, Smithson. Collect. quart. xlvi, Vol. ii, pp. 373 & 374 : *S. rufigenis*, figured ; REICHENOW, Vög. Afrikas, pl. xxi, fig. 4 : *S. major* Neum. = *S. jacksoni* Sharpe ; id. t. c. p. 627.
- Eremomela flaviventris griseoflava* and *E. erlangeri*, figured ; ERLANGER, J. Ornith. 1905, pp. 733 & 734, Taf. xviii : *E. flaviventris abdominalis*, n. subsp., E. Africa ; REICHENOW, Vög. Afrikas iii, p. 635 : *E. erlangeri*, n. sp., Garre-Liwin, N. E. Africa ; id. t. c. p. 635 : *E. baugarti*, n. sp., Damara Land ; id. Ornith. Monber. xiii, p. 25 : *E. flaviventris sharpei*, n. subsp. (= *E. damarensis* Sharpe, nec Wahlberg), Damara Land ; id. t. c. pp. 25 & 26 : *E. scotops* from Kidudwe, E. Africa ; OBERHOLSER, P. U. S. Mus. xxviii, pp. 906 & 907 : *E. congensis*, n. sp., Lower Congo ; REICHENOW, Vög. Afrikas iii, p. 639 : *E. citriniceps*, figured ; id. t. c. pl. xxii, fig. 2.
- Camaroptera erlangeri*, n. sp., S. Somali Land ; id. t. c. p. 617 : *C. granti* Alex. = *C. chloronota* Reichenow ; id. t. c. p. 620 : *C. pileata* (fig. 3) and *C. chloronota* (fig. 4) ; figured, id. t. c. pl. xvii.
- Stiphrornis xanthogaster*, figured ; SHARPE, Ibis 1905, p. 476, pl. ix.

*Phyllergates heterolæmus*, n. sp., Mount Apo (6700 feet), Mindanao, Philippine Is.; MEARNS, P. Soc. Washington xviii, p. 86.

*Suya superciliaris* nesting in S. E. China; LA TOUCHE & RICKETT, Ibis 1905, pp. 35 & 36.

*Prinia somalica erlangeri*, n. subsp., S. Somali Land; REICHENOW, Ornith. Monber. xiii, p. 24: id. Vög. Afrikas iii, p. 592: eggs described; id. J. Ornith. 1905, p. 725: *P. somalica* and *P. s. erlangeri*, figured; ERLANGER, t. c. Taf. xix: *P. sonitans* breeding in S. E. China; LA TOUCHE & RICKETT, Ibis 1905, p. 36: *P. melanops*, figured; REICHENOW, Vög. Afrikas iii, pl. xx, fig. 2: *P. melanocephala*, figured; id. t. c. pl. xxii, fig. 1: *P. reichenowi* (Hartl.), figured; id. t. c. pl. xxii, fig. 1.

*Malurus pulcherrimus* from Alligator River, N. Australia; HARTERT, Nov. Zool. xii, pp. 223 & 224.

*Amytornis woodwardi*, n. sp., S. Alligator River, N. Australia; id. Bull. B. O. C. xvi, pp. 30 & 31: *A. housei*, figured; CAMPBELL, Emu iv, pl. xiii, fig. 3.

### Family VIREONIDÆ.

*Hylophilus frontalis* (Tschudi) is a *Chlorospingus*; BERLEPSCH & HELLMAYR, J. Ornith. 1905, p. 8.

*Vireo huttoni oberholseri*, n. subsp., San Diego Co., California; BISHOP, Condor vii, pp. 142 & 143.

### Family AMPELIDÆ.

*Ampelis garrulus*; supposed nesting in Worcestershire; REA, Trans. Worcester Club 1897-99: in Berkshire; PROCTOR, Bull. B. O. C. xv, p. 88: notes on; GOODWIN, Condor vii, pp. 98-100: in Utah; id. t. c. p. 52; migration in winter of 1903-04; TSCHUSI, Ornis xiii, pp. 1-56.

### Family ARTAMIDÆ.

*Artamus leucorhynchus*, nest and eggs described; McGREGOR, Bureau Govt. Labs. Manila, No. 34, pp. 22 & 23.

*Pseudochelidon eurystomina* Hartl., figured; DUBOIS, Ann. Mus. Congo ii, p. 13, pl. viii.

### Family PRIONOPIDÆ.

Characters of the Family; OBERHOLSER, P. U. S. Mus. xxviii, p. 924.

*Colluricincla pallidirostris* = *C. brunnea* ♀; HARTERT, Nov. Zool. xii, p. 227: *C. superciliosa*, from New Guinea and Cape York; id. t. c. p. 227: *C. sibila* = *Pinarolestes boweri*; id. t. c. p. 228: *C. woodwardi*, n. sp., Arnhem Land, N. Australia; id. t. c. p. 228: *Pinarolestes parvula* and *P. rufigaster* belong to the genus *Colluricincla*; id. t. c. p. 228.

*Prionops melanoptera*, juv., figured; ERLANGER, J. Ornith. 1905, Taf. xvi, fig. 1.

*P. cristata* and allies; NEUMANN, J. Ornith. 1905, pp. 215-220: review of species; id. t. c. pp. 218-220: *P. cristata omoensis*, n. subsp., Omo River district; id. t. c. p. 216: *P. talacoma* Smith = *P. poliocephalus* Stanley; id. t. c. p. 218.

## Family LANIIDÆ.

- Cracticus quoyi tunneyi*, n. subsp., Arnhem Land, N. Australia ; HARTERT, Nov. Zool. xii, p. 228 : review of the allied species ; id. t. c. pp. 228 & 229 : *C. nigrogularis picatus*, distinct from *C. nigrogularis* ; id. t. c. pp. 229 & 230.
- Gymnorhina tibicen longirostris*, n. subsp. (nec Milligan), N. W. Australia ; HARTERT, Nov. Zool. xii, p. 230.
- G. leuconota*, arterial system of the brain ; BEDDARD, P. Zool. Soc. London 1905, i, pp. 114-116.
- Lanius minor*, from Bosham, Sussex ; GRIFFITH, Bull. B. O. C. xvi, p. 38.
- L. lama*, from Tsampo Valley, Tibet ; DRESSER, Bull. B. O. C. xv, p. 38 : id. P. Zool. Soc. London 1905, pt. i, p. 55, pl. v, fig. 1 [= *L. tephronotus* GRANT, Bull. B. O. C. xv, p. 94.]
- L. collurio*, habits ; STEELE-ELLIOTT, Zoologist 1905, pp. 309 & 310 : CORBIN, t. c. pp. 387 & 388 : breeding in confinement ; GÜNTHER, Avicul. Mag. (2) iii, pp. 330 & 331.
- L. raddei* (figg. 1-3), *L. rufus* (figg. 4, 7), *L. erythronotus* (figg. 5, 8), *L. cristatus* (figg. 6, 9), *L. bucephalus* (figg. 10-12), eggs, figured ; DRESSER, Ibis 1905, pp. 525-527, pl. xi.
- L. nubicus*, in Kent ; NICOLL, Bull. B. O. C. xvi, p. 22.
- L. phœnicuroides*, in N. Somali Land ; ERLANGER, J. Ornith. 1905, p. 703.
- L. ludovicianus*, in Connecticut in winter ; ALLEN, Auk xxii, pp. 211 & 212.
- L. l. migrans*, observations at Ottawa ; EIFRIG, Auk xxii, p. 314.
- L. arabicus*, n. sp., Amiri district, S. Arabia ; GRANT, Bull. B. O. C. xv, p. 78.
- L. major*, on the Newarp Lightship, Essex Coast ; WITHERBY, Bull. B. O. C. xv, p. 99.
- L. antinorii*, eggs described ; ERLANGER, J. Ornith. 1905, pp. 701 & 702.
- L. excubitorius*, referred to the genus *Fiscus* ; A. L. BUTLER, Ibis 1905, p. 327.
- L. uropygialis*, n. sp., is the form of *L. humeralis*, from East Africa ; REICHENOW, J. Ornith. 1905, p. 560 : id. Vög. Afrikas iii, Nachtrag, p. 835 : *L. excubitorius intercedens*, n. subsp., Hawash to Omo River ; NEUMANN, J. Ornith. 1905, p. 228 = *L. böhmi* ; REICHENOW, t. c. Nachtrag, p. 835 : *L. arabicus* Grant, probably = *L. buryi* Lorenz & Hellm. ; id. t. c. p. 835.
- L. intercedens* and *L. böhmi*, remarks on ; REICHENOW, J. Ornith. 1905, pp. 427 & 428.
- Enneoctonus collurio* var. *fuscatus*, n. subsp., E. Persia ; SARUDNY, Denkschr. K. Russ. Geogr. Ges. xxxvi, p. 368 (1903). Cf. OTTO, Ornith. Monber. xiii, p. 135.
- Cephalophoneus suluensis*, n. sp., Bual, Sulu Island, Philippine Islands ; MEARNS, P. Soc. Washington xviii, p. 86.
- Malaconotus poliocephalus* and its races, notes on ; NEUMANN, J. Ornith. 1905, pp. 225-227 : *M. starki* Scl. = *M. blanchoti* (Steph.) ; id. t. c. p. 226 : *M. blanchoti* Grant, nec Steph. = *M. catharoxanthus* Neum. ; id. t. c. p. 226 : range of the six forms ; id. t. c. pp. 226 & 227.
- M. olivaceus schoanus* Neum. = *M. o. hypopyrrhus* ; REICHENOW, J. Ornith. 1905, p. 559.
- Chlorophoneus sulfureopectus* and *C. s. suahelicus*, notes on ; NEUMANN, J. Ornith. 1905, pp. 221 & 222 : *C. multicolor*, in Sierra Leone ; KEMP, Ibis 1905, p. 234.
- Pelicinius hilgerti*, eggs described ; ERLANGER, J. Ornith. 1905, pp. 695 & 696.

- Laniarius jacksoni* Sharpe, probably = *Chlorophoneus bocagei*; REICHENOW, Vög. Afrikas iii, Nachtrag, p. 834 : *L. aethiopicus somaliensis*, n. subsp., S. Somali Land ; id. t. c. p. 834.
- L. aethiopicus* and *L. a. ambiguus*, notes on ; NEUMANN, J. Ornith. 1905, pp. 222 & 223.
- L. erlangeri*, n. sp., S. Somali Land ; REICHENOW, Vög. Afrikas iii, p. 834 : id. J. Ornith. 1905, p. 697.
- Dryoscopus malzakii erythreæ* and allied forms ; NEUMANN, J. Ornith. 1905, pp. 223-225.
- D. pringlei*, in S. Somali Land ; ERLANGER, J. Ornith. 1905, p. 699.
- Nicator gularis* from S. Somali Land ; ERLANGER, J. Ornith. 1905, p. 695.
- Pomatorhynchus blanfordi* Sharpe = *P. senegalus habessinicus* (H. & E.) ; NEUMANN, J. Ornith. 1905, p. 220.
- P. blanfordi* and *P. jamesi*, eggs described ; ERLANGER, J. Ornith. 1905, pp. 692, 695.
- Pachycephala mestoni*, n. sp., ♀, Bellenden Ker Range ; DE VIS, Ann. Queensland Mus. No. 6, pp. 44 & 45.
- Hyloterpe apoensis*, n. sp., Mount Apo (6000 feet), Mindanao, Philippine Is. ; MEARN, P. Soc. Washington xviii, pp. 86 & 87.
- Hypocolius* referred to the Turdidae ; REICHENOW, Vög. Afrikas iii, p. 677.

### Family PARIDÆ.

See HARTERT, Vög. pal. Fauna, Heft. iii, pp. 339-384.

- Parus salicarius*, in England ; HARTERT, Ornis xiii, pp. 60 & 61.
- P. s. rhenanus*, figured ; KLEINSCHMIDT, C.R. vii Congr. Zool. 1905, pl. to p. 144.
- P. hudsonicus*, breeding at Dover, Maine ; RITCHIE, Auk xxii, pp. 85-87 : occurrence near Boston, Mass. ; WRIGHT, t. c. p. 87.
- P. montanus*, its rufous nasal plumes ; INGRAM, Bull. B. O. C. xv, p. 96.
- P. lugubris anatolicæ*, n. subsp., Asia Minor ; HARTERT, Vög. pal. Fauna, heft. iii, p. 368.
- Pæcile lugubris hyrcanus*, n. subsp., W. Persia ; SARUDNY & LOUDON, Ornith. Monber. xiii, p. 76.
- Parus ater schwederi*, n. subsp., Samhof, Livonia ; LOUDON & TSCHUSI, Ornith. Jahrb. xvi, pp. 140 & 141.
- Pardaliparus elegans mindanensis*, n. subsp., Mount Apo (6,200 feet), Mindanao, Philippine Is. ; MEARN, P. Soc. Washington xviii, p. 8.
- Parus major* and allies, notes on ; HARTERT, Ornis xiii, pp. 59 & 60 : MARTORELLI, Avicula ix, pp. 86 & 87 ; HARTERT, Nov. Zool. xii, pp. 497-500 : *P. m. zayrossiensis* Sarudny & Loudon = *P. blanfordi*, *P. major caspius* probably also = *P. blanfordi*, *P. major caschmirensis*, n. subsp., Cashmere ; id. t. c. p. 498 : *P. major planorum*, n. subsp., Plains of N. India ; id. t. c. p. 499 : *P. m. mahrattarum*, n. subsp., S. Indian Peninsula and Ceylon ; id. t. c. p. 499 : *P. m. hainanus*, n. subsp., Hainan ; id. t. c. p. 499 : *P. m. okinawæ*, n. subsp., Riu Kiu Id. ; id. t. c. p. 500 : *P. m. tibetanus*, n. subsp., Tibet ; id. t. c. p. 500 : *P. m. minor*, remarks on ; id. t. c. p. 500.
- P. major peloponnesius*, n. subsp., Greece ; PARROT, J. Ornith. 1905, pp. 547-550, 665.
- P. major zayrossiensis*, n. subsp., Sagrosch Mts., S. W. Persia ; SARUDNY & LOUDON, Ornith. Monber. xiii, pp. 108 & 109 : *P. m. caspius*, n. subsp., Caspian Provinces of Persia (Ghilan, Masanderan, Asterabad) ; iid., l. c.
- P. major blanfordi* Prazak (Ornith. Jahrb. 1895, p. 240) = *P. transcaspius*

- Sarudny (Bull. Soc. Imp. Moscou, 1893) ; SARUDNY, Ornith. Monber. xiii, p. 109, note.
- P. bocharensis* Licht., not closely allied to *P. cinereus* Vieill., which is nearer to *P. transcaspius* and *P. major* ; SARUDNY & LOUDON, Ornith. Monber. xiii, p. 109, note.
- P. bocharensis turkestanicus*, n. subsp., C. Asia (Dsungaria, Sémiratschja, and Syr Darya districts) ; iid. t. c. p. 109.
- P. cæruleus*, curious variety in Holland ; SNOUCKAERT VAN SCHAUBURG, Ornith. Monber. xiii, pp. 75 & 76.
- P. c. ogliastræ*, n. subsp., Sardinia and Corsica ; HARTERT, Vög. pal. Fauna, heft. iii, p. 349.
- Cyanistes cæruleus orientalis*, n. subsp., E. Russia (Govts. of Orenburg, Ufa, Samara, Kazan, Simbirsk) ; SARUDNY & LOUDON, Ornith. Monber. xiii, pp. 105 & 106.
- C. berezowskii*, figured ; BIANCHI, Wiss. Res. Przew. Reis. Vög. ii, pl. vii, figg. 3 & 4.
- Parus cyaneus*, figured ; HERBERT, Tr. Edinb. Field Soc. v, pp. 194-196, pl. xix.
- P. niger lacuum*, n. subsp., Lake Region, S. of the Omo River, N. E. Africa ; NEUMANN, Ornith. Monber. xiii, p. 77.
- Acredula calva*, figured ; BIANCHI, Wiss. Res. Przew. Reis. Vög. ii, pl. vii, figg. 1 & 2.
- A. caudata*, nesting in Hungary ; LINTIA, Aquila xii, pp. 335-337.
- Psaltriparus minimus*, nesting habits ; FINLEY, Condor vii, pp. 91-95 cum tab.
- Ægithalus caudatus* and *A. roseus*, near Leipzig ; HESSE, Ornith. Monber. xiii, pp. 127 & 128.
- Æ. stoliczkæ*, figured ; BIANCHI, Wiss. Res. Przew. Reis. Vög. ii, pl. x, figg. 1 & 2.
- Anthoscopus ansorgei*, n. sp., Benguela ; HARTERT, Bull. B. O. C. xv, pp. 74 & 75 : *A. sharpei*, n. sp., Usambiro, S. of Victoria Nyanza ; id. t. c. p. 75.
- A. minutus* and its allies ; REICHENOW, Vög. Afrikas iii, p. 526 : *A. m. levallanti*, n. subsp., Cape Colony, *A. m. damarensis*, n. subsp., Damara Land ; id. t. c. p. 526.
- Pholidornis* and *Parmoptila*, referred to the *Paridæ* ; REICHENOW, Vög. Afrikas iii, p. 529.
- Xerophila castaneiventris*, figured ; CAMPBELL, Emu iv, pl. xiii, fig. 1.
- Apatema*, n. gen., type *A. olivascens* (Cassin) ; REICHENOW, Vög. Afrikas iii, p. 523.

### Family REGULIDÆ.

Distribution in Italy ; RONNA, Avicula ix, pp. 65-71. Cf. DRESSER, eggs of the birds of Europe (179).

*Regulus regulus anglorum*, n. subsp., British Islands ; HARTERT, Bull. B. O. C. xvi, p. 11.

### Family CERTHIIDÆ.

See HARTERT, Vög. pal. Fauna, Heft. iii, 1905, pp. 316-328.

*Amaurocichla Sharpe*, is a Creeper ; REICHENOW, Vög. Afrikas iii, p. 508. *Certhia familiaris corsa*, n. subsp., Corsica ; HARTERT, Vög. pal. Fauna, heft. iii, p. 320 : *C. f. bianchii*, n. subsp., Mts. of Kansu and N. Szechuen ; id. t. c. p. 321 : *C. f. tianschanica*, n. subsp., Tianshan ; id. t. c. p. 321 : *C. brachydactyla ultramontana*, n. subsp., N. Mediterranean countries ; id. t. c. p. 324.

- C. familiaris persica*, n. subsp., Caspian Provinces of Persia (Ghilan, Masanderam, Asterabad); SARUDNY & LOUDON, Ornith. Monber. xiii, pp. 106 & 107.  
*C. brachydactyla mauritanica*, n. subsp., Algeria and Tunis; WITHERBY, Bull. B. O. C. xv, pp. 35 & 36.  
*C. familiaris* and *C. brachydactyla*, notes on; HARTERT, Ornis. xiii, pp. 58 & 59.  
*C. familiaris americana*, observations on the nesting habits; CHADBOURNE, Auk xxii, pp. 179–183, pls. vi–ix: KENNARD & McKECHNIE, t. c. pp. 183–193, pls. x–xii.

### Family SITTIDÆ.

- Sitta europaea* and its allied forms; PARROT, Ornith. Jahrb. xvi, pp. 113–127.  
*S. e. levantina*, n. subsp., Asia Minor to Palestine; HARTERT, Vög. pal. Fauna, heft. iii, p. 333.  
*S. e. rubiginosa*, TSCHUSI & SARUDNY, Ornith. Jahrb. xvi, p. 140.  
*S. syriaca obscura*, n. subsp., W. Persia; SARUDNY & LOUDON, Ornith. Monber. xiii, p. 76: *S. syriaca* is a distinct species from *S. neumayeri*; iid. t. c. p. 76, note.  
*S. frontalis palawana*, n. subsp., Palawan and Balabac Is.; HARTERT, Bull. B. O. C. xvi, pp. 11 & 12.

### Family ZOSTEROPIDÆ.

- Zosterops lateralis*, from Norfolk Island; NORTH, Rec. Austral. Mus. v, p. 338.  
*Z. palpebrosa alani*, n. subsp., S. Dionisio, Volcano Islands; HARTERT, Bull. B. O. C. xv, p. 45.  
*Z. japonica insularis*, n. subsp., Tanegashima and Yukushima; OGAWA, Annot. zool. Japon. v, pp. 186–190.  
*Z. superciliosa* Reichenow from Lake Dilolo, Upper Congo; DUBOIS, Ann. Mus. Congo i, pp. 16 & 17.  
*Z. völitzkowi*, n. sp., Europa Island, near Madagascar; REICHENOW, Ornith. Monber. xiii, p. 180.  
*Z. deserticola*, n. sp., Great Namaqua Land; REICHENOW, Vög. Afrikas iii, p. 433.

### Family DICÆIDÆ.

- Dicæum sibuyanicum*, young bird described; McGREGOR, Bureau Govt. Labs. Manila, No. 25, p. 18.  
*D. davao*, n. sp., Rio Grande, S. Mindanao; MEARNS, P. Soc. Washington xviii, p. 87.

### Family NECTARINIIDÆ.

- Æthopyga boltoni*, n. sp., Mt. Apo, Mindanao; id. t. c. p. 5.  
*Æthopyga rubrinota*, n. sp., Lubang Is., Philippines; McGREGOR, Bureau Govt. Labs. Manila, No. 25, pp. 30 & 31.  
*Nectarinia erlangeri*, n. sp., S. Somali Land; REICHENOW, Vög. Afrikas iii, p. 496.  
*N. kilimensis* is a *Drepanorhynchus*; OBERHOLSER, P. U. S. Mus. xxviii, p. 931.  
*Helionympha*, n. gen., type *H. nectarinioides* (Richmond); OBERHOLSER, P. U. S. Mus. xxviii, p. 929.  
*Cinnyris chalcomelas*, n. sp., S. Somali Land (Kismayu); REICHENOW, Vög. Afrikas iii, p. 482.

- C. decorsei*, n. sp., Chari, Lake Chad ; OUSTALET, Bull. Mus. Paris 1904, p. 536.  
*C. völitzkowi*, n. sp., Mayotte ; REICHENOW, Ornith. Monber. xiii, p. 181.  
*C. pembae*, n. sp., Pemba Is., E. Africa ; id. t. c. p. 180.  
*Cyrtostomus dinagatensis*, n. sp., Island of Dinagat, Philippine Is ; MEARNS, P. Soc. Washington xviii, pp. 5 & 6.  
*Chalcomitra oritis*, figured ; REICHENOW, Vög. Afrikas, pl. xvii, fig. 1 : *C. borgaerti*, n. sp., E. Usambara Hills, German East Africa ; id. Ornith. Monber. xiii, p. 182.  
*Cinnyris olivacea ragazii*, distinct from *C. olivacea* ; OBERHOLSER, P. U. S. Mus. xxviii, p. 927.  
*Anabathmis*, n. gen., type *A. thomensis* (Bocage) ; REICHENOW, Vög. Afrikas iii, p. 467.  
*Anthreptes rubritorques*, n. sp., Usambara, German East Africa ; id. Ornith. Monber. xiii, p. 181.  
*A. cagayanensis*, n. sp., Island of Cagayan Sulu, Philippine Is. ; MEARNS, P. Soc. Washington xviii, p. 6.  
*A. gabonicus*, figured ; REICHENOW, Vög. Afrikas iii, pl. xvii, fig. 2.  
*A. orientalis* = *A. longuemarii* ; id. t. c. p. 446.

### Family MELIPHAGIDÆ.

- Myzomela obscura grisescens*, n. subsp., N. Territory of South Australia ; HARTERT, Nov. Zool. xii, p. 235.  
*Melithreptus magnirostris*, n. sp., Kangaroo Island, South Australia ; NORTH, Rec. Austral. Mus. vi, pp. 20 & 21, pl. v, figg. 1 & 2.  
*M. brevirostris*, note on ; id. t. c. p. 338.  
*Ptilotis fasciogularis*, eggs described ; CAMPBELL, Emu iv, p. 137.  
*P. versicolor*, nest and eggs described ; NORTH, Victorian Natural. xxi, pp. 167 & 168 : notes on ; id. Rec. Austral. Mus. vi, pp. 29 & 30, pl. v, fig. 3.  
*Philemon citreogularis sordidus* distinct from *P. citreogularis* ; HARTERT, Nov. Zool. xii, p. 232.  
*Entomyza cyanotis* and its allies ; id. t. c. pp. 232 & 233.

### Family DREPANIDIDÆ.

- Chlorodrepanis chloris* and *C. virens*, nesting habits ; BRYAN, Occ. Pap. Honolulu Mus. ii, pp. 46-52.  
*Oreomystis maculata*, nest and eggs described ; id. t. c. pp. 48 & 49, fig. 3.  
*Himatione sanguinea*, note on ; id. t. c. p. 46.  
*Loxioides baillieu*, nest and eggs described ; NEHRKORN, J. Ornith. 1905, pp. 419 & 420 : BRYAN, Pap. B. P. Bishop Mus. ii, pp. 59 & 60 cum fig.  
*Psittirostra psittacea deppei*, nom. nov., vice *P. psittacea olivacea* Rothschild, nec Ranzani ; ROTHSCHILD, Bull. B. O. C. xv, p. 45.  
*Heterorhynchus wilsoni*, nest and eggs described ; BRYAN, Occ. Pap. Honolulu Mus. ii, pp. 61 & 62 cum fig.

### Family MNIOTILTIDÆ.

- Migration in South-east Lousiania and Southern Mississippi ; KOPMAN, Auk xxii, pp. 289-296 : the winter ranges ; COOKE, t. c. pp. 296-299. See THAYER (685).  
*Vermivora*, Swains. vice *Helminthophila* Ridgw. ; OBERHOLSER, Smithson. Collect. quart. xlvi, pp. 66 & 67.

- Helminthophila celata*, winter resident in South Carolina; WAYNE, Auk xxii, p. 417.
- H. leucobronchialis*, at Englewood, New Jersey; HIX, Auk xxii, pp. 417 & 418.
- H. leucobronchialis* and *H. lawrencei*, status of; BISHOP, Auk xxii, pp. 21-24.
- H. bachmanii*, notes on the breeding and a description of the first plumage of the young bird; BREWSTER, Auk xxii, pp. 392-394.
- Vermivora celata*, notes on the species and its forms; OBERHOLSER, Auk xxii, pp. 242-247.
- V. celata orestera*, n. subsp., Willis, New Mexico; id. t. c. pp. 243 & 244.
- Compsothlypis americanus usneæ*, in Wayne Co., Michigan; SWALES, Auk xxii, pp. 84 & 85.
- Dendroica aestiva*, supposed occurrence in Grenada, West Indies; CLARK, Auk xxii, pp. 212-214: in Durham; BIDWELL, Bull. B. O. C. xv, p. 46: GRACE, t. c. pp. 46 & 47.
- D. townsendi*, distribution in California during migration; GRINNELL, Condor vii, pp. 52 & 53.
- D. auduboni* and *D. coronata* figured; COOKE, Bird Lore viii, pl. i.
- D. a. nigrifrons*, in Southern California; WAYNE, Auk xxii, p. 419.
- D. coronata*, at Cape Elizabeth, Maine, in January; BROWNSON, Auk xxii, p. 418.
- D. kirtlandi*, its range; TAVERNER, Ont. Nat. Sci. Bull. i, pp. 13-17: near Richmond, Indiana; DENNIS, Auk xxii, p. 314.
- Seiurus motacilla*, at Philadelphia in summer; ROGERS, Auk xxii, p. 419.
- S. noveboracensis*, nesting at Lancaster, Massachusetts; THAYER, Auk xxii, pp. 418 & 419.
- Setophaga ruticilla*, resident in Dominica, West Indies; CLARK, Auk xxii, p. 419.
- S. chrysogaster* Tschudi and *Basileuterus diachlorus* Cab. = *Basileuterus bivittatus chrysogaster*; BERLEPSCH & HELLMAYR, J. Ornith. 1905, pp. 6 & 7.
- Basileuterus*, notes on species and on Tschudi's types; iid. l. c.
- Myiodioctes tristriatus* Tschudi is a *Basileuterus*; iid. t. c. p. 7.
- Wilsonia mitrata*, at Falmouth in Maine; BROWNSON, Auk xxii, p. 85.

### Family MOTACILLIDÆ.

See HARTERT, Vög. pal. Fauna, Heft. iii, 1905, pp. 263-310.

*Motacilla alba* and its allies; HARTERT, Vög. pal. Fauna, Heft. iii, pp. 301-309.

*M. lugubris*, nesting in a hedge; READ, Zoologist 1905, p. 33.

*M. subpersonata* a form of *M. alba* rather than *M. personata*; HARTERT, Ibis 1905, pp. 98-101.

*M. flava*, and its allies; HARTERT, Vög. pal. Fauna, heft. iii, pp. 287-296: *M. boarula* and its allies; id. t. c. pp. 298-301.

*M. flava simillima*, n. subsp., Kamtschatka; id. t. c. p. 289.

*M. raii* and *M. melanope* in confinement; BUTLER, Avicult. Mag. (2) iii, pp. 271-274.

*Budytés leucocephala* figured; BIANCHI, Wiss. Res. Przew. Reis. Vög. ii, pl. x, figg. 3 & 4.

*Agrodroma godlewskii* Tacz. = *Anthus richardi striolatus* Blyth; HARTERT, Vög. pal. Fauna, heft. iii, p. 266.

*Anthus spipoletta*, at Eastbourne; ARNOLD, Zoologist 1905, p. 142.

*A. anadyrensis*, n. sp., River Gichiga, N. E. Siberia; ALLEN, Bull. Amer. Mus. xxi, p. 254.

- A. leucophrys captus*, n. subsp., Palestine to Persia and N. W. India; HARTERT, Vög. pal. Fauna, pp. 269 & 270: *A. berthelotii madeirensis*, n. subsp., Madeira; id. t. c. p. 271: *A. spinolella kleinschmidti*, n. subsp., Faroe Islands; id. t. c. p. 284.
- A. nicholsoni longirostris*, n. subsp., Gandjule Lake, N. E. Africa; NEUMANN, Ornith. Monber. xiii, p. 77 = *A. nicholsoni*; REICHENOW, Vög. Afrikas iii, Nachtrag, p. 839.
- Anthus nivescens*, n. sp., Kismayu, Somali Land; REICHENOW, Ornith. Monber. xiii, p. 179.
- A. richardi* and *A. infuscatus* in S. E. China; LA TOUCHE & RICKETT, Ibis 1905, pp. 46-48.
- Macronyx*, notes on East African species of the genus: *M. sharpei* figured; JACKSON, Ibis 1905, pp. 101-104, pl. iii.
- Tmetothylacus tenellus* Cab., its habits; id. t. c. p. 194.

### Family ALAUDIDÆ.

See HARTERT, Vög. pal. Fauna, Heft. iii, 1905, pp. 241-263.

*Certhilauda somalica*, figured; WITHERBY, Ibis 1905, p. 512, pl. x.

*Alaemon alaudipes* and its allies; HARTERT, Vög. pal. Fauna, Heft. iii, pp. 250 & 251.

*A. hamertoni*, n. sp., E. Somali Land; WITHERBY, Ibis 1905, p. 513: *A. h. altera*, n. subsp., Wasangali Country, Somali Land; id. t. c. p. 514.

*Eremophila alpestris* and its allies; HARTERT, Vög. pal. Fauna, Heft. iii, pp. 255-263.

*Otocoris alpestris praticola*, on Mount Washington, N. H.; TORREY, Auk xxii, pp. 414 & 415.

*O. brandti montana*, n. subsp., Western Tian-shan; BIANCHI, Wiss. Res. Przew. Reis. Vög. ii, pp. 227-231: *O. b. przewalskii*, n. subsp., Southwest Zaidam; id. t. c. pp. 231-236: *O. elwesi khamensis*, n. subsp., Tibet; id. t. c. pp. 249-251.

*Calendula dunni* Shelley is a *Galerida*; REICHENOW, Vög. Afrikas iii, p. 840.

*Mirafra javanica* and its Australian allies; HARTERT, Nov. Zool. xii, p. 237: *M. woodwardi*, figured; CAMPBELL, Emu iv, pl. xiii, fig. 2: *M. collaris*, E. Somali Land; WITHERBY, Ibis 1905, p. 511.

*Alauda galerita* and *A. theckla* in Algeria; KLEINSCHMIDT, Falco i, pp. 85-90.

*Galerida*, notes on Palæarctic species; HARTERT, Nov. Zool. xii, pp. 502 & 503.

*G. thecklae superflua*, notes on; WHITAKER, Ibis 1905, pp. 195 & 196.

*G. cristata*, note on the species near St Petersburg; BIANCHI, Annaire Mus. St Petersb. ix, p. xxxviii.

*G. c. meridionalis*, in Greece; PARROT, J. Ornith. 1905, pp. 640-643.

*G. c. carthaginensis*, nom. n. pro *G. c. macrorhyncha* Erl. (nec Tristr.), Tunis; KLEINSCHMIDT & HILGERT, Ornith. Monber. xiii, p. 188: *G. cristata gafse*, n. sp., Tunis (*G. c. arenicola* Erl. nec Tristr.); iid. t. c. p. 189.

*Galerida*, review of North African species; iid. t. c. pp. 189 & 190.

*Alauda*, notes on Palæarctic species; HARTERT, Nov. Zool. xii, p. 501.

*A. buxtoni*, n. sp., Gichiga River, N. E. Siberia; ALLEN, Bull. Amer. Mus. xxi, p. 247.

*A. arvensis* and its allies; HARTERT, Vög. pal. Fauna, Heft. iii, pp. 244-250.

*Ammomanes*, review of the genus; BIANCHI, Bull. Ac. St. Petersb. xxi, pp. 231-246 (Russian); Cf. OTTO, J. Ornith. 1905, pp. 601-618.

- Pseudammomanes*, n. subgen., Type *Ps. ferruginea* (Smith); BIANCHI, t. c. p. 241.  
*Ammomanopsis*, n. subgen., Type *A. grayi* (Wahlb.); id. t. c. p. 241.  
*Ammomanoides*, n. subgen., Type *A. phoenicuroides* (Blyth); id. t. c. p. 241.  
*A. samharensis* distinct from *A. assabensis*; HARTERT, Nov. Zool. xii, p. 302.  
*Spizocorys obbiensis*, n. sp., Obbia, E. Somali Land; WITHERBY, Ibis 1905, pp. 514 & 515.  
*Lullula arborea* and its allies; HARTERT, Vög. pal. Fauna, Heft. iii, pp. 241-243.  
*Pyrrhulauda butleri* Shelley, notes on; BUTLER, Ibis 1905, pp. 311-314.  
*P. leucotis* and *P. melanocephala*, notes on; id. l. c.

### Family FRINGILLIDÆ.

- Chloris chloris* in Greece: *C. c. aurantiventris*, notes on; PARROT, J. Ornith. 1905, pp. 647.  
*Coccothraustes coccothraustes*, note on the species near St. Petersburg; BIANCHI, Annuaire Mus. St Petersb. ix, p. xxxiii.  
*C. vulgaris*, structure of skull; PYCRAFT, Bull. B. O. C. xv, pp. 37 & 38.  
*C. v. buvryi* Cab. from Algeria, is a distinct form of Hawfinch; WITHERBY, Bull. B. O. C. xv, p. 37: primaries figured; id. Ibis 1905, pp. 192 & 193, text-fig. 15.  
*Oryzoborus fringilloides* Pelz. is a *Dolospingus*; BERLEPSCH & HELLMAYR, J. Ornith. 1906, pp. 23 & 24.  
*Spermophila albicularis*, nesting in captivity; FARRAR, Avicult. Mag. (2) iii, pp. 358-362.  
*Cardinalis cardinalis*, wintering in Concord, Mass.; HOWE, Auk xxii, p. 211.  
*Fringilla cælebs africanus*, notes on; WITHERBY, Ibis 1905, p. 194.  
*F. montifringilla* near Cologne on the 19th of June, 1905; REICHENOW, Ornith. Monber. xiii, p. 149.  
*F. teydea polatzeki*, n. subsp., Gran Canaria Isl.; HARTERT, Ornith. Monber. xiii, p. 164.  
*Procarduelis nipalensis*, in the Shan States, Burma; COMBER, J. Bombay Soc. xvi, p. 739.  
*Carduelis carduelis* and its allied forms, that from Greece being probably undescribed; PARROT, J. Ornith. 1905, pp. 653-657.  
*C. elegans*, on Norfolk Island; NORTH, Rec. Austral. Mus. v, p. 338.  
*C. elegans* and *Ligurinus chloris*, notes on; FRIEDRICH, Arch. Ver. Mecklenburg lviii, pp. 156-162.  
*Spinus citrinelloides* and its allies; NEUMANN, J. Ornith. 1905, pp. 354-358: *S. e. kikuyuensis*, n. subsp., Kikuyu, Mt. Kenya, Naivascha Lake; id. t. c. p. 356.  
*S. pinus*, breeding at Guelph, Ontario; KLUGH, Auk xxii, p. 415.  
*Linota rufostrigata*, n. sp., Tibet; WALTON, Bull. B. O. C. xv, p. 90.  
*Cannabina rufescens* nesting in Berkshire; PROCTOR, Bull. B. O. C. xv, p. 88: in Kent; MEADE-WALDO, t. c. p. 88.  
*Acanthis hornemannii exilipes*, in Montana; CAMERON, Auk xxii, p. 313.  
*Montifringilla nivalis* in Sussex; NICOLL, Bull. B. O. C. xv, p. 58.  
*Petronia petronia algeriensis*, n. subsp., Algeria; KOLIBAY, Ornith. Monber. xiii, pp. 23 & 24.  
*Passer montanus* var. *pallidus*, n. subsp., E. Persia; SARUDNY, Denkschr. K. Russ. Geogr. Ges. xxxvi, p. 262: (1903), cf. OTTO, Ornith. Monber. xiii, p. 135.  
*Passer domesticus*, at Tucson, Arizona; BRENNINGER, Auk xxii, p. 417: 1905. [VOL. XLII.]

- notes on the species in the United States; SKINNER, Rep. Smithson. Inst. 1905, pp. 423-428.
- P. domesticus* and *P. italicæ*, notes on the allied forms; TSCHUSI, Ornith. Jahrb. xvi, pp. 215-219.
- Passer griseus* and its allies, 8 races recognised; NEUMANN, J. Ornith. 1905, pp. 352 & 353.
- Poliospiza erlangeri*, n. sp., Arussi-Gala Land, N. E. Africa; REICHENOW, Ornith. Monber. xiii, p. 146: *P. collaris*, n. sp., Gurra Land, N. E. Africa; id. t. c. p. 146: *P. pachyrhyncha*, n. sp., Damaso, N. E. Africa; id. t. c. pp. 146 & 147.
- Serinus sharpei* from Mossamedes; W. L. SCLATER, Ann. S. Afr. Mus. iii, p. 372.
- Sycais arvensis*, breeding in captivity; BUTLER, Avicult. Mag. (2) iii, pp. 97-101.
- Hæmatospiza indica* (Gm.) the name for *H. sipahi*; its synonymy; RICHMOND, P. Soc. Washington xviii, pp. 75 & 76.
- Propasser waltoni*, n. sp., S. Tibet; SHARPE, Bull. B. O. C. xv, p. 95.
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*Neospiza gougenensis* (fig. 2) and *N. jessiae* (fig. 1) figured; EAGLE CLARKE, Ibis 1905, pl. vi.  
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*Coereba gorgonae*, n. sp., Gorgona Is., Colombia; THAYER & BANGS, Bull. Mus. Harvard xlvi, pp. 97 & 98.  
*Cyanerpes gigas*, n. sp., Gorgona Is., Colombia; iid. t. c. pp. 96 & 97.  
*Diglossa pectoralis unicincta*, n. subsp., N. Peru; HELLMAYR, Nov. Zool. xiii, p. 564.  
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*D. cayana callaina*, n. subsp., Divala, Chiriquí; BANGS, P. Soc. Washington xviii, pp. 154 & 155.

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*Tanagrella velia signata*, n. subsp., Pará; HELLMAYR, Bull. B. O. C. xv, p. 90.  
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*C. pulchra*, *C. sophiae*, and *C. xanthocephala*, notes on; iid. t. c., pp. 7 & 8.  
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*Tanagra cana dilucida*, n. subsp., San Miguel Is., Bay of Panama; THAYER & BANGS, Bull. Mus. Harvard xlvi, pp. 157 & 158.

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*Coliuspasser soror*, figured ; t. c. pl. xxix, fig. 2 : *Urobrachya axillaris*, var. *U. affinis*, figured ; id. t. c. pl. xxx, fig. 2 : *U. zanzibarica* (fig. 1) and *U. affinis* (fig. 2), figured ; id. t. c. pl. xxx.
- Pyromelana ladoensis*, figured ; id. t. c. pl. xxix, fig. 1.  
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- P. flammiceps petiti* is distinct from *P. flammiceps* ; NEUMANN, J. Ornith. 1905, p. 344 : *P. f. sylvatica*, n. subsp., Cameroons to Angola ; id. t. c. p. 345.
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- Euplectes capensis xanthomelas* and its allies, notes on ; NEUMANN, J. Ornith. 1905, p. 346.
- Philæterus cabanisi euchorus* Oberh. = *Pseudonigrita cabanisi* (F. & R.) ; REICHENOW, Vög. Afrikas iii, p. 839.
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- Pyrenestes coccineus*, its habits ; KEMP, Ibis 1905, p. 239 : *P. minor*, figured ; SHELLEY, t. c. pl. xxxv, fig. 2.
- Cryptospiza jacksoni* (fig. 2), *C. shelleyi* (fig. 3), figured ; SHELLEY, t. c. pl. xxxv.
- Quelea cardinalis* from the Zambesi ; W. L. SCLATER, Ann. S. Afr. Mus. iii, p. 370.
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- L. niveiguttata*, figured ; SETH-SMITH, Avicul. Mag. (2) iii, pl. to p. 119.
- L. polionota* in Sierra Leone ; KEMP, Ibis 1905, pp. 244 & 245.
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*Neisna dufresneyi nyansæ*, n. subsp., Victoria Nyanza ; NEUMANN, J. Ornith. 1905, pp. 50.  
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*E. stictoptera*, n. sp., Mayotte Island ; REICHENOW, Ornith. Monber. xiii, p. 180 : *E. rhodopyga* (fig. 1) and *E. vinacea* (figg. 2 & 3), figured ; SHELLEY, B. Africa, iv, pl. xxxii.  
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*Sitagra aliena*, figured ; id. t. c. pl. xxxix, fig. 2.  
*Ploceus ocularius abayensis*, n. subsp., Gudji, E. of Lake Abaya ; NEUMANN, J. Ornith. 1905, p. 339 : *P. o. suahelicus*, n. subsp., Usumbara ; id. t. c. pp. 339 & 340 : range of the species ; id. t. c. p. 340.  
*Sycobrotus stictifrons*, figured ; SHELLEY, B. Africa iv, pl. xxxix, fig. 1.  
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*Cassiculus melanicterus* in S. Sinaloa, remarks on ; MILLER, Bull. Amer. Mus. xxi, pp. 360 & 361.  
*Callothrush* Cassin, 1866 = *Tangavius* Lesson, 1839 ; NELSON, P. Soc. Washington xviii, pp. 125 & 126 : *C. robustus* = *Tangavius involucratus* Less. ; id. t. c. p. 125.  
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*O. monachus permistus* and allies, notes on distribution of this and allied species ; notes on *O. larvatus rolleti*, *O. l. angolensis*, n. subsp., Angola to the Okavango River ; NEUMANN, J. Ornith. 1905, p. 236.  
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- Lamprocorax todayensis*, n. sp., Todaya (4000 feet), Mindanao, Philippine Is. ; MEARNS, P. Soc. Washington xviii, p. 88.  
*Cosmopsarus regius*, eggs described ; ERLANGER, J. Ornith. 1905, p. 711.  
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*tincta* ; id. Vög. Afrikas iii, Nachtrag, p. 837 : *A. morio shelleyi* Hartert = *A. m. rüppelli* ; id. t. c. p. 837 : *A. fulgidus harterti* Neumann = *O. hartlaubi* Gray ; id. t. c. p. 837 : *A. gracilirostris* Neumann = *A. cinnamopterus* ; id. t. c. p. 838 : *A. dubius* Richmond = *Stilbopsis kenricki* ; id. t. c. p. 838.  
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- Ptilonorhynchus violaceus*, changes of plumage; BUTLER, Ann. Nat. Hist. (7) xvi, pp. 350 & 351.
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# IV. REPTILIA AND BATRACHIA.

BY

I. B. J. SOLLAS.

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## V. PISCES.

BY

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*Pataecus maculatus*, Gthr., figured, WAITE, Rec. Austral. Mus. p. 75, pl. xv.

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*Tilestina*, g. n. for *T. gibbosa*, sp. n., SCHMIDT, in Russian, Pisc. marium orient. imp. ross. 1904, p. 134, pl. iv.

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*Podothecus thompsoni*, figured, SCHMIDT, t. c. p. 143, pl. iv.

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## VI. TUNICATA.

BY

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## II. SUBJECT-INDEX.

## A. ANATOMY, PHYSIOLOGY and GENERAL.

- General account of Tunicata continued ; SEELIGER (37).  
 General account of anatomy and physiology of *Tunicata* ; ALDER & HANCOCK (1).  
 Review of literature for 1899-1903 ; MATZDORFF (21 & 22).  
 Anatomy of *Oikopleura* and *Fritillaria* ; SALENSKY (34) : of *Dolchinia* ; KOROTNEFF (18).  
 Structure of eyes in *Salpa*, spp. ; REDIKORZEW (30) : of eyes and neural gland in *Salpa* and *Cyclosalpa* ; METCALF & JOHNSON (23).  
 Structure of "heart" in *Appendiculariae* ; SALENSKY (35).  
 Physiology of heart in Ascidians ; CARLSON (5).  
 Circulation in Tunicata ; PIZON (29).  
 Structure of Spermatozoa in *Oikopleura* and *Botrylloides* ; RETZIUS (31).  
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 Self-fertilisation artificially induced in *Ciona* ; MORGAN (25).  
 Degeneration and regeneration in *Clavellina* ; DRIESCH (10).  
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 Revision of Heller's types in Museum Godeffroy ; MICHAELSEN (24).

## B. EMBRYOLOGY.

- Embryology of *Pyrosoma* ; KOROTNEFF (17).  
 Early development of Tunicata compared with other Chordata ; CONKLIN (8).  
 Early development of *Cynthia* ; CONKLIN (6) : of *Cynthia* and *Molgula* ; CONKLIN (7).  
 Development of Mesoderm and structure of tail in Ascidian larvæ ; HEINEMANN (13).  
 Development of colony and budding in *Diplosoma* ; PIZON (27).  
 Growth of colony in *Botryllus* studied by cinematograph ; PIZON (28).

## C. DISTRIBUTION.

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- Norway, lists of spp. ; NORDGAARD and others (26) : Norwegian seas to Iceland, n. spp. ; BJERKAN (2) : Drøbaksund, Norway, lists ; KIÆR (16).  
 North Sea and Zuyder Zee, *Appendiculariae* ; VAN BREEMEN (3).  
 British Seas, *Ascidia*, n. spp. ; ALDER & HANCOCK (1) : Firth of Clyde, *Appendiculariae* ; BROWNE (4) : Irish Sea, *Oikopleura* ; A. SCOTT (36) : Valencia, Ireland, pelagic Tunicata ; DELAP (9).  
 Bay of Biscay, *Thaliacea* ; FOWLER (11).  
 Coast of French Somaliland, n. spp. ; SLUITER (39 & 40).  
 Mauritius, n. spp. ; HARTMEYER (12).  
 Bass' Straits, *Polycarpa*, n. spp. ; MICHAELSEN (24).  
 Malay Archipelago, n. spp. ; SLUITER (38).  
 Tropical Pacific, pelagic Tunicata, n. sp. ; RITTER & BYXBEE (33).  
 California, n. sp. ; RITTER (32).  
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## 2. Geological.

[Vacant.]

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- A. amœna*, Britain, p. 116, pl. xi, figg. 1 & 2, pl. xviii, fig. 2, *morei*, Dublin, p. 126, pl. xiv & text-fig. 23; ALDER & HANCOCK, t. c.: *A. obocki* and *somaliensis*, p. 101; SLUITER, Bull. Mus. Paris xi, 1905: *A. obocki*, p. 7, pl. i, figg. 1-1c, *somaliensis*, p. 8, pl. i, figg. 2-2b, Tadjourah; SLUITER, Mem. Soc. zool. France xviii : n. spp.
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- Polyclinum festum*, Mauritius, p. 400, pl. xiii, figg. 6 & 7 ; HARTMEYER, Zool. Jahrb. Suppl. viii, n. sp.
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- S. doliolum*, Norwegian Seas, p. 8, pl. i, figg. 7-8, pl. ii, figg. 1-4 ; BJERKAN, Bergens Mus. Aarbog 1905, No. 5 : *S. natalis*, Mauritius, p. 387, pl. xiii, figg. 8-11 ; HARTMEYER, Zool. Jahrb. Suppl. viii : *S. miniata*, Somali coast ; SLUITER, Bull. Mus. Paris xi, 1905, p. 102, and Mem. Soc. zool. France xviii, p. 11, pl. i, figg. 4-4c, n. spp.
- Thaliacea* of Valencia ; DELAP, Ann. Rep. Fish. Ireland, 1902-03, Pt. ii, App. I, pp. 1-9.

## VII. MOLLUSCA.

BY

E. R. SYKES, B.A.

Assisted by E. A. SMITH, I.S.O.

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## INTRODUCTION.

THE literature attributable to the year 1905 seems to be of about the usual standard, both in quality and quantity.

As usual, we have to chronicle further progress by PILSBRY (600) with 'Tryon's Manual,' he having continued his study of the *Achatinidae*. KOBELT (387) has continued 'Martini & Chemnitz,' dealing with the *Agnatha*, *Naninidae* and *Helix*. Further portions of 'Bronn's Thierreich' from the pen of SIMROTH (68) have appeared and another part of TAYLOR's (591) account of the British non-marine fauna ; more rapid progress would double the value of these works. Both BERGH (42) and KOBELT (339, 343) have written in Semper's well-known 'Reisen,' on the marine and land fauna of the Philippines, respectively : the latter author having also continued (340, 495) his study of the Palaearctic non-marine fauna and the account of the European marine Mollusca.

The marine 'Expeditions' have not been so prolific as in the last few years. MEISENHEIMER (394) has written an elaborate account of the Pteropods collected during the German deep-sea Expedition, with valuable details, both anatomical and geographical. NIERSTRASZ (420) and BERGH (41) have described the Chitons and Opisthobranchs of the 'Siboga' Expedition, respectively, and ELIOT (201) the Nudibranchs of the 'Antarctic,' while HÄGG (257) has completed the review of the forms found during the Swedish Polar Expedition.

Several papers relating to Nudibranchs may perhaps be grouped together. The East African fauna has been studied by ELIOT (200) ; that of California by COCKERELL & ELIOT (128) and, so far as regards the *Dorididae*, by MACFARLAND (376) ; the South Australian species have been catalogued by BASEDOW & HEDLEY (30) ; while New Zealand has received attention from BENHAM (40).

The European *Turbinidae* and Opisthobranchs have been reviewed by LOCARD (364, 365). To FARRAN (204) we owe a useful account of some Opisthobranchs from Ceylon, while a number of shells from that island have been described by PRESTON (474) and SOWERBY (553). HIDALGO (285) has issued a catalogue of the marine fauna of the Philippines, and PILSBRY (459) has described further Japanese forms. As of old, HEDLEY (266, &c.) has written on the Australian fauna ; SUTER (572, &c.) has added to our knowledge of New Zealand Molluscs ; while Miss LODDER (367) has catalogued the species of Tasmania. Further studies on the Magellanic Mollusca have been written by STREBEL (568, 569).

Turning to papers devoted especially to non-marine forms, we may firstly note those by BOETTGER (57) on the Cameroons ; GERMAIN (228, &c.) on Central Africa ; and NEUVILLE & ANTHONY (414, 415) on Abyssinia. The contributions on the Asiatic fauna are of considerable interest : PILSBRY & HIRASE (461, 462) have described further shells from the Japanese Empire and given an account of the Formosan Molluscs ; DAUTZENBERG & FISCHER (171) have added to our knowledge of the fauna of Tonkin ; MARTENS (384) has dealt with some freshwater shells from Corea ; and BLanford (47)—whose name we deeply regret appears for the last time—has described some Zonitoids from the Indian Region. DALL (165) has written a valuable account of the Alaskan fauna. As usual several papers have appeared relating to the North American fauna, notably by BAKER (19, &c.), CLAPP (114, &c.), PILSBRY (553, &c.), STERKI (562, &c.), WALKER (620, &c.), and WHITEAVES (663, &c.) ; special mention may be made of PILSBRY's (460) on the *Urocoptidae* and *Helicidae* of the South Western States. The Bahamas Mollusca have been studied by DALL (158, 159). Several notes on the Neozelanian fauna by SUTER (575, &c.) will repay attention.

Artificial parthenogenesis has been studied by LOEB (368, 369); MARCEAU (378, &c.) has worked on the heart and muscles; SPILLMANN (555) the heart in the Diotocards; CARLSON (86, &c.) the physiology of the heart, &c.

Cephalopod anatomy has attracted a number of workers; we can only mention MERTON (404) on the retina, HESS (278) on the eye, and the papers by SCHWEIKART (510) and JOUBIN (313, 315).

Amongst the papers dealing with Gastropod embryology may be named those of OTTO & TÖNNIGES (430) on *Paludina*, WIERZEJSKI (642) on *Physa*, and SCHIMKEWITSCH (505, 506) on *Philine*. PILSBRY (450, &c.) has given a useful account of the anatomy of some Helicoids; SIMROTH (529, &c.) has issued some notes on Slugs; and we record the paper by REYNELL (487) on *Cassidaria*, as also those of DISTASO (184, &c.) on *Cæcidæ* and *Dentalium*. The Gastropod protoconch has been studied by KESTEVEN (327, 328). A curious case of duplication of the eye in *Helix* has been noticed by WIEGMANN (640). The development of Pelecypods has formed the subject of papers by ANTHONY (11, &c.); LLOYD (363) has dealt with the boring mechanism in molluscs; while HERDMAN (275, &c.) and BLOOMER (49, &c.) have, respectively, written on the anatomy of the Pearl Oyster and the *Solenidae*. The habits and anatomy of the Amphineura have been studied by HEATH (263, &c.), and we may notice the paper by SCHWEIKART (510).

A review of the genera of the *Mytilidæ* has been issued by JUKES-BROWNE (317). WAGNER'S (617, 618) studies on *Helicina* have resulted in a very large number of new names, which may duly be seen in the systematic portion. A useful task has been undertaken by MAY (391) who has critically reviewed a number of Tenison-Woods' 'types.'

In conclusion, I would desire, since after the present year the form of the 'Record' will be altered, to take this, the last, opportunity of expressing my grateful thanks not only to Mr Edgar Smith, who has kindly assisted me for so many years past, but also to those many friends, by whose help in furnishing reprints and pointing out errors of commission and omission, it has alone been possible to fulfil my task.

## I. TITLES.\*

1. ADAMS, L. E. Conchological notes from the United States. J. Conch. xi, pp. 165-168.
2. —. A Plover with *Anodonta cygnea* attached to its foot. T. c. p. 175.
3. —. An account of the Mussel fishery and pearl-button industry of the Mississippi River. T. c. pp. 212-215.  
—. [See also WRIGHT & ADAMS (653).]
4. AIRAGHI, C. Ammoniti triasici (Muschelkalk) del M. Rite in Cadore. Boll. Soc. geol. Ital. xxiv, pp. 237-256, pl. viii.
5. ALDRICH, T. H. A new species of *Somatogyrus* from South Alabama. Nautilus xviii, p. 140, fig.
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8. ANCEY, C. F. Remarks on some land and fresh-water shells from the New Hebrides, with description of new species. *Nautilus* xix, pp. 42-46.
9. ANDREÆ, A. Kurzer Ueberblick über das Miocän von Oppeln i. Schles. und seine Fauna. *Zeitschr. Deutsch. geol. Ges.* lvi, Prot., pp. 249-255, figg.
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11. ANTHONY, R. La constitution de l'arête ligamentaire et l'évolution du ligament chez les Acéphales actuels analogues aux Rudistes (*Aetheriidæ*). *C.R. Ac. Sci. cxl*, pp. 948-950, figg.
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## B.—DISTRIBUTION.

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West Africa:—N. spp. of *Homorus* and *Trichodina*; PILSBRY in TRYON (600).

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### 9. South African Region.

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### 11. Afro-Arabian Region.

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### 12. Indian Region.

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Christinas Island :—*Jaminia proscripta*, n. sp.; SMITH (547).

### 13. Indo-Chinese Region.

Burma :—N. spp. of *Macrochlamys*; BLANFORD (47).

Siam :—*Chamberlainia pavonina*, n. sp.; ROCHEBRUNE (491).

Tonkin :—List of Collection, with n. varr., notes on synonymy, and n. spp. of *Helix*, *Kaliella*, *Limnaea*, *Mællendorfia*, *Streptaxis*, and *Unio*; DAUTZENBERG & FISCHER (171); *Tortaxis lubricus*, ? n. sp.; PILSBRY in TRYON (600); *Simpsonia demangei*, n. sp.; ROCHEBRUNE (491); N. spp. of *Philomycus*; SIMROTH (529); *Aphanoconia halongensis*, n. sp.; WAGNER (617).

Yunnan :—*Ariophanta innata*, n. sp.; FULTON (217).

### 14. Indo-Malay Region.

Borneo :—N. spp. of *Cyclotus*, *Diplommatina*, *Helicarion*, and *Lagochilus*; FULTON (217).—North Borneo : *Opisthostoma fraternum*, n. sp.; SMITH (545).—Sarawak : Three n. spp. of *Opisthostoma*; SMITH (539).

Banguey I. :—*Aphanoconia trichroa*, n. sp.; WAGNER (617).

Java :—*Chloritis malangensis*, n. sp.; BULLEN (79); *Plectotropis leucocilia*, n. sp.; GUDE (252).

Java and Sumatra :—*Prosopeas holosericum*, n. sp.; PILSBRY in TRYON (600).

Bawean :—N. subspp. of *Amphidromus*; FRUHSTORFER (214).

Engano :—N. subspp. of *Amphidromus*; FRUHSTORFER (214).

Gisser I. :—Varieties of *Xesta citrina* and *Planispira zebra*; BULLEN (79).

West Sumatra :—*Amphidromus bulowi*, n. sp.; FRUHSTORFER (213); N. spp. of *Dyakia*; SYKES (583).

### 15. Philippine Region.

Philippines :—*Helicostyla mearnsi*, n. sp.; BARTSCH (28); Species of *Inozonites* and *Trochomorpha*; KOBELT (339); Of *Obbina*; KOBELT & WINTER (343); *Sulfurina euchromia*, n. sp.; WAGNER (618).

### d. AUSTRALIAN ZONE.

#### 16. Austro-Malayan Region.

New Guinea :—*Planispira tectorium*, n. sp.; FULTON (220); N. spp. of *Aphanoconia* and *Sulfurina*; WAGNER (617).—British New Guinea: *Planispira blackiana*, n. sp.; PRESTON (471); N. spp. of *Chloritis*, *Hemiplecta*, *Papuina*, and *Rhyssota*; SMITH (546); *Palaeohelicina hara*, n. sp.; WAGNER (618).

Kei Is. :—*Aphanoconia keiensis*, n. sp.; WAGNER (617).

Aru :—*Chloritis linteræ*, n. sp.; GUDE (252).

Woodlark I. :—*Aphanoconia braueri*, n. sp.; WAGNER (617).

Halmahera :—*Sulfurina lauræ*, n. sp.; WAGNER (617).

Louisiades :—N. spp. of *Aphanoconia* and *Palaeohelicina*; WAGNER (617).

New Ireland :—N. spp. of *Papuina*; FULTON (220).

Solomon Is. :—*Papuina lilium*, n. sp.; FULTON (220).

#### 17. Australian Region.

South Australia :—Shells from North-West Territory, with n. spp. of *Thersites* and *Xanthomelon*; HEDLEY (270); *Thalassia cyrtochila*, n. sp.; GUDE (252).

New South Wales :—*Sitala pudica*, n. sp.; GUDE (252).

Tasmania :—Notes on fauna; LODDER (367); Shells from Maria Island with n. spp. of *Ancylus* and *Helix*; PETTERD (447).

#### 18. Austro-Polynesian Region.

Samoa :—*Sturanya jetschini*, n. sp.; WAGNER (617).

New Caledonia :—N. spp. of *Charopa* and *Endodonta*; GUDE (252).

Loyalty Is. :—*Charopa lifuana*, n. sp.; GUDE (252).

New Hebrides :—Shells, with n. spp. of *Palaina*, *Physa*, and *Potamopyrgus*; ANCEY (8).

#### 19. Polynesian Region.

Hawaiian Is. :—Notes on shells, with n. spp. of *Amastra* and *Endodonta*; PILSBRY & VANATTA (464); N. spp. of *Endodonta* and *Opeas*; PILSBRY & VANATTA (466).

Tahiti :—*Aphanoconia pentheri*, n. sp.; WAGNER (617).

Pelew Is.:—N. spp. of *Palaeohelicina* and *Sulfurina*; WAGNER (617).

Marquesas :—*Trochonanina sykesi*, n. sp.; GUDE (252).

Cook's Is.:—*Thalassia cookensis*, n. sp.; GUDE (252).

## 20. Neozelanian Region.

New Zealand :—On fresh-water fauna, with n. spp. of *Corneocyclas* and *Gundlachia*; SUTER (578) : *Gundlachia neozelanica*, n. sp.; SUTER (579) : Review of *Potamopyrgus*, with *P. subterraneus*, n. sp.; SUTER (580) : Illustrated review of species of *Isidora*; SUTER (581) : *Flammulina laingi*, n. sp.; SUTER (575) : On a few shells; WEBSTER (625).

### e. NEANTARCTIC ZONE.

## 21. Patagonian Region.

Tierra del Fuego :—Few shells, with n. spp. of *Chilina* and *Succinea*; SMITH (543).

## 22. Chilian Region.

[None.]

### f. NEOTROPICAL ZONE.

## 23. Peruvian Region.

Peru :—Notes on *Nenia*, with *N. callangana*, n. sp.; EHRMANN (195) : N. spp. of *Drymaeus* and *Strophocheilus*; FULTON (220) : *Helicina schlüteri*, n. sp.; WAGNER (618).

## 24. Colombian Region.

New Granada :—N. spp. of *Helicina*; WAGNER (618).

Venezuela :—N. spp. of *Helicina*; WAGNER (618).

## 25. Brazilian Region.

Brazil :—*Proserpina* (*Staffola*, n. sect.) *derbyi*, n. sp.; DALL (163) : *Strophocheilus versatilis*, n. sp.; FULTON (220) : List of some shells; IHERING (300) : N. spp. of *Helicina*; WAGNER (618) : N. spp. of *Tomigerus* from Ceara; IHERING (298).

## 26. Mexican Region.

Nicaragua :—Fauna of Mosquito Coast; FLUCK (208).

Central Mexico :—Land and fresh-water shells, with n. spp. of *Hendersonia* (n. gen.), *Schizicheila*, *Sphaerium*, *Streptostyla*, and *Xanthonyx*; DALL (160).

New Mexico :—*Oreohelix strigosa*, n. subsp.; COCKERELL (124) : *Urocoptidae* and *Helicidae*, with *Holospira regis*, n. sp.; PILSBRY (460).

## 27. Caribbean Region.

Bahamas :—List of fauna, with n. spp. of *Cepolis*, *Cerion*, and *Rhytidopoma*; DALL (159) : Non-marine fauna, with n. spp. of *Cepolis*; DALL (158).

Jamaica :—*Geomelania jarvisi*, n. sp.; SYKES (582).

## g. NEARCTIC ZONE.

## 28. American Region.

United States :—Few notes on shells ; ADAMS (1) : Notes on many spp. ; DALL (165) : Several n. varr. of *Pisidium* ; STERKI (566) : *Pisidium atlanticum*, n. sp. ; STERKI (563) : Distribution of non-marine fauna ; WALKER (622) : Ancestry of *Unionidæ* ; WHITE (632).—*Cycladidae* of Southern States ; STERKI (564).

Alabama : *Polygyra smithii*, n. sp. ; CLAPP (115) : *Carychium nannodes*, n. sp. ; CLAPP (116) : N. spp. of *Quadrula* ; FRIERSON (211) : *Polygyra decepta*, n. sp. ; CLAPP (114) : *Somatogyrus walkeri*, n. sp. ; ALDRICH (5) : *Pisidium limatulum*, n. sp. ; STERKI (562).—Arizona : *Urocoptidae* and *Helicidae*, with n. spp. of *Ashmunella*, *Holospira*, *Oreohelix*, and *Sonorella* ; PILSBRY (460).—Florida : Land shells, with *Succinea floridana*, n. sp. ; PILSBRY (455) : New locality for *Cerion incanum* ; SIMPSON (528) : Shells, with n. spp. of *Lioplax* and *Unio* ; WALKER (620).—Georgia : *Medionidus simpsonianus*, n. sp. ; WALKER (621).—Indiana : Shells from Bass Lake ; BAKER (22) : List of semi-fossil landshells ; DANIELS (166) : *Succinea indiana*, n. sp. ; PILSBRY (453).—Iowa : Fauna of McGregor Co. ; BAKER (24).—Kentucky : List of *Unionidæ* ; WILLIAMSON (646).—Maine : *Valvata nylanderi*, n. sp. ; DALL (165).—Massachusetts : *Paludestrina salsa*, n. sp. ; PILSBRY (457) : A few slugs ; COCKERELL, *Nautilus* xix, p. 84.—Michigan : Shells from ; RUTHVEN (499).—New York : *Lymnaea owascoensis*, n. sp. ; BAKER (21).—North Carolina : *Polygyra ferrissi*, n. subsp. ; FERRISS (207).—Ohio : *Lymnaea sterckii*, n. sp. ; BAKER (23).—Rhode Island : Occurrence of *Lyogyrus brownii* ; CARPENTER (90) : *Vertigo perryi*, n. sp. ; STERKI (565).—Wisconsin : List of shells from ; CHADWICK (102).

Bermuda :—Notes on fauna ; BRYANT (75).

## 29. Californian Region.

California :—*Lymnaea bryanti*, n. sp. ; BAKER (21) ; Does *Cochliopa rowelli* exist there ; PILSBRY (458) : *Helix sequoicola*, n. subsp. ; ROWELL (498).

## 30. Canadian Region.

Relations of Eastern Siberian and Alaskan Fauna ; DALL (157).

Alaska :—Fauna of this and Canada, &c., reviewed, with n. spp. of *Lymnaea* and *Segmentina* ; DALL (165).

Yukon Territory :—Fresh-water shells ; WHITEAVES (633).

Canada :—New localities for non-marine shells ; WHITEAVES (636).—Land fauna of New Brunswick ; BAILEY (18).—Land and fresh-water shells from Keewatin ; WHITEAVES (637).

British Columbia :—*Goniobasis columbiensis*, n. sp. ; WHITEAVES (635).

Hudson Bay :—Few non-marine shells ; WHITEAVES (634).

## MARINE MOLLUSCA. [For Non-Marine, see p. 39.]

Distribution of Pteropods ; MEISENHEIMER (393, 394).

Supplement to fauna of Porcupine Expedition continued ; SYKES (586).

Few Molluscs from Princesse-Alice, 1904 ; RICHARD, Bull. Mus. Monaco xli.

European Seas :—Tectibranchs and Heteropods ; LOCARD (365).—*Trochidæ* ; LOCARD (364).—Study of Fauna continued ; KOBELT (340).

1. *Arctic Province.*

Spitzbergen :—List of species with *Buccinum bromsi*, n. sp.; HÄGG (257).  
Jan Mayen Is. :—Some species enumerated; HÄGG (257).

2. *Boreal Province.*

Shells from near Drobak; KIÆR (329).

3. *Celtic Province.*

Germany :—Occurrence of *Mya arenaria*; LORENZEN (371).  
British Isles :—*Hero formosa*, n. var.; ELIOT (198).—Tenby: Addenda to Fauna; VAUGHAN (603).—Burnham-on-Crouch: Notes on *Crepidula*; COOPER, J. Conch. xi, p. 227.—Occurrence of *Ostrea angulata* at Southend; PETCH (445).—Notes on *Pecten incomparabilis*; KNIGHT, Tr. Soc. Glasgow vii, p. 117.—Isle of Man: *Mytilus* fry in tow-nets; HERDMAN, P. Liverp. biol. Soc. xix, p. 214.—Ireland: Notes on fauna of Skerries; COLGAN (129).—Occurrence of *Sthenoteuthis pteropus*; NICHOLS (419).

4. *Lusitanian Province.*

S. Atlantic Ocean :—*Pneumodermopsis macrochira*, n. sp.; MEISENHEIMER (394).

Portugal :—Fauna recorded; ANON., Annuar. Ac. Porto 1895–6, p. 54; 1899–1900, p. 98; 1900–1, p. 84; 1903–4, p. 108.

Off Cape St. Vincent :—*Marginella hesperia*, n. sp.; SYKES (585).

S. France :—Shells from Cette; HORSLEY (292).—Notes on *Tapes*; HORSLEY (291).—Marseilles: Changes in fauna; BRIOT & GAVER (65).

Mediterranean :—Tectibranchs and Heteropods, with n. spp. of *Bulla* and *Tornatina*; LOCARD (365).—*Trochidae*, with n. spp. of *Gibbula* and *Zizyphinus*; LOCARD (364).—*Pseudoparastrophia levigata*, n. gen. and sp.; DISTASO (184).

Algeria :—Occurrence of *Natica intricatoides*, Hidalgo; ANCEY, Nautilus xix, p. 34.

5. *Aralo-Caspian Province.*

Caspian Sea :—Notes on fauna; OSTROUMOFF (429).

6. *West African Province.*

West Africa :—N. spp. of *Genota*, *Marginella*, and *Pusionella*; SYKES (585).

Gulf of Guinea :—N. spp. of *Pneumoderma* and *Thliptodon*; MEISENHEIMER (394).

Senegambia :—Notes on Oysters; ROCHEBRUNE (492).

Cape Verd Islands :—*Gibbula murchlandi*, n. sp.; SOWERBY (554).—*Pecten keppelianus*, n. sp.; SOWERBY (552).

Sierra Leone :—N. spp. of *Conus*, *Diplodonta*, *Protoma*, *Tellina*, and *Venus*; SOWERBY (552).

Ascension Island :—N. spp. of *Pecten* and *Tellina*; SOWERBY (552).

7. *South African Province.*

Natal :—Notes on Nudibranchs with *Chromodoridella mirabilis*, n. gen. and sp.; ELIOT (197).

## 8. Indo-Pacific Province.

- Indo-Pacific Province:—Review of Polyplacophora; NIERSTRASZ (420).
- East Africa and Zanzibar:—Nudibranchs, with n. spp. of *Doto*, *Elysia*, *Facelina*, *Hervia*, *Orodonis*, *Phidiana*, and *Stiliger*; ELIOT (200).
- Mayotte:—*Marginella repentina*, n. sp.; SYKES (585).
- Djibouti and Obock:—List of *Cerithiidæ*; VIGNAL (612): List of *Cypræidæ*; VAYSSIÈRE (605): Catalogue of Gastropods from; LAMY (349): *Arcidæ* from; LAMY (348).
- Red Sea and Gulf of Aden:—List of species, with n. spp. of *Drillia*, *Levanderina* (n. gen.), and *Raeta*; STURANY (571).
- Red Sea:—*Ricinula lischkei*, n. sp.; HIDALGO (286).
- Karachi, &c.:—Nudibranchs, with n. spp. of *Platydoris* and *Thecacera*; ELIOT (199).
- Masandam Is.:—*Pecten cristatum*, n. sp.; BAVAY (34).
- Indian Ocean:—*Marginella binotata*, n. sp.; SYKES (585): *Trochus* (*Lamprostoma*) *filiferus*, n. sp.; SCHEPMAN (504): N. spp. of *Creseis*, *Frocymbulia* (n. gen.), *Notobranchæa*, *Schizobrachium* (n. gen.) and *Thliptodon*; MEISENHEIMER (394).
- Ceylon:—On Nudibranchs and Tectibranchs, with n. spp. of *Aegires*, *Aplysia*, *Aplysiella*, *Chromodoris*, *Dolabifera*, *Galvina*, *Halgerda*, *Hervia*, *Linguella*, *Notarchus*, *Phyllaplysia*, *Platydoris*, *Pleurobranchus*, and *Thordisa*(?); FARRAN (204): N. spp. of *Anatina*, *Callista*, *Cancellaria*, *Cerithiopsis*, *Cerithium*, *Clavatula*, *Columbella*, *Cultellus*, *Diala*, *Eulima*, *Fenella*, *Gastrana*, *Gena*, *Mangilia*, *Pyramidella*, *Retusa*, *Rissoina*, *Tornatina*, and *Turbanilla*; PRESTON (474): N. spp. of *Calliostoma*, *Clanculus*, *Columbella*, *Diplodonta*, *Ethalia*, *Euchelus*, *Fossarina*, *Fossarus*, *Minolia*, *Nerita*, *Omphalius*, *Scalaria*, *Scutellina*, *Solariella*, *Teinostoma*, and *Tritonidea*; SOWERBY (553).
- Andamans:—N. spp. of *Pecten*; BAVAY (34).
- Tonkin:—List of collection, with n. varr., notes on synonymy, and n. spp. of *Assiminea*, *Plecotrema*, and *Scintilla*; DAUTZENBERG & FISCHER (171).
- East Indies:—Nudibranchs and Tectibranchs of the 'Siboga' Expedition, with n. spp. of *Aclesia*, *Anisodoris*, *Aplysia*, *Aplysiella*, *Aporodoris*, *Berthella*, *Carminodoris*, *Casella*, *Ceratosoma*, *Cerberilla*, *Chelidoneura*, *Chromodoris*, *Cratena*, *Diaulula*, *Discodoris*, *Doriopsis*, *Doriopsis*, *Elysia*, *Ennoia*, *Flabellina*, *Gastropteron*, *Halgerda*, *Halla*, *Hervia*, *Hexabranchus*, *Marionia*, *Myrrhine* (n. gen.), *Nembrotha*, *Oscaniella*, *Oscanus*, *Peltodoris*, *Phanerophthalmus*, *Phestilla*, *Philine*, *Phyllaplysia*, *Phyllidia*, *Platydoris*, *Pleurobranchæa*, *Pleurobranchus*, *Pleuroleura*, *Pleurophyllidia*, *Spurilla*, *Thordisa*, *Timorella* (n. gen.), *Trevelyanæ*, *Triopa*, *Trippa*, and *Tritonia*; BERGH (41): Polyplacophora, with n. spp. of *Acanthochites*, *Callistochiton*, *Callochiton*, *Chiton*, *Craspedochiton*, *Ischnochiton*, *Lepidopleurus*, *Leptoplax*, *Squamophora* (n. gen.), *Squamopleura* (n. gen.), and *Tonicia*; NIERSTRASZ (420).
- Pacific Ocean:—Notes on some *Cerithiidæ*, with n. spp.; PILSBRY & VANATTA (467): *Aphelodoris pallida*, *Doriopsis punctatella*, n. spp.; BERGH (42).
- Philippines:—List of Marine fauna completed; HIDALGO (285): *Latiaxis kieneri*, n. sp.; HIDALGO (286).
- Hawaiian Is.:—N. spp. of *Cerithium*; PILSBRY & VANATTA (465).
- Marshall Is.:—Occurrence of *Leptoconchus*; SCHNEE (507).
- Flint I.:—Shells from, with *Liotia voyi*, n. sp.; PILSBRY & VANATTA (463).
- Caroline I.:—Shells from; PILSBRY & VANATTA (463).
- Rapa I.:—*Pecten rapanensis*, n. sp.; BAVAY (32).

9. *Australo-Zealandic Province.*

Queensland:—Occurrence of *Cypraea xanthodon* at Bundaberg; ROBERTS, *Nautilus* xix, p. 12.

New South Wales:—Shells from off Cape Byron, with n. spp. of *Adaenarca*, *Adeorbis*, *Astele*, *Bathytoma*, *Bornia*, *Cerithiopsis*, *Cuspidaria*, *Cylidna*, *Limea*, *Liotia*, *Mangelia*, *Pseudorisoina*, and *Scala*; HEDLEY (268).

Victoria:—*Leuconopsis victoriae*, n. sp.; GATLIFF (223).

South Australia:—N. spp. of *Caledoniella* and *Lamellaria*; BASEDOW (29): Review of Nudibranchs, with n. spp. of *Albania* (?), *Archidoris*, *Ceratosoma*, *Halgerda*, *Hypselodoris*, and *Nembrotha* (?); BASEDOW & HEDLEY (30): *Leuconopsis tatei*, n. sp.; GATLIFF (223): Notes on shells, with n. spp. of *Astele*, *Calliostoma*, *Clanculus*, and *Gena*; VERCQ (606).

Tasmania:—New species of *Acanthodoris*, *Aphelodoris*, and *Chromodoris*; BERGH (42): Critical notes on some spp. of Woods, several of which are not Tasmanian; HEDLEY (266): Notes on fauna; LODDER (367): Review of Tenison-Woods' types; MAY (391).

New Zealand:—*Pecten imparicostatus*, n. sp.; BAVAY (32): Notes on Nudibranchs; BENHAM (40): New species of *Aphelodoris*, *Chromodoris*, and *Goniodoris*; BERGH (42): Addenda to fauna, with n. spp. of *Cerithiopsis*, *Clathurella*, *Columbella*, *Crossea*, *Drillia*, *Leptothyra*, *Mitromorpha*, *Odostomia*, *Rissoa*, *Trophon*, and *Vulpecula*; MURDOCH (412): *Patellidae*, with *Heliconiscus craticulatus*, n. sp., and n. subsp. of *H. stelliferus*; SUTER (574): Notes on *Chione*, with *C. subsulcata*, n. sp.; SUTER (573): Chitons, with n. spp. of *Ischnochiton* and *Plaxiphora*; SUTER (576): List of *Pleurotomidae*; SUTER (572): Addenda to fauna, with n. spp. of *Astralium*, *Corbula*, *Eulimella*, *Rissoia*, *Rissoina*, *Standella*, and *Turbo*; WEBSTER (625).

10. *Japonic Province.*

Japanese Seas:—Shells, with new forms, and n. spp. of *Buccinum*, *Cingula*, *Dentalium*, *Eulima*, *Lithophaga*, *Macrocallista*, *Natica*, *Pecten*, *Phorcus*, *Siliqua*, *Torinia*, and *Trapezium*; PILSBRY (459): Notes on fauna; UCHIYAMA (601).

11. *Aleutian Province.*

List of Molluses from Puget Sound; HARRINGTON & GRIFFIN, Tr. N. York Ac. xvi, p. 152.

12. *Californian Province.*

California:—Nudibranchs, with n. spp. of *Acanthodoris*, *Doridopsis*, *Janolus*, *Phyllobranchopsis* (n. gen.), and *Spurilla*; COCKERELL & ELIOT (128): A few Nudibranchs; COCKERELL, *Nautilus* xviii, p. 131: *Phacoides xantusi*, n. sp., DALL (147): N. spp. of *Admete*, *Erato*, *Leda*, *Mangilia*, and *Scissurella*; DALL (150): N. spp. of *Alaba* and *Murex*; DALL (153): Nudibranchs from Monterey Bay, with n. spp. of *Acanthodoris*, *Ægires*, *Ancula*, *Cadlina*, *Discodoris*, *Doriopsis*, *Hopkinsia* (n. gen.), *Laila* (n. gen.), *Montereina* (n. gen.), *Polycera*, *Rostanga*, and *Triopha*; MACFARLAND (376).

13. *Panamic Province.*

[None.]

## 14. Peruvian Province.

[None.]

## 15. Antarctic Province.

Antarctic:—Nudibranchs, with n. spp. of *Notæolidæa* (n. gen.), *Tritonia*, and *Tritoniopsis* (n. gen.); ELIOT (201): N. spp. of *Eledone*; JOUBIN (316).

Magellan province:—List of the *Trochidæ*, with n. spp. of *Calliostoma*, *Margarita*, and *Photinula*; STREBEL (568): Fauna, with n. spp. of *Actæon*, *Admete*, *Bela*, *Bittium*, *Columbella*, *Drillia*, *Euthria*, *Savatieria*, *Thesbia*, *Tornatina*, and *Turbonilla*; STREBEL (569).

Tierra del Fuego:—Shells, with n. spp. of *Chione*, *Mactra*, and *Photinula*; SMITH (543).

## 16. Argentine Province.

[None.]

## 17. Caribbean Province.

Brazil:—*Callistochiton porosus*, n. sp.; NIERSTRASZ (422).

Caribbean Sea:—*Geitodoris mollina*, n. sp.; BERGH (42).

Haiti:—Few shells from salt lagoon; DALL (158).

Bahamas:—Few shells from salt lagoon; DALL (158).

Nicaragua:—Fauna of Mosquito Coast; FLUCK (208).

## 18. Transatlantic Province.

E. United States:—Species of *Martesia*; JOHNSON (306): Further notes on *Martesia*; JOHNSON (307): Few notes on shells; ADAMS (1).

New England:—*Tonicella blaneyi*, n. sp.; DALL (164).

Maine:—Mollusca from Frenchman's Bay; BLANEY (46).

## GEOLOGICAL.

N.B.—The remarks given at the beginning of the preceding section, p. 39, also apply here.

Note on *Ryncholites* and *Rynchoteuthis*; BORTOLOTTI, Riv. ital. Pal. xi, p. 121.—*Salarium granulatum*, Zek., renamed; BÖSE, Rev. paleozool. ix, p. 169.—*Lima expansa*, Sby., renamed; COSSMANN, Rev. paleozool. ix, p. 234.—Studies on *Rudistes*; DOUVILLÉ (191).—Form of aperture in *Oeptychius refractus*; LISSAJOUS (361).—Types of several species figured, with notes; PALÆONTOLOGIA UNIVERSALIS (436).—On the systematic position of *Palæorbis*; REIS (482).—Studies on *Hippurites*; TOUCAS (599).—Rectifications of nomenclature; UGOLINI, Rev. paleozool. ix, p. 117.

Few fossils from Canigou, France; DEPÉRET, Soc. Pyrenees-or. xlvi, p. 421.—Forms from various strata in Dept. of Segré; DESMAZIÈRES (179).—Some fossils from near Derby and Burton-on-Trent; FOX-STRANGWAYS, Mem. geol. Surv. U. K., No. 141.—Fossils from near Déva; HALAVÁTS, Jahresb. Ungarn. geol. Anstalt 1903, p. 113.—Fossils from a deep boring near Bremen; JORDAN (312).—Few fossils from sheet of Die district; KILIAN, Bull. Soc. Isere vii, p. 73.—Few fossils from Cork; LAMPLUGH, &c., Geology, Cork, Mem. geol. Surv. Ireland.—Mollusca from well-borings near Amsterdam; LORIÉ (372).—Fossils from Alps of Dauphiné and Savoy; MATTE, Bull. Soc. Isere vi, p. 289.—Molluscs from Roumania; NORCSA, Mt. Ungar. geol. Anstalt xiv, p. 149.—Fossils

from Jura of Neuchatel ; SCHARDT, Bull. Soc. Neuchatel xxx, p. 404, xxxi, p. 253.—Lists of species from the Areuse District ; SCHARDT & DUBOIS (502).—Age of *Inoceramus*-strata in Carpathians ; WIŚNIOWSKI (649).

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*Sthenoteuthis pteropus*, note on ; NICHOLS (419).  
 †*Styracoteuthis*, n. gen. for *S. orientalis*, n. sp., Eocene, Arabia ; CRICK, P. Malac. Soc. London vi, p. 274, fig.

*AMMONEA.*

- Study of suture-lines in *Pseudosageceras* ; NOETLING (423).  
 †*Aspenites*, n. gen., type *A. acutus*, n. sp., Trias, N. America ; HYATT & SMITH (297), p. 94.  
 †*Bogdoites*, n. gen. for three 'forms of *Balatonites* from South Russia' ; KITTL, Abh. geol. Reichsanst. xx, p. 11, footnote [om. 1903].  
 †*Californites*, n. gen., type *C. merriami*, n. sp., Trias, N. America ; HYATT & SMITH (297), p. 179.

† This sign is prefixed to fossil forms.

- +*Calliconites*, n. gen. for *C. dieneri*, n. sp., Trias, Sicily; GEMMELLARO, Giorn. Soc. Palermo xxiv, p. 310.
- +*Clydoniceras*, n. gen. for *Ammonites discus*, Sby.; BLAKE (45), p. 53.
- +*Columbites*, n. gen., type *C. parisianus*, n. sp., Trias, N. America; HYATT & SMITH (297), p. 50.
- +*Cordillerites*, n. gen., type *C. angulatus*, n. sp., Trias, N. America; HYATT & SMITH (297), p. 109.
- +*Dieneria*, n. gen., type *D. arthaberi*, n. sp., Trias, N. America; HYATT & SMITH (297), p. 105.
- +*Discotropites*, n. gen., type *Ammonites sandligensis*, Hauer, Trias, N. America; HYATT & SMITH (297), p. 61.
- +*Gonianotites*, n. gen. for *G. italicus*, n. sp., &c., Trias, Sicily; GEMMELLARO, Giorn. Soc. Palermo xxiv, p. 155.
- +*Gymnotropites*, n. subgen. of *Paratropites*, type *P. americanus*, n. sp., Trias, N. America; HYATT & SMITH (297), p. 56.
- +*Hercegovites*, n. subgen. of *Dinarites* for *D. mohamedanus*, Mojs., &c.; KITTL, Abh. geol. Reichsanst. xx, p. 22 [om. 1903].
- +*Inyoites*, n. gen., type *I. oweni*, n. sp., Trias, N. America; HYATT & SMITH (297), p. 134.
- +*Lanceolites*, n. gen., type *L. compactus*, n. sp., Trias, N. America; HYATT & SMITH (297), p. 13.
- +*Leconteia*, n. gen., type *L. californica*, n. sp., Trias, N. America; HYATT & SMITH (297), p. 35.
- +*Leopoldia*, n. gen. for *Ammonites leopoldi*, Orb., &c.; BAUMBERGER (31), p. 28.
- +*Liccaites*, n. subgen. of *Dinarites* for *D. circumPLICATUS*, Mojs., &c.; KITTL, Abh. geol. Reichsanst. xx, p. 24 [om. 1903].
- +*Megalytoceras*, n. gen., 'genotype,' *Lytoceras confusum*, Buckm.; BUCKMAN, Quart. J. Geol. Soc. lxi, p. 150.
- +*Mojisovicsites*, n. gen. for *M. crassecostatus*, n. sp., &c., Trias, Sicily; GEMMELLARO, Giorn. Soc. Palermo xxiv, p. 57.
- +*Nannolytoceras*, n. gen., 'genotype,' *Ammonites pygmæus*, D'Orb.; BUCKMAN, Quart. J. Geol. Soc. lxi, p. 151.
- +*Neanites*, n. subgen. of *Clionites*, type *C. californicus*, n. sp., Trias, N. America; HYATT & SMITH (297), p. 189.
- +*Owenites*, n. gen., type *O. koeneni*, n. sp., Trias, N. America; HYATT & SMITH (297), p. 82.
- +*Pachylytoceras*, n. gen., 'genotype,' *Alocolytoceras torulosus*, Zieten; BUCKMAN, Quart. J. Geol. Soc. lxi, p. 144.
- +*Palicites*, n. gen. for *P. mojisovici*, n. sp., Trias, Sicily; GEMMELLARO, Giorn. Soc. Palermo xxiv, p. 55.
- +*Paraceratites*, n. subgen. of *Ceratites* for *C. prior*, n. sp.; KITTL, Abh. geol. Reichsanst. xx, p. 29 [om. 1903].
- +*Paraganides*, n. gen., type *P. californicus*, n. sp., Trias, N. America; HYATT & SMITH (297), p. 77.
- +*Paranannites*, n. gen., type *P. aspenensis*, n. sp., Trias, N. America; HYATT & SMITH (297), p. 80.
- +*Platytes*, Mojsisovics, renamed *Protoplattytes*, q. v.
- +*Proceratites*, n. gen., types *Ceratites plicatus*, Waag., and *carbonarius*, Waag.; KITTL, Abh. geol. Reichsanst. xx, p. 28 [om. 1903].
- +*Protoplattytes*, n. n. for *Platytes*, Mojsisovics non Guenée; COCKERELL, J. Malac. xii, p. 16.
- +*Pseudovirgatites*, n. subgen. of *Perisphinctes* for *P. scupulosus*, Oppel; VETTERS, Beitr. Pal. Oesterr.-Ung. xvii, p. 227.
- +*Shastites*, n. subgen. of *Clionites*, type *C. compressus*, n. sp., Trias, N. America; HYATT & SMITH (297), p. 188.
- +*Siculites*, n. sect. of *Ceratites* for *C. dolomiticus*, n. sp., &c., Trias; GEMMELLARO, Giorn. Soc. Palermo xxiv, p. 38.

- +*Stantonites*, n. subgen. of *Clionites*, type *C. rugosus*, n. sp., Trias, N. America; HYATT & SMITH (297), p. 185.  
 +*Tardeceras*, n. gen., type *T. parvum*, n. sp., Trias, N. America; HYATT & SMITH (297), p. 44.  
 +*Thysanolytoceras*, n. gen., 'genotype' *Ammonites eudesianus*, D'Orb.; BUCKMAN, Quart. J. Geol. Soc. lxi, p. 149.  
 +*Tornquistites*, n. gen., type *T. evolutus*, n. sp., Trias, N. America; HYATT & SMITH (297), p. 59.  
 +*Traskites*, n. subgen. of *Clionites*, type *C. robustus*, n. sp., Trias, N. America; HYATT & SMITH (297), p. 186.

## TETRABRANCHIATA.

- +*Cosmonautilus*, n. gen., type *C. dilleri*, n. sp., Trias, N. America; HYATT & SMITH (297), p. 207.

## II. GASTROPODA.

- Physiology of locomotion; CARLSON (85).  
 Evolution; DAVIS (172).  
 Development and stages of Gastropod protoconch; KESTEVEN (327, 328).  
 Coiling and sections of the shell; MUÑOZ-COBÓ Y ARREDENDO (410).  
 Senility amongst Gastropods; SMITH (537).

## PULMONATA.

### STYLOMMAТОPHORA.

#### TESTACELLIDÆ and SELENITIDÆ.

- Agnatha*, monograph completed; KOEBELT in MARTINI & CHEMNITZ (387).  
*Artemon apertus*, Martens, figd.; KOEBELT in MARTINI & CHEMNITZ (387), p. 43.  
*Daudebardia (Libania) nægelei*, Cilicia; BOETTGER, Nachrbl. Deutsch. malak. Ges. 1905, p. 100, fig. : n. sp.  
*Ennea swinhoei*, n. subsp.; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 736.  
*Ennea turennei*, Abyssinia; NEUVILLE & ANTHONY, Bull. Mus. Paris x, p. 116: *E. (Gulella) acutidens*, Cameroons; BOETTGER, Nachrbl. Deutsch. malak. Ges. 1905, p. 160, figg. : n. spp.  
*Gibbulina (Gonospira) striaticosta*, Morelet, figd.; KOEBELT in MARTINI & CHEMNITZ (387), p. 327.  
*Gibbulina (Gonospira) obesa*, Mauritius; KOEBELT in MARTINI & CHEMNITZ (387), p. 334, fig. : n. sp.  
*Gibbus martensi*, n. var.; BOETTGER, Nachrbl. Deutsch. malak. Ges. 1905, p. 157, fig.  
*Odontartemon tridens*, Mlldff., figd.; KOEBELT in MARTINI & CHEMNITZ (387), p. 94.  
*Paryphanta fumosa*, anatomy; MURDOCH, Tr. N. Zealand Inst. xxxvi, p. 156: *P. hochstetteri*, notes on; SUTER (577).  
*Perrottetia*, n. subgen. of *Odontartemon*, type *Streptaxis perrotteti*, Petit; KOEBELT in MARTINI & CHEMNITZ (387), p. 91.  
*Streptartemon*, n. subgen. of *Streptaxis*, type *S. streptodon*, Morelet; KOEBELT in MARTINI & CHEMNITZ (387), p. 33.  
*Streptaxidae*, monograph commenced; KOEBELT in MARTINI & CHEMNITZ (387).

*Streptaxis blaisei*, Tonkin; DAUTZENBERG & FISCHER, J. Conchyl. liii, p. 86, fig. : n. sp.

*Streptostyla potosiana*, p. 190, *pulmeri*, p. 191, Mexico; DALL, Smithson. Collect. quart. xlvi, figg. : n. spp.

### LIMACIDÆ, PHILOMYCIDÆ, and ZONITIDÆ.

*Africarion erlangeri*, N. E. Africa; KOEHL, Nachrbl. Deutsch. malak. Ges. 1905, p. 127 : n. sp.

*Agriolimax attemsi*, Corfu; SIMROTH, SB. Bohmisch. Ges. 1904, No. xxvi, p. 18, fig. : n. sp.

*Ariophanta innata*, Yunnan; FULTON, Ann. Nat. Hist. xv, p. 92 : n. sp.

*Bensonia nepalensis* (Nevill MS.), India; BLANFORD, P. Zool. Soc. London 1904, ii, p. 441, fig. : n. sp.

*Bloyetia erlangeri*, p. 128, *kismajuensis*, *filomarginata*, p. 129, N. E. Africa; KOEHL, Nachrbl. Deutsch. malak. Ges. 1905 : n. spp.

*Cryptosoma fragile*, Mlldff., figd.; KOEHL in MARTINI & CHEMNITZ (387), p. 1198.

*Dyakia granaria*, Bock, note on; SYKES, P. Malac. Soc. London vi, p. 227.

*Dyakia perstriata*, p. 227, *eutonus*, p. 228, W. Sumatra; SYKES, t. c. figg. : n. spp.

*Euplecta pulchella*, India; BLANFORD, P. Zool. Soc. London 1904, ii, p. 447, fig. : n. sp.

*Helicarion rugosa*, N. Borneo; FULTON, Ann. Nat. Hist. xv, p. 91 : *H. hiraseanus* (Pilsbry), Formosa; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 740 : n. spp.

*Hemiplecta jansoni*, *ougarrana*, British New Guinea; SMITH, Ann. Nat. Hist. xvi, p. 195 : n. spp.

*Inozonites*, Philippine species figd.; KOEHL (339).

*Kaliella crenulata*, n. subsp.; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 717 : *K. crenulata*, n. subsp.; PILSBRY & HIRASE, t. c. p. 743.

*Kaliella joubini*, Tonkin; DAUTZENBERG & FISCHER, J. Conchyl. liii, p. 87, fig. : *K. lioconus*, p. 716, *affinis*, p. 717, Japanese Empire; PILSBRY & HIRASE, P. Ac. Philad. 1905 : *K. costata*, *venusta*, p. 743, *longa*, p. 744, Formosa; PILSBRY & HIRASE, t. c. : n. spp.

*Limacidæ*, anatomy; SIMROTH (530) : *L. sidamoensis*, figd.; ROCHEBRUNE & GERMAIN (493).

*Limax corecyensis*, Corfu, p. 11, *mrazeki*, Bosnia and Montenegro, p. 12; SIMROTH, SB. Bohmisch. Ges. 1904, No. xxvi, figg. : n. spp.

*Macrochlamys*, anatomy of Mauritian species; GODWIN-AUSTEN (241).

*Macrochlamys kuluensis* (Nevill MS.), *superflua*, p. 442, (?) *atoma* (Fairbank MS.), *prava*, *rutila*, p. 443, India, *chaos*, *notha*, *noxia*, p. 444, *curvibrabis*, *spreta*, *patens*, p. 445, Burma, *pseudochuinix*, Great Cocos I., p. 446; BLANFORD, P. Zool. Soc. London 1904, ii, figg. : *M. lineatus*, p. 713, *kumeensis*, p. 714, Japanese Empire; PILSBRY & HIRASE, P. Ac. Philad. 1905 : *M. nitidus*, Formosa; PILSBRY & HIRASE, t. c. p. 741 : n. spp.

*Microcystina hakajimana*, n. subspp.; PILSBRY & HIRASE, t. c. p. 711.

*Microcystina stuarti* (Godwin-Austen MS.), Andamans, *shevaroyana*, India; BLANFORD, P. Zool. Soc. London 1904, ii, p. 446, figg. : *M. anijimana*, p. 712, *acuta*, p. 714, *hakonensis*, *edgariana*, *kumejimana*, p. 715, *hokkaidonis*, p. 716, Japanese Empire; PILSBRY & HIRASE, P. Ac. Philad. 1905 : *M. lamprobasis*, p. 741, *lissobasis*, *radiata*, p. 742, Formosa; PILSBRY & HIRASE, t. c. : n. spp.

*Naninidæ*, monograph continued, with illustrations of some unfigured spp.; KOEHL in MARTINI & CHEMNITZ (387).

- Otesia chichijimana, hahajimana*, Japanese Empire ; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 713 : n. spp.
- Philomycus*, anatomy ; SIMROTH (529).
- Philomycus balius, tonkinensis*, Tonkin, *taiwanensis*, Formosa, p. 41, *dæderleini*, Loo Choos, *melachloros, viperinus*, Japan, p. 42 ; SIMROTH, SB. Ges. Leipzig 1901-2 : n. spp.
- Polita (?) turbinata*, India ; BLANFORD, P. Zool. Soc. London 1904, ii, p. 447, fig. : n. sp.
- Rhyssota bisculptilis*, British New Guinea ; SMITH, Ann. Nat. Hist. xvi, p. 194 : n. sp.
- Sitala circumcincta*, n. subsp. ; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 745.
- Sitala pudica*, New South Wales ; GUDE, J. Malac. xii, p. 11, fig. : *S. hirasei*, p. 744, *angulifera*, p. 745, Formosa ; PILSBRY & HIRASE, P. Ac. Philad. 1905 : n. spp.
- Taphrospira*, n. gen., type *Macrochlamys convallata*, Bens., p. 441, with *T. excavata*, n. sp., p. 442, fig., India ; BLANFORD, P. Zool. Soc. London 1904, ii.
- Thalassia cookensis*, Cook's Is., p. 11, *cyrtochila*, S. Australia, p. 12 ; GUDE, J. Malac. xii, figg. : n. spp.
- Trochomorpha*, Philippine species described and figd. ; KOEHL (339) : *T. cultrata*, n. subsp. ; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 714 : *T. cultrata*, n. subsp. ; PILSBRY & HIRASE, t. c. p. 740 : *T. sapeca*, of which *T. hamonvillei* is a synonym, figd. ; DAUTZENBERG & FISCHER (171).
- Trochomorpha pellucida*, Formosa ; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 739 : n. sp.
- Trochonanina bonhouri, zeltneri*, figd. ; ROCHEBRUNE & GERMAIN (493).
- Trochonanina sykesi*, Marquesas ; GUDE, J. Malac. xii, p. 12, fig. : n. sp.
- Urocyclus ehlersi*, E. Africa ; SIMROTH, Zeitschr. wiss. Zool. lxxxii, Festschrift, p. 496, fig. : n. sp.
- Vaucheria*, Pallary, is founded on a valve of *Pollicipes* ; DAUTZENBERG (170).
- Vitreo tomlinii*, Greece ; SMITH, P. Malac. Soc. London vi, p. 314, fig. : n. sp.
- Vitrina alaskana*, n. n. for *V. pfeifferi*, Newc. non Desh. ; DALL (165), p. 37 : *V. bozasi*, figd. ; ROCHEBRUNE & GERMAIN (493).
- Vitrina (?) jamjamensis* (Mlldff. MS.), N.E. Africa ; KOEHL, Nachrbl. Deutsch. malak. Ges. 1905, p. 127 : n. sp.
- Xesta citrina*, varieties figd. ; BULLEN, P. Malac. Soc. London vi, p. 191.
- Zonites insignis*, Naegele, figd. ; KOEHL in ROSSMÄSSLER (495), p. 21 : also in MARTINI & CHEMNITZ (387), p. 1208.

### ARIONIDÆ.

*Arion*, sp. monstr., Germany ; SIMROTH, Zeitschr. wiss. Zool. lxxxii, Festschrift, p. 503, fig.

### ENDODONTIDÆ.

- Charopa lifuana*, Loyalty Is., p. 12, *ochracea*, New Caledonia, p. 13 ; GUDE, J. Malac. xii, figg. : n. spp.
- Endodonta marsupialis*, Oahu, *kamehameha*, Molokai, p. 784, *concentrata*, Lanai ; PILSBRY & VANATTA, P. Ac. Philad. 1905, figg. : *E. (Nesophila) thaunumi*, p. 574, (*Thaumatodon*) *luctifera*, p. 575, Hawaiian Is. ; PILSBRY & VANATTA, P. Ac. Philad. 1905, figg. : *E. (Thaumatodon) quadridens*, New Caledonia ; GUDE, J. Malac. xii, p. 13, fig. : n. spp.

- Flammulina (Thalassohelix) laingi*, New Zealand; SUTER, J. Malac. xii, p. 19, fig. : n. sp.
- Helix discors*, Tasmania; PETTERD, P. Soc. Tasmania 1900-1901, p. 2 : n. sp.
- Pterodiscus* belongs to *Achatinellidæ*, q.v.; PILSBRY & VANATTA, P. Ac. Philad. 1905, p. 572.
- Punctum lederi*, Bttg., n. var.; BOETTGER, Nachrbl. Deutsch. malak. Ges. 1905, p. 102.
- Punctum boreale*, Japanese Empire; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 717 : *P. taiwanicum*, Formosa; PILSBRY & HIRASE, t. c. p. 746 : n. sp.

## HELICIDÆ.

- Ashmunella*, review of genus with n. subspp. and n. varr.; PILSBRY (460).
- Ashmunella fissidens*, p. 243, *duplicidens*, *angulata*, p. 244, *ferrissi*, p. 247, *esuritor*, p. 249, *metamorphosa*, p. 252, Arizona; PILSBRY, P. Ac. Philad. 1905, figg. : n. spp.
- Campylaea philippii*, Naples; KOBELT, Nachrbl. Deutsch. malak. Ges. 1905, p. 10 : n. sp.
- Cathaica hermanni*, *sturanyana*, figd.; GUDE, J. Malac. xii, p. 11.
- Cepolis duclosiana*, Fér., n. var.; DALL (158), p. 38.
- Cepolis (Hemitrochus) exumana*, (*Plagiptycha*) *gregariana*, p. 37, (P.) *inaguana*, p. 38, Bahamas; DALL (158), figg.: *C. smirna*, p. 435, *androsi*, p. 436, Bahamas; DALL, Smithson. Collect. quart. xlvi, figg. : n. spp.
- Chloritis fragilis*, anatomy; PILSBRY (450) : *C. pseudoprunum*, Pils., is a synonym of *C. pelodes*, Pfr.; FULTON, J. Malac. xii, p. 21: *C. (Sulcobasis) globosa*, Preston, n. var.; SMITH, Ann. Nat. Hist. xvi, p. 194.
- Chloritis linteræ*, Aru; GUDE, J. Malac. xii, p. 13, fig. : *C. malangensis*, Java; BULLEN, P. Malac. Soc. London vi, p. 192, fig. : n. spp.
- Corilla humberti*, anatomy; PILSBRY (450).
- Dorcasia alexandri*, anatomy; PILSBRY (450).
- Draparnaudia singularis*, Pfr., n. var.; ANCEY, Nautilus xix, p. 42.
- Eulota mercatoria*, *connivens*, n. subspp.; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 708: *E. fulvicans*, n. subsp.; PILSBRY & HIRASE, t. c. p. 731.
- Eulota flexibilis*, (*Euhadra*) *fiscina*, ?Saghalien I.; FULTON, Ann. Nat. Hist. xv, p. 92: *E. (Plectotropis) tokunovaga*, Japanese Empire; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 708: *E. (Plectotropis) impexa*, p. 730, (P.) *inrinensis*, (P.) *hebes*, p. 731, (P.) *perplexa*, p. 732, Formosa; PILSBRY & HIRASE, t. c. : n. spp.
- Ganesella sororecula*, n. subspp.; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 709: *G. albida*, n. subsp.; PILSBRY & HIRASE, t. c. p. 736.
- Glyptostoma newberryanum*, internal septa: GUDE, P. Malac. Soc. London vi, p. 283, fig.
- Helicella caperata*, sinistral; SHAW (517): Phylogeny; WIEGMANN (641).
- Helicigona arbustorum*, sinistral; KENNARD, P. Malac. Soc. London vi, p. 183.
- Helicostyla mearnsi*, Philippines; BARTSCH, Smithson. Miscell. quart. xlvi, p. 409, fig. : n. sp.
- Helicidae* of S. Western United States; PILSBRY (460): Monograph continued; KOBELT in MARTINI & CHEMNITZ (387): Notes on Ethology; HESSE (281): Salivary glands; VIGIER & PACAUT (609); PACAUT (432): *H. aspersa*, dart in body-cavity; BARNES, P. Malac. Soc. London vi, p. 284: *H. aspersa*, in shell of *Limnaea*; BÜLOW (86): *H. candidissima*, note on, with distribution; CAZIOT (95): *H.*

*serpentina*, note on ; CAZIOT (93) ; *H. vermiculata*, notes on ; CAZIOT (92) : *H. desertorum*, habitat & food ; COOKE (134) : *H. nemoralis* and *hortensis*, variation and crossing ; DARBISHIRE (168) : *H. balansai*, Morlet, n. var. ; DAUTZENBERG & FISCHER, J. Conchyl. liii, p. 90 : *H. lutescens*, *cavata*, n. varr. ; KOBELT in ROSSMÄSSLER (495) : *H. palavasensis*, n. n. for *Helix lineata*, Locard non Olivi ; GERMAIN, Bull. Soc. Elbeuf xxiii, p. 53 : *H. aspersa*, Müller, distribution ; GERMAIN (233) : *H. (Helicogena) secerunda*, var. *montenegrina*, Wohlberedt, figd. ; KOBELT in ROSSMÄSSLER (495), p. 19 : *H. aspersa*, nerve ganglia ; LEGENDRE (352-354) : *H. lutosinula*, n. n. for *H. luteata*, Locard non Parreyss ; LOCARD & GERMAIN, Mem. Ac. Lyon viii, p. 79 : *H. pomatia*, cytology of salivary glands ; PACAUT & VIGIER (433, 434) : *H. sequoicola*, n. subsp. ; ROWELL, Nautilus xix, p. 41 ; *H. ericetorum*, duplication of the eye ; WIEGMANN (640).

*Helix (Theba) ignorata*, Cilicia ; BOETTGER, Nachrbl. Deutsch. malak. Ges. 1905, p. 104, fig. ; *H. conventae*, p. 41, (*Xerophila*) *subpapalis*, p. 42, S. France ; CAZIOT, Bull. Soc. zool. France xxx, figg. : *H. (Ganesella?) lamyi*, Tonkin ; DAUTZENBERG & FISCHER, J. Conchyl. liii, p. 91, fig. ; *H. germaini*, France ; LOCARD & GERMAIN, Mem. Ac. Lyon viii, p. 90, fig. : *H. (Helicogena) grothei*, Tripoli, p. 201, *kisonis*, p. 202, *engaddensis galilaei*, p. 203, *eduardi*, p. 205, Palestine, *rumelica magnifica*, p. 218, *castanea* ? *quinquefusciata*, *lucorum hueti*, p. 220, Constantinople, *ancyrensis*, p. 222, Asia Minor ; KOBELT in MARTINI & CHEMNITZ (387) figg. : n. spp.

*Mællendorffia*, notes on group ; PILSBRY, Nautilus xix, p. 63 : *M. eucharistus*, n. subspp. ; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 710.

*Mællendorffia blaisei*, Tonkin ; DAUTZENBERG & FISCHER, J. Conchyl. liii, p. 99, fig. : *M. (Trihelix) hiraseana*, Formosa ; PILSBRY, Nautilus xix, p. 66, fig. : n. spp.

*Mællendorffia*, n. subgen. of *Mællendorffia* for *M. erdmanni*, S. & B. ; PILSBRY, Nautilus xix, p. 64.

*Murella lauriensis*, p. 84, *castelluccensis*, p. 85, Calabria ; KOBELT, Nachrbl. Deutsch. malak. Ges. 1905 ; n. spp.

*Obbina*, Philippine species described & figd. ; KOBELT & WINTER (343).

*Oreohelix*, review of, with n. subspp. ; PILSBRY (460) : *O. strigosa*, n. subsp. ; COCKERELL, Nautilus xviii, p. 113.

*Oreohelix barbuta*, p. 279, *yavapai*, p. 281, (*Radiozentrum*, n. subgen.) *chiricahuana*, p. 283, Arizona ; PILSBRY, P. Ac. Philad. 1905, figg. : n. spp.

*Papuina lilium* comes from Choiseul I., with note on *P. dampieri* ; SMITH (546).

*Papuina meekiana*, British New Guinea ; SMITH, Ann. Nat. Hist. xvi, p. 193, fig. : *P. lilium*, Solomon Is., (*Dendrotrochus*) *pumila*, p. 22, *suprapicta*, p. 23, New Ireland ; FULTON, J. Malac. xii, figg. : n. spp.

*Planispira zebra*, n. var. ; BULLEN, P. Malac. Soc. London vi, p. 191.

*Planispira (Cristigibba) tectorium*, New Guinea ; FULTON, J. Malac. xii, p. 23, fig. : *P. (Trachiopsis) blackiana*, British New Guinea ; PRESTON, P. Malac. Soc. London vi, p. 207, fig. : n. spp.

*Plectotropis leucochila*, Java ; GUDE, J. Malac. xii, p. 14, fig. : n. sp.

*Polygyra ferrissi*, n. subsp. ; FERRISS, Nautilus xix, p. 67 : *P. inflecta*, n. subsp. ; CLAPP, t. c. p. 74.

*Polygyra decepta*, Alabama ; CLAPP, Nautilus xix, p. 25, fig. : *P. smithii*, Alabama ; CLAPP, t. c. p. 73, fig. : n. spp.

*Pupisoma japonicum*, n. subsp. ; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 710.

*Radiozentrum*, n. subgen. of *Oreohelix*, type *O. chiricahuana*, n. sp. ; PILSBRY, t. c. p. 283.

*Solaropsis rugifera*, Dohrn, n. var. ; IHERING, Rev. Mus. Paulista, p. 456.

- Sonorella*, review of, with n. subspp.; PILSBRY (460).  
*Sonorella virilis*, Arizona; PILSBRY, P. Ac. Philad. 1905, p. 266, fig. : n. sp.  
*Stegodera*, notes on; PILSBRY, Nautilus xix, p. 63.  
*Thersites meridionalis*, anatomy; PILSBRY (450).  
*Thersites basedowi*, South Australia; HEDLEY, Tr. R. Soc. S. Austral. xxix, p. 161, fig. : n. sp.  
*Trigonephrus*, n. gen., type *Helix globulus*; PILSBRY, P. Malac. Soc. vi, p. 286.  
*Xanthomelon subleatum*, *clydonigerum*, notes on; HEDLEY, Tr. R. Soc. S. Austral. xxix, p. 162.  
*Xanthomelon radiatum*, p. 163, *asperrimum*, p. 164, South Australia; HEDLEY, t. c. figg. : n. spp.  
*Xanthonyx potosiana*, Mexico; DALL, Smithson. Collect. quart. xlvi, p. 190, fig. : n. sp.  
*Xerocampylæa*, anatomy and systematic position; HESSE (279).

### BULIMIDÆ and BULIMULIDÆ.

- Amphidromus contrarius*, *perversus*, *enganoensis*, n. subspp.; FRUHSTORFER (214).  
*Amphidromus (Goniodromus) bulowi*, W. Sumatra; FRUHSTORFER, Nachrbl. Deutsch. malak. Ges. 1905, p. 83, fig. : n. sp.  
*Bulimus rothschildianus*, Abyssinia; NEUVILLE & ANTHONY, Bull. Mus. Paris xi, p. 197 : n. sp.  
*Drymæus euryostomus*, Phil., and *hamadryas*, Phil., are the same; FULTON, J. Malac. xii, p. 21.  
*Drymæus regularis*, Peru; FULTON, t. c. p. 25, fig. : n. sp.  
*Goniodromus*, n. subgen. of *Amphidromus*, no species named; BÜLOW, Nachrbl. Deutsch. malak. Ges. 1905, p. 83 [A. (*G.*) *bulowi*, n. sp., descr. on same page; FRUHSTORFER].  
*Pilsbryella*, n. subgen. of *Tomigerus* for *T. turbinatus*, &c.; IHERING, P. Malac. Soc. London vi, p. 199.  
*Strophocheilus (Borus) rugosus*, n. n. for *santacruci*, Pfr. & Pilsbry non d'Orb.; FULTON, J. Malac. xii, p. 23.  
*Strophocheilus (Borus) versatilis*, Brazil (?), (*B.*) *semimalleatus*, Peru; FULTON, t. c. p. 24, figg. : n. spp.  
*Tomigerus laevis*, *rochai*, p. 197, *corrugatus*, p. 198, Ceara; IHERING, P. Malac. Soc. London vi, figg. : n. spp.

### BULIMINIDÆ, UROCOPTIDÆ, and PUPIDÆ.

- Balia malleyi*, S. France; CAZIOT, Bull. Soc. zool. France xxx, p. 45, fig. : Also in Rev. Sci. Bourbonnais 1905, p. 99 : n. sp.  
*Buliminus*, phylogeny; WIEGMANN (641): *B. albocostatus*, n. subsp., with figg. of *B. prusanus*, *sylvestris*; KOBELT in ROSSMÆSSLER (495).  
*Buliminus larvatus* (Ancey MS.), Transcasplia; KOBELT in ROSSMÆSSLER (495), p. 21, fig. : n. sp.  
*Cerion glans*, n. var.; DALL, Smithson. Collect. quart. xlvi, p. 437: *C. eleutherae*, n. var.; DALL (158), p. 35.  
*Cerion (Strophiops) watlingense*, p. 438, (*S.*) *inconspicuum*, p. 439, (*S.*) *variabile*, p. 440, (*S.*) *brunneum*, (*S.*) *plegmatum*, p. 441, (*S.*) *northropi*, p. 442, *oweni*, p. 443, Bahamas; DALL, Smithson. Collect. quart. xlvi, figg. : n. spp.  
*Clausilia ardouiniana*, n. var.; DAUTZENBERG & FISCHER (171).  
*Coryna biarmata*, n. var.; KOBELT in ROSSMÆSSLER (495).

- Ena (Pachnodus) mcbeaniana*, Transvaal ; BURNUP, P. Malac. Soc. London vi, p. 302, fig. : n. sp.
- †*Eomegaspira*, Pils., is a synonym of *Palaeostoa*, Andr. ; COSSMANN, Rev. paleozool. ix, p. 59.
- Hendersoniu*, n. gen. for *H. palmeri*, n. sp., Mexico ; DALL, Smithson. Collect. quart. xlvi, p. 187, fig. [Renamed *Hendersoniella*, q. v.]
- Hendersoniella*, n. n. for *Hendersonia*, Dall non Wagner ; DALL, P. Soc. Washington xviii, p. 189.
- Holospira ferrissi*, p. 215, *cionella*, p. 217, Arizona, *regis* (Pils. & Ckl.), p. 218, New Mexico, *chiricahuana*, p. 219, Arizona ; PILSBRY, P. Ac. Philad. 1905, figg. : n. spp.
- Jaminia proscripta*, Christmas Island ; SMITH, Ann. Nat. Hist. xvi, p. 551, fig. : n. sp.
- Nenia*, notes on, with list of, Peruvian species ; EHRENMANN (195).
- Nenia callangana*, Peru ; EHRENMANN, Nachrbl. Deutsch. malak. Ges. 1905, p. 65, fig. : n. sp.
- Pupidæ*, nomenclature ; COCKERELL (123) : PILSBRY (451, 452) : DALL (149).
- Pupa anglica*, Fér., note on ; MARGIER (381) : *P. raymondi*, Mouss., n. var. ; ROSEN, Nachrbl. Deutsch. malak. Ges. 1905, p. 57.
- Pupillidae*, see under *Pupidæ*.
- Urocoptidæ* of S. Western United States ; PILSBRY (460).
- Vertigo substriata*, sinistral ; STANDEN (557) : *V. hirasei*, n. subsp. ; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 718.
- Vertigo perryi*, Rhode Island ; STERKI, Nautilus xix, p. 53 : n. sp.

### STENOGYRIDÆ and ACHATINELLIDÆ.

- Achatinidæ*, monograph continued ; PILSBRY in TRYON (600) : *A. passargei*, Mtns., figd. ; MARTENS (385), p. 754 : *A. gracilior*, Bttgr., is a synonym of *A. papyracea* var. *adelinæ*, Pils. ; ANON., Nautilus xix, p. 96 : *A. schweinfurthi*, n. var. ; GERMAIN, Bull. Mus. Paris xi, p. 251, fig.
- Achatina modestior*, Cameroons ; BOETTGER, Nachrbl. Deutsch. malak. Ges. 1905, p. 167, fig. : *A. morrelli*, Zambesi River ; PRESTON, P. Malac. Soc. London vi, p. 244, fig. : n. spp.
- Amastra alata* (Pfr.), figd. ; PILSBRY & VANATTA, P. Ac. Philad. 1905, p. 571.
- Amastra* (*Helicamastra*, n. sect.) *discus*, Oahu ; PILSBRY & VANATTA, t. c. p. 571; fig. : n. sp.
- Archachatina rhodostoma*, p. 115, *papyracea*, p. 117, n. var. ; PILSBRY in TRYON (600).
- Bacillum orthoceras*, G.-Austen, n. subsp. ; PILSBRY in TRYON (600), xviii, p. 3.
- Cæcilianella minuta*, Mouss., figd. ; BOETTGER, Nachrbl. Deutsch. malak. Ges. 1905, p. 112.
- Curvella duillyana*, n. n. for *C. sulcata*, D'Ailly non Chaper ; PILSBRY in TRYON (600), xviii, p. 48.
- Curvella redfieldi*, p. 49, *liberiana*, p. 50, Liberia ; PILSBRY in TRYON (600), xviii, figg. : *C. crozleyi*, p. 302, *straminea*, *succinea*, p. 303, *elevata*, p. 304, South Africa ; BURNUP, P. Malac. Soc. London vi, figg. : n. spp.
- Cyclumastra*, n. sect. of *Amastra*, type *A. cyclostoma*, Baldwin ; PILSBRY & VANATTA, P. Ac. Philad. 1905, p. 750.
- Euonyma turriformis*, Krauss, n. subsp. ; PILSBRY in TRYON (600), xviii, p. 44.
- Helicamastra*, n. sect. of *Amastra*, type *A. discus*, n. sp. ; PILSBRY & VANATTA, P. Ac. Philad. 1905, p. 570.
- Homorus erlangeri*, *garamulatae*, p. 129, *obesus*, p. 130, *ellerbecki*, *ginirensis*, p. 131, N. E. Africa ; KOEHL, Nachrbl. Deutsch. malak. Ges. 1905 :

- H. pattalus*, p. 147, *opeas*, p. 151, West Africa ; PILSBRY in TRYON (600), figg. : n. spp.
- Limicolaria flammulata*, n. var. ; BOETTGER, Nachrbl. Deutsch. malak. Ges. 1905, p. 172, fig. : *L. joubini*, figd. ; ROCHEBRUNE & GERMAIN (493).
- Limicolaria centralis*, French Soudan ; GERMAIN, Bull. Mus. Paris x, p. 467 : n. sp.
- Obeliscus natalensis*, South Africa ; BURNUP, P. Malac. Soc. London vi, p. 304, fig. : n. sp.
- Opeas opella*, Honolulu ; PILSBRY & VANATTA, P. Ac. Philad. 1905, p. 785, fig. : n. sp.
- Paropeas*, n. subgen. of *Prosopeas*, type *P. acutissimum*, Mousson ; PILSBRY in TRYON (600), xviii, p. 14.
- Petriola*, n. n. for *Trichodina*, Ancey non Ehrenberg ; DALL, Nautilus xviii, p. 143.
- Prosopeas acutissimum*, Mousson, n. var., p. 23, *anceyi*, n. n. for *P. macilentum*, Ancey non Reeve, p. 33 ; PILSBRY in TRYON (600), xviii.
- Prosopeas holosericum* (Boettger), Java and Sumatra ; PILSBRY in TRYON (600), xviii, p. 24, fig. : n. sp.
- Pterodiscus*, notes on genus and species, which belong to *Achatinellidæ* ; PILSBRY & VANATTA, P. Ac. Philad. 1905, p. 572.
- Rumina decollata*, note upon, with distribution ; CAZIOT (97).
- Serpæa foai*, Tanganyika ; GERMAIN, Bull. Mus. Paris xi, p. 255 : n. sp.
- Stenogyridæ*, monograph commenced ; PILSBRY in TRYON (600).
- Stenogryra rothschildiana*, Abyssinia ; NEUVILLE & ANTHONY, Bull. Mus. Paris xi, p. 115 : n. sp.
- Subulina kassaiana*, figd. ; ROCHEBRUNE & GERMAIN (493).
- Tornatellina rucuana*, Japanese Empire ; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 718 : n. sp.
- Tortaxis*, n. gen., type *Achatina erecta*, Bens., p. 5, with *T. lubricus* (Dtz.), ?n. sp., Tonkin, p. 11 ; PILSBRY in TRYON (600), xviii.
- Trichodina*, Ancey, renamed *Petriola*, q. v. : *T. monacha*, Morel, n. var. ; PILSBRY in TRYON (600), p. 189.
- Trichodina aratispira*, West Africa ; PILSBRY in TRYON (600), p. 187, fig. : n. sp.

### SUCCINEIDÆ, VERONICELLIDÆ and ONCIDIIDÆ.

- Arctonchis*, n. sect. of *Onchidella*, type *O borealis*, Dall ; DALL (165), p. 112.
- Onchidium verruculatum*, anatomy ; FARRAN (204), p. 358.
- Succinea brumpti*, figd. ; ROCHEBRUNE & GERMAIN (493).
- Succinea moussonii*, Kalahari ; MARTENS (385), p. 755, fig. : *S. ordinaria*, Tierra del Fuego ; SMITH, P. Malac. Soc. London vi, p. 338, fig. : *S. floridana*, Florida ; PILSBRY, Nautilus xix, p. 40 : *S. indiana*, Indiana ; PILSBRY, t. c. p. 28 : n. spp.
- Veronicella schivelyæ*, n. var. ; DALL, Smithson. Collect. quart. xlvi, p. 446.

### BASOMMATOPHORA.

#### AURICULIDÆ, LIMNÆIDÆ, PHYSIDÆ and CHILINIDÆ.

- Amphipeplea arguta*, radula ; SUTER, Tr. N. Zealand Inst. xxxvii, p. 251.
- Ancylus mariae*, Tasmania ; PETTERV, P. Soc. Tasmania 1900 & 1901, p. 1 : n. sp.
- Carychium nannodes*, Alabama ; CLAPP, Nautilus xix, p. 91, fig. : n. sp.

- Cassidula labrella, paludosa*, n. subspp.; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 718.
- Chilina fuegiensis*, Tierra del Fuego; SMITH, P. Malac. Soc. London vi, p. 339, fig.; n. sp.
- Caelostele cylindrata*, Cilicia; BOETTGER, Nachrbl. Deutsch. malak. Ges. 1905, p. 109, fig.; n. sp.
- Cyclolimnaea*, n. sect. of *Limnæa*, type *L. involuta*, Harvey; DALL (165), p. 64.
- Gundlachia lucasi*, New Zealand; SUTER, Tr. N. Zealand Inst. xxxvii, p. 250, fig.; *G. neozelanica*, New Zealand; SUTER, t. c. p. 258: n. spp.
- Haldemanina*, n. sect. of *Planorbula*, type *Planorbis wheatleyi*, Lea; DALL (165), p. 97.
- Isidora*, review of New Zealand species, with n. subsp. of *I. lirata*, Woods; SUTER, Tr. N. Zealand Inst. xxxvii, p. 267: *I. tabulata, lirata, radula*; SUTER, t. c. p. 252.
- Laimodonta bronni*, n. var.; DAUTZENBERG & FISCHER (171).
- Leuconopsis victoriæ*, Victoria, p. 11, *tatei*, South Australia, p. 12; GATLIFF, Victorian Natural. xxii, figg.; n. spp.
- Limnæa*, critical notes on some American forms; BAKER (20): Genitalia; BAKER (19): *L. stagnalis*, n. var.; BAKER, Nautilus xviii, p. 142: *L. stagnalis*, umbilicate var.; HUTTON, J. Conch. xi, p. 144: *L. parva*, Lea, notes on; BAKER, Nautilus xix, p. 52: *L. parva*, Caziot, is preoccupied; COCKERELL, J. Malac. xii, p. 89: *L. undussumæ*, Martens, n. var.; GERMAIN, Bull. Mus. Paris x, p. 467: *L. peregra* and *ovata*, notes; BROCKMEIER (66): *L. nimouensis*, figg.; ROCHEBRUNE & GERMAIN (493).
- Limnea faliconica*, p. 43, *guebhardi*, p. 44, S. France; CAZIOT, Bull. Soc. zool. France xxx, figg.; *L. blaisei*, Tonkin; DAUTZENBERG & FISCHER, J. Conchyl. liii, p. 116, fig.; *L. petersi*, p. 66, Alaska, *preblei*, Alaska and Manitoba, p. 70, (*Stagnicola*?) *perpolita*, p. 78, Alaska, (*S.*) *anticostiana*, p. 79, Anticosti I.; DALL (165), figg.; *L. sterkii*, Ohio; BAKER, Nautilus xix, p. 51: *L. owascoensis*, New York, *bryanti*, California; BAKER, op. cit. xviii, p. 141: n. spp.
- Paraspira*, n. sect. of *Tropidiscus*, type *Planorbis rotundatus*, Poiret; DALL (165), p. 86.
- Physa fontinalis*, embryology; WIERZEJSKI (642): *P. rhomboidea*, Crandall, name is preoccupied; COCKERELL, Nautilus xix, p. 96.
- Physa layardi*, Vate I.; ANCEY, Nautilus xix, p. 44: n. sp.
- Physopsis didieri*, figg.; ROCHEBRUNE & GERMAIN (493).
- Pierosoma*, n. sect. of *Helisoma* for *Planorbis trivolvis*, Say; DALL (165), p. 81.
- Planorbis campanulatus, exacuous*, n. var.; DALL (165): *P. bozasi*, figg.; ROCHEBRUNE & GERMAIN (493): *P. abyssinicus*, n. var.; GERMAIN, Bull. Mus. Paris x, p. 353.
- Planorbis tetragonostoma*, Lake Tchad; GERMAIN, Bull. Mus. Paris x, p. 467: *P. lamyi*, Tanganyika; GERMAIN, op. cit. xi, p. 256: n. spp.
- Planorbula tchadiensis*, Lake Tchad; GERMAIN, op. cit. x, p. 468: n. sp.
- Plecotrema punctigerum*, Ad., figg.; DAUTZENBERG & FISCHER (171).
- Plecotrema blaisei*, Tonkin; DAUTZENBERG & FISCHER, J. Conchyl. liii, p. 112, fig.; n. sp.
- Segmentina (Planorbula) christyi*, Alaska and Manitoba; DALL (165), p. 99, fig.; *S. chevalieri*, Lake Tchad; GERMAIN, Bull. Mus. Paris x, p. 468: n. spp.
- Torquis*, n. sect. of *Gyraulus*, type *Planorbis parvus*, Say; DALL (165), p. 86.
- Zospeum venetum*, p. 3, *lyratum*, p. 4, Italy; POLLONERA, Proteus iii, figg.: n. spp.

## SIPHONARIIDÆ and AMPHIBOLIDÆ.

*Ampullarina minuta*, Woods, is young of *A. fragilis*; MAY, P. Soc. Tasmania 1902, p. 113.  
*Siphonaria*, homing; WILLCOX (644).

## OPISTHOBRANCHIATA.

## NUDIBRANCHIATA.

Illustrations of, and notes on, South Australian species; BASEDOW & HEDLEY (30).

Nudibranchs of the Siboga Expedition, with anatomy, &c.; BERGH (41).

Critical notes on Pacific Nudibranchs; ELIOT (199).

Notes on Californian species; MACFARLAND (376).

Nudibranchs, maturation; SMALLWOOD (536).

*Acanthodoris metulifera*, Tasmania; BERGH (42), p. 98, fig. : *A. rhodoceras*, California; COCKERELL & ELIOT, J. Malac. xii, p. 38, fig. : *A. hudsoni*, p. 51, *brunnea*, p. 52, California; MACFARLAND, P. Soc. Washington xviii : n. spp.

*Aegires villosus*, Ceylon; FARRAN (204), p. 346, fig. : *Ae. albopunctatus*, California; MACFARLAND, P. Soc. Washington xviii, p. 45 : n. spp.

*Albania* (?) *verconis*, South Australia; BASEDOW & HEDLEY, Tr. R. Soc. S. Austral. xxix, p. 154, fig. : n. sp.

*Ancula pacifica*, California; MACFARLAND, P. Soc. Washington xviii, p. 53 : n. sp.

*Anisodoris sibogae*, p. 96, (?) *timorensis*, p. 97, East Indies; BERGH (41), figg. : n. spp.

*Aphelodoris luctuosa*, Tasmania, p. 75, *purpurea*, New Zealand, p. 77, *pallida*, Pacific Ocean, p. 78; BERGH (42), figg. : n. spp.

*Aporodoris* (?) *rubra*, East Indies; BERGH (41), p. 94, fig. : n. sp.

*Archidoris staminea*, South Australia; BASEDOW & HEDLEY, Tr. R. Soc. S. Austral. xxix, p. 151, fig. : n. sp.

*Cadlina marginata*, *flavomaculata*, California; MACFARLAND, P. Soc. Washington xviii, p. 43 : n. spp.

*Carminodoris blandula*, East Indies; BERGH (41), p. 111, fig. : n. sp.

*Casella rubra*, Flores; BERGH (41), p. 163, fig. : n. sp.

*Cephalopyge*, n. gen. for *Phyllirhoe trematoides*, Chun; HANEL, Zool. Jahrb. Syst. xxi, p. 451.

*Ceratosoma bicorne*, East Indies; BERGH (41), p. 167, fig. : *C. adelaidæ*, S. Australia; BASEDOW & HEDLEY, Tr. R. Soc. S. Austral. xxix, p. 156, fig. : n. spp.

*Cerberilla ambonensis*, Amboyna; BERGH (41), p. 225, fig. : n. sp.

*Chromodoridella*, n. gen. for *C. mirabilis*, n. sp. Natal; ELIOT, P. Malac. Soc. London vi, p. 233.

*Chromodoris universitatis*, Cockerell, and *tenuilinearis*, Farran, equal *C. californiensis*, Bergh, and *nigrostriata*, Eliot; COCKERELL & ELIOT, J. Malac. xii, p. 37.

*Chromodoris tenuilinearis*, Ceylon; FARRAN (204), p. 342, fig. : *C. tasmaniensis*, Tasmania, p. 69, *aegialia*, California, p. 70, *figurata*, p. 71, *atopa*, p. 73, New Zealand; BERGH (42), figg. : *C. flammulata*, p. 151, *marpessa*, p. 152, *venusta*, *ophthalmica*, p. 153, *nodulosa*, p. 154, *pantherina*, p. 155, *papulosa*, p. 156, *sibogae*, *inopinata*, p. 157, *lactea*, p. 159, *clitonota*, p. 160, *virgata*, p. 161, East Indies; BERGH (41), figg. : n. spp.

*Cratena cucullata*, Gisser I.; BERGH (41), p. 230, fig. : n. sp.

- Diaulula* (?) *gigantea*, p. 119, Roma I., (?) *rubra*, p. 120, Sula-Besi ; BERGH (41), figg. : n. spp.
- Dirona* (McFarland MS), n. gen. for *D. picta*, *albolineata*, McFarland ; COCKERELL & ELIOT, J. Malac. xii, p. 45.
- Discodoris labifera*, Abr., note on ; FARRAN (204), p. 335.
- Discodoris heathi*, California ; MACFARLAND, P. Soc. Washington xviii, p. 39 : *D. (?) sibogae* [= *D. rubra*, Bergh, post, p. 248], p. 104, (?) *liturata*, p. 106, (?) *tutescens*, p. 107, (?) *versicolor*, p. 108, East Indies ; BERGH (41), figg. : n. spp.
- Doridopsis*, notes on species ; ELIOT (200).
- Doridopsis reticulata* ; COCKERELL & ELIOT, J. Malac. xii, p. 41, fig. : n. sp.
- Doriopsilla* (?) *laevis*, off Timor ; BERGH (41), p. 179, fig. : n. sp.
- Doriopsis fulva*, California ; MACFARLAND, P. Soc. Washington xviii, p. 45 : *D. punctatella*, Pacific Ocean ; BERGH (42), p. 87, fig. : *D. erubescens*, p. 173, *amena*, p. 174, *flaccida*, *weberi*, p. 175, East Indies ; BERGH (41), figg. : n. spp.
- Doto africana*, E. Africa ; ELIOT, P. Zool. Soc. London 1904, ii, p. 285 : n. sp.
- Elysia marginata*, Pease, figd. ; ELIOT (200).
- Elysia dubia*, E. Africa ; ELIOT, P. Zool. Soc. London 1904, ii, p. 297, fig. : *E. thysanopoda*, Kei Is., p. 84, (?) *lineolata*, Saleyer, p. 85, *haingsisiana*, Haingsisi, p. 87 ; BERGH (41), figg. : n. spp.
- Ennoia longicirra*, Aru Is. ; BERGH (41), p. 234, fig. : n. sp.
- Facelina lineata*, E. Africa ; ELIOT, P. Zool. Soc. London 1904, ii, p. 288, fig. : n. sp.
- Flabellina* (?) *macassarana*, Macassar ; BERGH (41), p. 237, fig. : n. sp.
- Galvina producta*, Ceylon ; FARRAN (204), p. 332, fig. : n. sp.
- Geitodoris planata*, Alder & Hancock, note on ; ELIOT (196).
- Geitodoris mollina*, Caribbean Sea ; BERGH (42), p. 66, fig. : n. sp.
- Goniodoris punctata*, New Zealand ; BERGH (42), p. 91, fig. : n. sp.
- Halgerda punctata*, Ceylon ; FARRAN (204), p. 339, fig. : *H. graphica*, South Australia ; BASEDOW & HEDLEY, Tr. R. Soc. S. Austral. xxix, p. 152, fig. : *H. elegans*, Gunong-Api, p. 124, *rubra*, Banda, p. 126, *inornata*, Karakelang Is., p. 128 ; BERGH (41), figg. : n. spp.
- Halla indecora*, Aru Is. ; BERGH (41), p. 116, fig. : n. sp.
- Hero formosa*, n. var. ; ELIOT, P. Malac. Soc. London vi, p. 239.
- Hervia ceylonica*, Ceylon ; FARRAN (204), p. 331, fig. : *H. sibogae*, Kangean I. ; BERGH (41), p. 231, fig. : *H. lineata*, E. Africa ; ELIOT, P. Zool. Soc. London 1904, ii, p. 286, fig. : n. spp.
- Hexabranchus*, notes on species ; ELIOT (200).
- Hexabranchus punctatus*, Borneo ; BERGH (41), p. 92, fig. : n. sp.
- Hopkinsia*, n. gen. for *H. rosacea*, n. sp., California ; MACFARLAND, P. Soc. Washington xviii, p. 53.
- Hypselodoris epicuria*, South Australia ; BASEDOW & HEDLEY, Tr. R. Soc. S. Austral. xxix, p. 153, fig. : n. sp.
- Janolus cœruleopictus*, California ; COCKERELL & ELIOT, J. Malac. xii, p. 48, fig. : n. sp.
- Kalinga ornata*, A. & H., radula ; FARRAN (204), p. 347.
- Laila*, n. gen. for *L. cockerelli*, n. sp., California ; MACFARLAND, P. Soc. Washington xviii, p. 46.
- Linguella cinerea*, Ceylon ; FARRAN (204), p. 334, fig. : n. sp.
- Marionia distincta*, p. 206, *tessellata*, p. 207, East Indies ; BERGH (41), figg. : n. spp.
- Montereima*, n. gen. for *M. nobilis*, n. sp., California ; MACFARLAND, P. Soc. Washington xviii, p. 38.
- Myrrhine*, n. gen., p. 226, for *M. longicirra*, n. sp., p. 227, Saleyer ; BERGH (41), fig.
- Nembrotha rubropapulosa*, p. 198, *amitina*, (?) *rubroocellata*, p. 201, East

- Indies; BERGH (41), figg.: *N. (?) verconis*, South Australia; BASEDOW & HEDLEY, Tr. R. Soc. S. Austral. xxix, p. 158, fig.: n. spp.  
*Nirva*, n. gen. for *Doris* (?) *brockii*, Bergh; BERGH (41), p. 117.  
*Noteoidea*, n. gen. for *N. gigas*, p. 520, *purpurea*, p. 524, n. spp., S. Orkneys; ELIOT, Tr. R. Soc. Edinb. xli, figg.  
*Orodoris striata*, E. Africa; ELIOT, P. Zool. Soc. London 1904, ii, p. 269: n. sp.  
*Peltodoris rubescens*, Kabaena I.; BERGH (41), p. 134, fig.: n. sp.  
*Phestilla sibogae*, Rotte I.; BERGH (41), p. 232, fig.: n. sp.  
*Phidiuna tenuis*, E. Africa; ELIOT, P. Zool. Soc. London 1904, ii, p. 287: n. sp.  
*Phyllidia*, notes on species; ELIOT (200).  
*Phyllidia celestis*, Saleyer; BERGH (41), p. 182, fig.: n. sp.  
*Phyllobranchopsis*, n. gen. for *P. enteromorphae*, n. sp., California; COCKERELL & ELIOT, J. Malac. xii, p. 52, fig.  
*Placobranchus ocellatus*, Van Hasselt, figd.; ELIOT (200).  
*Platydoris inframaculata*, note on; FARRAN (204), p. 336.  
*Platydoris townsendi*, Maskat; ELIOT, J. Conch. xi, p. 253, fig.: *P. flam-mulata*, Borneo, p. 138, *sanguinea*, Saleyer, p. 139; BERGH (41), figg.: *P. herdmani*, p. 337, (?) *spinulosa*, p. 338, Ceylon; FARRAN (204), figg.: n. spp.  
*Pleuroleura pallida*, Kei Is., *suluensis*, Sulu Archipelago; BERGH (41), p. 212, figg.: n. spp.  
*Pleurophyllidia formosa*, Kel., notes on; FARRAN (204), p. 333.  
*Pleurophyllidia rosea*, p. 213, *stenidia*, p. 214, East Indies; BERGH (41), figg.: n. spp.  
*Polycera quadridelineata* (Müller), genital system; POHL (468).  
*Polycera atra*, California; MACFARLAND, P. Soc. Washington xviii, p. 50: n. sp.  
*Rostanga pulchra*, California; MACFARLAND, t. c. p. 40: n. sp.  
*Spurilla chromosoma*, California; COCKERELL & ELIOT, J. Malac. xii, p. 51: *S. orientalis*, Kei I.; BERGH (41), p. 223, fig.: n. spp.  
*Stiliger varians*, p. 290, *irregularis*, p. 291, East Africa; ELIOT, P. Zool. Soc. London 1904, ii, figg.: n. spp.  
*Thecacera maculata*, Karachi; ELIOT, J. Conch. xi, p. 241: n. sp.  
*Thordisa* (?) *caudata*, Ceylon; FARRAN (204), p. 340, fig.: *T. tristis*, Aru Is., p. 121, *hilaris*, Saleyer, p. 122, (?) *maculosa*, Borneo, p. 123; BERGH (41), figg.: n. spp.  
*Timorella*, n. gen. for *T. perplexa*, n. sp., Timor; BERGH (41), p. 241, fig.  
*Trevelyania rubra*, *rubromaculata*, p. 189, *rubropapulosa*, p. 191, (?) *defensa*, p. 192, East Indies; BERGH (41), figg.: n. spp.  
*Triopa longicornis*, (?) *tristis*, East Indies; BERGH (41), p. 186, figg.: n. spp.  
*Triopha maculata*, p. 49, *grandis*, p. 50, California; MACFARLAND, P. Soc. Washington xviii: n. spp.  
*Trippa affinis*, Savu; BERGH (41), p. 131, fig.: n. sp.  
*Tritonia pallida*, Stimpson, note on; ELIOT, Tr. R. Soc. Edinb. xli, p. 528.  
*Tritonia olivacea*, p. 204, *irrorata*, p. 205, East Indies; BERGH (41), figg.: *T. appendiculata*, S. Orkneys; ELIOT, Tr. R. Soc. Edinb. xlvi, p. 526, fig.: n. spp.  
*Tritoniopsis*, n. gen. for *T. brucei*, n. sp., Gough I.; ELIOT, t. c. p. 530, fig.

### TECTIBRANCHIATA (including PTEROPODA).

- Tectibranchs of the Siboga Expedition, with anatomy, etc.; BERGH (41).  
Anatomy and distribution of Pteropods; MEISENHEIMER (394).  
Distribution of Pteropods; MEISENHEIMER, Zool. Anz. xxix, pp. 155-163, 1 map.

- Acera bullata*, biology ; LEGENDRE (355).
- Aclesia varicolor*, Kur Is., p. 21, *pusilla*, Paternoster Is., p. 22 ; BERGH (41), figg. : n. spp.
- Actaeon ringei*, Le Maire Straits, Patagonia ; STREBEL, Zool. Jahrb. Syst. xxii, p. 576, fig. : n. sp.
- Aplysia*, physiology of stomach-muscles ; BRÜCKE (71) : *A. cornigera*, Sby., p. 349, *elongata*, Pease, p. 350, notes on ; FARRAN (204).
- Aplysia intermedia*, Ceylon ; FARRAN (204), p. 351, fig. : *A. scripta*, Amboyna, p. 4, *atromarginata*, p. 8, East Indies, *sibogæ*, p. 9, Timor, *vexans*, p. 10, Amboyna, *velifer*, p. 11, Flores ; BERGH (41), figg. : n. spp.
- Aplysiella mollis*, Ceylon ; FARRAN (204), p. 353, fig. : *A. pasirana*, East Indies, p. 24, *viridis*, Paternoster Is., p. 25 ; BERGH (41), figg. : n. spp.
- Berthella borneensis*, Borneo, p. 69, *minor*, p. 70, Sulu Archipelago, *inoperta*, Damar Is., p. 73 ; BERGH (41), figg. : n. spp.
- Bulla gallica*, France (Atlantic and Mediterranean), p. 42, *subquadrata*, Monts., Mediterranean, p. 43 ; LOCARD, Ann. Soc. Agric. Lyon ii : n. spp.
- Chelidonura velutina*, p. 43, *amœna*, p. 45, Saleyer ; BERGH (41), figg. : n. spp.
- Creseis caliciformis*, S. Indian Ocean ; MEISENHEIMER (394), p. 308, fig. : n. sp.
- Cylichna striata*, Hutton, note and fig. ; MURDOCH, Tr. N. Zealand Inst. xxxvii, p. 218 : *C. atkinsoni*, Woods, figured ; MAY, P. Soc. Tasmania 1902, p. 113.
- Cylichna tenuis*, New South Wales ; HEDLEY, Rec. Austral Mus. vi, p. 54, fig. : n. sp.
- Dolabifera maillardii*, Desh., p. 353, *scapula*, Mart., p. 354, notes on ; FARRAN (204).
- Dolabifera marginata*, Ceylon ; FARRAN (204), p. 354, fig. : n. sp.
- Frocymbulia*, n. gen., p. 13, for *P. valdiviae*, n. sp., p. 14, N. of New Amsterdam Is. ; MEISENHEIMER (394), fig.
- Gastropteron sibogæ*, Paternoster Is. ; BERGH (41), p. 32, fig. : n. sp.
- Halopsyche gaudichaudi*, anatomy ; MEISENHEIMER (394).
- Limacina contorta*, Monts., figured ; SYKES (586).
- Notarchus ceylonicus*, Ceylon ; FARRAN (204), p. 355, fig. : n. sp.
- Notobranchæa valdiviae*, Indian Ocean ; MEISENHEIMER (394), p. 55, fig. : n. sp.
- Ophthalmidæ*, new group for *Phanerophthalmus*, etc. ; BERGH (41).
- Oscaniella alboguttata*, p. 58, *lugubris*, p. 60, *purpurascens*, p. 62, *dubia*, p. 63, *inermis*, p. 64, *modesta*, p. 65, East Indies ; BERGH (41), figg. : n. spp.
- Oscanius weberi*, Saleyer, etc., p. 53, *sibogæ*, p. 55, *papuligerus*, Kei Is., p. 56 ; BERGH (41), figg. : n. spp.
- Phanerophthalmus pauper*, East Indies ; BERGH (41), p. 37, fig. : n. sp.
- Philine aperta*, eggs ; SCHIMKEWITSCH (505, 506) : Three European spp. figured, with *P. talismani*, n. n. for *P. striatula*, Locard non Jeffreys ; SYKES (586).
- Philine rubra*, Taam Is. p. 29, *elegans*, East Indies, p. 31 ; BERGH (41), figg. : n. spp.
- Phyllaplysia inornata*, Kur Is. ; BERGH (41), p. 27, fig. : *P. albomaculata*, p. 351, *pellucida*, p. 352, Ceylon ; FARRAN (204), figg. : n. spp.
- Pleurobranchæa brocki*, Bergh, notes on ; FARRAN (204), p. 355.
- Pleurobranchæa morula*, Paternoster Is. ; BERGH (41), p. 48, fig. : n. sp.
- Pleurobranchus citrinus*, Rupp. & Leuck., note on ; FARRAN (204), p. 356.
- Pleurobranchus hornelli*, Ceylon ; FARRAN (204), p. 357, fig. : *P. griseus*, p. 66, *latipes*, p. 67, East Indies ; BERGH (41), figg. : n. spp.

- Pneumoderma euryctylum*, Gulf of Guinea ; MEISENHEIMER (394), p. 51, fig. : n. sp.
- Pneumodermopsis macrochira*, S. Atlantic and S. Indian Oceans ; MEISENHEIMER (394), p. 47, fig. : n. sp.
- Retusa serendibensis*, Ceylon ; PRESTON, J. Malac. xii, p. 1, fig. : n. sp.
- Schizobrachium*, n. gen., p. 51, for *S. polycotylum*, n. sp., p. 52, S. Indian Ocean ; MEISENHEIMER (394), fig.
- Thliptodon diaphanus*, Gulf of Guinea and E. Indian Ocean ; MEISENHEIMER (394), p. 59, fig. : n. sp.
- Tornatina detruncata*, Monts., Mediterranean ; LOCARD, Ann. Soc. Agric. Lyon ii, p. 60 : *T. tenuistriata*, Ceylon ; PRESTON, J. Malac. xii, p. 1, fig. : *T. (Utriculus) paessleri*, Patagonia ; STREBEL, Zool. Jahrb. Syst. xxii, p. 577, fig. : n. spp.

## NUCLEOBANCHIATA.

Heteropoda, heart and excretory organ ; RYWOSCH (500).

## PROSOBRANCHIATA.

## PECTINIBANCHIATA.

## TOXOGLOSSA.

## TEREBRIDÆ, CONIDÆ, PLEUROTOMIDÆ, and CANCELLARIIDÆ.

- Admete woodworthi*, California ; DALL, Nautilus xviii, p. 123 : *A. magellonica*, Magellan Region ; STREBEL, Zool. Jahrb. Syst. xxii, p. 594, fig. : n. spp.
- Bathybela*, n. sect. of *Bela* for *Thesbia nudator*, Loc., etc. ; KOEHL (340), p. 276.
- Bathyclionella*, n. sect. of *Bela* for *Pleurotoma quadruplex*, Watson ; KOEHL (340), p. 279.
- Bathytoma sarcinula*, New South Wales ; HEDLEY, Rec. Austral. Mus. vi, p. 53, fig. : n. sp.
- Bela angusteplicata*, p. 583, *lateplicata*, p. 584, *gazellæ*, p. 585, *magellanica*, p. 586, *michaelseni*, p. 587, *paessleri*, p. 588, *martensi*, p. 589, Magellan Region ; STREBEL, Zool. Jahrb. Syst. xxii, figg. : n. spp.
- Cancellaria exquisita* [= *wilmeri*, Sby.], Ceylon ; PRESTON, J. Malac. xii, p. 3, fig. : n. sp.
- Clathurella epentroma*, New Zealand ; MURDOCH, Tr. N. Zealand Inst. xxxvii, p. 219, fig. : n. sp.
- Clavatula gaylordæ*, Ceylon ; PRESTON, J. Malac. xii, p. 2, fig. : n. sp.
- Clionella semicostata* (Kien.), anatomy ; BERGH (42), p. 102.
- Conus fuscolineatus*, Sierra Leone ; SOWERBY, P. Malac. Soc. London vi, p. 282, fig. : n. sp.
- Drillia consociata*, n. var. ; SYKES, P. Malac. Soc. London vi, p. 318, fig.
- Drillia lyullensis*, New Zealand ; MURDOCH, Tr. N. Zealand Inst. xxxvii, p. 221, fig. : *D. levanderi*, Massowa ; STURANY, Nachrbl. Deutsch. malak. Ges. 1905, p. 135, fig. : *D. janseni*, p. 580, *suxdorfi*, p. 582, *kophameli*, p. 582, Magellan Region ; STREBEL, Zool. Jahrb. Syst. xxii, figg. : n. spp.
- Genota vafra*, West Africa ; SYKES, P. Malac. Soc. London vi, p. 317, fig. : n. sp.
- Mangilia lamarcki*, n. n. for *Pleurotoma plivata*, Latn. ; PEZANT, Feuille Natural. xxxv, p. 89.

- Mangilia perattenuata*, California; DALL, Nautilus xviii, p. 123 : *M. emina*, New South Wales; HEDLEY, Rec. Austral. Mus. vi, p. 53, fig. : *M. mangeri*, (*Glyphostoma*) *carioti*, (*G.*) *ecolorata*, (*Clathurella*) *carnicolor*, p. 2, (*Cythara*) *brunneolineata*, p. 3, Ceylon; PRESTON, J. Malac. xii, figg. : n. spp.
- Mitromorpha suteri*, New Zealand; MURDOCH, Tr. N. Zealand Inst. xxxvii, p. 220, fig. : n. sp.
- Ohlinia*, n. gen. for *Admete* (?) *limnæformis*, Smith; STREBEL, Zool. Jahrb. Syst. xxii, p. 597, fig.
- Pleurobela*, n. sect. of *Belomitra* for *B. spelta* (Monts.), Locard; KOEHL (340), p. 301.
- Pleurotomidae* of European Seas reviewed; KOEHL (340) : New Zealand species; SUTER (572).
- P. weldiana*, Woods, equals *Drillia fucata*, Rve.; HEDLEY, P. Soc. Tasmania 1902, p. 77.
- Pusionella remorata*, West Africa; SYKES, P. Malac. Soc. London vi, p. 317, fig. : n. sp.
- Savatieria dubia*, p. 641, *pfefferi*, p. 642, *molinæ*, p. 644, *areolata*, p. 645, Magellan Region; STREBEL, Zool. Jahrb. Syst. xxii, figg. : n. spp.
- Surcula buchanani*, Hutton, *trailli*, Hutton, notes on names and synonyms; SUTER, P. Malac. Soc. London vi, p. 200.
- Terebra hedleyana*, n. n. for *Terebra hedleyi*, Pils., preocc.; PILSBRY, P. Ac. Philad. 1905, p. 101.
- Thesbia michaelseni*, p. 590, *filostriata*, p. 591, *ohlini*, p. 592, Magellan Region; STREBEL, Zool. Jahrb. Syst. xxii, figg. : n. spp.
- Villiersia*, Monts., renamed *Villiersiella*, q. v.
- Villiersiella*, apparently n. n. for *Villiersia*, Monts. nec D'Orb.; KOEHL (340), p. 381.

## RACHIGLOSSA.

## OLIVIDÆ, MARGINELLIDÆ, VOLUTIDÆ, and MITRIDÆ.

- Erato albescens*, California; DALL, Nautilus xviii, p. 124 : n. sp.
- Marginella tasmanica*, *cypræoides*, Woods, figd.; MAY, P. Soc. Tasmania 1902, p. 109.
- Marginella imperatrix*, *keppeli*, p. 315, West Africa, *repentina*, Mayotte, *binotata*, Indian Ocean (? Ceylon), *hesperia*, off Cape St Vincent, p. 316; SYKES, P. Malac. Soc. London vi, figg. : n. spp.
- Mitra* piercing *Fistulana*; SMITH (538) : Some spp. figd.; BÜLOW (82) : *M. tasmanica*, Woods, figd.; MAY, P. Soc. Tasmania 1902, p. 109.
- Oliva peruviana*, anatomy; HALLER (260) : *O. tigridella*, Duclos, note on; BRIDGMAN (62) : *O. oryza*, Lam., note on; BRIDGMAN (61).
- Voluta*, some spp. figd.; BÜLOW (82).
- Vulpecula* (*Pusia*) *hedleyi*, New Zealand; MURDOCH, Tr. N. Zealand Inst. xxxvii, p. 228, fig. : n. sp.

## FASCIOLARIIDÆ, TURBINELLIDÆ, BUCCINIDÆ, NASSIDÆ, COLUMBELLIDÆ, MURICIDÆ, and CORALLIOPHILIDÆ.

- Anomacme*, new group of *Euthria*, for *E. smithi*, n. sp.; STREBEL, Zool. Jahrb. Syst. xxii, p. 633.
- †*Aptycholathyrus*, n. gen. for *A. lirofunatus*, n. sp., Eocene, Cotentin; COSSMANN & PISSARRO, Bull. Soc. geol. Normand. xxiv, p. 44.
- Buccinum*, some spp. figd., with notes and n. varr.; HÄGG (257) : *B. chishimanum*, figd.; PILSBRY, P. Ac. Philad. 1905, p. 103.
- Buccinum bromsi*, Spitzbergen; HÄGG, Arkiv Zool. ii, No. 13, p. 57, fig. : *B. unicum*, Japan; PILSBRY, P. Ac. Philad. 1905, p. 102, fig. : n. spp.

- Columbella huttoni*, Suter, n. n. for *Lachesis sulcata*, Hutton, preocc. ; MURDOCH, Tr. N. Zealand Inst. xxxvii, p. 223 : *C. pardalina*, n. subsp. ; PILSBRY, P. Ac. Philad. 1905, p. 102 : *C. legrandi*, Woods, figd. ; MAY, P. Soc. Tasmania 1902, p. 110.
- Columbella perlævis*, (*Atilia*) *macandrewi*, ? Ceylon ; SOWERBY, Ann. Nat. Hist. xvi, p. 189 : *C. (Mitrella) multistriata*, Ceylon ; PRESTON, J. Malac. xii, p. 3, fig. : *C. (Seminella) decorata*, p. 635, *paessleri*, *melvillei*, p. 637, Magellan Region ; STREBEL, Zool. Jahrb. Syst. xxii, figg. : *C. transitans*, *paxillus*, p. 224, *saxatilis*, p. 225, New Zealand ; MURDOCH, Tr. N. Zealand Inst. xxxvii, figg. : n. spp.
- Euthria ringei*, p. 619, *michaelseni*, p. 621, *janseni*, p. 622, *mulachi*, p. 623, *paessleri*, p. 624, *philippii*, p. 626, *martensi*, p. 630, *agnesia*, p. 631, *kobelki*, p. 632, *smithi*, p. 633, Magellan Region ; STREBEL, Zool. Jahrb. Syst. xxii, figg. : n. spp.
- Fasciolaria tulipa*, cannibalism and larval excretion-organs ; GLASER (238).
- Glypteuthria*, new group of *Euthria*, for *E. meridionalis*, Smith, etc. ; STREBEL, Zool. Jahrb. Syst. xxii, p. 627.
- Latiaxis kieneri*, Philippines ; HIDALGO (286), p. 3 : n. sp.
- Leptoconchus* sp., Marshall Is. ; SCHNEE (507).
- Maculotriton bracteatus*, var. figd. ; PILSBRY, P. Ac. Philad. 1905, p. 103.
- Megalatractus aruanus*, notes on ; HEDLEY, Rec. Austral. Mus. vi, p. 98.
- Murex (Phyllumotus) santarosana*, California ; DALL, Nautilus xix, p. 14 : n. sp.
- Nassa obsoleta*, life history, etc. ; DIMON (183).
- Pareuthria*, n. group of *Euthria*, for *E. cornea*, etc. ; STREBEL, Zool. Jahrb. Syst. xxii, p. 600.
- Purpura*, earliest use of name ; DALL, P. Soc. Washington xviii, p. 189 : Nutrition of embryo ; PELSENEER (443).
- Ricinula lischkei*, Red Sea ; HIDALGO (286), p. 2 : n. sp.
- Sycotypus*, physiology of alimentary canal ; MENDEL & BRADLEY (401, 402).
- Tritonidea lamareki*, n. n. for *Fusus polygonus*, Lam. non Gmel. ; PEZANT, Feuille Natural. xxxv, p. 88.
- Tritonidea (Cantharus) fuscopicta*, ? Ceylon ; SOWERBY, Ann. Nat. Hist. xvi, p. 191 : n. sp.
- Trophon (Kalydon) curta*, New Zealand ; MURDOCH, Tr. N. Zealand Inst. xxxvii, p. 228, fig. : n. sp.
- Usilla gouldi* (Smith), figd. ; PILSBRY, P. Ac. Philad. 1905, p. 104.

## TÆNIOGLOSSA.

LOTORIIDÆ, CASSIDIDÆ, DOLIIDÆ, CYPRÆIDÆ, STROMBIDÆ,  
APORRHAIDÆ, and STRUTHIOLARIIDÆ.

- Aquillus nobilis*, Cour., figd. ; BÜLOW (82).
- Casmaria*, notes on genus and species ; MELVILL (396).
- Cassidaria rugosa*, anatomy ; REYNELL (482) : *C. echinophora*, variation ; VINASSA DE REGNY (613).
- Cypræa*, notes on, with n. varr. ; VAYSSIÈRE (604, 605) : Four n. varr. ; MELVILL (397) : Several n. varr. ; ROUS (497) : *C. miliaris*, *capensis*, n. varr. ; ROUS, Nautilus xix, p. 29.
- †*Digitolabrum*, n. sect. of *Dientomochilus*, type *Rostellaria princeps*, Vass. ; COSSMANN, Essais Pal. Comp. vi, p. 40 [om. 1904].
- Dolium perdix* (L.), anatomy ; BERGH (42), p. 105.
- Lotoriidæ*, notes on nomenclature ; DOLLFUS (187).
- Rostellaria crispata* (Sow.), anatomy ; BERGH (42), p. 107 : *R. delicatula*, variation and distribution ; MELVILL & STANDEN (399).

*Strombus pugilis*, sexual dimorphism; COLTON (130): Notes on animal, habits, etc.; COLTON (131): *S. pugilis*, n. var.; FLICK, Nautilus xix, p. 32.

### CERITHIIDÆ, PLANAXIDÆ, TRICHOTROPIDIDÆ, and CÆCIDÆ.

*Bittium michaelseni*, Magellan Region; STREBEL, Zool. Jahrb. Syst. xxii, p. 655, fig. : n. sp.

Cæcidæ; DISTASO (184).

*Cerithiopsis halligani*, New South Wales; HEDLEY, Rec. Austral. Mus. vi, p. 51, fig. : *C. abjecta*, *brunneoflava*, *orientalis*, Ceylon; PRESTON, J. Malac. xii, p. 4, figg.: *C. sarissa*, New Zealand; MURDOCH, Tr. N. Zealand Inst. xxxvii, p. 221, fig. : n. spp.

*Cerithium tuberculatum*, L., is really a *Potamides*; DAUTZENBERG & FISCHER, J. Conchyl. liii, p. 130.

*Cerithium tomlinii*, Ceylon; PRESTON, J. Malac. xii, p. 3, fig. : *C. thaanumi*, *hawaiense*, Hawaiian Is.; PILSBRY & VANATTA, P. Ac. Philad. 1905, p. 576 [Figd.; t. c. p. 787]: *C. voyi*, p. 787, Caroline and Hawaiian Is., *nesioticum*, Hawaiian Is., &c., p. 789; PILSBRY & VANATTA, t. c. figg. : n. spp.

+*Horizostoma*, n. subgen. of *Cerithium* for *C. heterostoma*, Gein.; DENINGER, Beitr. Pal. Oesterr.-Ung. xviii, p. 15.

+*Irania*, n. gen. for *Vicarya fusiformis*, Hislop, &c.; DOUVILLÉ (192), p. 319.

*Planaxis abbreviata*, n. subsp.; PILSBRY, P. Ac. Philad. 1905, p. 105.

*Protoma pulchra*, Sierra Leone; SOWERBY, P. Malac. Soc. London vi, p. 281, fig. ; n. sp.

*Pseudoparastrophia*, n. gen., type *P. levigata*, n. sp., Mediterranean; DISTASO, Zool. Jahrb. Syst. xxii, p. 434, fig.

*Pseudovertagus*, n. sect. of *Cerithium*, type *C. aluco*, L.; VIGNAL, Bull. Mus. Paris x, p. 358.

*Pyrazus*, notes on spp.; VIGNAL (611).

*Trichotropis tenuis*, Sm., figd.; HÄGG (257).

### MELANIIDÆ, PSEUDOMELANIIDÆ, PLEUROCERIDÆ, LITTORINIDÆ, and FOSSARIDÆ.

*Fossarina lineata*, ? Ceylon; SOWERBY, Ann. Nat. Hist. xvi, p. 188 : n. sp.

*Fossarus bulimoides*, Woods, is young of *Adelacteon casta*, Ad.; MAY, P. Soc. Tasmania 1902, p. 111.

*Fossarus oblongus*, ? Ceylon; SOWERBY, Ann. Nat. Hist. xvi, p. 188 : n. sp.

*Goniobasis columbiensis*, British Columbia; WHITEAVES, Nautilus xix, p. 61, fig. : n. sp.

*Littorina*, vitality; SMITH, P. Malac. Soc. London vi, p. 272.

*Melania tuberculata*, Müll., note on synonymy; DAUTZENBERG & FISCHER, J. Conchyl. liii, p. 141.

*Melania gottschei*, p. 26, *succincta*, p. 28, *multisculpta*, p. 29, *forticosta*, p. 31, *tegulata*, p. 32, *nodiperda*, p. 33, *nodifila*, p. 38, *graniperda*, p. 39, *coreana*, p. 40, *multicincta*, p. 44, *extensa*, p. 45, *paucicincta*, p. 46, *ovulum*, p. 47, *globus*, p. 48, Martens, Korea, figd.; MARTENS, Zool. Jahrb. Suppl. viii.

*Melanopsis hungarica*, notes on; KORMOS (345).

*Paramelania nassa*, n. var.; GERMAIN, Bull. Mus. Paris xi, p. 259.

+*Rhabdostrophus*, n. subgen. of *Loxonema* for *L. grindrodii*, *pseudofasciatum*, n. spp., Silurian; DONALD, Quart. J. Geol. Soc. lxi, p. 565.

*Turristylus*, n. subgen. of *Trypanostylus* for *T. triadicus*, Kittl; &c. ;  
BLASCHKE, Beitr. Pal. Oesterr.-Ung. xvii, p. 205.

SOLARIIDÆ, RISSOIIDÆ, HYDROBIIDÆ, VIVIPARIDÆ,  
VALVATIDÆ, AMPULLARIIDÆ, and ASSIMINEIDÆ.

- Alaba oldroydi*, California ; DALL, Nautilus xix, p. 15 : n. sp.  
*Ampullaria gigas*, account of ; BRÜNING (73, 74).  
*Ampullaria chevalieri*, Chari Region ; GERMAIN, Bull. Mus. Paris x, p. 469 :  
n. sp.  
*Assiminea brevicula*, Pfr., figd. ; DAUTZENBERG & FISCHER, J. Conchyl. liii,  
p. 163.  
*Assiminea francoisi*, p. 164, *interrupta*, p. 165, Tonkin ; DAUTZENBERG &  
FISCHER, t. c. figg. : n. spp.  
*Bithynia martreti*, Mamoun Country ; GERMAIN, Bull. Mus. Paris x, p. 469 :  
n. sp.  
*Cingula kurilensis*, Kuril Is. ; PILSBRY, P. Ac. Philad. 1905, p. 106, fig. :  
n. sp.  
*Cleopatra morrelli*, Zambesi River ; PRESTON, P. Malac. Soc. London vi,  
p. 300, fig. : *C. trisulcata*, Tanganyika ; GERMAIN, Bull. Mus. Paris xi,  
p. 257 : n. spp.  
*Cochliopa rowelli*, note on habitat ; PILSBRY (458).  
*Daudebardiella*, n. gen., p. 119, for *D. negelei*, p. 121, *asiana*, p. 122,  
n. spp., Cilicia ; BOETTGER, Nachrbl. Deutsch. malak. Ges. 1905,  
figg.  
*Diala tumida*, Woods, note on ; MAY, P. Soc. Tasmania 1902, p. 111.  
*Diala polita*, *semipellucida*, Ceylon ; PRESTON, J. Malac. xii, p. 4, figg. :  
n. spp.  
*Fenella purpureoapicata*, Ceylon ; PRESTON, t. c. p. 5, fig. : n. sp.  
*Lanistes foai*, Upper Congo ; GERMAIN, Bull. Mus. Paris xi, p. 256 :  
n. sp.  
*Larietia sarana*, p. 114, *sodalis*, *compacta*, p. 116, Cilicia ; BOETTGER,  
Nachrbl. Deutsch. malak. Ges. 1905, figg. : n. spp.  
*Lioplax pilsbryi*, Florida ; WALKER, Nautilus xviii, p. 133, fig. : n. sp.  
*Paludestrina jenkinsi*, n. var. ; OVERTON (431).  
*Paludestrina salsa*, Massachusetts ; PILSBRY, Nautilus xix, p. 90, fig. :  
n. sp.  
*Paludina vivipara*, development ; OTTO & TÖNNIGES (430) : *P. quadrata*,  
Bens., n. var. ; DAUTZENBERG & FISCHER, J. Conchyl. liii, p. 157.  
*Paulia exigua*, Cilicia ; BOETTGER, Nachrbl. Deutsch. malak. Ges. 1905,  
p. 118, fig. : n. sp.  
*Potamopyrgus*, review of New Zealand species ; SUTER, Tr. N. Zealand  
Inst. xxxvii, p. 258.  
*Potamopyrgus brevior*, VATE I. ; ANCEY, Nautilus xix, p. 46 : *P. sub-*  
*terraneus*, New Zealand ; SUTER, Tr. N. Zealand Inst. xxxvii, p. 267,  
fig. : n. spp.  
*Rissoia cyclostoma*, *agnesi*, Woods, p. 112, *rubicunda*, Tate & May, p. 119,  
figl. ; MAY, P. Soc. Tasmania 1902.  
*Rissoia vulgaris*, *micans*, *zosterophila*, p. 277, *carnosa*, *candidissima*, p. 278,  
New Zealand ; WEBSTER, Tr. N. Zealand Inst. xxxvii, figg. : *R. leptalea*, p. 228,  
*microstriata*, *insculpta*, p. 229, New Zealand ;  
MURDOCH, t. c. figg. : n. spp.  
*Rissoina*, notes on three spp. ; WEBSTER, t. c. pp. 278 & 279 : *R. gertrudis*,  
Woods, figd. ; HEDLEY, P. Soc. Tasmania 1902, p. 78 : *R. flindersi*,  
Woods, note and fig. ; MAY, t. c. p. 111.  
*Rissoina agrestis*, New Zealand ; WEBSTER, Tr. N. Zealand Inst. xxxvii,  
p. 279, fig. : *R. pellucida*, *delicatula*, *oscitans*, (*Rissoina*) *filicostata*,

- (*Morchiella*) *lankaensis*, Ceylon ; PRESTON, J. Malac. xii, p. 5, figg. : n. spp.
- Somatogyrus walkerianus*, Alabama ; ALDRICH, Nautilus xviii, p. 140, fig. : n. sp.
- Stenothyra monilifera*, Bens., figd. ; DAUTZENBERG & FISCHER, J. Conchyl. liii, p. 153.
- Torinia densegranosa*, Japan ; PILSBRY, P. Ac. Philad. 1905, p. 106, fig. : n. sp.
- Valvata lewisi*, n. var. ; DALL (165), p. 123.
- Valvata nylanderi*, Maine ; DALL (165), p. 122 : n. sp.
- Vitrella*, n. varr. from Wurttemberg ; GEYER (234).
- Vitrella saxigena*, p. 297, *gonostoma*, p. 299, *suevica*, p. 300, Wurttemberg ; GEYER, Jahresh. Ver. Wurttemb. lxi, figg. : n. spp.
- Vivipara conlecta*, sinistral ; STANDEN (558) : *V. conlecta*, n. var. ; TAYLOR, J. Conch. xi, p. 144.
- Vivipara densestriata*, Zambesi River ; PRESTON, P. Malac. Soc. London vi, p. 300, fig. : *V. passargei*, Kalahari ; MARTENS (385), p. 757, fig. : *V. foai*, Tanganyika, *lensanti*, Lake Tchad ; GERMAIN, Bull. Mus. Paris xi, p. 257 : n. spp.

### CYCLOPHORIDÆ and CYCLOSTOMATIDÆ.

- Alycaeus varius*, Formosa ; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 729 : n. sp.
- Cataulus*, notes on with n. var. of *C. marginatus* ; SYKES (587).
- Cataulus smithi*, *prestoni*, p. 56, congener, p. 57, Ceylon ; SYKES, J. Malac. xii, figg. : n. spp.
- Cyathopoma taiwanicum*, Formosa ; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 724 : n. sp.
- Cyclophorus unicus*, Mabille, figd. ; DAUTZENBERG & FISCHER, J. Conchyl. liii, p. 167 : *C. turgidus*, n. subsp. ; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 705.
- Cyclostomatidæ*, revision of American groups ; DALL, P. Malac. Soc. London vi, p. 208 : *C. sulcatum*, Drap., and allied spp., note on ; CAZIOT (96).
- Cyclotus taivanus*, n. subsp. ; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 705 : *C. taivanus*, *swinhoei*, *minutus*, n. subspp. ; PILSBRY & HIRASE, t. c. p. 723.
- Cyclotus (Eucyclotus) amabilis*, N. Borneo ; FULTON, Ann. Nat. Hist. xv, p. 93 : n. sp.
- Diplomatina tokunoshimana*, *tosana*, n. subspp. ; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 706.
- Diplomatina (Gastroptrychia) electa*, N. Borneo ; FULTON, Ann. Nat. Hist. xv, p. 94 : *D. (Nicida) lankaensis*, (*N.*) *delectabilis*, Ceylon ; PRESTON, J. Malac. xii, p. 9, figg. : *D. taiwanica*, p. 726, *camura*, *prava*, p. 727, Formosa ; PILSBRY & HIRASE, P. Ac. Philad. 1905 : n. spp.
- Hybocystis gravidu*, *crossei*, and *rochebrunei* are all the same ; DAUTZENBERG & FISCHER, J. Conchyl. liii, p. 171.
- Japonia zebra*, p. 722, *formosana*, p. 723, Formosa ; PILSBRY & HIRASE, P. Ac. Philad. 1905 : n. spp.
- Lagochilus scissimargo*, Bens., *fischeri*, Morl., notes on with figg. and n. varr. ; DAUTZENBERG & FISCHER, J. Conchyl. liii, p. 169.
- Lagochilus proprium*, Borneo ; FULTON, Ann. Nat. Hist. xv, p. 93 : n. sp.
- Opisthosiphon*, n. gen., type *Chondropoma bahamense*, Shuttl. ; DALL, P. Malac. Soc. London vi, p. 209.
- Opisthostoma fraternum*, North Borneo ; SMITH, Ann. Nat. Hist. xv, p. 360 : *O. shelfordi*, *sadongense*, p. 189, *picsingense*, p. 190, Sarawak ; SMITH, P. Malac. Soc. London vi, figg. : n. spp.

- Palaina francoisi*, Espiritu Santo I.; ANCEY, Nautilus xix, p. 44: *P. (Adelopoma) paucicostata*, Japanese Empire; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 707: *P. formosana*, Formosa; PILSBRY & HIRASE, t. c. p. 728: n. spp.
- Parachondria*, n. subgen. of *Chondropoma*, type *Turbo fascia*, Wood; DALL, P. Malac. Soc. London vi, p. 209.
- Pseudopomatias eos*, Formosa; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 728: n. sp.
- Pupinella oshimae*, n. subsp.; PILSBRY & HIRASE, t. c. p. 705.
- Rhytidopoma euploca*, Bahamas; DALL, Smithson. Collect. quart. xlvii, p. 449, fig.: n. sp.

#### TRUNCATELLIDÆ.

- Blandfordia formosana*, Formosa; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 750: n. sp.
- Geomelania*, note on type; SYKES, P. Malac. Soc. London vi, p. 225, fig.
- Geomelania jarvisi*, Jamaica; SYKES, t. c. p. 226, fig.: n. sp.
- Truncatella japonica*, Japanese Empire; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 707: n. sp.

#### CAPULIDÆ, XENOPHORIDÆ, ADEORBIIDÆ, LAMELLARIIDÆ and NATICIDÆ.

- Adeorbis angulata*, New South Wales; HEDLEY, Rec. Austral. Mus. vi, p. 50, fig.: n. sp.
- Caledoniella contusiformis*, South Australia; BASEDOW, Tr. R. Soc. S. Austral. xxix, p. 183, fig.: n. sp.
- Crepidula*, adaptation of shell; GRAF (244): *C. rugosa*, n. varr.; WILLIAMSON, Nautilus xix, p. 50: *C. nivea*, var.; DALL (154).
- Natica catena*, scalariform; SPAN, J. Conch. xi, p. 159, fig.
- Natica (Haloconcha) hirasei*, Japan; PILSBRY, P. Ac. Philad. 1905, p. 105, fig.: n. sp.
- †*Phryx*, n. subgen. of *Capulus* for *C. bilateralis*, n. sp., Trias, Tirol; BLASCHKE, Beitr. Pal. Oesterr.-Ung. xvii, p. 174.
- Xenophora mediterranea* and *senegalensis*, note on; KOEBELT, Nachrbl. Deutsch. malak. Ges. 1905, p. 64.

#### PTENOGLOSSA.

##### SCALIDÆ.

- Aclis watsoni*, n. n. for *A. minutissima*, Watson non Desh.; PEZANT, Feuille Natural. xxxv, p. 88.
- Crossea glabella*, New Zealand; MURDOCH, Tr. N. Zealand Inst. xxxvii, p. 225, fig.: n. sp.
- Scala minutula*, Tate and May, note and fig.; HEDLEY, Rec. Austral. Mus. vi, p. 52.
- Scala turrisphari*, New South Wales; HEDLEY, Rec. Austral. Mus. vi, p. 52, fig.: n. sp.
- Scalaria zelebori*, note on; SUTER (577).
- Scalaria octogona*, *interstriata*,? Ceylon; SOWERBY, Ann. Nat. Hist. xvi, p. 190: n. spp.

#### GYMNOGLOSSA.

##### EULIMIDÆ and PYRAMIDELLIDÆ.

- Enteroxenos*, embryo; BONNEVIE (60).
- Eulimidæ*, notes on Adams' Japanese species, and fig. of *E. luchuana*,

- Pils.*; *articulata*, Sby.; PILSBRY, P. Ac. Philad. 1905, p. 107: *E. tasmanica*, Woods, is a *Rissoia*, with fig.; MAY, P. Soc. Tasmania 1902, p. 110.
- Eulima exasperata*, *indica*, Ceylon; PRESTON, J. Malac. xii, p. 6, figg.: *E. bovicornu*, *ogasawarana*, Japan; PILSBRY, P. Ac. Philad. 1905, p. 111, figg. : n. spp.
- Eulimella cæna*, New Zealand; WEBSTER, Tr. N. Zealand Inst. xxxvii, p. 279, fig. : n. sp.
- Odostomia impolita*, *rugata*, Hutton, notes on; MURDOCH (412).
- Odostomia proxima*, p. 226, *vestalis*, p. 227, New Zealand; MURDOCH, Tr. N. Zealand Inst. xxxvii, figg. : n. spp.
- Pseudorisoina elegans*, New South Wales; HEDLEY, Rec. Austral. Mus. vi, p. 51, fig. : n. sp.
- Pyramidella (Oscilla) mirabilis*, (*O.*) *suburbana*, (*Mormula*) *humilis*, p. 6, (*Actaeopyramis*) *ceylanica*, (*A.*) *sykesi*, (*A.*) *suavissima*, p. 7, Ceylon; PRESTON, J. Malac. xii, figg. : n. spp.
- Turbanilla tasmanica*, Woods, is *Truncatella scalarina*; MAY, P. Soc. Tasmania 1902, p. 111.
- Turbanilla smithi* (Pfeffer, MS.), Magellan Region; STREBEL, Zool. Jahrb. Syst. xxii, p. 659, fig. : *T. coeni*, *sinhila*, (?) *princeps* [= *Terebra pygmæa*, Hinds], Ceylon; PRESTON, J. Malac. xii, p. 7, figg. : n. spp.

## SCUTIBRANCHIATA.

### RHIPHIDOGLOSSA.

#### PROSERPINIDÆ and HELICINIDÆ.

- Rhiphidoglossa*, structure of heart, etc.; SPILLMANN (555).
- Andamanica*, n. sect. of *Aphanoconia* for *Helicina andamanica*, Bens., etc.; WAGNER, Denk. Ak. Wien lxxvii, p. 406.
- Angulata*, n. sect. of *Helicina* for *H. leopoldina*, n. sp., etc.; WAGNER, op. cit. lxxviii, p. 228.
- Aphanoconia*, n. gen. for *Helicina verecunda*, Gould, etc.; WAGNER, op. cit. lxxvii, p. 388: *A. bandana*, p. 406, *zigzag*, p. 409, *suturalis*, p. 411, *discoidea*, p. 413, n. varr.; WAGNER, t. c. p. 406.
- Aphanoconia eduardi*, Louisiades, p. 393, *braueri*, Woodlark I., p. 394, *submucronata* (Mlldff. MS.), New Guinea, *trichroa*, Banguey I., p. 400, *halongensis*, Tonkin, p. 404, *keiensis*, Kei Is., p. 405, *pantheri*, Tahiti, p. 408; WAGNER, t. c. figg. : n. spp.
- Citrina*, n. sect. of *Sulfurina* for *Helicina citrina*, Grat., etc.; WAGNER, t. c. p. 372.
- Concentrica*, n. sect. of *Helicina* for *H. concentrica*, Pfr., etc.; WAGNER, op. cit. lxxviii, p. 220.
- Dichroa*, n. sect. of *Aphanoconia* for *Helicina dichroa*, Mlldff., etc.; WAGNER, op. cit. lxxvii, p. 403.
- Discoidea*, n. sect. of *Aphanoconia* for *Helicina discoidea*, Pease, and *villosa*, Anton; WAGNER, op. cit. lxxvii, p. 413.
- Diversicolor*, n. sect. of *Orobophana* for *Helicina diversicolor*, Cox, etc.; WAGNER, t. c. p. 431.
- Euneritella*, n. sect. of *Helicina* for *H. neritella*, Lam., etc.; WAGNER, op. cit. lxxviii, p. 212.
- Fulgora*, n. sect. of *Aphanoconia* for *Helicina fulgora*, Gould, etc.; WAGNER, op. cit. lxxvii, p. 408.
- Globulina*, n. sect. of *Sulfurina* for *Helicina crossei*, Pfr., etc.; WAGNER, t. c. p. 376.
- Helicinidæ*, classification; WAGNER (617): *Helicina*, review of genus with n. var.; WAGNER (618); *H. rawsoni*, Pfr., figd.; DALL (158), p. 36.

- Helicina pandiensis*, New Granada, *schluteri*, Peru, p. 221, *infesta*, Venezuela, *oceanensis*, New Granada, p. 223, *steindachneri*, Venezuela, p. 224, *leopoldinae*, p. 228, *wettsteini*, p. 229, Brazil; WAGNER, Denk. Ak. Wien lxxviii, figg. : n. spp.
- Hemipoma*, n. gen. for *Helicina hakodadiensis*, Hartman, etc.; WAGNER, op. cit. lxxvii, p. 433.
- Hendersonia*, n. gen. for *Oligyra occulta*, Say; WAGNER, t. c. p. 364.
- Kalokonia*, n. sect. of *Palaeohelicina* for *P. moquiniana* (Recl.), etc.; WAGNER, op. cit. lxxviii, p. 204.
- Kosmetopoma*, n. subgen. of *Sulfurina* for *Helicina amaliæ*, Kob.; WAGNER, op. cit. lxxvii, p. 382.
- Miluna*, n. gen. for *M. josephinæ*, n. sp., China; WAGNER, t. c. p. 363, fig.
- Musiva*, n. sect. of *Orobophana* for *Helicina musiva*, Gould, etc.; WAGNER, t. c. p. 429.
- Ogasawarana*, n. sect. of *Aphanoconia* for *Helicina ogasawarana*, Pils., etc.; WAGNER, t. c. p. 395.
- Orbiculata*, n. sect. of *Helicina* for *H. orbiculata*, Say, etc.; WAGNER, op. cit. lxxviii, p. 238.
- Orobophana*, n. gen. for *Helix sphæroidea*, Pfr., etc.; WAGNER, op. cit. lxxvii, p. 415: *O. colorata*, p. 418, *mediana*, p. 424, n. varr.; WAGNER, t. c.
- Pachystoma*, n. sect. of *Orobophana* for *Helicina pachystoma*, Smith; WAGNER, t. c. p. 432.
- Palaeohelicina*, n. gen. for *Helicina fischeriana*, Montr., etc.; WAGNER, t. c. p. 435: Review of genus with n. varr.; WAGNER (618): *P. fischeriana*, p. 436, *stanleyi*, p. 438, n. varr.; WAGNER, t. c.
- Palaeohelicina hara*, British New Guinea; WAGNER, op. cit. lxxviii, p. 204, fig.: *P. heterochroa*, Pelew Is., p. 436, *filie*, Louisades, p. 439; WAGNER, op. cit. lxxvii, figg. : n. spp.
- Primeana*, n. sect. of *Orobophana* for *Helicina primeana*, Gass., etc.; WAGNER, t. c. p. 423.
- Proserpina* (*Staffola*, n. sect.) *derbyi*, Brazil; DALL, P. Soc. Washington xviii, p. 202 : n. sp.
- Punctisalcata* (sic), n. sect. of *Helicina* for *H. punctisalcata* (sic), Martens, etc.; WAGNER, Denk. Ak. Wien lxxviii, p. 218.
- Reticulata*, n. sect. of *Aphanoconia* for *Helicina verecunda*, Gould, etc.; WAGNER, op. cit. lxxvii, p. 389.
- Retorquata*, n. subgen. of *Helicina* for *H. zephyrina*, Duclos, etc.; WAGNER, op. cit. lxxviii, p. 230.
- Rhabdokonia*, n. sect. of *Palaeohelicina* for *Helicina fischeriana*, Montr., etc.; WAGNER, op. cit. lxxvii, p. 435.
- Rostrata*, n. sect. of *Helicina* for *H. rostrata*, Morel., etc.; WAGNER, op. cit. lxxviii, p. 235.
- Schazicheila palmeri*, Mexico; DALL, Smithson. Collect. quart. xlviii, p. 191, fig. : n. sp.
- Sculpta*, n. sect. of *Aphanoconia* for *Helicina sculpta*, Martens; WAGNER, Denk. Ak. Wien lxxvii, p. 398.
- Sphæroidea*, n. sect. of *Orobophana* for *Helicina sphæroidea*, Pfr., etc.; WAGNER, t. c. p. 415.
- Staffola*, n. sect. of *Proserpina* for *P. derbyi*, n. sp., Brazil; DALL, P. Soc. Washington xviii, p. 202.
- Sturanya*, n. gen. for *Helicina plicatilis*, Mousson, etc.; WAGNER, Denk. Ak. Wien lxxvii, p. 383.
- Sturanya jetschini*, Samoa and Viti Is.; WAGNER, t. c. p. 384, fig. : n. sp.
- Subglobulosa*, n. sect. of *Helicina* for *H. subglobulosa*, Poey, etc.; WAGNER, op. cit. lxxviii, p. 240.

- Sublævigata*, n. sect. of *Orobophana* for *Helicina sublævigata*, etc. ; WAGNER, op. cit. lxxvii, p. 426.  
*Succincta*, n. sect. of *Helicina* for *H. succincta*, Martens, etc. ; WAGNER, op. cit. lxxviii, p. 236.  
*Sulfurina martensi*, p. 375, *parva*, p. 377, *zelebori*, p. 380, n. varr. ; WAGNER, op. cit. lxxvii.  
*Sulphurina euchromia*, Philippines, p. 373, *lauræ*, Halmahera, p. 376, *jickelii*, British New Guinea, *sturanii*, Pelew Is. ; WAGNER, t. c. figg. : n. spp.  
*Trichroa*, n. sect. of *Aphanoconia* for *A. trichroa*, n. sp., etc. ; WAGNER, t. c. p. 400.  
*Turbinata*, n. sect. of *Helicina* for *H. zephyrina*, Duclos, etc. ; WAGNER, op. cit. lxxviii, p. 231.  
*Variabilis*, n. sect. of *Helicina* for *H. variabilis*, Wagner, etc. ; WAGNER, t. c. p. 226.  
*Waldemaria*, n. gen. for *Helicina japonica*, Ad. ; WAGNER, op. cit. lxxvii, p. 362.

NERITIDÆ, NERITOPSIDÆ, TURBINIDÆ, TROCHIDÆ, and  
CYCLOSTREMATIDÆ.

- Adeorbis picta*, Woods, equals *Chlorostoma fasciatus*, Born ; HEDLEY, P. Soc. Tasmania 1902, p. 77.  
*Astele turbinata*, Woods, equals *Chlorostoma scalare*, Anton ; HEDLEY, t. c. p. 77.  
*Astele bili*, New South Wales ; HEDLEY, Rec. Austral. Mus. vi, p. 48, fig. : *A. calliston*, South Australia ; VERCO, Tr. R. Soc. S. Austral. xxix, p. 167, fig. : n. spp.  
*Astralium pyramidale*, New Zealand ; WEBSTER, Tr. N. Zealand Inst. xxxvii, p. 276, fig. : n. sp.  
*Bathybembix œola*, Watson, Japan, adult state, figd. ; SCHEPMAN (504).  
*Calliostoma zietzi*, South Australia ; VERCO, Tr. R. Soc. S. Austral. xxix, p. 166, fig. : *C. planiliratum*, p. 184, *nevilli*, p. 185, ? Ceylon ; SOWERBY, Ann. Nat. Hist. xvi : *C. irisans*, p. 129, *kophameli*, p. 130, *möbiusi*, p. 133, Magellan Straits ; STREBEL, Zeitschr. wiss. Zool. Suppl. viii, figg. : n. spp.  
*Clanculus leucomphalus*, South Australia ; VERCO, Tr. R. Soc. S. Austral. xxix, p. 168, fig. : *C. crassilabrum*, p. 185, *acutidentatus*, p. 186, ? Ceylon ; SOWERBY, Ann. Nat. Hist. xvi : n. spp.  
*Cyclostrema weldii*, Woods, has priority over *C. australe*, Ang. ; HEDLEY, P. Soc. Tasmania 1902, p. 78.  
†*Desmieria* (Bayle), n. gen., type *D. rugosa* ; DOUVILLÉ (192), p. 344.  
*Ethalia guamensis*, Q. & G., note with n. subspp. ; PILSBRY, P. Ac. Philad. 1905, p. 113 : *E. tasmanica*, Woods, equals *Modulus modulus*, L. ; HEDLEY, P. Soc. Tasmania 1902, p. 77.  
*Ethalia nevilli*, ? Ceylon ; SOWERBY, Ann. Nat. Hist. xvi, p. 187 : n. sp.  
*Ethaliella*, n. gen., type *Ethalia floccata*, Sby. ; PILSBRY, P. Ac. Philad. 1905, p. 115.  
*Euchelus cavernosus*, ? Ceylon ; SOWERBY, Ann. Nat. Hist. xvi, p. 186 : n. sp.  
†*Frombachia*, n. gen. for *F. uhligi*, n. sp., Trias, Tirol ; BLASCHKE, Beitr. Pal. Oesterr.-Ung. xvii, p. 185.  
*Gibbula tumidulina*, p. 65, *minuscula*, p. 66, apparently n. n. for *Trochus tumidus*, Weink. non Mtg., and *T. pygmæus*, Phil. non Risso ; LOCARD, Ann. Soc. Agric. Lyon i.  
*Gibbula murchlandi*, Cape Verd Is. ; SOWERBY, Ann. Nat. Hist. xvi, p. 192 : *G. incitabilis*, Mediterranean ; LOCARD, Ann. Soc. Agric. Lyon i, p. 70 : n. spp.

- Leptoathyra fluctuata*, Hutton, note and fig.; MURDOCH, Tr. N. Zealand Inst. xxxvii, p. 222.
- Leptoathyra crassicostata*, New Zealand; MURDOCH, t. c. p. 223, fig. : n. sp.
- Liotia alazon*, New South Wales; HEDLEY, Rec. Austral. Mus. vi, p. 49, fig. : *L. voyi*, Flint I.; PILSBRY & VANATTA, P. Ac. Philad. 1905, p. 293, fig. : n. spp.
- Margarita kophameli*, Patagonia; STREBEL, Zeitschr. wiss. Zool. Suppl. viii, p. 160, fig. : n. sp.
- Minolia eucoronata*, ?Ceylon; SOWERBY, Ann. Nat. Hist. xvi, p. 187 : n. sp.
- Nerita constellata*, ?Ceylon; SOWERBY, t. c. p. 190 : n. sp.
- Omphalius eusculptus*, ?Ceylon; SOWERBY, t. c. p. 186 : n. sp.
- †*Parapalaeonarica*, n. subgen. of *Palaeonarica* for *P. kittli*, n. sp., Trias, Tirol; BLASCHKE, Beitr. Pal. Oesterr.-Ung. xvii, p. 184.
- Phorcus borealis*, Japan; PILSBRY, P. Ac. Philad. 1905, p. 113, fig. : n. sp.
- Photinula steineni*, Magellan Straits; STREBEL, Zeitschr. wiss. Zool. Suppl. viii, p. 158, fig. : *P. crawshayi*, p. 335, *roseolineata*, p. 336, Tierra del Fuego; SMITH, P. Malac. Soc. London vi, figg. : n. spp.
- †*Polytropina*, n. gen., type *Euomphalus discors*, Sby.; DONALD, Quart. J. Geol. Soc. lxi, p. 575.
- Solariella tenuis*, ?Ceylon; SOWERBY, Ann. Nat. Hist. xvi, p. 188: n. sp.
- Teinostoma pellucidum*, ?Ceylon; SOWERBY, t. c. p. 187 : n. sp.
- Trochocochlea obstricta*, n. n. for *Trochus crassus*, Forbes non Pultn.; LOCARD, Ann. Soc. Agric. Lyon i, p. 82.
- Trochus (Lamprostoma) filiferus*, Indian Ocean; SCHEPMAN, Notes Leyden Mus. xxv, p. 99, fig. : n. sp.
- Turbo cucullata*, Woods, equals *T. radiatus*, Gmel.; HEDLEY, P. Soc. Tasmania 1902, p. 77.
- Turbo (Lunella) radina*, New Zealand; WEBSTER, Tr. N. Zealand Inst. xxxvii, p. 276, fig. : n. sp.
- Zizyphinus subgranularis*, Dkr., is a synonym of *Astele subcarinatum*; VERCO, Tr. R. Soc. S. Austral. xxix, p. 172.
- Zizyphinus gibbosulus* (Monterosato), Mediterranean; LOCARD, Ann. Soc. Agric. Lyon i, p. 46 : ?n. sp.

### HALIOTIDÆ, PLEUROTOMARIIDÆ, and FISSURELLIDÆ.

- Fissurella*, homing; WILLCOX (644).
- Gena terminalis*, South Australia; VERCO, Tr. R. Soc. S. Austral. xxix, p. 166, fig. : *G. ziczac*, Ceylon; PRESTON, J. Malac. xii, p. 8, fig. : n. spp.
- †*Haliotimorpha*, n. gen. for *H. dieneri*, n. sp., Trias, Tirol; BLASCHKE, Beitr. Pal. Oesterr.-Ung. xvii, p. 175.
- Haliotis*, kidney; TOTZAUER (598).
- Scissurella (Schizotrochus) kelseyi*, California; DALL, Nautilus xviii, p. 124 : n. sp.
- †*Ulrichospira*, n. subgen. of *Plethospira*, type *U. similis*, n. sp., Silurian; DONALD, Quart. J. Geol. Soc. lxi, p. 569.

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- Docoglossa*, structure of heart, &c.; SPILLMANN (555).
- Acmaea testudinalis*, biology; WILLCOX (645).
- Helcioniscus stelliferus*, Gmel., n. subsp.; SUTER (574).
- Helcioniscus craticulatus*, Kermadec Islands; SUTER, P. Malac. Soc. London vi, p. 352, fig. : n. sp.

- Lottia gigantea*, chemical methods causing maturity of egg ; LOEB (368, 369).  
*Patinella*, Dall, renamed *Patinigera*, q. v.  
*Patinigera*, n. n. for *Patinella*, Dall non Gray ; DALL, Nautilus xviii, p. 113.  
*Scutellina nobilis*, ? Ceylon ; SOWERBY, Ann. Nat. Hist. xvi, p. 189 : n. sp.

### III. SCAPHOPODA.

- Dentalium*, anatomy ; DISTASO, Zool. Anz. xxix, pp. 271-278, figg. : *D. politum*, Costa, note on ; MONTEROSATO (407) : *D. entalis*, Desh., nervous system ; DISTASO (186).  
*Dentalium rhabdotum*, p. 116, (*Lævidentalium*) *coruscum*, (*Rhabdus*) *cerinum*, p. 117, Japan ; PILSBRY, P. Ac. Philad. 1905, figg. : n. spp.

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- Morphology, embryology, physiology and morphogeny ; ANTHONY (11-13).  
Torsion of shell ; CLARKE (118).  
Mechanism of boring in some Pelecypods ; LLOYD (363).

### SEPTIBRANCHIATA.

- Cuspidaria truncata*, New South Wales ; HEDLEY, Rec. Austral. Mus. vi, p. 47, fig. : n. sp.

### EULAMELLIBRANCHIATA.

#### ANATINACEA.

- Anatina smithi*, Ceylon ; PRESTON, J. Malac. xii, p. 8, fig. : n. sp.  
*Aporema*, Dall, renamed *Panacca*, q. v.  
*Panacca*, n. n. for *Aporema*, Dall non Scudder ; DALL, Nautilus xviii, p. 143.

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- Martesia*, Eastern United States species ; JOHNSON (306, 307).  
*Teredo*, account of ; KEER (322).

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- Cardium*, notes with figg. ; BÜLOW (82) : Variation of Caspian forms ; OSTROUMOFF (429) : *C. bechei*, Rve., note on ; SMITH, J. Malac. xii, p. 27.  
*Cardium* (*Trachycardium*) *pseudoangulatum*, Hab. incert. ; BÜLOW, Nachrbl. Deutsch. malak. Ges. 1905, p. 80, fig. : n. sp.  
*Corbula pura*, New Zealand ; WEBSTER, Tr. N. Zealand Inst. xxxvii, p. 279, fig. : n. sp.  
*Cultellus javanicus*, anatomy ; BLOOMER (51).  
*Cultellus* (*Ensiculus*) *maculatus*, Ceylon ; PRESTON, J. Malac. xii, p. 8, fig. : n. sp.  
*Ensis*, anatomy ; BLOOMER (49) : *E. magnus*, anatomy ; BLOOMER (50).

- +*Offneria*, n. gen., type *O. rhodanica*, n. sp., Urgonian ; PAQUIER (437), p. 82.  
 +*Onychocardium*, n. gen. for *O. portlandicum*, n. sp., Portage Rocks of Lake Erie ; WHITFIELD, Bull. Amer. Mus. xxi, p. 18.  
 +*Polyptychus*, n. gen. for *P. morgani*, n. sp., Santonian ; DOUVILLE, Bull. Soc. geol. France iv, p. 520 : also (92), p. 248.  
*Præcaprina*, n. gen., type *P. varians*, n. sp., Urgonian ; PAQUIER (437), p. 72.  
 +*Radiolitella*, n. sect. (of ?), type *Radiolites foroguliensis*, Pirona ; DOUVILLE, Bull. Soc. geol. France iv, p. 535.  
*Siliqua*, anatomy ; BLOOMER (49).  
*Siliqua intuspurpurea*, Japan ; PILSBRY, P. Ac. Philad. 1905, p. 118, fig. : n. sp.  
*Solecurtus dombeyi*, anatomy ; BLOOMER (51).  
*Solenidæ*, corrigenda to previous papers ; BLOOMER (52) : Anatomy of some species ; BLOOMER (51).

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- Callista (Callocardia) birtsii*, Ceylon ; PRESTON, J. Malac. xii, p. 8, fig. : n. sp.  
*Chione*, occurrence of Cercaria ; CHILTON (107) : Notes on New Zealand species ; SUTER, P. Malac. Soc. London vi, p. 202 : SMITH, t. c. p. 206 : *C. macleayana*, Woods, equals *C. stutchburyi*, Gray ; HEDLEY, P. Soc. Tasmania 1902, p. 77.  
*Chione subsulcata*, New Zealand ; SUTER, P. Malac. Soc. London vi, p. 205 : *C. fuegiensis*, Tierra del Fuego ; SMITH, t. c. p. 336, fig. : n. spp.  
*Cytherea ranella*, Lam., is from type a synonym of *Crista gibbia*, Lam. ; DAUTZENBERG & FISCHER, J. Conchyl. liii, p. 215.  
*Gastrana (Metis) bridgmani*, Ceylon ; PRESTON, J. Malac. xii, p. 8, fig. : n. sp.  
*Macoma*, notes on spp. with figg. ; JENSEN (304, 305).  
*Macrocallista chishimana*, Japan ; PILSBRY, P. Ac. Philad. 1905, p. 118, fig. : n. sp.  
*Mactra fuegiensis*, Tierra del Fuego ; SMITH, P. Malac. Soc. London vi, p. 337, fig. : n. sp.  
*Parmulina* renamed *Parmulophora*, q. v.  
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*Raeta jickelii*, Massowa ; STURANY, Nachrbl. Deutsch. malak. Ges. 1905, p. 133, fig. : n. sp.  
*Semele warburtoni*, Woods, equals *Codakia orbicularis*, L. ; HEDLEY, P. Soc. Tasmania 1902, p. 77.  
*Standella æqualis*, New Zealand ; WEBSTER, Tr. N. Zealand Inst. xxxvii, p. 280, fig. : n. sp.  
*Tellina (Peronæa) ascensionis*, Ascension Island, p. 279, (*Tellinella*) *prismatica*, Sierra Leone, p. 280 ; SOWERBY, P. Malac. Soc. London vi, figg. : n. spp.  
*Venus (Chione) keppeliana*, Sierra Leone ; SOWERBY, t. c. p. 280, fig. : n. sp.

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- Ætheriidæ*, ligament and ligamental area ; ANTHONY (11) : *Æ. bourguignati*, figd. ; ROCHEBRUNE & GERMAIN (493).  
*Anodonta*, parasitism of larva ; FAUSSEK (205) : *A. cygnea*, attached to Plover's foot ; ADAMS (2) : *A. falcata*, Drt., n. var. ; ROSEN, Nachrbl. Deutsch. malak. Ges. 1905, p. 63.

- Arthropteron*, n. gen. for *A. ouassouloui*, n. sp., Senegambia; ROCHEBRUNE, Bull. Mus. Paris x, p. 461.
- Bornia radiata*, New South Wales; HEDLEY, Rec. Austral. Mus. vi, p. 48, fig. : n. sp.
- Chamberlainia*, notes on; ROCHEBRUNE (491).
- Chamberlainia pavonina*, Siam; ROCHEBRUNE, Bull. Mus. Paris x, p. 464; n. sp.
- Corbicula fluminea*, Müll., synonymy; DAUTZENBERG & FISCHER, J. Conchyl. liii, p. 225.
- Corbicula elatior*, p. 65, *producta*, p. 66, Korea; MARTENS, Zool. Jahrb. Suppl. viii, figg. : n. spp.
- Corneocyclas hodgkini*, New Zealand; SUTER, Tr. N. Zealand Inst. xxxvii, p. 246, fig. : n. sp.
- Crassatellites ponderosus*, Gmel., note on; VERCO (606): also SMITH, J. Malac. xii, p. 26.
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- Fischeria centralis*, French Soudan; GERMAIN, Bull. Mus. Paris x, p. 470: n. sp.
- Hyriopsis goliath*, Rolle, equals *Unio cumingi*, Lea; DAUTZENBERG & FISCHER, J. Conchyl. liii, p. 201.
- Leptospatha*, n. n. for *Spathella*, Bourguignat non Hall; ROCHEBRUNE & GERMAIN, Mem. Soc. zool. France xvii, p. 25: *L. brumpti*, *bozasi*, figd.; ROCHEBRUNE & GERMAIN (493).
- Levanderia*, n. gen. for *L. erythræensis*, n. sp., Massowa; STURANY, Nachrbl. Deutsch. malak. Ges. 1905, p. 134, fig.
- Lucina minima*, Woods, figd.; MAY, P. Soc. Tasmania 1902, p. 114: *L. childreni*, note on; DALL, Nautilus xviii, p. 110.
- Medionidus simpsonianus*, Georgia; WALKER, Nautilus xviii, p. 136, fig.: n. sp.
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- Mutela chevalieri*, Upper Oubanghi; GERMAIN, Bull. Mus. Paris x, p. 470: n. sp.
- Mutelina joubini*, Upper Oubanghi; GERMAIN, t. c. p. 470: n. sp.
- †*Namnetia*, n. gen. for *N. discooides*, n. sp., Tertiary, France; COSSMANN, Bull. Soc. Ouest France v, p. 147.
- Nodularia douglasiæ*, n. subsp.; PILSBRY & HIRASE, P. Ac. Philad. 1905, p. 750.
- Phacoides* (*Miltha*) *xantusi*, Gulf of California; DALL, Nautilus xviii, p. 111: n. sp.
- Pisidium*, several n. varr.; STERKI (566).
- Pisidium limatulum*, Alabama; STERKI, Nautilus xviii, p. 108: *P. atlanticum*, United States; STERKI, t. c. p. 128: n. spp.
- †*Protopis*, n. subgen. of *Opis* for *O. triptycha*, n. sp.; KITTL, Jahrb. Geol. Reichsanst. liii, p. 718 [om. 1904].
- Quadrula archeri*, p. 13, *rubidula*, p. 14, Alabama; FRIERSON, Nautilus xix, figg.: n. spp.
- Scintilla blaisei*, Tonkin; DAUTZENBERG & FISCHER, J. Conchyl. liii, p. 212, fig.: n. sp.
- Simpsonia*, n. gen., p. 465, for *Unio duclerci*, Rochbr., and *S. demangei*, n. sp., Tonkin, p. 466; ROCHEBRUNE, Bull. Mus. Paris x.
- Spatha* (*Leptospatha*) *decorsei*, Chari Region; GERMAIN, t. c. p. 469: n. sp.

- Spathella*, Bourguignat, renamed *Leptospatha*, q. v.  
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*Trapezium japonicum*, Japan; PILSBRY, P. Ac. Philad. 1905, p. 119, fig. : n. sp.  
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*Unio chipolaensis*, Florida; WALKER, Nautilus xviii, p. 135, fig. : *U. zambesiensis*, Zambezi River; PRESTON, P. Malac. Soc. London vi, p. 301, fig. : *U. (Quadrula) blaisei*, Tonkin; DAUTZENBERG & FISCHER, J. Conchyl. liii, p. 210, fig. : n. spp.

### PSEUDOLAMELLIBRANCHIATA.

- Limea acclivis*, New South Wales; HEDLEY, Rec. Austral. Mus. vi, p. 46, fig. : n. sp.  
*Margaritifera*, structure of gill; HERDMAN (275): Development; SEURAT (516): *M. vulgaris*, anatomy; HERDMAN (277): *M. vulgaris*, parasites; SHIPLEY & HORNELL (522, 523).  
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*P. awajiensis*, Japan; PILSBRY, P. Ac. Philad. 1905, p. 121, fig. : *P. kelpelianus*, Ascension Island (?) and Cape Verd Islands; SOWERBY, P. Malac. Soc. London vi, p. 279 : *P. (Amussium) andamanense*, Andamans, p. 186, (*A.*) *cristatum*, Masandam I., p. 187, (*Chlamys*) *fluctuatus*, Andamans, p. 188; BAVAY, Mem. Soc. zool. France xvii, figg. : *P. imparicostatus*, New Zealand, p. 23, *rapanensis*, Rapa I., p. 25, BAVAY, J. Conchyl. liii, figg. : n. spp.  
+*Pseudoheligmus*, n. gen. for *P. morgani*, n. sp., Secondary, Persia; DOUVILLE (192), p. 264.  
*Spondylus*, popular notes; MANGER, P. South London Soc. 1904-5, p. 14.

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- Adacnarca squamea*, New South Wales; HEDLEY, Rec. Austral. Mus. vi, p. 45, fig. : n. sp.  
*Arca*, notes on species from Djibouti; LAMY (348): *A. pistachia*, Lam., note on; SMITH, J. Malac. xii, p. 27.  
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*Mytilidæ*, genera of; JUKES-BROWNE, P. Malac. Soc. London vi, p. 211.  
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*Leda ambia*, California; DALL, Nautilus xviii, p. 123 : n. sp.  
*Nucula nucleus*, new sensitive organ; VLES (615).

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*Solenogastres*, the radula; NIERSTRASZ (421), p. 666.

*Limifossor talpoideus*, Heath, morphology; HEATH (263).

*Krappomenia minima*, Nierstrasz, described in detail and figd.; NIERSTRASZ, Zool. Jahrb. Anat. xxi, p. 655.

### POLYPLACOPHORA.

Notes on many species of Indo-Pacific Region; NIERSTRASZ (420).

*Acanthochites rubiginosus*, Hutton, figd.; SUTER (576).

*Acanthochites biformis*, p. 55, *intermedius*, p. 56, (*Notoplax*) *rubromaculatus*, p. 61, (*N.*) *unicus*, p. 62, (*Loboplax*) *holosericeus*, p. 66, (*Cryptoconchus*) *burrowi*, p. 68, East Indies; NIERSTRASZ (420), figg. : n. spp.

*Acanthopleura corticata*, Hutton, equals *A. granulata*, Gmel.; SUTER (576).

*Callistochiton carpenteri*, East Indies; NIERSTRASZ (420), p. 39, fig. : *C. leidensis*, p. 143, Hab—?, *porosus*, p. 146, Rio Janeiro; NIERSTRASZ, Notes Leyden Mus. xxv, figg. : n. spp.

*Callochiton empleurus*, Hutton, figd.; SUTER (576).

*Callochiton sulcatus*, East Indies; NIERSTRASZ (420), p. 35, fig. : n. sp.

*Chitonidae*, morphology and origin of the egg-integument; SCHWEIKART (510), p. 374 : Breeding habits; HEATH, Zool. Anz. xxix, pp. 390–393 : *C. quoyi*, Desh., n. subsp.; SUTER (576).

*Chiton speciosus*, p. 77, *imbricatus*, p. 79, *reticulatus*, p. 81, East Indies; NIERSTRASZ (420), figg. : n. spp.

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*Cryptochiton stelleri*, excretory and circulatory systems; HEATH (265).

*Ischnochiton fulvus*, New Zealand; SUTER, J. Malac. xii, p. 66, fig. : *I. variegatus*, East Indian ocean; NIERSTRASZ (420), p. 23, fig. : n. spp.

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*Leptoplax varius*, East Indies; NIERSTRASZ (420), p. 52, fig. : n. sp.

*Pilsbryella*, n. sect. of *Lepidopleurus*, type *L. setiger*, n. sp.; NIERSTRASZ (420), p. 11.

*Plaxiphora murdochii*, New Zealand; SUTER, J. Malac. xii, p. 67, fig. : n. sp.

*Squamophora*, n. gen. for *S. oviformis*, n. sp., East Indies; NIERSTRASZ (420), p. 50, fig.

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## VIII. BRACHTIOPODA.

BY

E. R. SYKES, B.A.

ASSISTED BY

E. A. SMITH, I.S.O.

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Asia :—Fossils from Assam; DIENER (11).

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British Isles :—Shells from Lancashire; BOLTON, Tr. N. York Ac. xvi, p. 245.—Fossils from North Staffordshire Coalfields; GIBSON (16).—Fossils from North Staffordshire; HIND (20).—Few fossils from West of Ireland; HIND (21).—Some British forms noted; HIND (19).—Shells from Canonbie coalfield; PEACH & HORNE, Tr. R. Soc. Edinb. xl, p. 835.—Fossils from Limestone of Weston-super-Mare; SIBLY, Quart. J. Geol. Soc. lxi, p. 548.—Fossils from Bristol Area, with n. spp.; VAUGHAN (51).

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Europe:—Few Famennian fossils from Condroz; DESTINEZ, Ann. Soc. geol. Belgique xxxii, p. 123.—Occurrence of *Pentamerus rhenanus* in Germany; LOTZ (31).—Upper Devonian Fauna from Orenburg, with n. spp.; TOKARENKO (49).

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Australasia:—Species of *Spirifer* from Victoria; CHAPMAN (4).

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America:—Fossils from Canandaigua, &c., New York; CLARKE & LUTHER (6).—Ordovician fauna at Trenton Falls; WHITE, Tr. N. York Ac. xv, p. 71.

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America:—Fauna from Capo Breton, with n. spp.; MATTHEW (35).—Fauna of Eastern Canada, with list; MATTHEW (34).

Australasia:—Addition to S. Australian fauna, with a n. sp. of *Obolella*; ETHERIDGE (14).

**III. SYSTEMATIC.**

*Campages*, n. gen., type *C. furcifera*, n. sp., New South Wales; HEDLEY, Rec. Austral. Mus. vi, p. 43 fig.

†*Causea*, n. gen. for *C. formosa*, n. sp., Silurian; WIMAN, Bull. Geol. Inst. Upsala vi, p. 53.

†*Curticia*, n. gen., type *C. elegantula*, n. sp., Cambrian; WALCOTT, P. U. S. Mus. xxviii, p. 319.

†*Eostrophomena*, n. subgen. of *Strophomena*, type *S. elegantula*, n. sp., Cambrian; WALCOTT, t. c. p. 256.

†*Finkelnburgia*, n. subgen. of *Orthis*, type *O. finkelnburgi*, n. sp., Cambrian; WALCOTT, t. c. p. 277.

*Hemithyris columnus*, New South Wales; HEDLEY, Rec. Austral. Mus. vi, p. 44, fig. : n. sp.

†*Iphidea*, Billings, renamed *Iphidella*, q. v.

†*Iphidella*, n. n. for *Iphidea*, Billings non Bazley; WALCOTT, P. U. S. Mus. xxviii, p. 304.

†*Jamesella*, n. subgen. of *Nisusia*, type *Orthis perpasta*, Pomp.; WALCOTT, t. c. p. 252.

- †*Loperia*, n. subgen. of *Protorthis*, type *P. dougalensis*, n. sp., Cambrian; WALCOTT, t. c. p. 287.
- †*Nisusia*, n. gen., type *Orthis festinata*, Billings; WALCOTT, t. c. p. 247.
- †*Orusia*, n. subgen. of *Orthis* for *O. lenticularis*, Wahl., &c.; WALCOTT, t. c. p. 273.
- †*Otusia*, n. subgen. of *Billingsella* for *Orthis sandbergi*, Winchell; WALCOTT, t. c. p. 246.
- †*Paraphorhynchus*, n. gen. for *P. elongatus*, n. sp., &c., Kinderhook series of U. S. A.; WELLER, Tr. Ac. St. Louis xv, p. 260.
- †*Quebecia*, n. gen., type *Obolella circe*, Billings; WALCOTT, P. U. S. Mus. xxviii, p. 320.
- †*Rustella*, n. gen., type *R. edsoni*, n. sp., Cambrian; WALCOTT, t. c. p. 311.
- †*Schuchertina*, n. gen., type *S. cambria*, n. sp., Cambrian; WALCOTT, t. c. p. 323.
- †*Swantonia*, n. gen., type *Camarella antiqua*, Billings; WALCOTT, t. c. p. 296.
- Terebratalia transversa*, Sby., variation; SHIMER, Amer. Natural. xxxix, p. 691.

# IX. BRYOZOA.

BY

HELEN P. KEMP.

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## INTRODUCTION.

THE Bryozoa literature of 1905 is marked by some important papers on structure, development and relationship. RETZIUS (61, 62) has an excellent monograph on the nervous system of certain Bryozoa demonstrating, by means of the silver method, undoubted nerve cells from which fibres can be traced to their junction with larger central strands; also a paper on the sperm-apparatus of various evertebrates. WATERS (76) reports observations on the structure of *Entalophora regularis* showing the presence of a thick membranous transverse wall near the distal end of the tentacle-sheath. DUBLIN (30, 31) reports work on the relationship between the nucleoli and the chromosomes of the somatic and germ cells of *Pedi-*

*cellina americana*. By observations of their respective stain affinities, and their disposition at various periods of the cell metabolism, he shows that the nucleoli are not chromatin bodies and come only incidentally into connection with the chromosomes to which they in no way give origin. He insists upon the importance of an early mingling of gonomeric characters in order to ensure perfect larvæ, and points out that this supports the fact of the nucleoli being unconnected with the gonomery of the cell. CUMINGS (22, 23) in a paper upon the development and metamorphosis of *Fenestella* brings forward evidence that the genetic relation of this form to the Cyclostomata proves the latter to be the ancestor of the Cryptostomata and thus of the Cheilostomata. He shows a tendency towards concentration of the earlier developmental stages, and explains the large size of the protœcium in ancient types as due to a less degree of acceleration. Miss A. ROBERTSON (64, 65) has a note on the Embryology and Embryonic fission of the genus *Crisia*; and also a monograph on the Cheilostomatous Bryozoa of the West Coast of North America. She criticises Hincks' diagnosis of the *Aeteidae*. HALLEZ (34) has a paper on rheotropism in *Bugula avicularia*.

CALVET (10, 11) gives descriptions of the marine Bryozoa in the collection of the Musée Royal at Brussels, and from the zoological station at Cette; RÖMER (66) a list of Norwegian Bryozoa; SEELIGER (69) a note on Bryozoan larvæ and metamorphoses. Miss L. R. THORNLY (74) has a report on Herdman's collection of Polyzoa from Ceylon.

AMEGHINO (1) in "L'âge des formations sédimentaires de Patagonie" criticises Hatcher's views. NEVIANI (53, 54, 55) continues his bibliography of living and fossil Bryozoa, and has a paper on the Eocene fossils from Villatorta. THEVENIN (72) has a note on the Fossils of the Lower Carboniferous layer of Djebel Bechar, and WHITFIELD (80) on a new genus and species of Lower Carboniferous Bryozoon. MAPLESTONE (46) gives a list of the Fossil Cheilostomatous Polyzoa of the Victorian Tertiary Deposits. LANG (42) has a paper on *Stomatopora antiqua* and its related Liassic forms.

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- Pectinatella magnifica* (Leidy), ZIMMER, Zool. Anz. xxix, pp. 427 & 428.  
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- Crisia*, embryology and embryonic fission, ROBERTSON, Univ. Calif. publ. Zool. i, No. 3, 1903, pp. 115-156, pls. 12-15.  
 †*Berenicea somalica* n. sp., DACQUÉ, Beitr. Pal. Oesterr.-Ung. p. 125, Taf. xvii (iv), fig. 6.  
 †*Dictyoretmon* n. gen., *D. burlingtonense* n. sp., WHITFIELD, Bull. Amer. Mus. xx (1904), p. 469.  
*Entalophora regularis* MacGill., structure of, WATERS, J. Linn. Soc. xxix, 191, pp. 230-251.  
*Fenestella*, Metamorphosis and its significance, CUMINGS, Amer. J. Sci. xx (Sept.) 1905, p. 169.  
 †*Idmonea*; NEVIANI, Boll. Naturalista xxv (4-5), p. 25.  
 †*Pachydictya macropora*, HENNIG, Arkiv Zool. ii (3), pp. 32-35, figg. 33-36, Taf. 2, fig. 4; *P. holmi* n. sp., HENNIG, t. c. pp. 25-32, figg. 22-32, Taf. 1, fig. 5 : n. spp.

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A † is prefixed to fossil forms.

- +*Phænopora lindströmi* Ulr., HENNIG, diagnosis, Arkiv Zool. ii (3), pp. 10–16, figg. 1–7, Taf. 1, figg. 1 & 2.  
 +*Prisinopora* sp., in Carboniferous of S.W. Montana, DOUGLASS, Ann. Carnegie Mus. viii, No. 2, p. 419.  
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 +*Stomatopora gregoryi* n. sp., LANG, Geol. Mag. No. 492, June 1905, pp. 258–268, pl. xiv, fig. 10; *S. richardsoni* n. sp., LANG, t. c. pp. 258–268, pl. xiv, figg. 8 & 9.  
 +*Thamniscus* n. sp., DESTINEZ, Ann. Soc. geol. Belgique xxxii (2), p. 127.

## (b) CHEILOSTOMA.

- Aeteidae* Hincks, diagnosis, ROBERTSON, Univ. Calif. publ. Zool. ii, No. 5, pp. 235–322.  
*Aetea anguina* Lamouroux, ROBERTSON, t. c. pl. iv, figg. 1–4.  
*Beania longispinosa* n. sp., ROBERTSON, Univ. Calif. publ. Zool. ii, No. 5, p. 277, pl. xii, figg. 65 & 66.  
*Bugula avicularia*, Rheotropism, HALLEZ, C.R. Ac. Sci. xli, Pt. 21, p. 842, 1905.  
*B. californica*, pp. 267 & 268, pls. x, fig. 49, xvi, fig. 100, *B. pugeti*, pp. 271 & 272, pls. x, figg. 53 & 54, xi, fig. 55, *B. curvirostrata*, pp. 272 & 273, pl. xi, figg. 56–58, *B. longirostrata*, p. 274, pl. xi, figg. 59 & 60, *B. laxa*, p. 275, pl. xii, figg. 61 & 62, ROBERTSON, Univ. Calif. publ. Zool. ii, No. 5, n. spp.  
*Cellaria diffusa* n. sp., ROBERTSON, t. c. p. 289, pls. xv, fig. 90, xvi, fig. 104.  
*Cellepora compacta*, L. R. THORNLY, Pearl Oyster Fish. Rep. to Col. Gov. Suppl. Rep. xxvi, pp. 107–130; *C. petiolata*, WATERS, J. Linn. Soc. xxix, 191, p. 241, pl. 29, figg. 19 & 20 : n. spp.  
*Corynoporella spinosa* n. sp., ROBERTSON, Univ. Calif. publ. Zool. ii, No. 5, p. 284, pl. xiv, figg. 81 & 83.  
*Cribrella*, budding, MCINTOSH, Zoologist, Jan. 1905, p. 7.  
*Cribrilina patagonica* n. sp., WATERS, J. Linn. Soc. xxix, 191, p. 232, pl. 28, fig. 6.  
*Eschara moskensis*, NORDGAARD, Bergens Mus. Mar. Invest. Pt. ii (1905), pl. iv, figg. 3–5; *E. nordlandica*, NORDGAARD, t. c. pl. iv, figg. 32–35 : n. spp.  
*Flustra foliacea*, sperm of, RETZIUS, Biol. Untersuch. xii, 1905, pp. 89 & 90, Taf. xi, figg. 35–39.  
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 +*Lepralia almerai* n. sp., NEVIANI, Boll. Soc. geol. Ital. xxiv (1905), p. 160, fig. 1.  
*L. ceylonica*, *L. fissa*, *L. multidentata*, *L. nitida*, *L. purpurea*, *L. triangula*, L. R. THORNLY, Pearl Oyster Fish. Rep. to Col. Gov. Suppl. Rep. xxvi, pp. 107–130, n. spp.  
 +*Membranipora lacroixii*, specimen attached to *Neptunea* in Mekran Nodule, H. W. BURROWS, Geol. Mag. No. 493, July 1905, pp. 303–305, fig.  
*M. pilosa*, larval form (*Cyphonautes*) in Clyde, BROWNE, P. R. Soc. Edinb. xxv, p. 779.

- Menipea pribilofi* n. sp., ROBERTSON, Univ. Calif. publ. Zool. ii, No. 5, pp. 257 & 258, pls. vii, figg. 32 & 33, viii, fig. 34.
- M. occidentalis catalinensis* n. subsp., ROBERTSON, t. c. pp. 255 & 256, pl. vii, figg. 26 & 27.
- Microporella impressa* n. sp., NOBRE, Fauna Portugaise, Annuar. Ac. Porto 1903, 4, p. 115.
- M. senensis*, n. var., NEVIANI, Boll. Naturalista xxv, pp 21, 25, 29.
- Onychocella cucullata* n. sp., L. R. THORNLY, Pearl Oyster Fish. Rep. to Col. Gov. Suppl. Rep. xxvi, pp. 107-130.
- †*Paleschara* sp., in Carboniferous of S.W. Montana, DOUGLASS, Ann. Carnegie Mus. viii, No. 2, p. 419.
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- †*Porella eocena* n. sp., NEVIANI, Bull. Soc. geol. Nat. xxiv (1905), pp. 162 & 163, fig. 3.
- Retepora pocillum*, L. R. THORNLY, Pearl Oyster Fish. Rep. to Col. Gov. Suppl. Rep. xxvi, pp. 107-130.
- R. spatulifera* n. sp., WATERS, J. Linn. Soc. xxix, 191, p. 243, pl. 29, fig. 4.
- Rhyncopora corrugata*, *R. incisor* n. spp., L. R. THORNLY, Pearl Oyster Fish. Rep. to Col. Gov. Suppl. Rep. xxvi, pp. 107-130.
- Schismopora cucullata* n. sp., Lord Howe Island, MAPLESTONE, P. Soc. Victoria xvii, p. 389, pl. xxix, figg. 7, 8. (Omitted from last year's Record.)
- Schizoporella avicularis*, *S. collaris*, *S. viridis*, L. R. THORNLY, t. c. pp. 107-130 ; *S. patagonica*, WATERS, J. Linn. Soc. xxix, 191, p. 237, pl. 28, fig. 8 ; *S. stormi*, NORDGAARD, Bergens Mus. Mar. Invest. Pt. ii (1905), pp. 164-174, pl. 5, figg. 1 & 2 ; *S. hexagona* pl. v, figg. 12 & 13 ; *S. levinseni*, pl. v, figg. 3 & 4 : n. spp.
- Scrupocellaria diegensis* n. sp., ROBERTSON, Univ. Calif. publ. Zool. ii, No. 5, pp. 261-263, pls. ix, figg. 41-44, xvi, figg. 96.
- Smittia lebruni* n. sp., WATERS, J. Linn. Soc. xxix, 191, p. 239, pl. 28, fig. 13.
- †*S. (Mucronella) de angelisii* n. sp., NEVIANI, Boll. Soc. geol. Ital. xxiv (1905), p. 161, fig. 2.
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## X. CRUSTACEA.

(Including

GIGANTOSTRACA AND PYCNOGONIDA.)

BY

W. T. CALMAN, D.Sc.

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## INTRODUCTION.

THE great increase in the number of titles recorded under Crustacea as compared with last year (355 against 258) is partly due to the later date of closing the list, but chiefly to the rigorous preliminary searching of the periodicals by Mr C. Hadrill.

No very outstanding contributions to the general morphology of the Crustacea seem to be among the works recorded, though several authors such as CARPENTER (56) and THIELE (301) deal with questions affecting the class as a whole. In two papers on *Isopoda* (129 & 130), HANSEN has elucidated many points of morphology with his accustomed thoroughness. Especially in that dealing with the *Sphaeromidae* (130) he has provided a stable basis for the classification of a large and hitherto chaotic group. G. SMITH (285) has vindicated the general accuracy, on which doubt had been cast, of Fritz Müller's account of dimorphism in male *Tanaidæ*. In the same paper he also describes, in the males of certain crabs, an alternation of breeding and non-breeding phases, parallel to that long known in the genus *Cambarus*. BOUVIER's (25) memoir on the *Atyidæ* not only provides a valuable revision of the family but gives a most interesting account of the "mutations" which he has discovered in these freshwater prawns. Attention should also be called to PRZIBRAM's (231) study of "Heterochelie" in Decapods.

BLANC's (19) announcement of the discovery of a Caprellid in the Lake of Geneva is somewhat startling, but it is inevitable that it should be received with scepticism while it rests on the evidence of a solitary specimen.

Among the more purely systematic works an important place must be given to ALCOCK's fine monograph of the Indian *Paguridea* (1). Mention may also be made of the long series of papers on the collections of the Prince of Monaco (26-28, 31-34, 61-66, 81-85, 87, 126, 127, 258, 259) and on those from the West of Ireland (51, 52, 104, 105, 137, 138, 224, 297-300), from the Maldives Islands (88, 317, 337), Ceylon (223, 265, 290), and the Cape (293), and of DADAY's large work on the freshwater fauna of Paraguay (92).

The most important event of the year as regards the *Pycnogonida* is HODGSON's (9) redescription of the long lost *Declopoda*, which appeared almost simultaneously with LOMAN's (11) confident assertion that this animal is "ein irrationelles Monstrum."

The inconvenience caused by repaged reprints is unfortunately familiar enough, but a still more misleading practice, new to the present Recorder, has been followed in some reprints from the Bull. Mus. Paris, in which the original pagination is carefully preserved while the setting of the type is altered so that the pages no longer correspond to those of the original.

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North Sea, Crustacea; CONSEIL INTERNAT. EXPL. MER (75): *Gammarina* n. spp.; REIBISCH (241): North Sea and Zuyder Zee, *Copepoda*, *Cladocera*, *Caprellina*, *Stomatopoda*, VAN BREEMEN (38).

British Seas: Revised nomenclature of *Amphipoda*, *Tanaidacea* and *Isopoda*; NORMAN (205): *Copepoda* n. sp.; SCOTT (270).

Scotland: *Schizopoda*, *Cumacea*, *Amphipoda*, *Isopoda*, *Ostracoda*, *Copepoda*, *Cladocera*; T. SCOTT (266): *Copepoda* n. spp.; T. SCOTT (267): *Copepoda* n. spp., *Isopoda*; T. SCOTT (268): Firth of Forth, *Copepoda* n. sp.; NORMAN & SCOTT (207): Clyde area, *Schizopoda*; PATIENCE (217): Clyde, Plankton Crustacea, esp. *Copepoda* and *Cladocera*; SCOTT (269).

England: Off Northumberland and Durham, *Cumacea*, *Amphipoda*, *Isopoda*, *Copepoda*, n. spp.; BRADY (36): Cornwall, *Copepoda* n. sp.;

WILSON (333) : Devon and Cornwall, *Copepoda* n. spp. ; NORMAN & SCOTT (207) : English Channel, Crustacea ; GOUGH (116).

Irish Sea : *Decapoda*, *Copepoda* ; JOHNSTONE (150) : Crustacea, esp. *Copepoda*, *Cladocera*, larval *Decapoda* and *Stomatopoda* ; A. SCOTT (264) : Port Erin, *Monstrilla* ; ASHWORTH (10) : *Isopoda* ; HEWITT (134) : Crustacea, esp. *Copepoda* and *Cladocera* ; A. SCOTT (263).

Ireland : List of *Ostracoda* ; NORMAN (206) : *Copepoda* ; PEARSON (224) : off Co. Dublin, *Decapoda* ; COLGAN (73).

West of Ireland : *Cumacea* n. spp. ; CALMAN (52) : *Copepoda* n. spp. ; FARRAN (104) : *Cirripedia* ; FARRAN (105) : *Tanaidacea* and *Isopoda* n. spp. ; TATTERSALL (297) : *Phyllocarida* ; TATTERSALL (298) : *Stomatopoda* (larvæ) ; TATTERSALL (299) : *Tanaidacea* n. sp., *Isopoda* n. spp. ; TATTERSALL (300).

French coast : Boulogne, *Copepoda* ; CLIGNY (72) : *Decapoda* ; HALLEZ (125) : Saint-Vaast-la-Hogue, *Epicaridea* ; GIARD (112) : Arcachon, *Copepoda* ; PÉREZ (225) : Guéthary, *Caridea* ; PÉREZ (227).

Portugal, Crustacea, lists ; NOBRE (202).

Mediterranean : *Copepoda* ; ANTHONY & CALVET (8) : *Brachycarpus* (*Caridea*) ; NOBILI (191) : Italy, parasitic *Copepoda* ; GOGGIO (114) : Naples, *Copepoda* ; BRIAN (42) : *Hyperina* ; SENNA (275) : *Caridea* ; SENNA (276) : Messina, *Macrura* n. spp. ; RIGGIO (250) : *Schizopoda* and *Decapoda* ; THIELE (302) : Palermo, *Macrura* ; RIGGIO (251).

N. America : *Isopoda* n. spp. ; RICHARDSON (246) : *Copepoda* n. spp. ; WILSON (333) : Gulf of St Lawrence, *Copepoda*, *Branchiura*, and *Cladocera* ; T. SCOTT (272) : New England, list of Crustacea, with localities ; RATHBUN (238) : Southern New England, *Amphipoda* n. spp. ; HOLMES (136) : Massachusetts, *Copepoda* n. spp. ; WILSON (332) : Woods Hole, *Branchiura* ; WILSON (330).

New York city : *Schizopoda*, *Decapoda*, *Stomatopoda*, *Cumacea*, *Amphipoda*, *Tanaidacea*, *Isopoda* ; PAULMIER (220) : Florida, *Catometopa* n. sp. ; RATHBUN (237).

West Indies and S. America, *Penaeidea* and *Stenopidea* n. spp. ; BOUVIER (29) : West Indies and Gulf of Mexico, *Thalassinidea* n. spp. ; BOUVIER (30).

S. Atlantic, *Schizopoda* n. sp. ; ILLIG (145).

Cape of Good Hope, see under Indo-Pacific.

### b. Indo-Pacific.

Red Sea, *Copepoda* n. sp. ; BRIAN (44) : *Brachyura* n. sp. ; NOBILI (198) ; Red Sea and Gulf of Aden, *Brachyura* n. spp., *Anomura* n. spp., *Macrura* n. spp. ; NOBILI (201) : Red Sea, coast of Arabia, and Persian Gulf, *Brachyura* n. spp., *Anomura* n. spp., *Macrura* n. spp. ; NOBILI (197) : Persian Gulf, *Brachyura* n. sp., *Anomura* n. sp., *Macrura* n. spp. ; NOBILI (200) : Indian Seas, Persian Gulf, Arabian Sea, Bay of Bengal, Gulf of Martaban, Andaman Ids., *Decapoda* n. spp. ; MACGILCHRIST (174).

Indian Ocean, *Glaucothoë* n. sp. (Pagurid larvæ) ; BOUVIER (33) : *Schizopoda* n. sp. ; ILLIG (146).

Indian Seas : *Paguridæ* n. spp. ; ALCOCK (1) : *Penaeidea* n. spp. ; ALCOCK (4) : list of pedunculate *Cirripedia* ; ANNANDALE (7).

Andaman Sea, *Oxystomata* n. sp. ; ALCOCK (3).

Gulf of Manaar : *Macrura* n. spp. ; PEARSON (223) : *Ostracoda* n. spp. ; A. SCOTT (265) : *Tanaidacea* n. spp., *Isopoda* n. spp. ; STEBBING (290).

Maldivian and Laccadive Ids., *Paguridæ* n. spp. ; ALCOCK (2) : *Alpheidæ* (*Caridea*) n. spp. ; COUTIÈRE (80 & 88) : *Amphipoda* n. spp. ; WALKER (317) : *Copepoda* n. spp. ; WOLFENDEN (337).

Zanzibar, *Decapoda* (*Caridea* n. sp.), *Stomatopoda* ; NOBILI (192) :

Zanzibar, Aldabra etc., *Brachyura* n. spp., *Anomura*, *Macrura* n. sp., *Stomatopoda* n. spp.; LENZ (167).

Cape of Good Hope, *Brachyura* n. sp., *Anomura* n. sp., *Macrura* n. spp., *Schizopoda*, *Copepoda*; STEBBING (293): *Ascothoracida* (*Cirripedia*) n. sp.; LE ROI (254).

Malaysian Seas: *Cirripedia* n. spp.; ANNANDALE (7): *Cumacea* n. spp.; CALMAN (54): *Nephropsidea* n. sp., *Loricata* n. spp., *Eryoniidea* n. sp., *Thalassinidea* n. spp.; DE MAN (176): Java, *Isopoda* n. sp.; HANSEN (130).

Gerinan New Guinea, *Decapoda* n. spp.; NOBILI (196).

South Australia, *Brachyura* n. spp.; BAKER (11): *Anomura* n. sp.; BAKER (12): off Port Jackson, *Brachyura* n. spp., *Anomura* n. sp., *Macrura*; GRANT (117).

Philippines, *Ascothoracida* (*Cirripedia*) n. sp.; LE ROI (254).

Hong Kong, *Penaeidea* n. spp.; ALCOCK (4).

Japan: *Brachyura*; DOFLEIN in ZIMMER (349): *Penaeidea* n. sp.; KISHINOUYE (162): *Catometopa* n. sp.; NOBILI (195).

N. Pacific, Crustacea; NORMAN (204).

Hawaiian Ids., *Schizopoda*; ORTMANN (215).

Gambier Ids., *Oxyrhyncha* n. sp.; BOUVIER & SEURAT (35).

Eastern Pacific, *Epicaridea* n. sp.; RICHARDSON (249).

North and South America, *Copepoda* n. spp.; WILSON (333): N. America, *Isopoda* n. spp.; RICHARDSON (246): Alaska, *Isopoda* n. sp.; RICHARDSON (248): California, *Tanaidacea* n. spp.; RICHARDSON (244): Lower California, *Stomatopoda* n. sp.; COUTIÈRE (86): Panama, *Isopoda*, *Flabellifera* n. sp.; RICHARDSON (245): Juan Fernandez, *Decapoda* and *Stomatopoda*; PORTER (230): Chile, *Cirripedia*; VAYSSIÈRE (313): Coquimbo, *Galatheidae*; PORTER (229).

### c. Arctic and Antarctic.

Arctic Ocean, list of Crustacea; NORMAN (204).

Antarctic Seas: *Gammarina* n. spp.; CHEVREUX (67): Crustacea; HODGSON (135): *Schizopoda* n. sp.; ILLIG (146): *Phyllocarida* n. sp.; THIELE (303): *Copepoda* n. spp.; WOLFENDEN (336): Cape Adare, *Amphipoda*; THOMSON (305).

## 2. GEOLOGICAL.

Catalogue of fossil *Brachyura* and *Cirripedia* in Defrance Collection; BIGOT (16).

Glacial deposits, Frankfurt (Oder), *Ostracoda*; HUCKE (142): Post-pliocene, Palermo, *Brachyura*; CHECCHIA-RISPOLI (60): Pleistocene, Württemberg, *Ostracoda* n. spp.; SIEBER (282).

Tertiary: Mainz district, *Ostracoda* n. spp.; LIENENKLAUS (168): Nigeria, *Macrura* n. sp.; AMMON (6): New Hebrides, *Ostracoda*; CHAPMAN (59): "Molasse," Berne, *Cirripedia*; TIÈCHE (308): Lower Tertiary, Victoria, *Catometopa*; HALL (124): Upper Miocene, France, *Cirripedia*, *Brachyura*; COUFFON (77): Miocene, Gay Head, Mass., *Brachyura*; CUSHMAN (90): Württemberg, *Ostracoda* n. spp.; SIEBER (282): Eocene, France, *Decapoda* and *Cirripedia* (spp. indet.); DONCIEUX (99).

Cretaceous: *Decapoda* and *Cirripedia*, types in Philadelphia; JOHNSON (149): Münster, *Cirripedia*, *Macrura*; WEGNER (321): New Jersey, *Brachyura* [*Dromiacea*] n. sp.; WELLER (323).

Jurassic: Tithonian, Stramberg, *Isopoda*, *Anomura*, *Brachyura*; REMEŠ (242).

Trias: Britain, *Phyllopoda*; NEWTON (188), WOODWARD (342): Germany, *Phyllopoda*; WALTHER (319).

Carboniferous : Scotland, *Crustacea* ; PEACH & HORNE (222) : Lower Coal Measures, Lancashire, *Macrura* n. sp. ; WOODWARD (341).

Devonian : Ural, *Ostracoda* ; KAZANSKII (156) : Argentine, *Ostracoda* n. sp. ; THOMAS (304) : Upper Devonian, New York, *Ostracoda* n. sp. ; LOOMIS (172).

Silurian : Holland, *Ostracoda* ; JONKER (151) : N. Baltic region, *Ostracoda* n. spp. ; WIMAN (334) : New York, *Ostracoda* ; SHIMER (281).

Ordovician : Chazy, New York, *Ostracoda* n. spp. ; RAYMOND (240) : Pennsylvania, *Phyllopoda* n. sp. : COLLIE (74).

#### IV. SYSTEMATIC.†

[In addition to papers quoted below, see DE BUEN (50), CARPENTER (56), CONSEIL INTERNAT. EXPL. MER (75), COULON (78), GADZIKIEWICZ (108), GILSON (113), GOUGH (116), HODGSON (135), HOLT (137), JOUBIN (153), LIVON & BRIOT (169), LOEB (170), NOBRE (202), NORDGAARD (203), NORMAN (204), †PEACH & HORNE (222), QVIGSTAD (233), RICHARD (243), THIELE (301).]

List of Crustacea of New England ; RATHBUN, Pap. Boston Soc. vii.

### A. MALACOSTRACA.

#### 1. DECAPODA.

[See also BORDAGE (24), COLGAN (73), CUÉNOT (89), DEYROLLE (94), †DONCIEUX (99), GARREY (110), HALLEZ (125), HERRICK (133), †JOHNSON (149), JOHNSTONE (150), JORDAN (152), KIÆR (161), KOLTZOFF (163), KÜNCKEL (164), PAULMIER (220), SAINT-HILAIRE (256), DOFLEIN in ZIMMER (349).]

*Decapoda*, "heterochelie" and regeneration ; PRZIBRAM, Arch. Entwickl.-mech. xix, pp. 181-247, pls. viii-xiii, and Zentrbl. Physiol. xviii, No. 24.

#### a. BRACHYURA.

[See also †BIGOT (16), †COUFFON (77), GARSTANG (111), PAULMIER (219), †REMEŠ (242).]

### OXYRHYNCHA.

*Cyrtomaia goodridgei*, p. 251 ; MACGILCHRIST, Ann. Nat. Hist. (7) xv.

*Eumedonus zebra*, p. 344 ; LENZ, Abh. Senckenb. Ges. xxvii.

*Eumedon[us] convictor*, Gambier Ids., in *Echinothrix turcarum*, p. 629 ; BOUVIER & SEURAT, C.R. Ac. Sci. cxi : *Eumedonus granulosus*, Persian Gulf, p. 253 ; MACGILCHRIST, Ann. Nat. Hist. (7) xv : n. spp.

*Halimus laevis*, p. 119, pl. xxi, figg. 1 & 1a, *truncatipes*, p. 120, pl. xxii, figg. 2 & 2a, *tumidus*, p. 121, pl. xxii, figg. 3 & 3a, var. *gracilipes*, n. var., pl. xxiii, fig. 5 ; BAKER, Tr. R. Soc. S. Austral. xxix.

*Halimus gracilis*, Investigator Straits, p. 124, pl. xxiii, figg. 4 & 4a ; BAKER, t. c. n. sp.

*Huenia grandidieri*, p. 342, pl. xlvi, figg. 2-2c ; LENZ, Abh. Senckenb. Ges. xxvii.

† This sign when prefixed to a quotation indicates a fossil form or forms. Where the character of a reference is not indicated the words "description" or "descriptive notes" are to be understood.

- Hyastenus fultoni*, off Port Jackson, p. 313, pl. xi, fig. 1 ; GRANT, P. Linn. Soc. N. S. Wales 1905 (2), n. sp.
- Inachus scorpio*, high and low dimorphism, p. 313, text-figg. 1-8 ; SMITH, Mt. Stat. Neapel xvii : *I. dorsettensis*, parasitic castration by a gregarine, pp. 406-410, pl. xxvi ; SMITH, t. c.
- Lambrus pisoides*, p. 345 ; LENZ, Abh. Senckenb. Ges. xxvii.
- L. (Thyrolambrus) leprosus*, p. 399, (*Rhinolambrus*) *montiger*, p. 400, Red Sea ; NOBILI, Bull. Mus. Paris xi (1905), n. spp.
- Mamaia* [see also *Paramaya*], nomenclature ; STEBBING, P. Soc. Washington xviii, pp. 157-159.
- Menetziops bicornis*, p. 346, pl. xlvi, figg. 3-3e ; LENZ, Abh. Senckenb. Ges. xxvii.
- Micippa mascarenica* var. *nodulifera*, n. var., p. 127, pl. xxiv, figg. 8 & 8a ; BAKER, Tr. R. Soc. S. Austral. xxix : *M. thalia*, p. 24 ; STEBBING, S. African Crust. iii.
- Parahoplophrys* n. g. (near *Hoplophrys*), p. 238, *nodulosa*, Persian Gulf, p. 239 ; NOBILI, Bull. Mus. Paris xi (1905), n. sp.
- Paramaya* de Haan = *Maia* Lamk. = *Mamaia* Stebbing ; RATHBUN, P. Soc. Washington xviii, p. 73.
- Paramicippa hispida*, S. Australia, p. 126, pl. xxiv, figg. 6 & 6a ; BAKER, Tr. R. Soc. S. Austral. xxix, n. sp.
- Parthenope horrida*, p. 27 ; STEBBING, S. African Crust. iii.
- Scyramathia hertwigi*, p. 25 ; STEBBING, t. c.
- Simocarcinus pyramidatus*, p. 342 ; LENZ, Abh. Senckenb. Ges. xxvii.
- Thyrolambrus* [see also *Lambrus*] *excavatus*, Investigator Straits, p. 129, pl. xxiv, fig. 7 ; BAKER, Tr. R. Soc. S. Austral. xxix, n. sp.

### CYCLOMETOPA.

- Cyclometopa* dist. from *Catometopa* by char. of chelæ, p. 234 ; PRZIBRAM, Arch. Entwickmeh. xix.
- Actaea alphonsi* n. nom. for *A. pilosa* A. M. E., nec Stimpson, p. 235, *A. rufopunctata* var. *retusa* n. var., p. 404 ; NOBILI, Bull. Mus. Paris xi (1905) : *A. rüppellii*, p. 351 ; LENZ, Abh. Senckenb. Ges. xxvii : *A. granulata*, p. 30 ; STEBBING, S. African Crust. iii.
- A. sabaea*, p. 403, *pisigera*, p. 404, Red Sea ; NOBILI, Bull. Mus. Paris xi (1905), n. spp.
- Actumnus margarodes*, Persian Gulf, p. 260 ; MACGILCHRIST, Ann. Nat. Hist. (7) xv : *A. margarodes*, pl. lxxvi, fig. 3 ; ALCOCK & MACGILCHRIST, Illustr. Zool. Investigator : *A. bonnieri*, Persian Gulf, p. 163 ; NOBILI, Bull. Mus. Paris xi (1905) : n. spp.
- Atelecyclus*, respiration ; GARSTANG, Tr. Norfolk Soc. viii (1), pp. 22-24.
- †*A. rotundatus*, post-pliocene, Palermo ; CHECCHIA-RISPOLI, Natural. Sicil. xviii (4), pp. 86-89, 1 text-fig.
- Atergatopsis flavo-maculatus*, p. 349, pl. xlvi, fig. 7 ; LENZ, Abh. Senckenb. Ges. xxvii.
- Benthochascon hemingi*, pl. lxxvi, figg. 4 & 4a ; ALCOCK & MACGILCHRIST, Illustr. Zool. Investigator.
- Callinectes sapidus*, habits and life-history ; HAY, Rep. Bureau Fisheries (1904) 1905, pp. 397-413, 4 pls. : fishery in Maryland ; ROBERTS, t. c. p. 417-432.
- Cancer pagurus*, hatching ; WILLIAMSON, Rep. Fish. Board Scotland xxiii, Pt. iii, pp. 154 & 155.
- †*C. proavitus*, p. 386, pl. ii, fig. 14 ; CUSHMAN, Amer. Natural. xxxix.
- Carcinus mænas* ; THOMSON, Ann. Scott. Nat. Hist. 1905, pp. 56 & 57 :

- occurrence far from sea, in Tunis; CHAIGNON, Bull. Soc. Autun xvii, p. 81.
- Carpilodes diodoreus*, Djibouti, p. 403; NOBILI, Bull. Mus. Paris xi (1905), **n. sp.**
- Charybdis (Goniosoma) heterodon*, Red Sea, p. 401; NOBILI, t. c. **n. sp.**
- Chlorodioides lippus*, Red Sea, p. 405; NOBILI, t. c. **n. sp.**
- Chlorodopsis areolata*, p. 354, pl. xlvi, fig. 8, *melanodactyla*, p. 355; LENZ, Abh. Senckenb. Ges. xxvii.
- Dilocarcinus peruvianus*, p. 454; ORTMANN in v. IHERING, Revist. Mus. Paulista vi.
- Geryon quinquedens*, p. 36; STEBBING, S. African Crust. iii.
- Gomeza distincta* var., p. 263; MACGILCHRIST, Ann. Nat. Hist. (7) xv.
- Goniosoma merguiense*, p. 360, *lineatum*, p. 360, pl. xlvi, figg. 5-5c; LENZ, Abh. Senckenb. Ges. xxvii.
- Halimede hendersoni*, Persian Gulf, p. 162; NOBILI, Bull. Mus. Paris xi (1905), **n. sp.**
- Heteropanope pharaonica*, Red Sea, p. 407, text-fig. 2; NOBILI, t. c. **n. sp.**
- Leptodioides edwardsii*, p. 352; LENZ, Abh. Senckenb. Ges. xxvii.
- L. væltzkowii*, Zanzibar, p. 353, pl. xlvi, figg. 6 & 6a; LENZ, t. c. **n. sp.**
- Lybia (= Melia) denticulata*, Red Sea, p. 408; NOBILI, Bull. Mus. Paris xi (1905), **n. sp.**
- Neptunus* sp. (?), p. 359, pl. xlvi, figg. 4-4c; LENZ, Abh. Senckenb. Ges. xxvii.
- N. (Hellenus) arabicus*, Persian Gulf, p. 163, *alcocki*, Red Sea, p. 401; NOBILI, Bull. Mus. Paris xi (1905), **n. spp.**
- Parathelphusa spinescens*, Yunnan Fu, p. 156, figg. 1 & 2; CALMAN, Ann. Nat. Hist. (7) xvi, **n. sp.**
- Phymodius ungulatus*, p. 354; LENZ, Abh. Senckenb. Ges. xxvii.
- P. perlatus*, New Guinea, p. 487, pl. xii, fig. 3; NOBILI, Ann. Mus. Hungar. iii, **n. sp.**
- Pilodius armiger*, Red Sea, p. 405; NOBILI, Bull. Mus. Paris xi (1905), **n. sp.**
- Pilumnus*, notes on spp., p. 356; LENZ, Abh. Senckenb. Ges. xxvii.
- P. propinquus*, Persian Gulf, p. 163, *eudæmoneus*, Aden, p. 405, *spongiosus*, Perim, p. 406; NOBILI, Bull. Mus. Paris xi (1905), **n. spp.**
- Portumnoidea* **n. g.** (*Carcinidæ*) *garstangi* **n. nom.** [!] for *nasutus* Latr., p. 448; BOHN, Bull. Sci. France Belgique xxxvi [Omitted Zool. Rec. 1902 (21).]
- Potamon (Potamon) pittarelli*, Madagascar, p. 1, fig.; NOBILI, Boll. Mus. Torino xx, No. 507: *P. (Geotelphusa) biroi*, New Guinea, p. 491, pl. xii, fig. 4; NOBILI, Ann. Mus. Hungar. iii : **n. spp.**
- Potamonautes perlatus*, p. 33; STEBBING, S. African Crust. iii.
- Potamoniidae* (*Thelphusidae*), first part of Monograph, many **n. spp.**; RATHBUN, Arch. Mus. Paris vi (2), pp. 225-312, pls. ix-xviii, 1904.
- Thalamita admete*, p. 362; LENZ, Abh. Senckenb. Ges. xxvii.
- T. giardi*, Persian Gulf, p. 164, *de mani* and *bandusia*, Red Sea, p. 402; NOBILI, Bull. Mus. Paris xi (1905), **n. spp.**
- Thalamitoides tridens*, var. *spinigera* **n. var.**, p. 403; NOBILI, t. c.
- Thelphusidae* see *Potamoniidae*.
- Trachycarcinus glaucus*, pl. lxxvi, figg. 1, 2, 2a; ALCOCK & MACGILCHRIST, Illustr. Zool. Investigator.
- Trichopeltarium ovale*; MACGILCHRIST, Ann. Nat. Hist. (7) xv, p. 261; ALCOCK & MACGILCHRIST, Illustr. Zool. Investigator, pl. lxxv.
- Xantho planus*, p. 31, text-fig., *gaudichaudi*, p. 32, text-fig.; PORTER, Revist. chilena ix (1).
- Xanthodes cumatodes*, Persian Gulf, p. 258; MACGILCHRIST, Ann. Nat. Hist. (7) xv, **n. sp.**

## CATOMETOPA.

- †Archæoplax signifera*, p. 383, pls. i & ii; CUSHMAN, Amer. Natural. xxxix. *Brachynotus nudus*, action of salts on heart; ROGERS, J. exp. Zool. ii, pp. 237-252, 1 pl.
- Camatopsis rubida*, pl. lxxiv, figg. 3 & 3a; ALCOCK & MACGILCHRIST, Illustr. Zool. Investigator.
- Carcinoplax longimanus*, p. 37; STEBBING, S. African Crust. iii.
- Ceratoplax granulosa*, Gulf of Martaban; MACGILCHRIST, Ann. Nat. Hist. (7) xv, p. 263; ALCOCK & MACGILCHRIST, Illustr. Zool. Investigator, pl. lxxiv, figg. 2 & 2a, n. sp.
- Cyclograpsus parvulus* var. *unidens* n. var., p. 501; NOBILI, Ann. Mus. Hungar. iii.
- C. lophopus*, Djibouti, p. 411; NOBILI, Bull. Mus. Paris xi (1905), n. sp.
- Elamene truncata*, p. 367, pl. xlvi, figg. 15 & 15a; LENZ, Abh. Senckenb. Ges. xxvii.
- Gelasimus* [see also *Uca*] *pugilator*, regeneration of double chela; ZELENY, Biol. Bull. ix, pp. 152-155, 1 text-fig.: *G. pugilator*, regeneration, p. 81; ZELENY, J. exp. Zool. ii.
- Grapsidae*, g. ? et sp. ?, p. 368, pl. xlvi, figg. 10-10d; LENZ, Abh. Senckenb. Ges. xxvii.
- Hymenosoma geometricum*, p. 50; STEBBING, S. African Crust. iii.
- Macrophthalmus grandidieri*, p. 365, *sulcatus*, p. 366; LENZ, Abh. Senckenb. Ges. xxvii.
- Metopograpsus messor*, p. 369; LENZ, t. c.
- †Ommatocarcinus corioensis*, Lower Tertiary, Victoria, p. 356, pl. xxiii; HALL, P. Soc. Victoria (n. s.) xvii.
- Ocypoda fabricii*, p. 229, text-figg. 1 & 1a; NOBILI, Bull. Mus. Paris xi (1905).
- O. jousseaumei*, Red Sea, p. 233, text-fig. 2; NOBILI, t. c. n. sp.
- Ostracoteres spondyli*, Persian Gulf, p. 164, *cynthiae*, Djibouti, p. 409; NOBILI, t. c. n. spp.
- Palicus investigatoris*, var., p. 265; MACGILCHRIST, Ann. Nat. Hist. (7) xv.
- Paranotonyx* n. g. (*Gonoplacidae*) *curtipes*, Red Sea, p. 408; NOBILI, Bull. Mus. Paris xi (1905), n. sp.
- Pinnotheres borradalei* n. nom. for *P. tenuipes* Borr., nec Bürger, p. 410; NOBILI, t. c.
- P. perezi*, Persian Gulf, p. 164, *lutescens* and *coutieri*, p. 409, *maindroni* and *pilumnoides*, p. 410, Red Sea; NOBILI, t. c.: *Pinnotheres strombi*, in *Strombus pugilis*, Florida, p. 371, 2 figg.; RATHBUN, P. Ac. Philad. 1905 : n. spp.
- Plagusia chabrus*, p. 29, text-fig.; PORTER, Revist. chilena ix (1): *P. capensis*, p. 47; STEBBING, S. African Crust. iii.
- Planes minutus*, p. 43; STEBBING, t. c.
- Ptenoplax dentata*, Andaman Ids.; MACGILCHRIST, Ann. Nat. Hist. (7) xv, p. 266; ALCOCK & MACGILCHRIST, Illustr. Zool. Investigator, pl. lxxiv, fig. 1, n. sp.
- Sarmatium punctatum*, p. 498, text-fig. 1; NOBILI, Ann. Mus. Hungar. iii.
- S. biroi*, New Guinea, p. 498, text-fig. 2; NOBILI, t. c. n. sp.
- Sesarma impressa*, p. 370, *bidens*, p. 372, *meinerti*, p. 372; LENZ, Abh. Senckenb. Ges. xxvii: *S. gracilipes*, Temnocephalan parasite; MONTICELLI, Ann. Mus. Hungar. iii (1), pp. 21-24, 2 text-figg.: *S. impressa*, p. 495, *gardineri*, p. 497; NOBILI, Ann. Mus. Hungar. iii: *S. catenatum*, p. 44; STEBBING, S. African Crust. iii.
- S. (Sesarma) jousseaumei*, Red Sea, p. 411; NOBILI, Bull. Mus. Paris xi (1905), n. sp.
- Tritodynamia japonica*, p. 407, pl. x, figg. 2a-c; NOBILI, Ann. Mus. Hungar. iii.

- T. horváthi*, Japan, p. 407, pl. x, figg. 1a–h; NOBILI, t. c. n. sp.  
*Uca [=Gelasimus] arcuata*, p. 40; STEBBING, S. African Crust. iii.  
*Varuna litterata*, p. 41; STEBBING, t. c.  
*Veltzkowia* n. g. (*Hexapodinæ*), *zanzibarensis*, Zanzibar, p. 364, pl. xlvi, figg. 9–9c; LENZ, Abh. Senckenb. Ges. xxvii, n. sp.

### OXYSTOMATA.

- Cymonomops*, characters, p. 572; ALCOCK, Ann. Nat. Hist. (7) xv.  
*C. similis*, off Port Jackson, p. 315, pl. x, fig. 1; GRANT, P. Linn. Soc. N. S. Wales 1905 (2), n. sp.  
*Cymonomus*, characters, p. 566, *andamanicus*, Andaman Sea, p. 568, pl. xviii; ALCOCK, Ann. Nat. Hist. (7) xv, n. sp.  
*Dorippidae*, list of spp. and discussion of distribution; ALCOCK, t. c. pp. 565–577.  
*Ebalia abdominalis* and *lacertosa*, Red Sea, p. 399; NOBILI, Bull. Mus. Paris xi (1905), n. spp.  
*Ethusa hirsuta*, p. 257; MACGILCHRIST, Ann. Nat. Hist. (7) xv : *E. hirsuta*, pl. lxxii, figg. 1 & 1a, *desciscens*, pl. lxxii, figg. 2 & 2a, *investigatoris*, pl. lxxii, figg. 3 & 3a; ALCOCK & MACGILCHRIST, Illustr. Zool. Investigator, pl. lxxiii, figg. 2–2b, n. sp.  
*Leucosia signata*, Zanzibar, p. 4; NOBILI, Boll. Mus. Torino xx, No. 506.  
*L. hilaris*, Persian Gulf, p. 162; NOBILI, Bull. Mus. Paris xi (1905), n. sp.  
*Lyreidus channeri*, pl. lxxiii, figg. 1 & 1a; ALCOCK & MACGILCHRIST, Illustr. Zool. Investigator.  
*Matuta lunaris*, p. 54; STEBBING, S. African Crust. iii.  
*Nursia jousseaumei*, and var. *cornigera* n. var., Red Sea, p. 397; NOBILI, Bull. Mus. Paris xi (1905), n. sp.  
*Oreophorus reticulatus*, p. 254; MACGILCHRIST, Ann. Nat. Hist. (7) xv.  
*Philyra granigera*, Persian Gulf, p. 162; NOBILI, Bull. Mus. Paris xi (1905), n. sp.

### DROMIACEA.

- Cryptodromia fallax*, p. 363; LENZ, Abh. Senckenb. Ges. xxvii.  
*Dromia dormia*, p. 61; STEBBING, S. African Crust. iii.  
*Dromidia* (?) *bicornis*, p. 63; STEBBING, t. c.  
*Dynomene platyarthrodes*, Cape of Good Hope, p. 59, pl. xvii; STEBBING, t. c. n. sp.  
*Exodromidia* n. g. (*Dromiidæ*) *spinosa*, p. 65, pl. xviii; STEBBING, t. c.  
*Homola*, sp. (zoa), p. 468, pl. xvi, figg. 52–61; THIELE, Zool. Jahrb. Suppl. viii.  
*Latreillopsis petterdi*, off Port Jackson, p. 317, pl. x, figg. 2–2b; GRANT, P. Linn. Soc. N. S. Wales 1905 (2), n. sp.

### INCERTÆ SEDIS.

- †*Tetracarcinus* n. g., *subquadratus*, Cretaceous, New Jersey, p. 136, pl. xv, figg. 4–6; WELLER, Rep. geol. Surv. New Jersey 1904 (1905), n. sp.

### b. ANOMURA.

#### GALATHEIDEA.

[See also PORTER (229), †REMEŠ (242).]

*Galathea setosa*, South Australia, p. 267, pl. xxxv, figg. 2–2b; BAKER,

- Tr. R. Soc. S. Austral. xxix : *G. humilis*, Red Sea, p. 396; NOBILI, Bull. Mus. Paris xi (1905) : n. spp.  
*Grimothea gregaria*, function of last pair of legs; CHILTON, Tr. N. Zealand Inst. xxxvii, pp. 321 & 322, pl. xix.  
*Munidopsis dasypus*, p. 245, *wardeni* var. *andamanica* n. var., p. 245, *milleri*, var., p. 246, (*Orophorhynchus*) *ciliata*, p. 248; MACGILCHRIST, Ann. Nat. Hist. (7) xv : *M. trifida*, pl. lxx, fig. 1, *spinipes*, pl. lxx, fig. 2, *dasypus*, pl. lxx, fig. 3; ALCOCK & MACGILCHRIST, Illustr. Zool. Investigator.  
*M. spinipes*, Bay of Bengal, p. 247; MACGILCHRIST, Ann. Nat. Hist. (7). xv, n. sp.  
*Petrocheles australiensis*, p. 264, pl. xxxvi, figg. 1 & 1a; BAKER, Tr. R. Soc. S. Austral. xxix.  
*Petrolisthes*, notes on spp., p. 374, *maculatus*, p. 375, pl. xlvi, fig. 1; LENZ, Abh. Senckenb. Ges. xxvii.  
*Polyonyx transversus*, S. Australia, p. 262, pl. xxxvi, figg. 2 & 2a; BAKER, Tr. R. Soc. S. Austral. xxix: *P. parvidens* and *pugillator*, Persian Gulf, p. 161, *pedalis*, Red Sea, p. 396; NOBILI, Bull. Mus. Paris xi (1905) : n. spp.  
*Porcellana rostrata*, S. Australia, p. 260, pl. xxxv, figg. 1-1b; BAKER, Tr. R. Soc. S. Austral. xxix, n. sp.  
*Uroptychus glyphodactylus*, Andaman Ids.; MACGILCHRIST, Ann. Nat. Hist. (7) xv, p. 249; ALCOCK & MACGILCHRIST, Illustr. Zool. Investigator, pl. lxx, fig. 4 & pl. lxxi, figg. 1-1d, n. sp.

### PAGURIDEA.

[See also BOLAU (23).]

- Paguridea*, general account, with keys to families and genera and list of all spp. (ex. *Lithodidae*); ALCOCK, Cat. Pagurides.  
*Anapagurus* sp., p. 121; ALCOCK, t. c.  
*A. bonnieri*, Persian Gulf, p. 239; NOBILI, Bull. Mus. Paris xi (1905), n. sp.  
*Aniculus aniculus*, p. 94, pl. vii, fig. 6, *strigatus*, p. 97, pl. vii, fig. 4; ALCOCK, Cat. Pagurides.  
*A. tenebrarum*, off Cape Comorin, p. 96, pl. vii, fig. 5; ALCOCK, t. c. n. sp.  
*Birgus latro*, p. 150, pl. xvi; ALCOCK, t. c. : habits; SEURAT, Bull. Mus. Paris xi, 1905 (3), pp. 146 & 147.  
*Calcinus herbstii*, p. 53, pl. v, fig. 4, var. *lividus*, p. 55, *elegans*, p. 55, pl. v, fig. 2, *gaimardi*, p. 56, pl. v, fig. 3, *terræ-reginæ*, p. 57, pl. v, fig. 7, *latens*, p. 58, pl. v, fig. 5; ALCOCK, Cat. Pagurides.  
*Cancellus investigatoris*, off Ceylon; ALCOCK, t. c. p. 77, pl. v, fig. 8; ALCOCK & MACGILCHRIST, Illustr. Zool. Investigator, pl. lxix, figg. 3 & 3a, n. sp.  
*Catapagurus ensifer*, p. 115, pl. xiii, fig. 3; ALCOCK, Cat. Pagurides.  
*Cestopagurus olfaciens*, Maldives Ids., ALCOCK, Fauna Maldives ii (4), p. 835; ALCOCK, Cat. Pagurides, p. 116, n. sp.  
*Cheiroplatea* sp., p. 242; MACGILCHRIST, Ann. Nat. Hist. (7) xv.  
*Chiroplatea macgilchristi*, Bay of Bengal; ALCOCK, Cat. Pagurides, p. 18, pl. i, fig. 3; ALCOCK & MACGILCHRIST, Illustr. Zool. Investigator, pl. lxix, figg. 2 & 2a, n. sp.  
*Chlaenopagurus andersoni*, identified with *Paguropsis typica*, p. 28; ALCOCK, Cat. Pagurides.  
*Clibanarius clibanarius*, p. 43, pl. iv, fig. 1, *infraspinatus*, p. 44, *padaensis*, p. 44, pl. iv, fig. 2, *striolatus*, p. 46, pl. iv, fig. 7, *œquabilis*, var. *merguiensis*, p. 46, pl. iv, fig. 5, *humilis*, p. 47, pl. iv, fig. 6, *arethusa*, p. 48, pl. iv, fig. 3, *corallinus*, p. 48, pl. v, fig. 1, *cruentatus*, p. 50; ALCOCK, t. c.

- C. albicinctus*, off Cape Comorin, p. 50, pl. iv, fig. 4 ; ALCOCK, t. c. **n. sp.**
- Cœnobita cylindricus*, p. 142, pl. xv, figg. 1 & 1 $\alpha$ , *rugosus*, p. 143, pl. xiv, figg. 3 & 3 $\alpha$ , *perlatus*, p. 145, pl. xiv, figg. 2 & 2 $\alpha$ , *cavipes*, p. 146, pl. xiv, fig. 1 ; ALCOCK, t. c. : *C. perlata*, habits ; SEURAT, Bull. Mus. Paris x, 1904 (5), pp. 238-242.
- Diogenes diogenes*, p. 62, pl. xv, fig. 3, *morguiensis*, p. 63, pl. xv, fig. 2, *custos*, p. 64, pl. vi, fig. 1, var. *affinis*, p. 65, pl. vi, fig. 2, var. *violaceus*, p. 66, pl. vi, fig. 4, var. *planimanus*, p. 66, pl. vi, fig. 3, *miles*, p. 67, pl. vi, fig. 5, *avarus*, p. 68, pl. vi, fig. 6, *costatus*, p. 70, pl. vi, fig. 7, *rectimanus*, p. 71, pl. vi, fig. 8 ; ALCOCK, Cat. Pagurides.
- D. gardineri*, Maldives, p. 830, pl. lxvii, fig. 1 ; ALCOCK, Fauna Maldives ii (4) : *D. investigatoris*, p. 71, pl. vi, fig. 9, *bicristimanus*, p. 72, pl. vii, fig. 1, *gardineri*, p. 73, pl. vii, fig. 3, Indian Seas ; ALCOCK, Cat. Pagurides : **n. spp.**
- Eupagurus pergranulatus*, p. 125, pl. xi, fig. 1, *zebra*, p. 126, pl. xi, fig. 5, sp. ?, p. 133 ; ALCOCK, t. c. : *E. hirtimanus*, p. 377 ; LENZ, Abh. Senckenb. Ges. xxvii.
- E. janitor*, p. 832, pl. lxviii, figg. 2 & 4 ; ALCOCK, Fauna Maldives ii (4) : *E. investigatoris*, p. 128, pl. xi, fig. 2, *macardlei*, p. 129, pl. xi, fig. 3, *carpoformatus*, p. 130, var. *nephromma* **n. var.**, p. 131, pl. xi, figg. 4 & 4 $\alpha$ , *janitor*, p. 132, pl. xi, fig. 6 ; ALCOCK, Cat. Pagurides : **n. spp.**
- Glaucothoe* sp., p. 23 ; ALCOCK, t. c. : *G.*, spp. as larvae of *Paguridae* ; BOUVIER, C.R. Ac. Sci. exli, p. 644 : *G.*, relations of different "species" to types of *Paguridae*, key to "spp." etc. ; BOUVIER, Bull. Mus. Monaco li.
- G. hendersoni*, Indian Ocean, p. 5 ; BOUVIER, t. c. **n. sp.**
- Lithodes agassizii*, p. 243 ; MACGILCHRIST, Ann. Nat. Hist. (7) xv : *L. agassizii*, pl. lxviii & pl. lxix, fig. 1 ; ALCOCK & MACGILCHRIST, Illustr. Zool. Investigator.
- Nematopagurus muricatus*, p. 111, pl. xii, fig. 5 ; ALCOCK, Cat. Pagurides.
- N. gardineri*, Maldives, p. 834, pl. lxviii, fig. 3 ; ALCOCK, Fauna Maldives ii (4) : *indicus*, p. 109, pl. xii, fig. 4, *gardineri*, p. 110, pl. xii, fig. 2, *scutellichelis*, p. 112, pl. xii, fig. 3, *squamichelis*, p. 113, pl. xii, fig. 1, Indian Seas ; ALCOCK, Cat. Pagurides : **n. spp.**
- Neolithodes capensis*, Cape of Good Hope, p. 70, pls. xix & xx ; STEBBING, S. African Crust. iii, **n. sp.**
- Paguristes ciliatus* (?), p. 34, *longirostris*, p. 36, pl. i, fig. 5, *pusillus*, p. 37, pl. iii, fig. 3, *puniceus*, p. 38, pl. iii, fig. 6, *hians*, p. 40, pl. iii, fig. 2 ; ALCOCK, Cat. Pagurides : *P. frontalis*, p. 252, pl. xxxii, figg. 1-7 ; BAKER, Tr. R. Soc. S. Austral. xxix.
- P. balanophilus*, p. 33, pl. iii, fig. 1, *calvus*, p. 35, pl. i, fig. 4, *mundus*, p. 35, pl. iii, fig. 5, *incomitatus*, p. 39, pl. iii, fig. 4, Indian Seas ; ALCOCK, Cat. Pagurides : *P. brevirostris*, p. 256, pl. xxxiii, figg. 1 & 1 $\alpha$ , *sulcatus*, p. 258, pl. xxxiv, figg. 1 & 1 $\alpha$ , S. Australia ; BAKER, Tr. R. Soc. S. Austral. xxix : *P. aciculus*, off Port Jackson, p. 319, pl. xi, figg. 3 & 3 $\alpha$ , GRANT, P. Linn. Soc. N. S. Wales 1905 (2) : **n. sp.**
- Pagurodes limatulus*, p. 107, pl. xii, fig. 6 ; ALCOCK, Cat. Pagurides.
- Paguropsis typica*, p. 28, pl. ii ; ALCOCK, t. c.
- Pagurus punctulatus*, p. 81, pl. viii, fig. 1, *vulnerans*, p. 83, *setifer*, p. 83, pl. viii, fig. 3, *fabimanus*, p. 84, pl. viii, fig. 2, *euopsis*, p. 86, pl. ix, fig. 2, *guttatus*, p. 87, pl. ix, fig. 1, *deformis*, p. 88, pl. ix, fig. 4, *varipes*, p. 90, pl. ix, fig. 7, *asper*, p. 90, pl. ix, fig. 5, *dearmatus*, p. 91, pl. ix, fig. 6, *imbricatus*, p. 92, pl. ix, fig. 8, *hessii*, p. 93, pl. viii, fig. 4 ; ALCOCK, t. c. : *P. spinimanus*, p. 483 ; NOBILI, Ann. Mus. Hungar. iii.
- P. wood-masoni*, Maldives, p. 831 ; ALCOCK, Fauna Maldives ii (4) : *P. wood-masoni*, Andaman Is., p. 85, pl. ix, fig. 3 ; ALCOCK, Cat. Pagurides, **n. sp.**

- Parapagurus pilosimanus*, p. 99, pl. x, fig. 1, *minutus*, p. 101, pl. x, fig. 3, *andersoni*, p. 102, pl. x, fig. 2, var. *brevimanus*, p. 103; ALCOCK, t. c.  
*Parapylocheles scorpio*, p. 20, pl. i, fig. 1; ALCOCK, t. c.  
*Pyllocheles miersii*, p. 16, pl. i, fig. 2; ALCOCK, t. c.  
*Pylopaguropsis* n. g. (*Paguridae*), p. 133, *magnimanus*, p. 134, pl. xiii, fig. 2; ALCOCK, t. c.  
*Spiropagurus spiriger*, p. 118, pl. xiii, fig. 1, var. *profundorum* n. var., p. 120, pl. xiii, fig. 5, var. *lophomeris* n. var., p. 120, pl. xiii, fig. 7, var. *spinosicarpis* n. var., p. 120, pl. xiii, fig. 6; ALCOCK, t. c.  
*Sympagurus arcuatus*, var. *monstrosus*, p. 104, pl. x, fig. 5, *bicristatus* var. *indicus* n. var., p. 105, pl. x, fig. 4; ALCOCK, t. c.  
*Tomopaguropsis* n. g. (*Paguridae*), p. 136, *lanata*, Indian Seas, p. 137, pl. xiii, fig. 4; ALCOCK, t. c. n. sp.  
*Troglopagurus manaarensis*, p. 75, *jousseumii*, p. 75, pl. v, fig. 6; ALCOCK, t. c.  
*T. persicus*, Persian Gulf, p. 160; NOBILI, Bull. Mus. Paris vi (1905), n. sp.

### HIPPIDEA.

[Vacant.]

### c. MACRURA.

- Macrura, branchial system; COUTIÈRE, C.R. Ac. Sci. cxli, pp. 64-66.  
 Macrura, morphology; COUTIÈRE, t. c. pp. 127-130.

### NEPHROPSIDEA.

[See also ORTMANN in WILLIAMSON (326), HAY (132).]

- Astacus* spp., atavistic regeneration; SCHULTZ, Arch. Entwickmeh. xx, pp. 38-47, pl. ii: *A.*, in South Tyrol; HUBER, Arch. Hydrobiol. i (1), p. 72: *A. fluviatilis* in Hereford; BLAKE, Tr. Woolhope Club 1902/1904, p. 85: in Worcester; REA, Tr. Worcester Club 1897-99, p. 11 (1899): legislative protection in France; GALBERT, C.R. Ass. Franc. 1904 (1905), p. 755: regeneration; BIBERHOFER, Arch. Entwickmeh. xix, pp. 133-137, 5 text-figg.: *A. japonicus*, parasite of; PIERANTONI, Annuar. Mus. Univ. Napoli i (31), 3 pp., 1 pl.  
*Bartonius* n. subgen. of *Cambarus*, p. 97; ORTMANN, P. Amer. Phil. Soc. xliv.  
*Cambarellus* n. subgen. of *Cambarus*, p. 97; ORTMANN, t. c.  
*Cambarus*, revision, with keys to spp., and distribution; ORTMANN, t. c. pp. 99-136, pl. iii: notes on spp.; ORTMANN, Ann. Carnegie Mus. iii (2), pp. 387-406: *C. propinquus*, regeneration; ZELENY, J. exp. Zool. ii, pp. 347-369, 1 text-fig.  
*C. hinei*, Louisiana, p. 401, fig. 1; ORTMANN, Ohio Natural. vi: *C. monongalensis*, Pennsylvania, p. 395; ORTMANN, Ann. Carnegie Mus. iii (2): *C. (Procambarus) williamsoni*, Guatemala, p. 439, text-figg. 1-3; ORTMANN, t. c. (3): n. spp.  
*Faxonius* n. subgen. of *Cambarus*, p. 97; ORTMANN, P. Amer. Phil. Soc. xliv.  
*Homarus vulgaris*, phototropism of larvæ; BOHN, C.R. Ac. Sci. cxli, pp. 963-966: rotary movements of larvæ; BOHN, C.R. Soc. Biol. lix, 1905 (34), pp. 517 & 518: larval and post-larval stages figured; CHADWICK, P. Liverp. biol. Soc. xix, pp. 304-308, figg.: hatching, larval stages etc.; WILLIAMSON, Rep. Fish. Board Scotland xxiii, Pt. iii, pp. 65-107, pls. i-iv: *H. americanus*, fishery in U.S.; SMITH,

Rep. U. S. Fish. Comm. xxix for 1903 (1905), pp. 141–147 : artificial rearing ; SHERWOOD, t. c. pp. 149–174, 3 pls. : causes of death in artificial rearing ; GORHAM, t. c. pp. 175–193, 3 pls. : phototropism of larvæ, HADLEY, Science (n. s.), xxii, pp. 675–678.

*Nephrops norvegicus*, notes on fishery, Ireland ; HOLT, Rep. Fisheries Ireland 1902–1903, Pt. ii, pp. xviii–xix : abnormal chela ; PATTERSON, Zoologist (4) ix, p. 350 & text-fig.

*N. arafurensis*, Malay Seas, p. 587 ; DE MAN, Tijdschr. Nederland. Dierk. Ver. (2) ix, n. sp.

*Procambarus* n. subg. of *Cambarus* (q.v.), p. 437 ; ORTMANN, Ann. Carnegie Mus. iii (3).

### ERYONIDEA.

*Eryoneicus puritani* ; BOUVIER, Bull. Mus. Monaco xxviii, p. 6.

*E. faxoni*, E. Atlantic ; BOUVIER, C.R. Ac. Sci. cxl, p. 481, and Bull. Mus. Monaco xxviii, p. 5 : *alberti*, E. Atlantic ; BOUVIER, C.R. Ac. Sci. cxli, p. 645, and Bull. Mus. Monaco lv, p. 2 : *spinoculatus*, Terceira ; BOUVIER, Bull. Mus. Monaco xxviii, p. 7 : n. spp.

*Pentacheles trispinosus*, Malay Seas, p. 587 ; DE MAN, Tijdschr. Nederland. Dierk. Ver. (2) ix, n. sp.

*Polycheles agassizi* = *P. typhlops*, p. 480 ; BOUVIER, C.R. Ac. Sci. cxl : *P.*, notes on spp., p. 3, *debilis* var. *armatus* n. var., p. 4 ; BOUVIER, Bull. Mus. Monaco xxviii.

*P. dubius*, p. 490, *grimaldii*, p. 481, Azores ; BOUVIER, C.R. Ac. Sci. cxl : *P. dubius*, p. 4, *grimaldii*, p. 4 ; BOUVIER, Bull. Mus. Monaco xxviii : *P. eryoniformis*, E. Atlantic ; BOUVIER, C.R. Ac. Sci. cxli, p. 644, and Bull. Mus. Monaco lv, p. 2 : n. spp.

### LORICATA.

*Arctus crenulatus*, Madeira ; BOUVIER, C.R. Ac. Sci. cxl, p. 480, and Bull. Mus. Monaco xxviii, p. 2 : *A. gibberosus*, p. 588, *bicuspidatus*, p. 589, Malay Seas ; DE MAN, Tijdschr. Nederland. Dierk. Ver. (2) ix : n. spp.

*Ibacus alticrenatus* var. *septemdentatus* n. var., p. 322, pl. xi, fig. 2 ; GRANT, P. Linn. Soc. N. S. Wales 1905 (2).

*Palinurus* sp., physiology of heart, p. 151 ; CARLSON, Biol. Bull. viii : *P. vulgaris*, number of eggs ; OKELL, P. Liverp. biol. Soc. xix, pp. 16 & 17.

*Panulirus*, notes on spp. ; BOUVIER, Bull. Mus. Monaco xxix.

*Puer atlanticus*, Cape Verde Ids. ; BOUVIER, C.R. Ac. Sci. cxl, p. 479, and Bull. Mus. Monaco xxviii, p. 2, n. sp.

*Scyllarus paulsoni* n. nom. for *S. gundlachi* Paulson, nec v. Martens, p. 395 ; NOBILI, Bull. Mus. Paris xi (1905).

*S. sordidus*, Persian Gulf, p. 160, *pumilus*, Red Sea, p. 395 ; NOBILI, Bull. Mus. Paris xi (1905) : n. spp.

### THALASSINIDEA.

[See also †WEGNER (321).]

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*Axiopsis picteti* var. *spinimana* n. var., Malay Seas, p. 597 ; DE MAN, t. c.

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- Chlorotocus crassicornis*; SENNA, Annuar. Mus. Univ. Napoli i (18), 3 pp., 1 text-fig.
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- † *Anthrapalæmon woodwardi*, p. 439, text-fig. 2, *traquairii*(?), p. 440; WOODWARD, Geol. Mag. (5) ii.
- † *A. serratus*, Lower Coal Measures, Lancashire, p. 438, text-fig. 1; WOODWARD, t. c. n. sp.

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- Schizopoda* from Hawaiian Ids., notes on distrib. and char. of spp.; ORTMANN, Bull. U. S. Fish Comm. for 1903, Pt. iii.
- Schizopoda*, notes on spp. from "Oceana" Exp.; HOLT & TATTERSALL, Ann. Nat. Hist. (7) xvi, pp. 1-10.
- Schizopoda* of plankton in Bay of Biscay; HOLT & TATTERSALL, Tr. Linn. Soc. (2) Zool. x, pp. 103-129.
- Schizopoda*, morphology; COUTIÈRE, C.R. Ac. Sci. cxli, pp. 127-130.

- Arachnomysinæ* n. subfam. of *Mysidæ*, p. 128 ; HOLT & TATTERSALL, Rep. Fish. Ireland 1902-03, Pt. ii.
- Arachnomysis leuckartii*, ♀, p. 445, pl. xiv, figg. 1-6 ; THIELE, Zool. Jahrb. Suppl. viii.
- Bentheuphausia* sp., p. 112 ; HOLT & TATTERSALL, Rep. Fish. Ireland 1902-03, Pt. ii.
- Boreomysinæ* n. subfam. of *Mysidæ*, p. 130 ; HOLT & TATTERSALL, t. c.
- Boreomysis arctica*, p. 130, *microps*, p. 130 ; HOLT & TATTERSALL, t. c.
- B. subpellucida*, p. 8, figg. 5-8, *semicæca*, p. 9, figg. 9-11, N. Atlantic ; HANSEN, Bull. Mus. Monaco xxx, n. spp.
- Cesaramysis hispida*, p. 115 ; STEBBING, S. African Crust. iii.
- Chunomysis* n. g. (*Mysidæ*) *diadema*, N.E. Atlantic, p. 128, pl. xix, figg. 1-4, pl. xxv, figg. 1-7 ; HOLT & TATTERSALL, Rep. Fish. Ireland 1902-03, Pt. ii, n. sp.
- Dactylerythrops* n. g. (*Mysidæ*) *dactylops*, N.E. Atlantic, p. 121, pl. xxii ; HOLT & TATTERSALL, t. c. n. sp.
- Echinomysis* n. g. (*Mysidæ*) *chuni*, Antarctic and Indian Ocean, p. 151, 2 text-figg. ; ILLIG, Zool. Anz. xxix, n. sp.
- Euchetomera fowleri*, N.E. Atlantic, p. 123, pl. xxiv, figg. 1-3 ; HOLT & TATTERSALL, Rep. Fish. Ireland, 1902-03, Pt. ii : *E. fowleri*, p. 104, text-fig. ; HOLT & TATTERSALL, Tr. Linn. Soc. (2) Zool. x, n. sp.
- Eucopia* sp., sense-organ ; DOHRN, Zool. Anz. xxix, pp. 347-352, 4 text-figg. : *E. australis*, p. 5, fig. 1, *sculpticauda*, p. 7, fig. 4 ; HANSEN, Bull. Mus. Monaco xxx : *E. unguiculata*, p. 3, *australis*, p. 6 ; HANSEN, op. cit. xlvi.
- E. intermedia*, N. Atlantic, p. 5, figg. 2 & 3 ; HANSEN, op. cit. xxx, n. sp.
- Euphausia*, notes on spp., p. 7, key to some spp., p. 10, *mülleri*, p. 11, *diomedæ*, p. 16, *gibba*, p. 17 ; HANSEN, Bull. Mus. Monaco xlvi : *E. latifrons*, p. 112 ; STEBBING, S. African Crust. iii.
- E. recurva*, p. 13, *mutica*, p. 14, *brevis*, p. 15, N. Atlantic ; HANSEN, Bull. Mus. Monaco xlvi : *E. lanei*, N.E. Atlantic, p. 102, pl. xxiv, figg. 6-9 ; HOLT & TATTERSALL, Rep. Fish. Ireland 1902-03, Pt. ii : n. spp.
- Euphausiidæ*, notes on spp., p. 452 ; THIELE, Zool. Jahrb. Suppl. viii.
- Euphausiinae* n. subfam. of *Euphausiidæ*, p. 101 ; HOLT & TATTERSALL, Rep. Fish. Ireland 1902-03, Pt. ii.
- Gnathophausia calcarata*, luminous gland, p. 662, text-figg. 1 & 2 ; ILLIG, Zool. Anz. xxviii.
- G. drepanephora*, N.E. Atlantic, p. 113, pl. xviii ; HOLT & TATTERSALL, Rep. Fish. Ireland 1902-03, Pt. ii : *G. drepanephora*, p. 9, pl. ii ; HOLT & TATTERSALL, Ann. Nat. Hist. (7) xvi, n. sp.
- Hypererythrops* n. g. (*Mysidæ*), p. 119, *serriventer*, N.E. Atlantic, p. 120, pl. xxiii & pl. xxiv, fig. 4 ; HOLT & TATTERSALL, Rep. Fish. Ireland 1902-03, Pt. ii, n. sp.
- Katerythrops* n. g. (*Mysidæ*) *oceanae*, N.E. Atlantic, p. 117, pl. xx ; HOLT & TATTERSALL, t. c. : *K. oceanae*, p. 7, pl. i ; HOLT & TATTERSALL, Ann. Nat. Hist. (7) xvi, n. sp.
- Lophogaster typicus*, p. 449, pl. xiv, figg. 9-14 ; THIELE, Zool. Jahrb. Suppl. viii.
- Meganyctiphantes* n. g. (*Euphausiidæ*) *norvegica*, p. 105, pl. xvi ; HOLT & TATTERSALL, Rep. Fish. Ireland 1902-03, Pt. ii.
- Meterythrops picta*, N.E. Atlantic, p. 116, pl. xix, figg. 5-7, pl. xxv, figg. 8 & 9 ; HOLT & TATTERSALL, t. c. n. sp.
- Mysideis insignis*, p. 127, pl. xxiv, fig. 5 ; HOLT & TATTERSALL, t. c.
- M. (?) farrani*, N.E. Atlantic, p. 127 ; HOLT & TATTERSALL, t. c. n. sp.
- Mysis* spp., experiments on vibration of "auditory" setæ ; MARAGE, C.R. Ac. Sci. cxli, p. 732.

- Nematobrachion* n. nom. for *Nematodactylus*, preocc., *boöpis*, p. 153, pl. xxvi; CALMAN, Rep. Fish. Ireland 1902-03, Pt. ii.
- Nematoscelinæ* n. subfam. of *Euphausiidæ*, p. 107; HOLT & TATTERSALL, Rep. Fish. Ireland 1902-03, Pt. ii.
- Nematoscelis*, notes on spp., p. 27; HANSEN, Bull. Mus. Monaco xxx: *N. microps*, p. 28, *tenella*, p. 30; HANSEN, op. cit. xlvi.
- Nyctiphantes couchii*, p. 104, pl. xvii; HOLT & TATTERSALL, Rep. Fish. Ireland 1902-03, Pt. ii: *N. australis*, p. 113; STEBBING, S. African Crust. iii.
- Paramblyops* n. g. (*Mysidæ*), p. 124, *rostrata*, N.E. Atlantic, p. 125, pl. xxi; HOLT & TATTERSALL, Rep. Fish. Ireland 1902-03, Pt. ii, n. sp.
- Parerythrops obesa*, p. 122; HOLT & TATTERSALL, t. c.
- Pseudomma roseum*, p. 74; PATIENCE, Tr. Soc. Glasgow vii (1).
- P. calloplura*, p. 126, *kempi*, p. 126; HOLT & TATTERSALL, Rep. Fish. Ireland 1902-03, Pt. ii, n. spp.
- Siriella thompsonii*, p. 447, pl. xiv, figg. 7 & 8; THIELE, Zool. Jahrb. Suppl. viii.
- Stylocheiron*, notes on spp., p. 30; HANSEN, Bull. Mus. Monaco xxx: *S. longicorne*, p. 109, *chelifer*, p. 110; HOLT & TATTERSALL, Rep. Fish. Ireland 1902-03, Pt. ii.
- Thysanoëssa parva*, p. 27; HANSEN, Bull. Mus. Monaco xlvi: *T. longicaudata*, p. 107, pl. xv, *gregaria*, p. 108; HOLT & TATTERSALL, Rep. Fish. Ireland 1902-03, Pt. ii.
- T. parva*, N. Atlantic, p. 25, figg. 22-24; HANSEN, Bull. Mus. Monaco xxx, n. sp.
- Thysanopoda*, key to spp. from Atlantic, p. 12, *pectinata*, p. 16, fig. 12; HANSEN, Bull. Mus. Monaco xxx: *T. vulgaris*, p. 20, *acutifrons*, p. 22, *distinguenda*, p. 24, *pectinata*, p. 25; HANSEN, op. cit. xlvi: *T. obtusifrons*, p. 452, pl. xix, figg. 15 & 16; THIELE, Zool. Jahrb. Suppl. viii.
- T. vulgaris*, p. 15, *distinguenda*, p. 17, fig. 13, *lateralis*, p. 18, figg. 14-16, *insignis*, p. 19, figg. 17-19, *egregia*, p. 22, figg. 20 & 21, N. Atlantic; HANSEN, Bull. Mus. Monaco xxx: *T. æqualis*, p. 18, N. Atlantic; HANSEN, op. cit. xlvi: *T. cornuta*, S. Atlantic, p. 663, text-figg. 1-3; ILLIG, Zool. Anz. xxviii: *T. acutifrons*, N.E. Atlantic, p. 102; HOLT & TATTERSALL, Rep. Fish. Ireland 1902-03, Pt. ii : n. spp.

### 3. STOMATOPODA.

[See also PAULMIER (220).]

Larvæ off W. of Ireland; TATTERSALL, Rep. Fish. Ireland 1902-1903, Pt. ii, App. vii (1905), pp. 211-213.

Larvæ from Irish Sea, p. 214, fig. 2; A. SCOTT, P. Liverp. biol. Soc. xix.

*Gonodactylus*, notes on spp., p. 386, *spinosis*, p. 387, pl. xlvi, fig. 12; LENZ, Abh. Senckenb. Ges. xxvii: *G. demani*, p. 11; NOBILI, Boll. Mus. Torino xx, No. 506: *G. styliferus*, p. 34, text-fig.; PORTER, Revist. chilena ix (1).

*G. fimbriatus*, Zanzibar, p. 388, pl. xlvi, fig. 11; LENZ, Abh. Senckenb. Ges. xxvii, n. sp.

*Lysiosquilla digueti*, Lower California, p. 174 & text-figg.; COUTIÈRE, Bull. Soc. Philom. vii (3), n. sp.

*Protosquilla glabra*, Zanzibar, p. 388, pl. xlvi, fig. 13; LENZ, Abh. Senckenb. Ges. xxvii, n. sp.

*Squilla desmaresti*, in North Sea, p. 218; VAN BREEMEN, Tijdschr. Nederland. Dierk. Ver. (2) ix.

## 4. CUMACEA.

[See also BRADY (36), PAULMIER (220), SCOTT (200).]

- Bathycuma*, p. 17, key to spp., p. 18, *brevirostris*, p. 18; CALMAN, Fisheries, Ireland, Sci. Invest. 1904, i.
- B. longirostris*, Malay Seas, p. 9, pl. ii, figg. 13 & 14; CALMAN, Cumacea Siboga, n. sp.
- Bodotria scorpioides*, synonymy, p. 13; CALMAN, Fisheries, Ireland, Sci. Invest. 1904, i: *B. sp.*, p. 5; CALMAN, Cumacea Siboga.
- Campylaspis*, notes on spp., p. 34; CALMAN, Fisheries, Ireland, Sci. Invest. 1904, i.
- C. rostrata*, W. of Ireland, p. 35, pl. ii, figg. 35-38; CALMAN, t. c. n. sp.
- Ceratocuma* n. g. (*Ceratocumidæ*), p. 37, *horrida*, p. 37, pl. iv, figg. 57-75; CALMAN, t. c. n. sp.
- Ceratocumidæ* n. fam., p. 37; CALMAN, t. c.
- Cumella gracillima*, W. of Ireland, p. 23, pl. i, figg. 5-14; CALMAN, t. c. n. sp.
- Cumellopsis* n. g. (*Nannastacidæ*), p. 28, *helgæ*, p. 28, pl. ii, figg. 20-34; CALMAN, t. c. n. sp.
- Cyclaspis persculpta*, p. 3, pl. i, figg. 1-3, *sibogæ*, p. 4, pl. i, figg. 4-6, Malay Seas; CALMAN, Cumacea Siboga, n. spp.
- Cyclaspoides sarsi*, p. 15; CALMAN, Fisheries, Ireland, Sci. Invest. 1904, i: *C. sp.*, p. 6; CALMAN, Cumacea Siboga.
- Diastylis*, notes on spp., p. 45; CALMAN, Fisheries, Ireland, Sci. Invest. 1904, i.
- Diastylis tubulicauda*, W. of Ireland, p. 46, pl. v, figg. 82-86; CALMAN, t. c.: *D. cingulatus*, Malay Seas, p. 19, pl. ii, figg. 26-29; CALMAN, Cumacea Siboga : n. spp.
- Diastylopsis* sp., p. 23; CALMAN, t. c.
- Hemilamprops*, notes on spp., p. 41; CALMAN, Fisheries, Ireland, Sci. Invest. 1904, i.
- Heterocuma weberi*, Malay Seas, p. 6, pl. i, figg. 7-12; CALMAN, Cumacea Siboga, n. sp.
- Iphinoë trispinosa*, p. 15, *serrata*, p. 16; CALMAN, Fisheries, Ireland, Sci. Invest. 1904, i.
- Leucon siphonatus*, W. of Ireland, p. 19, pl. i, figg. 2-4; CALMAN, t. c. n. sp.
- Nannastacidæ*, key to genera, p. 22; CALMAN, t. c.
- Nannastacus suhmii*, p. 12; CALMAN, Cumacea Siboga.
- N. brevicaudatus*, W. of Ireland, p. 26, pl. i, figg. 15-19; CALMAN, Fisheries, Ireland, Sci. Invest. 1904, i: *N. hansenii*, p. 11, text-fig. 1, a-e, *pardus*, p. 13, text-fig. 2, a-c, *brachydactylus*, p. 14, text-fig. 3, a-e, Malay Seas; CALMAN, Cumacea Siboga : n. spp.
- Paradiastylis longipes*, Malay Seas, p. 21, text-fig. 4, a-i; CALMAN, t. c. n. sp.
- Platyaspis*, key to spp., p. 42; CALMAN, Fisheries, Ireland, Sci. Invest. 1904, i.
- Platyaspis orbicularis*, W. of Ireland, p. 43, pl. v, figg. 77-81; CALMAN, t. c. n. sp.
- Platycuma* n. g. (*Nannastacidæ*), p. 30, *holti*, W. of Ireland, p. 30, pl. iii, figg. 39-56; CALMAN, t. c. n. sp.
- Pseudodiastylis* n. g. (*Diastylidæ*) *ferox*, Malay Seas, p. 16, pl. ii, figg. 15-25; CALMAN, Cumacea Siboga, n. sp.
- Vauntompsonia*, p. 16, *cristata*, p. 17, pl. i, fig. 1; CALMAN, Fisheries, Ireland, Sci. Invest. 1904, i.

## 5. TANAIDACEA.

[See also PAULMIER (220).]

*Tanaidacea*, revision of nomenclature of spp. described in Bate & Westwood's "British Sessile-eyed Crustacea"; NORMAN, Ann. Nat. Hist. (7) xvi, pp. 78-95.

*Tanaidacea* of North America, all spp. described and figured; RICHARDSON, Bull. U. S. Mus. liv.

*Apseudes hibernicus*, p. 38, pl. ix, figg. 4-7; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905).

*Heterotanais anomalous*, p. 336, pl. xxi, figg. 29-35; SMITH, Mt. Stat. Neapel xvii.

*H. magnus*, Naples, p. 336, pl. xxi, figg. 36-39; SMITH, t. c.: *H. crassicornis*, Gulf of Manaar, p. 4, pl. i, A; STEBBING, Rep. Ceylon Pearl Fisheries iv : n. spp.

*Leptocheilia dubia*, p. 333, pl. xx, figg. 1-17; SMITH, Mt. Stat. Neapel xvii: *L. lifuensis*, p. 7, pl. i, c; STEBBING, Rep. Ceylon Pearl Fisheries iv.

*L. mercantilis*, p. 335, pl. xx, figg. 18-23, *mergellinæ*, p. 336, pl. xx, figg. 24-28; SMITH, Mt. Stat. Neapel xvii: *L. mirabilis*, Gulf of Manaar, p. 6, pl. i, B; STEBBING, Rep. Ceylon Pearl Fisheries iv : n. spp.

*Puncolus* n. g. (*Tanaidæ*) *californiensis*, California, p. 367, text-figg. 1-10; RICHARDSON, P. U. S. Mus. xxviii, n. sp.

*Tanais gracilis*, p. 3, pl. i, d; STEBBING, Rep. Ceylon Pearl Fisheries iv.

*T. normani*, California, p. 369, text-figg. 11-13; RICHARDSON, P. U. S. Mus. xxviii, n. sp.

*Tanaopsis laticaudata*, p. 41, pl. ix, figg. 9 & 10; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905).

*Typhlotanais proctagon*, W. of Ireland, p. 601; TATTERSALL, Rep. Brit. Ass. lxxiv 1904 (1905): *T. proctagon*, p. 3, pl. i, figg. 1-9; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905) : n. sp.

## 6. ISOPODA.

[See also BRADY (36), MEISSNER (181), PAULMIER (220), SCOTT (266) & (269), SCOURFIELD (274), SMITH (285), WOLTERSTORFF (340).]

*Isopoda*, revision of nomenclature of spp. described in Bate & Westwood's "British Sessile-eyed Crustacea"; NORMAN, Ann. Nat. Hist. (7) xvi, pp. 78-95.

## ASELLOTA.

[See also HUBER (141), SNETHLAGE (289).]

*Asellota* of N. America, descr. and figg. of all spp. (only n. gg. and spp. noted below); RICHARDSON, Bull. U. S. Mus. liv.

*Asellota*, morphology and classification; HANSEN, P. Zool. Soc. London 1904, ii (2) (1905), pp. 302-331.

*Eurycope longipes*, W. of Ireland, p. 30, pl. x, figg. 1-8; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905), n. sp.

*Iæra marina*, p. 51, pl. ix, fig. 11, *nordmanni*, p. 51, pl. ix, fig. 12; TATTERSALL, t. c.

*Ilyarachna plunketti*, W. of Ireland, p. 602; TATTERSALL, Rep. Brit. Ass. lxxiv, 1904 (1905): *I. plunketti*, p. 28, pl. vii, figg. 1-9; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905) : n. spp.

*Iolella* n. nom. for *Tole* Ortmann (misprint for *Iole*, preocc.), p. 457; RICHARDSON, Bull. U. S. Mus. liv.

- I. sarsi*, Alaska, p. 467, text-fig. 523 ; RICHARDSON, t. c. : *I. alasensis*, N. Pacific, p. 464, text-fig. 519 ; BENEDICT in RICHARDSON, t. c. : n. spp. *Ischnosoma greenii*, W. of Ireland, p. 602 ; TATTERSALL, Rep. Brit. Ass. lxxiv, 1904 (1905) : *I. greeni*, p. 20, figg. 1–6 ; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905), n. sp.
- Jæropsis curvicornis*, p. 51, pl. xi, c ; STEBBING, Rep. Ceylon Pearl Fisheries iv.
- Janira (?) nana*, Gulf of Manaar, p. 50, pl. iii, c ; STEBBING, t. c. n. sp.
- Lipomera* n. g. (*Lipomeridae*) *lamellata*, W. of Ireland, p. 602 ; TATTERSALL, Rep. Brit. Ass. lxxiv, 1904 (1905) : *L. lamellata*, p. 33, pl. viii, figg. 1–14 ; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905) : n. sp.
- Lipomeridae* n. fam. near *Munnopsidae*, p. 602 ; TATTERSALL, Rep. Brit. Ass. lxxiv, 1904 (1905).
- Metamunna* n. g. (near *Pleurogonium*) *typica*, W. of Ireland, p. 602 ; TATTERSALL, t. c. : *M. typica*, p. 18, pl. ix, figg. 1–3 ; TATTERSALL, Fisheries Ireland Sci. Invest. 1904, ii (1905) : n. sp.
- Munna caeca*, S. California, p. 483, text-figg. 541–543 ; RICHARDSON, Bull. U. S. Mus. liv : *M. schauinslandi*, Chatham Ids., p. 372, pl. xiv, figg. 1–12 ; SARS, Zool. Jahrb. Syst. xxi : n. spp.
- Munnopsis murrayi*, p. 73, pl. v, fig. 8 ; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905).
- M. oceanica*, W. of Ireland, p. 23, pl. v, figg. 1–7 ; TATTERSALL, t. c. n. sp.
- Munnopsooides* n. g. (near *Munnopsis*) *beddardi*, W. of Ireland, p. 602 ; TATTERSALL, Rep. Brit. Ass. lxxiv, 1904 (1905) : *M. beddardi*, p. 26, pl. vi, figg. 1–8 ; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905) : n. sp.
- Parasellidae* n. fam., p. 315 ; HANSEN, P. Zool. Soc. London 1904, ii (1905).
- Stenetriiidæ* n. fam., p. 315 ; HANSEN, t. c.
- Stenetrium*, p. 303, key to spp., p. 316, *armatum*, p. 318, pl. xix, figg. 1a–d, *fractum*, p. 319, *haswelli*, p. 321, *stebbingii*, p. 325, *inerme*, p. 329 ; HANSEN, P. Zool. Soc. London 1904, ii (2) (1905).
- S. mediterraneum*, Sicily, p. 320, pl. xix, figg. 2a–h, *serratum*, West Indies, p. 323, pl. xix, figg. 3a–d, pl. xx, fig. 1a, *occidentale*, West Indies, p. 324, pl. xx, figg. 2a–n, *antillense*, West Indies, p. 326, pl. xx, figg. 3a–i, pl. xxi, figg. 1a–e, *siamense*, Siam, p. 327, pl. xxi, figg. 2a–i ; HANSEN, P. Zool. Soc. London 1904, ii (2) (1905) : *S.*, key to spp., p. 54, *chiltoni*, Gulf of Manaar, p. 54, pl. xii, A ; STEBBING, Rep. Ceylon Pearl Fisheries iv : n. spp.
- Tole* [see also *Iolella*] *holmesi*, Alaska, p. 216, text-fig. 5 ; RICHARDSON, Bull. Bureau Fisheries xxiv, n. sp.

## PHREATOICOIDEA.

[See CHILTON (70).]

## FLABELLIFERA.

[See also †REMEŠ (242).]

*Flabellifera* of N. America, descr. and figg. of all spp. (only n. gg. and spp. noted below) ; RICHARDSON, Bull. U. S. Mus. liv.*Aega symmetrica*, Alaska, p. 209, text-fig. 1 ; RICHARDSON, Bull. Bureau Fisheries xxiv : *A. ommatophylax* Galle, p. 21, pls. iv & v, A ; STEBBING, Rep. Ceylon Pearl Fisheries iv : n. spp.*Egidæ*, key to gen., p. 20 ; STEBBING, t. c.*Alcirona papuana*, p. 502, pl. xiii, fig. 5, NOBILI, Ann. Mus. Hungar. iii, n. sp.

- Ancinella* n. g. (*Sphaeromidae*), p. 114, *profunda*, N. Atlantic, p. 132 ; HANSEN, Quart. J. Micr. Sci. xlix, n. sp.
- Anciniidae* n. fam. ; TATTERSALL, Rep. Brit. Ass. lxxiv, 1904 (1905), p. 601, and Fisheries, Ireland, Sci. Invest. 1904, ii (1905), p. 11.
- Anilocra frontalis*, hepatic cells ; GUIEYSE, Bull. Soc. Philom. vii (4), pp. 207-211, 1 text-fig. : *A. dimidiata*, p. 26 ; STEBBING, Rep. Ceylon Pearl Fisheries iv.
- Argathona* n. g. (*Argathonidae*) *normani*, Gulf of Manaar, p. 17, pl. iii, A ; STEBBING, t. c. n. sp.
- Argathonidae* n. fam., p. 16 ; STEBBING, t. c.
- Bathycopea* n. g. (*Anciniidae*), *typhlops*, W. of Ireland, p. 601 ; TATTERSALL, Rep. Brit. Ass. lxxiv, 1904 (1905) : *B. typhlops*, p. 12, pl. iii, figg. 1-13 ; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905) : n. sp.
- Cæcosphaeroma*, p. 375, *virei*, p. 376, pl. xiv, figg. 3-3b, pl. xv, figg. 3 & 9 ; DOLLFUS, Ann. Sci. Nat. (8), xx.
- Cassidinidea* n. g. (*Sphaeromidae*), type *ovalis* Say, p. 113 ; HANSEN, Quart. J. Micr. Sci. xlix. [See also *Cassidisca*.]
- Cassidinopsis* n. g. (*Sphaeromidae*), type *emarginata* Guérin, p. 108 ; HANSEN, t. c.
- Cassidisca* n. g. for *lunifrons* Rehdn. etc., p. 272, cancelled as syn. of *Cassidinidea*, p. ix ; RICHARDSON, Bull. U. S. Mus. liv.
- Cilicæa curudata*, *gilliiana*, *sculpta*, and *cordata* referred to *Paracerceis*, p. ix ; RICHARDSON, Bull. U. S. Mus. liv : *C.*, key to spp., p. 34, *latreillii*, p. 36, pls. iii, B and viii ; STEBBING, Rep. Ceylon Pearl Fisheries iv.
- C. whiteleggei*, p. 39, pl. ix, A & B, *beddardi*, p. 40, pl. x, A & B, sp., juv., p. 42, pl. ix, C, Gulf of Manaar ; STEBBING, t. c. n. spp.
- Cilicæopsis* n. g. (*Sphaeromidae*), type *granulata* Whitelegge, p. 104 ; HANSEN, Quart. J. Micr. Sci. xlix.
- Cirolana hirtipes*, habits, p. 25 ; BRIAN, Boll. Naturalista xxv (3) : *C.*, key to European spp., p. 340, *borealis*, p. 342, *neglecta*, p. 345, *cæca*, p. 348, *microphthalmia*, p. 349, *cranchii*, p. 350, pl. xxxiii, fig. 3a, *hansenii*, p. 353, pl. xxxiii, figg. 4a-4d, pl. xxxiv, figg. 1a-1k ; HANSEN, J. Linn. Soc. Zool. xxix : *C. sulcatacauda*, p. 11, *parva*, p. 12 ; STEBBING, Rep. Ceylon Pearl. Fisheries iv : *C. borealis*, p. 43, pl. ix, fig. 8 ; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905).
- C. gallica* Roscoff, p. 344, pl. xxxiii, figg. 1a-1d, *schmidti*, N. Atlantic, p. 347, pl. xxxiii, figg. 2a-2c ; HANSEN, J. Linn. Soc. xxix : *C. chiltoni*, San Francisco, p. 91, text-fig. 73 ; RICHARDSON, Bull. U. S. Mus. liv : n. spp.
- Cirolaninae*, key to genera, p. 339 ; HANSEN, J. Linn. Soc. xxix.
- Conilera cylindracea*, p. 355 ; HANSEN, t. c.
- Conilorpheus* n. g. (*Eurydicidae*) *herdmani*, Gulf of Manaar, p. 13, pl. ii, A ; STEBBING, Rep. Ceylon Pearl Fisheries iv, n. sp.
- Cymodoce bicarinata*, p. 42, pl. x, C, *inornata*, p. 43 ; STEBBING, t. c. : *C. truncata* (= *Sphaeroma inerme* Tatt.), p. 6, pl. ii, figg. 1-9, *granulatum*, p. 10 ; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905).
- Discerceis* n. g. (*Sphaeromidae*) *granulosa* and *linguicauda*, p. x ; RICHARDSON, Bull. U. S. Mus. liv.
- Dynamene perforata*, *benedicti*, *glabra*, and *moorei*, referred to *Dynamenella*, p. x, *D. carinata*, referred to *Dynameniscus*, p. xi ; RICHARDSON, t. c.
- D. moorei*, W. Indies, p. 303, text-figg. 325 & 326 ; RICHARDSON, t. c. n. sp.
- Dynamenella* n. g. (*Sphaeromidae*) type *perforata* Moore, p. 107 ; HANSEN, Quart. J. Micr. Sci. xlix. [See also *Dynamene*.]
- Dynameniscus* n. g. (*Sphaeroniidae*) *carinata*, p. xi ; RICHARDSON, Bull. U. S. Mus. liv.
- Eurydice*, key to European spp., p. 357, *spinigera*, p. 359, *grimaldii*,

- p. 361, *truncata*, p. 363, pl. xxxiv, figg. 2a-2b, *pulchra*, p. 365, pl. xxxiv, figg. 3a-3c, pl. xxxv, fig. 1a, *inermis*, p. 369, pl. xxxv, figg. 3a-3c; HANSEN, J. Linn. Soc. xxix: *E. truncata*, p. 45, pl. xi, figg. 5-8; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905).
- E. affinis*, coast of France, p. 367, pl. xxxv, figg. 2a-2k; HANSEN, J. Linn. Soc. xxix, n. sp.
- Eurydicidae* (= *Cirolanidae*), key to gen., p. 10; STEBBING, Rep. Ceylon Pearl Fisheries iv.
- Exosphaeroma faxoni*, Florida, p. 292, text-figg. 307 & 308; RICHARDSON, Bull. U. S. Mus. liv, n. sp.
- Faucheria* n. g. (*Cirolanidae*), p. 373, *faucherii*, p. 374, pl. xiv, figg. 2 & 2a, pl. xv, figg. 2, 7 & 8; DOLLFUS, Ann. Sci. nat. (8) xx.
- Gnathia insolita*, Gulf of Manaar, p. 9, pl. xii, b; STEBBING, Rep. Ceylon Pearl Fisheries iv, n. sp.
- Hansenlana sphæromiformis*, p. 15, pl. ii, b; STEBBING, t. c.
- Hemisphaeroma* n. g. (*Sphaeromidae*), p. 103, *pulchrum*, Java, p. 117; HANSEN, Quart. J. Micr. Sci. xlix, n. sp.
- Irona nanoides*, Gulf of Manaar, p. 28, pl. vi, b; STEBBING, Rep. Ceylon Pearl Fisheries iv, n. sp.
- Lanocirca zeylanica*, Gulf of Manaar, p. 19, pl. v, b; STEBBING, t. c. n. sp.
- Livoneca* sp.; WILLINK, Natuurk. Tijdschr. Nederl. Ind. lxiv, pp. 156-161.
- L. convexa*, Panama, p. 445, 2 figg.; RICHARDSON, P. U. S. Mus. xxix, n. sp.
- Nesa bidentata*, p. 47; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905).
- Paracerceis* n. g. (*Sphaeromidae*), type *caudata* Say, p. 108; HANSEN, Quart. J. Micr. Sci. xlix. [See also *Cilicæa*.]
- Paradynamene* n. g. (*Sphaeromidae*) *benjamensis*, Gulf-weed, p. 305, text-figg. 330-333; RICHARDSON, Bull. U. S. Mus. liv, n. sp.
- Rhothra callipia*, p. 26, pl. vi, a; STEBBING, Rep. Ceylon Pearl Fisheries iv.
- Rocinela belliceps*, p. 213, text-fig. 2, *angustata*, p. 214, text-fig. 3; RICHARDSON, Bull. Bureau Fisheries xxiv: *R. orientalis*, p. 24, pl. vi, c; STEBBING, Rep. Ceylon Pearl Fisheries iv.
- R. propodialis*, Alaska, p. 214, text-fig. 4; RICHARDSON, Bull. Bureau Fisheries xxiv, n. sp.
- Spelæosphaeroma* n. g. (*Cirolanidae*, sec. DOLLFUS), *julium*, Par-rieki, Italy; FERUGLIO, Il Mondo sotterraneo 1904, Nos. 1 & 2. [Quoted from DOLLFUS, Ann. Sci. Nat. (8) xx, p. 373.]
- Sphaeroma inerme*, W. of Ireland, p. 601; TATTERSALL, Rep. Brit. Ass. lxxiv, 1904 (1905) [see *Cymodoce truncata*]: *S. walkeri*, Gulf of Manaar, p. 31, pl. vii; STEBBING, Rep. Ceylon Pearl Fisheries iv: n. spp.
- Sphaeromidae*, revision of sub-families, groups, and genera; HANSEN, Quart. J. Micr. Sci. xlix, pp. 69-135, pl. vii: discussion of genera, p. 29; STEBBING, Rep. Ceylon Pearl Fisheries iv.
- Sphaeromides*, p. 371, *raymondi*, p. 372, pl. xiv, fig. 1, pl. xv, figg. 1 & 6; DOLLFUS, Ann. Sci. Nat. (8) xx.
- Tecticeps alascensis* and *convexus*, p. xi; RICHARDSON, Bull. U. S. Mus. liv.
- Tridentella* n. g. (*Corallanidae*) for *virginiana* Rchdn., p. 161; RICHARDSON, Bull. U. S. Mus. liv.
- Typhlocirolana* n. g. (*Cirolanidae*), p. 74, *moraguesi*, Majorca, p. 76; RACOVITZA, Bull. Soc. zool. France xxx, n. sp.
- Vireia* n. g. (*Sphaeromidae*), p. 377, *burgunda*, p. 378, pl. xiv, figg. 4 & 4a, pl. xv, figg. 4, 10 & 11, *berica*, p. 379, pl. xiv, figg. 5 & 5a, pl. xv, figg. 5, 12 & 13; DOLLFUS, Ann. Sci. Nat. (8) xx.

## VALVIFERA.

- Valvifera* of N. America, descr. and figg. of all spp. (only n. gg. and spp. noted below); RICHARDSON, Bull. U. S. Mus. liv.
- Amesopodidæ n. fam.*, p. 44; STEBBING, Rep. Ceylon Pearl Fisheries iv.
- Amesopus n. g.* (*Amesopodidæ*) *richardsonæ*, Gulf of Manaar, p. 44, pl. xi, a; STEBBING, t. c. n. sp.
- Arcturella dilatata*, Firth of Forth, p. 151, pl. xiii, fig. 11; T. SCOTT, Rep. Fish. Board Scotland xxiii, Pt. iii.
- Astacilla amblyura*, Gulf of Manaar, p. 46, pl. xi, b; STEBBING, Rep. Ceylon Pearl Fisheries iv, n. sp.
- Erichsonella n. nom.* for *Erichsonia*, preocc., p. 400; BENEDICT in RICHARDSON, Bull. U. S. Mus. liv.
- Idothea* Fabr., 1799, distinct from *Idotea* Weber, 1795; RICHARDSON, P. Soc. Washington xviii, pp. 9 & 10.
- Idothea* spp. from Port Erin; HEWITT, P. Liverp. biol. Soc. xix, pp. 14 & 15; I. spp., p. 48; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905).
- I. fewkesi*, California, p. 359, text-figg. 387 & 388; RICHARDSON, Bull. U. S. Mus. liv, n. sp.
- Mesidotea n. g.* (*Idotheidæ*) for *entomon* (Linn.) etc., p. 347; RICHARDSON, t. c.
- Pentidotea n. g.* (*Idotheidæ*) for *resecata* (Stimpson) etc., p. 368; RICHARDSON, t. c.

## EPICARIDEA.

- Epicaridea* of N. America, descr. and figg. of all spp. (only n. g. and sp. noted below); RICHARDSON, Bull. U. S. Mus. liv.
- Epicaridea*, notes on spp., p. 54; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905).
- Bopyriscus n. g.* (*Bopyridæ*) *calmani*, California, p. 562, text-figg. 617-619; RICHARDSON, Bull. U. S. Mus. liv, n. sp.
- Bopyroides hippolytes*, p. 218, text-figg. 6 & 7; RICHARDSON, Bull. Bureau Fisheries xxiv.
- B. furcata* (not descr.), p. 17; NORMAN, Mus. Nor. Crust., 2nd Ed., n. sp.
- Colypuridae n. fam.* for *Colypurus* (q.v.), p. 105; RICHARDSON, Bull. Mus. Harvard xlvi (6).
- Colypurus n. g.* (*Colypuridae*), p. 105, *agassizi*, Eastern Pacific, p. 106, 1 pl.; RICHARDSON, t. c. n. sp.
- Cryptonscidæ*, larva on *Næsa bidentata*, p. 47; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905).
- Gyge branchialis*, distribution; GIARD, Feuille Natural. xxxvi, No. 421, p. 12; *G. galatheæ* Bate & Westwood = *G. branchialis* Cornalia & Panceri, note on host, p. 86; NORMAN, Ann. Nat. Hist. (7) xvi.
- Heterophryxus appendiculatus*, p. 77, pl. xi, figg. 1-4; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905).
- Holophryxus n. g.* (*Dajidæ*), p. 220, *alaskensis*, Alaska, p. 221, text-figg. 8-10; RICHARDSON, Bull. Bureau Fisheries xxiv, n. sp.
- Lobocepion n. g.* (*Bopyridæ*), p. 504, *grapsi*, on *Grapsus grapsus*, New Guinea, p. 505, pl. xiii, fig. 6; NOBILI, Ann. Mus. Hungar. iii, n. sp.
- Rhabdochiridæ n. fam.* for *Rhabdocheirus incertus* Bonnier, p. 105; RICHARDSON, Bull. Mus. Harvard xlvi (6).
- Scyracepon n. g.* (*Bopyridæ*), p. 35, *tuberculosa*, on *Scyramathia carpenteri*, W. of Ireland, p. 36, pl. xi, figg. 9-12; TATTERSALL, Fisheries, Ireland, Sci. Invest. 1904, ii (1905), n. sp.

## ONISCOIDEA.

[See also CHILTON (70), LEBEDINSKI (166).]

*Oniscoidea*, general account of structure and habits, descriptions and figures of British species; WEBB & SILLEM, Essex Natural. xiv, pp. 38-56 & 81-96.

*Oniscoidea* of N. America, descr. and figg. of all spp. (only n. spp. noted below); RICHARDSON, Bull. U. S. Mus. liv.

Distrib. of spp. introduced into Australia and New Zealand; CHILTON, Ann. Nat. Hist. (7) xvi, pp. 428-432.

*Actoniscus lindahli*, California, p. 635, text-figg. 679-680; RICHARDSON, Bull. U. S. Mus. liv, n. sp.

*Ambounia suarezi*, p. 51, pl. vi, fig. 30; BUDDE-LUND, Revis. Crust. Isop. Terr. 1904.

*Arhina* n. g. (*Oniscidæ*), p. 44, *porcelliooides* (loc.?), p. 45, pl. vi, figg. 7-17; BUDDE-LUND, t. c. n. sp.

*Armadillidium bifidum*, p. 172, text-fig. 1, *halophilum*, p. 172, text-fig. 2, Cyprus; DOLLFUS, Feuille Natural. xxxv, No. 418, n. spp.

*Armadillo*, revision of genus, many spp. re-descr. and figured, p. 96; BUDDE-LUND, Revis. Crust. Isop. Terr. 1904.

*A. erythroleucus*, Crimea, p. 98, *montanus*, Tripoli, p. 99, *verrucosus*, Ecuador, p. 104, *crassus*, St Thomas Id. (G. of Guinea), p. 105, *congener*, Brazil, p. 108, *tuberosus*, Hayti, p. 109, *festivus*, Pt. Elizabeth, p. 112, pl. ix, figg. 40 & 41, *mixtus*, Algoa Bay, p. 113, *microps*, Borneo, p. 116, *marcidus*, Pulo Penang, p. 117, *miser*, Australia, p. 121, *proximatus*, Borneo, p. 122, pl. x, fig. 23, *immotus*, Pulo Penang, p. 122, pl. x, fig. 24, *egens*, Nyassaland, p. 124, *conglobator*, Pulo Penang, p. 124, *intermixtus*, Selangor, p. 126, pl. x, figg. 28-32, *nigromarginatus*, Selangor, p. 127, *emunitus*, Siam, p. 129, *panurus*, Natal, p. 131, *latifrons*, S. Africa, p. 132, pl. x, figg. 39-44; BUDDE-LUND, t. c. n. spp.

*Armadilloniscus* (?) *cecconi*, Cyprus, p. 176, text-fig. 8; DOLLFUS, Feuille Natural. xxxv, No. 418, n. sp.

*Ethelum* n. subg. of *Eubelum*, p. 24; BUDDE-LUND, Revis. Crust. Isop. Terr. 1899, see also Ent. Meddel. (2) i, p. 90.

*Helleria brevicornis*, synonymy and distrib.; NOBILI, Boll. Mus. Torino xx, No. 491.

*Hiallum* n. subg. of *Eubelum*, p. 22; BUDDE-LUND, Revis. Crust. Isop. Terr. 1899, see also Ent. Meddel. (2) i, p. 88.

*Hypergnathus* n. g. (*Oniscidæ*), p. 631, *texensis*, Texas, p. 632, text-figg. 675-677; RICHARDSON, Bull. U. S. Mus. liv, n. sp.

*Leptotrichus cecconi*, p. 175, text-fig. 6, *pilosus*, p. 176, text-fig. 7, Cyprus; DOLLFUS, Feuille Natural. xxxv, No. 418, n. spp.

*Ligia* [see *Ligyda*].

*Ligyda* Rafinesque = *Ligia* Fabr.; RICHARDSON, P. Soc. Washington xviii, p. 10.

*Lucasius orientalis*, Cyprus, p. 174, text-fig. 5; DOLLFUS, Feuille Natural. xxxv, No. 418, n. sp.

*Oniscidæ*, list of sub-fam., tribes, and genera, p. 36; BUDDE-LUND, Revis. Crust. Isop. Terr. 1904.

*Porcellio hirtipes*, Sahara, p. 325, text-figg. 1-4; DOLLFUS, Bull. Mus. Paris x, 1904 (6): *P. spatula*, p. 172, text-fig. 3, *carinatus*, p. 174, text-fig. 4, Cyprus; DOLLFUS, Feuille Natural. xxxv, No. 418: n. spp.

*Pseudarmadillo dollfusi*, Bahamas, p. 657, text-figg. 700 & 701; RICHARDSON, Bull. U. S. Mus. liv, n. sp.

*Pseudophiloscia* n. g. (*Oniscidæ*) *fragilis*, New Zealand, p. 43, pl. vi, figg. 5 & 6, *infexa*, Chile, p. 43, pl. vi, figg. 1-4; BUDDE-LUND, Revis. Crust. Isop. Terr. 1904, n. spp.

- Saijdjahus* n. g. (*Oniscidæ*), p. 49, *creper*, Borneo, p. 49, pl. vi, figg. 24–29 ; BUDDE-LUND, t. c. n. sp.
- Scleropactes concinnus*, p. 47, pl. vii, figg. 1–10 ; BUDDE-LUND, t. c.
- Spherillo*, revision of genus, many spp. re-descr. and figured, p. 51 ; BUDDE-LUND, t. c.
- S. sollers*, Australia, p. 55, pl. vii, figg. 16 & 17, *collaris*, Mauritius, p. 60, *squamatus*, New Zealand, p. 61, *bipunctatus*, New Zealand, p. 62, *rufomarginatus*, New Zealand, p. 64, pl. vii, figg. 34–36, *marginatus*, New Zealand, p. 65, *tarangensis*, New Zealand, p. 67, pl. viii, fig. 9, *dispersus*, Bismarck Ids., p. 70, pl. viii, fig. 10, *impressifrons*, Sydney, p. 73, *iniquus*, Cape York, p. 74, pl. viii, figg. 13 & 14, *canaliculatus*, Chatham Ids., p. 74, *chathamensis* (= *A. speciosus* Chilton, non Dana), Chatham Ids., p. 75, *peltatus*, Seychelles, p. 78, *maculosus*, Seychelles, p. 80, *decoratus*, Siam, p. 81, *boholensis*, Philippines, p. 82, *brachycephalus*, Borneo, p. 84, *obliquipes*, Philippines, p. 85, *lentus*, New Guinea, p. 88, pl. viii, figg. 37–39, *setaceus*, Auckland, p. 89, *nobilis*, Riū-Kiu Ids., p. 90, pl. ix, figg. 1 & 2, *ingens*, Philippines, p. 91, pl. ix, figg. 4–7, *caligans*, Philippines, p. 92, *brevis*, Auckland, p. 93 ; BUDDE-LUND, t. c. n. spp.
- Suarazia* n. g. (*Oniscidæ*), p. 47, *heterodoxa*, p. 48, pl. vi, figg. 18–23 ; BUDDE-LUND, t. c.
- Sunniva* n. g. (*Oniscidæ*), p. 48, *mystica* (not described), Madagascar, p. 49 ; BUDDE-LUND, t. c. n. sp.
- Syngastron* Costa = *Helleria* Ebner, p. 2 ; NOBILI, Bull. Mus. Torino xx, No. 491.
- Syntomagaster dasypus* Costa = *Helleria brevicornis*, Ebner p. 2 ; NOBILI, t. c.
- Titanethes albus*, p. 56, fig. 10 ; LEBEDINSKIĭ, Zapiski Novoross. Obshch. xxiii (2).
- Trichoniscus roseus*, Ireland ; WELCH, Irish Natural. xiv, p. 198.

## 7. AMPHIPODA.

[See also BRADY (36), BUCHINSKAIO (47), CHILTON (70), CHUN (71), PAULMIER (220), SCOTT (266 & 269), SMITH (285), WOLTERSTORFF (340).]

*Amphipoda*, revision of nomenclature of spp. described in BATE & WESTWOOD's "British Sessile-eyed Crustacea" ; NORMAN, Ann. Nat. Hist. (7) xvi, pp. 78–95.

### GAMMARINA.

[See also HUBER (141), LEBEDINSKIĭ (165 & 166), OSTWALD (216).]

*Gammarina* of North Sea, notes on many spp., only those figured are noted below ; REIBISCH, Wiss. Meeresuntersuch. Kiel viii, pp. 147–188.

"Secondary appendage" of antennules as systematic character ; WALKER, Ann. Nat. Hist. (7) xvi, p. 464.

List of spp. from N. Atlantic, p. 7 ; CHEVREUX, Bull. Mus. Monaco xxxv.

*Acanthozone cuspidata*, p. 491, pl. ix, fig. 1 & text-fig. ; HOLMES, Bull. Bureau Fisheries xxiv.

*Allorchestes littoralis*, p. 472, pl. iii, fig. 2 & text-fig. ; HOLMES, t. c.

*Ampelisca macrocephala*, p. 479, text-fig., *spinipes*, p. 480, text-fig., *agassizi*, p. 481, text-fig. ; HOLMES, t. c.

*A. compressa*, New England, p. 480, pl. vi, fig. 1 & text-fig. ; HOLMES, t. c. n. sp.

*Amphithoe longimana*, p. 509, pl. xiii, fig. 2 & text-fig., *rubricata*, p. 510,

- pl. xiii, fig. 1 & text-fig.; HOLMES, t. c.: *A. albomaculata* Bate & Westwood = *Podoceropsis excavata* Bate, p. 83; NORMAN, Ann. Nat. Hist. (7) xvi.
- Anonyx nugax*, p. 472, pl. iii, fig. 3 & text-fig.; HOLMES, Bull. Bureau Fisheries xxiv.
- Apherusa gracilis*, New England, p. 495, text-fig.; HOLMES, t. c. n. sp.
- Autonoë smithi*, New England, p. 516, text-fig.; HOLMES, t. c. n. sp.
- Batea secunda*, New England, p. 499, text-fig.; HOLMES, t. c. n. sp.
- Bathyonyx* n. g. (*Gammaridae*) de Vismesi, Lough Mask, p. 2, pls. i & ii, figg. 1-19; VEJDOKSKÝ, SB. Bohmisch. Ges. 1905, xxviii, n. sp.
- Bathyporeia norvegica*, p. 157, pl. iv, figg. 2-6, *pelagica*, p. 158, pl. iv, figg. 7 & 8, *gracilis*, p. 158, pl. iv, figg. 9-12, *pilosa*, p. 160, pl. iv, fig. 13; REIBISCH, Wiss. Meeresuntersuch. Kiel viii.
- Bruzeliella* n. g. (= *Podocerus*, auctt. = *Jassa* Stebbing, non *Bruzelius*), type, *B. falcata* Montagu, p. 83; NORMAN, Ann. Nat. Hist. (7) xvi.
- Byblis serrata*, p. 482, pl. v, fig. 3 & text-fig.; HOLMES, Bull. Bureau Fisheries xxiv.
- Calliopius laeviusculus*, p. 494, pl. x, fig. 1 & text-fig.; HOLMES, t. c.
- Carinogammarus mucronatus*, p. 503, text-fig.; HOLMES, t. c.
- Cerapus tabularis*, p. 517, text-fig.; HOLMES, t. c.
- Charcotia* n. g. (*Lysianassidae*) *obesa*, Antarctic Seas, p. 163, text-fig. 3; CHEVREUX, Bull. Soc. zool. France xxx, n. sp.
- Cheirimedon dentimanus*, Antarctic Seas, p. 159, text-fig. 1; CHEVREUX, t. c. n. sp.
- Chelura terebrans*, p. 508, text-fig.; HOLMES, Bull. Bureau Fisheries xxiv.
- Coremapus* n. g. (near *Microdeutopus*), type *versiculatus* Bate, p. 78; NORMAN, Ann. Nat. Hist. (7) xvi.
- Corophium cylindricum*, p. 521, text-fig.; HOLMES, Bull. Bureau Fisheries xxiv.
- Cyphocaris richardi*, Azores, p. 1, figg. 1 & 2; CHEVREUX, Bull. Mus. Monaco xxiv: *C. alicei*, Atlantic, p. 1, figg. 1 & 2; CHEVREUX, Bull. Mus. Monaco xxvii : n. spp.
- Dexamine thea*, p. 498, text-fig.; HOLMES, Bull. Bureau Fisheries xxiv.
- Elasmopus laevis*, p. 507, pl. xii, fig. 1 & text-fig.; HOLMES, t. c.
- E. latibrachium*, Maldives, p. 928, pl. lxxxviii, figg. 6-10; WALKER, Fauna Maldives ii, n. sp.
- Epimeria loricata*, p. 491, pl. viii, fig. 3; HOLMES, Bull. Bureau Fisheries xxiv.
- Ericthonius rubricornis*, p. 518, text-fig., *minax*, p. 519, text-fig.; HOLMES, t. c.
- Eusirus cuspidatus*, p. 493, pl. ix, fig. 3 & text-fig.; HOLMES, t. c.
- Gammarellus angulosus*, p. 508, pl. x, fig. 2 & text-fig.; HOLMES, t. c.
- Gammaropsis gardineri*, Maldives, p. 929, pl. lxxxviii, figg. 11-14, 16, 17; WALKER, Fauna Maldives ii, n. sp.
- Gammarus locusta*, p. 500, pl. x, fig. 3 & text-fig., *annulatus*, p. 501, pl. xi, fig. 2 & text-fig., *marinus*, p. 502, pl. xi, fig. 1 & text-fig.; HOLMES, Bull. Bureau Fisheries xxiv: *G. annulatus*; phototropism; SMITH, Amer. J. Physiol. xiii, pp. 205-216, 4 text-figs.
- Grubia compta*, p. 510, text-fig.; HOLMES, Bull. Bureau Fisheries xxiv: *G. microphthalmia*, p. 930, pl. lxxxviii, fig. 15, text-fig. 142; WALKER, Fauna Maldives ii.
- Guerinella* n. nom. (for *Guerina* Della Valle), p. 7; CHEVREUX, Bull. Mus. Monaco xxxv.
- Halirages fulvocinctus*, p. 495, text-fig.; HOLMES, Bull. Bureau Fisheries xxiv.
- Harpinia plumosa*, p. 478; HOLMES, t. c.
- Haustorius arenarius*, p. 476, pl. v, fig. 2 & text-fig.; HOLMES, t. c.
- Hippomedon kergueleni*, p. 3; THOMSON, P. Soc. Tasmania 1900/1901.

- H. serratus*, New England, p. 473, pl. iv, fig. 2 & text-fig.; HOLMES, Bull. Bureau Fisheries xxiv, n. sp.
- Hoplonyx cicada*, p. 474, pl. iv, fig. 1 & text-fig.; HOLMES, t. c.
- Hyale nilssoni*, p. 925, text-fig. 140; WALKER, Fauna Maldive ii.
- Ischyrocerus anguipes*, p. 513, pl. xiii, fig. 3 & text-fig.; HOLMES, Bull. Bureau Fisheries xxiv.
- Jassa marmorata*, New England, p. 511, text-fig.; HOLMES, t. c. n. sp.  
[See also *Bruzeliella*.]
- Katius* n. g. (*Lysianassidae*) *obesus*, N. Atlantic, p. 1, figg. 1-3; CHEVREUX, Bull. Mus. Monaco xxxv, n. sp.
- Kroyera arenaria*, p. 182, pl. v, figg. 6-10, *altamarina*, p. 183, pl. v, figg. 11-15; REIBISCH, Wiss. Meeresuntersuch. Kiel viii.
- Lafystius sturionis*, p. 492, pl. ix, fig. 2 & text-fig.; HOLMES, Bull. Bureau Fisheries xxiv.
- Leucothoë spinicarpa*, p. 486, pl. vii, fig. 1 & text-fig.; HOLMES, t. c. : *L. lilljeborgii*, p. 179, pl. v, fig. 5; REIBISCH, Wiss. Meeresuntersuch. Kiel viii.
- Lysianopsis* n. g. (*Lysianassidae*) *alba*, New England, p. 475, pl. v, fig. 1 & text-fig.; HOLMES, Bull. Bureau Fisheries xxiv, n. sp.
- Mæra danæ*, p. 525, pl. xii, fig. 2; HOLMES, t. c.
- Melita dentata*, p. 504, text-fig., *nitida*, p. 505, pl. xi, fig. 3 & text-fig.; HOLMES, t. c.
- M. parvimana*, New England, p. 506, text-fig.; HOLMES, t. c. n. sp.
- Menigrates obtusifrons*, p. 154, pl. iv, fig. 1; REIBISCH, Wiss. Meeresuntersuch. Kiel xiii.
- Metopa grænlandica*, p. 483, pl. vi, fig. 3 & text-fig.; HOLMES, Bull. Bureau Fisheries xxiv.
- M. quadrangula*, North Sea, p. 178, pl. v, figg. 1-4; REIBISCH, Wiss. Meeresuntersuch. Kiel viii, n. sp.
- Microdeutopus gryllotalpa*, p. 514, text-fig., *danmonensis*, p. 515, text-fig.; HOLMES, Bull. Bureau Fisheries xxiv.
- Monoculodes edwardsi*, New England, p. 487, text-fig.; HOLMES, t. c. n. sp.
- Niphargus caspary* Pratz = *N. kochianus* de Rougemont, non Bate, p. 18, text-figs. i-xiv; VEJDovsky, SB. Bohmisches Ges. 1905, xxviii.
- Orchestia agilis*, p. 469, pl. ii, fig. 3 & text-fig., *palustris*, p. 471, pl. iii, fig. 1 & text-fig.; HOLMES, Bull. Bureau Fisheries xxiv: *O. palustris*, structure and habits; SMALLWOOD, Cold Spring Mon. iii: *O. platensis*, p. 924, text-fig. 140; WALKER, Fauna Maldive ii.
- Orchomenella macronyx*, Antarctic Seas, p. 161, text-fig. 2; CHEVREUX, Bull. Soc. zool. France xxx, n. sp.
- Paracyphocaris* n. g. (*Lysianassidae*) *predator*, N. Atlantic, p. 1, figg. 1-3; CHEVREUX, Bull. Mus. Monaco xxxii, n. sp.
- Paragrubia vorax*, p. 930, pl. lxxxviii, fig. 18; WALKER, Fauna Maldive ii.
- Paramphithoë pulchella*, p. 489, pl. viii, fig. 1 & text-fig.; HOLMES, Bull. Bureau Fisheries xxiv.
- Paraphoxus spinosus*, New England, p. 477, text-fig.; HOLMES, t. c. n. sp.
- Parapleustes latipes*, p. 187, pl. v, fig. 19; REIBISCH, Wiss. Meeresuntersuch. Kiel viii.
- Paratylus minikoi*, Minikoi, p. 925, text-fig. 141; WALKER, Fauna Maldive ii, n. sp.
- Parædicerus lynceus*, p. 487, pl. vii, fig. 2 & text-fig.; HOLMES, Bull. Bureau Fisheries xxiv.
- Phoxocephalus hölbölli*, p. 477, text-fig.; HOLMES, t. c.
- Pleustes panoplus*, p. 488, pl. vii, fig. 3 & text-fig.; HOLMES, t. c.
- Podoceropsis nitida*, p. 524, text-fig.; HOLMES, t. c.
- Podocerus* [see *Bruzeliella*].
- Polycheria atollis*, Maldives, p. 926, pl. lxxxviii, figg. 1-5; WALKER, Fauna Maldive ii, n. sp.

- Pontogeneia inermis*, p. 496, text-fig. ; HOLMES, Bull. Bureau Fisheries xxiv.  
*Pontoporeia femorata*, p. 476, text-fig. ; HOLMES, t. c.  
*Ptilocheirus pinguis*, p. 522, pl. xii, fig. 3 & text-fig. ; HOLMES, t. c.  
*Rhachotropis aculeata*, p. 493 ; HOLMES, t. c.  
*Stegocephalus inflatus*, p. 482, pl. vi, fig. 2 ; HOLMES, t. c.  
*Stenotheë cypris*, p. 484, text-fig., *minuta*, p. 485, text-fig., New England ;  
 HOLMES, t. c. n. spp.  
*Symploestes latipes*, p. 490, pl. viii, fig. 2, text-fig., *glaber*, p. 490, text-fig. ;  
 HOLMES, t. c.  
*Talorchestia longicornis*, p. 468, pl. ii, fig. 1 & text-fig., *megalophthalma*,  
 p. 469, pl. ii, fig. 2 & text-fig. ; HOLMES, t. c.  
*Tryphosa pinguis*, p. 473, pl. iv, fig. 3 & text-fig. ; HOLMES, t. c.  
*Unciola irrorata*, p. 520, text-fig. ; HOLMES, t. c.  
*Urothoë elegans*, p. 161, *marina*, p. 163, pl. iv, figg. 14–16 ; REIBISCH,  
 Wiss. Meeresuntersuch. Kiel viii.  
*U. poseidonis*, North Sea, p. 163, pl. iv, figg. 17–21 ; REIBISCH, t. c. n. sp.  
*Westwoodilla hyalina*, p. 184, pl. v, figg. 16–18 ; REIBISCH, t. c.

#### HYPERRINA.

- Acanthoscina macrocarpa*, N. Atlantic, p. 2, fig. ; CHEVREUX, Bull. Mus. Monaco xxxvii, n. sp.  
*Brachyscelus mediterraneus* and *crusculum*, notes ; SENNA, Annuar. Mus. Univ. Napoli i (6), 9 pp., 10 text-figg.  
*Euthemisto bispinosa*, p. 465, pl. i, fig. 2 ; HOLMES, Bull. Bureau Fisheries xxiv.  
*Hyperia galba*, p. 464, pl. i, fig. 1 & text-fig. ; HOLMES, t. c.  
*Lanceolidae*, larval. form (*Physosoma*), p. 417, text-fig. 3 ; WOLTERECK,  
 Zool. Anz. xxix.  
*Parascina fowleri*, male, p. 1 ; CHEVREUX, Bull. Mus. Monaco xxxvii.  
*Phronima sedentaria*, p. 465, pl. i, fig. 3 ; HOLMES, Bull. Bureau Fisheries xxiv.  
*Scinidae*, list of spp. from N. Atlantic, p. 1 ; CHEVREUX, Bull. Mus. Monaco xxxvii.  
*Scypholanceola* n. g. (*Lanceolidae*), no species named, p. 415, text-fig. 2 ;  
 WOLTERECK, Zool. Anz. xxix.  
*Vibilioides* n. g. (*Vibiliidae*) *alberti*, N. Atlantic, p. 1, figg. 1 & 2 ; CHEVREUX, Bull. Mus. Monaco xlix, n. sp.

#### CAPRELLINA.

[See also BRAUN (37), VAN BREEMEN (38).]

- Aeginella longicornis*, p. 525, text-fig. ; HOLMES, Bull. Bureau Fisheries xxiv.  
*Caprella geometrica*, p. 526, text-fig., *linearis*, p. 526, text-fig., *septentrionalis*, p. 527, *simpsoni*, p. 527 ; HOLMES, t. c.  
*Podalirius* sp. in Lake of Geneva ; BLANC, Arch. Sci. Nat. xix (2), p. 208,  
 and C.R. vi. Congr. Internat. Zool. Berne, pp. 425–429, 4 text-figg.

#### 8. PHYLLOCARIDA.

[See also THIELE in ZIMMER (349).]

- Nebalia typhlops*, off W. of Ireland ; TATTERSALL, Ann. Rep. Fish. Ireland  
 1902–1903, Pt. ii, App. vii (1905), p. 210 : *N. longicornis magellanica*,

p. 66, pl. ii, figg. 14–17; THIELE, Deutsch. Südpol. Exp. 1901–1903, ix.  
*Nebaliella extrema*, Antarctic Sea, p. 61, pl. ii, figg. 1–13; THIELE, t. c. n. sp.

## B. ENTOMOSTRACA.

[See PAULSEN (221).]

### 1. BRANCHIOPODA.

#### a. PHYLLOPODA.

[See also BUCHINSKAIO (47), DEYROLLE (94), †NEWTON (188), SCOURFIELD (274), SNETHLAGE (289), †WALTHER (319), †WOODWARD (342).]

*Phyllopoda*, structure of eyes and frontal organ; NOWIKOFF, Zeitschr. wiss. Zool. lxxix, pp. 432–464, pls. xxii & xxiii, 9 text-figg.

*Phyllopoda*, notes on British spp.; SCOURFIELD, J. Quekett Club (2) ix, pp. 39 & 40.

*Apus* sp., in Balúchistán; VREDENBURG, Jour. and Proc. Asiatic Soc. Bengal (n. s.) i (3), pp. 33 & 34, 1 text-fig.

*A. sakalavus*, Madagascar, p. 1; NOBILI, Boll. Mus. Torino xx, No. 513, n. sp.

*Artemia salina*, habits, breeding etc.; ARTOM, Zool. Anz. xxix, pp. 284–291, 1 text-fig.: cervical plate of nauplius; ZOGRAF, C.R. Ac. Sci. exli, pp. 903–905.

*Branchinecta coloradensis*, *lindahli* and *paludosa*, compared, notes on development; SHANTZ, Biol. Bull. ix, pp. 249–264, pls. x–xii.

*Chirocephalus diaphanus*, phagocytosis and excretion; BRUNTZ, Arch. Zool. exp. (4) iv, pp. 183–198, pl. xiv, and C.R. Soc. Biol. lix, 1905 (26), pp. 229 & 230.

*Estheria hislopi*, p. 231, pl. xv, figg. 1–10; DADAY, Zoologica xviii (44).

*E. obliqua*, Cape Colony, p. 10, pl. ii; SARS, Arch. Naturv. Christian. xxvii (4), n. sp.

*Limnadia lenticularis*, anatomy and histology; NOWIKOFF, Zeitschr. wiss. Zool. lxxviii, pp. 561–619, pls. xix–xxii, 5 text-figg.: *L. lenticularis*, p. 63, pl. iv, figg. a–f; VÁVRA, J. Quekett Club (2) ix (1904).

*Limnetis brachyura*, p. 66; VÁVRA, t. c.

†*Ribeiria parva*, Ordovician, Pennsylvania, p. 419, pl. lix, figg. 4 & 5; COLLIE, Bull. Geol. Soc. Amer. xiv, n. sp.

*Streptocephalus dregei*, p. 298, pl. xviii, figg. 1 & 2; GURNEY, P. Zool. Soc. London 1904, ii (2) (1905).

*S. papillatus*, Cape Colony, p. 4, pl. i; SARS, Arch. Naturv. Christian. xxvii (4), n. sp.

#### b. CLADOCERA.

[See also VAN BREEMEN (38), BREHM (39), BREHM & ZEDERBAUER (41), GURNEY (121), HUBER (141), JUDAY (154), MACCALLUM (173), MURRAY (187), RUTTNER (255), SARS (261), A. SCOTT (263 & 264), T. SCOTT (266, 269, 272), SCOURFIELD (273), SKORIKOW (283), VOIGT (315), WELTNER (324), WOLTERSTORFF (340), ZACHARIAS (344 & 345), ZYKOFF (352, 353, 355).]

*Cladocera*, review of distribution; STINGELIN, C.R. vi. Congr. Internat. Zool. Berne, pp. 533–541.

*Cladocera*, "olfactory" filaments; SCOURFIELD, Forschber. Plon xii, pp. 340–353, pls. v & vi.

*Cladocera*, figg. and notes on spp., some new varr. described, in Servian ; ČORĆEVIĆ, Ghlas Srpska Ak. lxix, pp. 190-249.  
*Cladocera*, notes (in Russian) and figg. of some freshwater spp. ; MEISSNER, Trudui Kazan Univ. xxxix (3).

- Acroperus harpae*, p. 154, text-figg. 9-12 ; KEILHACK, Arch. Naturg. lxxi (i).  
*Alona affinis*, p. 171, pl. x, figg. 26 & 27, *cambouei*, p. 172, pl. xi, figg. 1 & 2, *glabra*, p. 173, pl. xi, figg. 3 & 4, *rectangula*, p. 176, pl. xi, figg. 7 & 8 ; DADAY, Zoologica xviii (44) : *A. guttata*, p. 143, text-fig. 2, sp., p. 159, text-figg. 15-17 ; KEILHACK, Arch. Naturg. lxxi (i) : *A. elegans*, distrib. ; STINGELIN, Zool. Anz. xxix, p. 225.  
*A. anodonta*, p. 175, pl. xi, figg. 5 & 6, *fasciculata*, p. 177, pl. xi, figg. 9-11, Paraguay ; DADAY, Zoologica xviii (44) : *A. weltneri*, Madü Lake, p. 158, text-figg. 13 & 14 ; KEILHACK, Arch. Naturg. lxxi (i) : n. spp.  
*Alonella dentifera*, p. 162, pl. x, figg. 10 & 11, *punctata*, p. 163, pl. x, figg. 12-17, *globulosa*, p. 165, pl. x, figg. 8 & 9 ; DADAY, Zoologica xviii (44) : *A. (Pleuroxus) nana*, p. 259, text-fig. 45 ; TIMM, Mt. Mus. Hamburg xxii.  
*Alonopsis ambigua*, p. 150, text-fig. ; GURNEY, Tr. Norfolk Soc. viii.  
*Anchistropus emarginatus*, p. 264, text-fig. 56 ; TIMM, Mt. Mus. Hamburg xxii.  
*Bosmina longirostris*, p. 49, text-fig. 1 ; BREHM & ZEDERBAUER, Verh. Ges. Wien lv : *B. crassicornis*, p. 154, text-fig. 8 ; KEILHACK, Arch. Naturg. lxxi (i) : *B. longirostris* varr., p. 240, text-figg. 11-28, *coregoni*, p. 251, text-figg. 29 & 30 ; TIMM, Mt. Mus. Hamburg xxii : *B. insignis*, p. 479, text-figg. 1 & 2 ; ZYKOFF, Zool. Anz. xxix.  
*B. tenuirostris*, p. 196, pl. xii, figg. 18-20, *macrostyla*, p. 197, pl. xii figg. 21-24, Paraguay ; DADAY, Zoologica xviii (44), n. spp.  
*Bosminella anisitsi*, p. 199, pl. xiii, figg. 1-5 : DADAY, t. c.  
*Camptocercus australis*, p. 189, pl. xii, fig. 4 ; DADAY, t. c.  
*Ceriodaphnia cornuta*, p. 205, pl. xiii, figg. 16 & 17, *rigaudi*, p. 206, pl. xiii, figg. 14 & 15, *silvestrii*, p. 207, pl. xiii, figg. 18-20, *reticulata*, p. 208, pl. xiii, figg. 21 & 22 ; DADAY, t. c. : *C. pulchella*, p. 240, text-fig. 8 ; TIMM, Mt. Mus. Hamburg xxii.  
*Chydorus ventricosus*, p. 156, pl. x, figg. 1 & 2 ; DADAY, Zoologica xviii (44) : *C. piger*, p. 145, text-fig. 3, *gibbus*, p. 160, text-fig. 18 ; KEILHACK, Arch. Naturg. lxxi (i) : *C. globosus*, p. 261, text-fig. 50, *sphaericus*, p. 262, text-figg. 51-54 ; TIMM, Mt. Mus. Hamburg xxii.  
*C. flavescens*, p. 157, pl. x, figg. 3 & 4, *hybridus*, p. 158, pl. x, figg. 5-7, Paraguay ; DADAY, Zoologica xviii (44), n. spp.  
*Daphnia obtusa*, p. 211, pl. xiii, figg. 25 & 26, *curvirostris*, p. 211, pl. xiii, figg. 27-29 : DADAY, t. c. : *D. cucullata*, p. 153, figg. 4-7 ; KEILHACK, Arch. Naturg. lxxi (i) : *D. zschokkei* var. *vigezzina* n. var., p. 67, 2 text-figg. ; MONTI, Forschber. Plon xii : *D. obtusa*, parasite of ; PÉREZ, C.R. Soc. Biol. lviii, 1905 (22), pp. 1027-1029, 2 text-figg. : *D. magna*, distribution ; STINGELIN, Zool. Anz. xxix, p. 224 : *D.*, notes on spp., p. 236 ; TIMM, Mt. Mus. Hamburg xxii : *D. pulex*, formation of ephippium ; WOLFF, Forschber. Plon xii, pp. 303-315, 10 text-figg. : *D. hyalina*, form *notodon-varani* form. nov., p. 733 ; ZACHARIAS, Zool. Anz. xxviii : *D. hyalina*, structure and formation of ephippium ; ZWACK, Zeitschr. wiss. Zool. lxxix, pp. 548-573, pls. xxvi & xxvii.  
*Diaphanosoma leuchtenbergianum*, p. 235, text-figg. 1 & 2 ; TIMM, Mt. Mus. Hamburg xxii.  
*Euryalona tenuicaudis*, p. 178, pl. xi, figg. 12 & 13, *orientalis*, p. 180, pl. xi, figg. 14 & 15 ; DADAY, Zoologica xviii (44).  
*E. fasciculata*, Paraguay, p. 181, pl. xii, figg. 5-10 ; DADAY, t. c. n. sp.

- Eury cercus lamellatus*, p. 254, text-figg. 35 & 36 ; TIMM, Mt. Mus. Hamburg xxii.  
*Grimaldina brazzai*, p. 192 ; DADAY, Zoologica xviii (44).  
*Hyalodaphnia cucullata*, p. 238, text-figg. 3-5 ; TIMM, Mt. Mus. Hamburg xxii.  
*Pliocryptus halyi*, p. 190 ; DADAY, Zoologica xviii (44) : *I. sordidus*, p. 252, text-figg. 31 & 32, *agilis*, p. 253, text-fig. 33 ; TIMM, Mt. Mus. Hamburg xxii.  
*I. verrucosus*, Paraguay, p. 191, pl. xii, figg. 11-14 ; DADAY, Zoologica xviii (44), n. sp.  
*Latona setifera*, p. 139, text-fig. 1 ; KEILHACK, Arch. Naturg. lxxi (i).  
*Latonopsis breviremis*, pl. xiv, figg. 1-3, *fasciculata*, pl. xiv, figg. 13-17, Paraguay ; DADAY, Zoologica xviii (44), n. spp.  
*Leptorhynchus rostratus*, p. 168, pl. x, figg. 24 & 25 ; DADAY, t. c.  
*L. dentifer*, Paraguay, p. 169, pl. x, figg. 18-23 ; DADAY, t. c. n. sp.  
*Leydigia acanthocercoides*, p. 185, pl. xi, fig. 19 ; DADAY, t. c. : *L. quadrangularis*, p. 258, text-fig. 44 ; TIMM, Mt. Mus. Hamburg xxii.  
*L. parva*, Paraguay, p. 186, pl. xi, figg. 20 & 21 ; DADAY, Zoologica xviii (44) : *L. africana*, Orange River Colony, p. 300, pl. xviii, figg. 5 & 6 ; GURNEY, P. Zool. Soc. London 1904, ii (2) (1905) : n. spp.  
*Leydigiosis ornata*, Paraguay, p. 187, pl. xii, figg. 1-3 ; DADAY, Zoologica xviii (44), n. sp.  
*Lynceus (Alona) quadrangularis*, p. 255, text-figg. 37 & 38, *affinis*, p. 256, text-figg. 39 & 40, *rectangulus*, p. 257, text-figg. 41 & 42, (*Alonella*) *rostratus*, p. 257, text-fig. 43 ; TIMM, Mt. Mus. Hamburg xxii.  
*Macrothrix laticornis*, p. 253, text-fig. 34 ; TIMM, t. c.  
*M. gibbera*, Paraguay, p. 195, pl. xii, figg. 15-17 ; DADAY, Zoologica xviii (44), n. sp.  
*Moina micrura*, p. 241, text-figg. 9 & 10 ; TIMM, Mt. Mus. Hamburg xxii.  
*M. ciliata*, Paraguay, p. 201, pl. xiii, figg. 9-13 ; DADAY, Zoologica xviii (44) : *M. belli*, Orange River Colony, p. 299, pl. xviii, figg. 3 & 4 ; GURNEY, P. Zool. Soc. London 1904, ii (2) (1905) : n. spp.  
*Moinodaphnia reticulata*, Paraguay, p. 202, pl. xiii, figg. 6-8 ; DADAY, Zoologica xviii (44), n. sp.  
*Monospilus dispar*, p. 263, text-fig. 55 ; TIMM, Mt. Mus. Hamburg xxii.  
*Parasida ramosa*, p. 218, pl. xiv, figg. 4-7, *variabilis*, p. 220, pl. xiv, figg. 8-12 ; DADAY, Zoologica xviii (44).  
*Pleuroxus trigonellus*, p. 259, text-figg. 46-48, *uncinatus*, p. 261, text-fig. 49 ; TIMM, Mt. Mus. Hamburg xxii.  
*Pseudalona latissima*, p. 183, pl. xi, fig. 16, *longirostris*, p. 184, pl. xi, fig. 18 ; DADAY, Zoologica xviii (44).  
*Simocephalus*, priority, p. 141 ; KEILHACK, Arch. Naturg. lxxi (i) : *S. capensis*, p. 209, pl. xiii, figg. 23 & 24 ; DADAY, Zoologica xviii (44) : *S. vetulus*, p. 240, text-figg. 6 & 7 ; TIMM, Mt. Mus. Hamburg xxii ; *S. vetulus*, determination of sex ; ISSAKOWITSCH, Biol. Zentrbl. xxv, pp. 529-536.

## 2. COPEPODA.

[See also BRAUN (37), VAN BREEMEN (38), BREHM (39), BREHM & ZEDERBAUER (40 & 41), BUCKINSKAIO (47), CHUN (71), DAMAS (93), HUBER (141), JENSEN (148), JOHNSTONE (150), JUDAY (154), LEBEDINSKI (165), LOHmann (171), MONTI (185), MURRAY (187), PEARSON (224), RUTTNER (255), SARS (261), A. SCOTT (263 & 264), T. SCOTT (266, 269, 271), SKORIKOW (283), VOIGT (315), WILSON (331), WOLTERSTORFF (340), ZACHARIAS (344 & 345), ZYKOFF (352, 353, 355).]

*Copepoda*, figg. and notes on freshwater spp., in Servian; ČORČEVIĆ, Ghlas Srpska Ak. lxix, pp. 190-249.  
*Copepoda*, notes (in Russian) and figg. of some freshwater spp.; MEISSNER, Trudui Kazan Univ. xxxix (3).

- Acartia clausi*, p. 49, pl. ii, figg. 9 & 10, *giesbrechti*, p. 50, pl. ii, figg. 5-8; T. SCOTT, Tr. Soc. Glasgow viii (1).  
*A. simplex*, Chatham Ids., p. 375, pl. xiv, figg. 13-20; SARS, Zool. Jahrb. Syst. xxi, n. sp.  
*Acrocalanus longicornis*, p. 1000, figg. on pl. xcvi, *monachus*, p. 1002, figg. on pl. xcvi, *gibber*, p. 1003, figg. on pl. xcvi, *gracilis*, p. 1003, figg. on pl. xcvi; WOLFENDEN, Fauna Maldive ii, Suppl. i.  
*A. gardineri*, Maldives, p. 1005, figg. on pl. xcvi; WOLFENDEN, t. c. n. sp.  
*Aegisthus spinulosus*, W. of Ireland, p. 46, pl. xii, figg. 8-14, pl. xiii, figg. 1-4; FARRAN, Rep. Fish. Ireland 1902-03, Pt. ii, n. sp.  
*Alebion gracile*, p. 128, *glabrum*, p. 129, Massachusetts; WILSON, P. Soc. Washington xviii, n. spp.  
*Amallophora affinis*, p. 21, *obtusifrons*, p. 22, N. Atlantic; SARS, Bull. Mus. Monaco xxvi, n. spp.  
*Ameira breviremis*, off Northumberland, p. 214, pl. iii, figg. 11-14, pl. iv, figg. 1-6; BRADY, Tr. Soc. Northumb. (n. s.) i: *A. simplex*, Devonshire, p. 291; NORMAN & SCOTT, Ann. Nat. Hist. (7) xv: *A. elegans*, Firth of Forth, p. 144, pl. x, figg. 18 & 19, pl. xi, figg. 1-9; T. SCOTT, Rep. Fish. Board Scotland xxiii, Pt. iii : n. spp.  
*Amphiascus* n. g. (*Diosaccidae*) = *Stenelia* Brady, non Boeck, p. 380, *pacificus*, Chatham Ids., p. 381, pl. xv, figg. 36-52; SARS, Zool. Jahrb. Syst. xxi, n. sp.  
*Anchorella uncinata*, p. 8, pl. iv, fig. 8; BRIAN, Annuar. Mus. Univ. Napoli i (24).  
*Anthosoma crassum*, p. 112, pl. v, figg. 15 & 16; T. SCOTT, Rep. Fish. Board Scotland xxiii, Pt. iii.  
*Anuretes heckelii*, p. 647, pl. xxv, figg. 316-321; WILSON, P. U. S. Mus. xxviii.  
*Arietellus giesbrechti*, p. 21, *plumifer*, p. 21, *pavoninus*, p. 22, *simplex*, p. 22, N. Atlantic; SARS, Bull. Mus. Monaco xl, n. spp.  
*Aspidiscus fasciatus*, p. 81, pl. xlvi; SARS, Crust. Norway v.  
*Augaptilus angustus*, p. 10, *laticeps*, p. 11, *oblongus*, p. 11, *brevicaudatus*, p. 12, *gracilis*, p. 12, *elongatus*, p. 13, *nodifrons*, p. 13, *truncatus*, p. 14, *longicirrus*, p. 15, *tenuicaudis*, p. 15, *gibbus*, p. 16, *longimanus*, p. 17, *cucullatus*, p. 17, N. Atlantic; SARS, Bull. Mus. Monaco xl, n. spp.  
*Bathycalanus* n. g. (*Calanidae*), p. 7, *richardi*, N. Atlantic, p. 8; SARS, op. cit. xxvi, n. sp.  
*Bathyponitia* n. g. (*Parapontellidae*), p. 23, *elongata*, N. Atlantic, p. 24; SARS, op. cit. xl, n. sp.  
*Beatricella* n. g. for *Delavalia mimica* Scott, p. 568; SCOTT, Ann. Nat. Hist. (7) xvi.  
*Belisarius viguieri*, p. 44, pl. ii, figg. 1-5; SCOURFIELD, J. Quekett Club (2) ix (1904).  
*Böckella*, def., notes, and list of spp. p. 593; EKMAN, Zool. Anz. xxix.  
*Brachiella thynni*, anatomy; MICULICICH, Zool. Anz. xxviii, pp. 599-620, 7 text-figs.: *B.* spp., notes; MICULICICH, t. c. pp. 733-736.  
*Brachycalanus* n. g. (*Calanidae*) *atlanticus*, p. 41, pl. x, figg. 1-14; FARRAN, Rep. Fish. Ireland 1902-03, Pt. ii.  
*Bradyetes* n. g. (*Calanidae*), p. 31, *inermis*, W. of Ireland, p. 32, pl. iii, figg. 13-20, pl. iv, figg. 13-14; FARRAN, t. c. n. sp.  
*Bradyidius armatus*, p. 1005; WOLFENDEN, Fauna Maldive ii, Suppl. i.  
*Bryaxis brevicornis*, p. 32, pl. iv, fig. 6; FARRAN, Rep. Fish. Ireland 1902-03, Pt. ii.

- B. minor*, W. of Ireland, p. 32, pl. iv, figg. 1-5 & 7-12 ; FARRAN, t. c. n. sp.
- Calanipeda aquædulcis* Kritschagin = *Pop[p]ella guerni* Richard, p. 281 ; ZYKOFF, Zool. Anz. xxix.
- Calanus vulgaris* var. *plumosus* n. var., p. 994, pl. xcvi, figg. 21 & 22, *caroli*, p. 994, pl. xcvi, fig. 42, *pauper*, p. 995, pl. xcvi, figg. 29, 31, 32 & 35, *minor*, p. 995, pl. xcvi, figg. 36-38, *robustior*, p. 996, pl. xcvi, figg. 5 & 6 ; WOLFENDEN, Fauna Maldives ii, Suppl. i.
- Caligodes megacephalus*, N. America, p. 609, pl. xvi ; WILSON, P. U. S. Mus. xxviii, n. sp.
- Caligus trachypteri*, p. 3, pl. iii, figg. 1-7 ; BRIAN, Annuar. Mus. Univ. Napoli i (24) : *C. abbreviatus*, p. 109, pl. v, figg. 1-6 ; T. SCOTT, Rep. Fish. Board Scotland xxiii, Pt. iii : *C. rapax*, p. 568, pl. viii and many text-figg., *curtus*, p. 578, pl. x and text-figg., *belones*, p. 586, pl. xii, figg. 135-139, *pelamydis*, p. 594, pl. xiii, figg. 154-161, pl. xiv, fig. 161a, *productus*, p. 597, pl. xiv, figg. 162-170, *balistæ*, p. 601, pl. xv, figg. 172-177, *isonyx*, p. 602, pl. xiv, fig. 171, pl. xv, figg. 184-186, *thymni* [*thynnii*], p. 603, pl. xv, figg. 178 & 179, *haemulonis*, p. 606, pl. xv, figg. 180-183, *monacanthi*, p. 607, *centrodonti*, p. 652, pl. xxvii ; WILSON, P. U. S. Mus. xxviii.
- C. remoræ*, Red Sea, p. 564, 9 figg. ; BRIAN, Arch. parasit. ix : *C. rufimaculatus*, p. 561, pl. v, *schistonyx*, p. 564, pl. vi, *mutabilis*, p. 573, pl. viii, text-fig. 2, *aliuncus*, p. 576, pl. ix, *chelifer*, p. 582, pl. xi, *latifrons*, p. 587, pl. xii, figg. 140-149, *bonito*, p. 589, pl. xiii, figg. 150-153 and many text-figg., North America, *teres*, p. 649, pl. xxvi, Chile ; WILSON, P. U. S. Mus. xxviii : n. spp.
- Candacia catula* var. *similis* n. var., p. 1012 ; WOLFENDEN, Fauna Maldives ii, Suppl. i.
- C. obtusa*, N. Atlantic, p. 23 ; SARS, Bull. Mus. Monaco xl : *C. tuberculata*, Maldives Ids., p. 1013, figg. on pl. xcvi ; WOLFENDEN, Fauna Maldives ii, Suppl. i : n. spp.
- Canthocampus bidens*, p. 144, pl. ix, figg. 5-8, *trispinosus*, p. 145, pl. ix, fig. 9 ; DADAY, Zoologica xviii (44) : *C.*, notes on spp., breeding habits etc. ; WOLF, Zool. Jahrb. Syst. xxii, pp. 101-280.
- Centropages gracilis*, p. 1013, figg. on pl. xcvi, *calaninus*, p. 1014, figg. on pl. xcvi, *elongatus*, p. 1014, figg. on pl. xcvi, *orsini*, p. 1015, figg. on pl. xcvi, *furcatus*, p. 1016 ; WOLFENDEN, Fauna Maldives ii, Suppl. i.
- Chirundina angulata*, N. Atlantic, p. 13 ; SARS, Bull. Mus. Monaco xxvi, n. sp.
- Chondracanthus depressus* and var. *oblongus* n. var. on *Pleuronectes flesus*, E. Scotland, p. 114, pl. vi, figg. 7-17 ; T. SCOTT, Rep. Fish. Board Scotland xxiii, Pt. iii, n. sp.
- Cletodes sarsi*, Firth of Forth, p. 146, pl. xii, figg. 1-9 ; T. SCOTT, t. c. n. sp.
- Cornucalanus* n. g. (near *Xanthocalanus*), p. 20, *magnus* (locality ?), p. 21, pl. vii, *simplex* (locality ?), p. 22 ; WOLFENDEN, Plankton Studies i, n. spp.
- Coryceus*, notes on spp., p. 1026, figg. on pl. xcix ; WOLFENDEN, Fauna Maldives ii, Suppl. i.
- Cyclopidae*, figg. of various spp. with notes in Russian ; LEBEDINSKII, Zapiski Novoross. Obshch. xxv (2).
- Cyclopina pusilla*, Chatham Ids., p. 399, pl. xix, figg. 150-161 ; SARS, Zool. Jahrb. Syst. xxi, n. sp.
- Cyclops phaleratus*, p. 132, pl. viii, fig. 1, *anceps*, p. 133, pl. viii, figg. 2-4, *prasinus*, p. 134, pl. viii, fig. 5, *varicans* var. *furcatus* n. var., p. 135, pl. viii, figg. 6-11, *macrurus*, p. 137, pl. viii, figg. 12, 21, 28, 29, *mendocinus*, p. 138, pl. viii, fig. 17, *albidus*, p. 139, pl. viii, figg. 13 & 14, *annulatus*, p. 139, pl. viii, figg. 15 & 16, *dybowskii*, p. 140, pl. viii, figg.

- 18–20, *spinifer*, p. 141, pl. viii, figg. 22–27, pl. ix, figg. 1 & 2, *strenuus*, p. 142, pl. ix, figg. 3 & 4; DADAY, Zoologica xviii (44) : *C. nanus*, p. 44, pl. ii, figg. 6–9; SCOURFIELD, J. Quekett Club (2) ix (1904) : *C.*, notes on spp., breeding habits etc.; WOLF, Zool. Jahrb. Syst. xxii, pp. 101–280.
- Cylindropsyllus brevicornis*, Ryckflusse, p. 437, figg. 8–10; DOUWE, Zool. Ann. xxviii, n. sp.
- Dactylopodella* n. g. (*Thalestridae*), p. 131, *flava*, p. 132, pl. lxxxi ; SARS, Crust. Norway v.
- Dactylopodus maldivensis*, Maldives Ids., p. 1031, figg. on pl. xcix ; WOLFENDEN, Fauna Maldives ii, Suppl. i, n. sp.
- Dactylopusia*, p. 125, *thisboides*, p. 126, pl. lxxvii & lxxviii, fig. 1, *vulgaris* n. nom. for *strömi* Claus, p. 128, pl. lxxix, fig. 1, *brevicornis*, p. 130, pl. lxxx ; SARS, Crust. Norway v.
- D. valida*, p. 293, *ornata*, p. 294, *purpurocincta*, p. 295, S. England ; NORMAN & SCOTT, Ann. Nat. Hist. (7) xv : *D. neglecta*, p. 127, pl. lxxviii, fig. 2, *micronyx*, p. 129, pl. lxxix, fig. 2, Norway ; SARS, Crust. Norway v : n. spp.
- Delavalia pygmaea*, off Northumberland, p. 214, pl. iii, figg. 5–10 ; BRADY, Tr. Soc. Northumb. (n. s.) i : *D. normani*, British Seas, p. 569 ; SCOTT, Ann. Nat. Hist. (7) xvi : n. spp.
- Diaptomus conifer*, p. 147, pl. ix, fig. 10 ; DADAY, Zoologica xviii (44) : *D. blanci*, p. 687, pl. xxv, figg. 9–11, *pectinicornis*, p. 690, pl. xxv, figg. 12–14 ; VAN DOUWE, Zool. Jahrb. Syst. xxii : *D.*, notes on spp., breeding habits etc.; WOLF, Zool. Jahrb. Syst. xxii, pp. 101–280.
- D. falcifer*, p. 148, pl. ix, figg. 11–15, *anisitsi*, p. 149, pl. ix, figg. 16–22, Paraguay ; DADAY, Zoologica xviii (44), n. spp.
- Dichelestium sturionis*, p. 111, pl. v, figg. 17–24, pl. vi, figg. 1–6 ; T. SCOTT, Rep. Fish. Board Scotland xxiii, Pt. iii.
- Doropygus pulex*, p. 2, pl. iv, figg. 10–12 ; BRIAN, Annuar. Mus. Univ. Napoli i (24).
- Dysponius curticaudatus*, Firth of Forth, p. 148, pl. xiii, figg. 1–10 ; T. SCOTT, Rep. Fish. Board Scotland xxiii, Pt. iii, n. sp.
- Echetus typicus*, p. 611, pl. xvii ; WILSON, P. U. S. Mus. xxviii.
- Ectinosoma australe*, p. 377, pl. xv, figg. 21–35 ; SARS, Zool. Jahrb. Syst. xxi.
- Euchaeta marina*, p. 1007, figg. on pl. c, var., p. 1008, fig. on pl. c, *concinna*, p. 1008, figg. on pl. c ; WOLFENDEN, Fauna Maldives ii, Suppl. i.
- E. tumidula*, p. 15, *orrecta*, p. 16, *gracilis*, p. 16, *incisa*, p. 17, N. Atlantic ; SARS, Bull. Mus. Monaco xxvi : *E. indica*, Maldives Ids., p. 1008, figg. on pl. c ; WOLFENDEN, Fauna Maldives ii, Suppl. i : n. spp.
- Euchirella rostrata* var. *magnus* [? n. var.], p. 18, *venusta*, p. 18, *brevis*, p. 18, *atlantica*, p. 20 ; WOLFENDEN, Plankton Studies i : *E. bella* var. *bella*, p. 1006, figg. on pl. xcvii ; WOLFENDEN, Fauna Maldives ii, Suppl. i.
- E. brevis*, N. Atlantic, p. 12 ; SARS, Bull. Mus. Monaco xxvi : *E. hirsuta*, p. 17, pl. vi, *maxima*, p. 18, pl. vi, *elongata*, p. 19, pl. vi, *spinosa*, p. 19, pl. vi, Atlantic ; WOLFENDEN, Plankton Studies i : n. spp.
- Eudactylina nigra*, Massachusetts, p. 131 ; WILSON, P. Soc. Washington xviii, n. sp.
- Euryte longicauda* var. *minor* n. var., p. 143, pl. x, figg. 13 & 14 ; T. SCOTT, Rep. Fish. Board Scotland xxiii, Pt. iii.
- Eurytemora herdmani* var. *minor* n. var., p. 49, pl. ii, figg. 1 & 2 ; T. SCOTT, Tr. Soc. Glasgow vii (1).
- Euterpe acutifrons*, p. 1034, figg. on pl. xcix ; WOLFENDEN, Fauna Maldives ii, Suppl. i.
- Guetanus holti*, W. of Ireland, p. 33, pl. vi, figg. 1–12, as n. sp., identified with *G. latifrons* Sars, in Addendum ; FARRAN, Rep. Fish. Ireland 1902–03, Pt. ii.

- G. minor*, W. of Ireland, p. 34, pl. v, figg. 1–11; FARRAN, t. c. : *G. latifrons*, p. 11, *curvicornis*, p. 11, *robustus*, p. 11, *inermis*, p. 12, N. Atlantic; SARS, Bull. Mus. Monaco xxvi : *G. antarctica*, Antarctic, p. 7, pl. iii, *longispinus*, Atlantic, p. 7, pl. iii; WOLFENDEN, Plankton Studies i : n. spp.
- Gaidius affinis*, p. 9, *notacanthus*, p. 9, *cryptospinus*, p. 10, *divaricatus*, p. 10, N. Atlantic; SARS, Bull. Mus. Monaco xxvi : *G. intermedius*, Antarctic, p. 6, pl. iii; WOLFENDEN, Plankton Studies i : n. spp.
- Gaussia* n. g. (near *Metridia*) *scotti* (as "nov. sp." in error), p. 5, pl. ii; WOLFENDEN, t. c.
- Gloioptotes ornatus*, Woods Holl, p. 127; WILSON, P. Soc. Washington xviii, n. sp.
- Halicyclops propinquus*, Chatham Ids., p. 395, pl. xviii, figg. 135–149; SARS, Zool. Jahrb. Syst. xxi, n. sp.
- Halithalestris* n. g. (*Thalestridae*), p. 117, *croni*, p. 118, pl. lxxii; SARS, Crust. Norway v.
- Haloptilus spiniceps*, p. 1010, pl. xcvi, fig. 45; WOLFENDEN, Fauna Maldives ii, Suppl. i.
- H. ocellatus*, S. Atlantic, p. 14, pl. v; WOLFENDEN, Plankton Studies i, n. sp.
- Harpacticus fulvus*, phototropism etc.; BOHN, C.R. Soc. Biol. lix, 1905 (37), pp. 650–652: *H. uniremis*, p. 147, pl. x, fig. 20; T. SCOTT, Rep. Fish. Board Scotland xxiii, Pt. iii.
- Hatschekia* (*Clavella*) *obesa* [? n. sp.], p. 217, pl. xiii, figg. 1 & 1a, text-fig. 1, *H. (Cycnus) pagelii* [? err. for *pagelli*] *bogueravei*, p. 218, pl. xiii, figg. 2–2c, text-fig. 2; GOGGIO, Arch. zool. ital. ii.
- H. cernæ*, on *Cerna gigas*, Palermo, p. 219, pl. xiii, fig. 3, text-fig. 3, *richardii* on *Labrus merula*, Pisa, p. 222, pl. xiii, fig. 4, text-fig. 4; GOGGIO, t. c. n. spp.
- Herrmannella parva*, Plymouth, p. 299; NORMAN & SCOTT, Ann. Nat. Hist. (7) xv, n. sp.
- Hersiliodes pelseneeri*, p. 278; PÉREZ, C.R. Soc. Biol. lviii.
- Heterocope weismanni*, breeding habits etc.; WOLF, Zool. Jahrb. Syst. xxii, pp. 101–280.
- Heterorhabdus*, notes on spp., p. 44; FARRAN, Rep. Fish. Ireland 1902–03, Pt. ii : *H. grandis*, p. 8, pl. iv, *grimaldi*, p. 10, pl. iv, *major*, p. 11, pl. iv, *brevicornis*, p. 11, *profundus*, p. 12, pl. iv, *austrinus*, p. 13, pl. iv; WOLFENDEN, Plankton Studies ii.
- H. latus*, N. Atlantic, p. 9; SARS, Bull. Mus. Monaco xl : *H. brevicaudatus*, p. 12, pl. iv, *atlanticus*, p. 13, Atlantic; WOLFENDEN, Plankton Studies i : n. spp.
- Homoiotes* n. g. (*Caligidæ*) *palliata* (loc.?), p. 661, pl. xxix; WILSON, P. U. S. Mus. xxviii, n. sp.
- Idya*, p. 87, *furecata*, p. 88, pls. li & lli, fig. 1, *minor*, p. 90, pl. lli, fig. 2, *ensifera*, p. 90, pl. llii, fig. 1, *longicornis*, p. 92, pl. liv, fig. 1, *gracilis*, p. 94, pl. lv, fig. 1; SARS, Crust. Norway v.
- I. tenera*, p. 91, pl. llii, fig. 2, *elegantula*, p. 93, pl. liv, fig. 2, *angusta*, p. 95, pl. lv, fig. 2, *finmarchica*, p. 96, pl. lvi, Norway; SARS, t. c. n. spp.
- Idyella* n. g. (*Idyidæ*), p. 99, *pallidula*, p. 100, pl. lviii, fig. 1, *exigua*, p. 101, pl. lviii, fig. 2, Norway; SARS, t. c. n. spp.
- Idyopsis* n. g. (*Idyidæ*), p. 97, *dilatata*, p. 98, pl. lvii, fig. 1, *pusilla*, p. 99, pl. lvii, fig. 2, Norway; SARS, t. c. n. spp.
- Labidocera aestiva*, p. 49, pl. ii, figg. 3 & 4; T. SCOTT, Tr. Soc. Glasgow vii (1) : *L. kroyeri* var. *similis* n. var., p. 1016, figg. on pl. xcvi, *wollastonii*, p. 1017, figg. on pl. xcvi, *detruncata* var., p. 1017, figg. on pl. xcvi, *minuta*, p. 1018, figg. on pl. xcvi, *laevidentata*, p. 1019, figg. on pl. xcvi; WOLFENDEN, Fauna Maldives ii, Suppl. i.
- Laophonte mohammed*, p. 685, pl. xxv, figg. 7 & 8; VAN DOUWE, Zool.

- Jahrb. Syst. xxii : *L. mohammed*, distribution, p. 347 ; ZYKOFF, Zool. Anz. xxix.
- L. thomsoni*, p. 391, pl. xvii, figg. 103–118, *exigua*, pl. xviii, figg. 119–134, Chatham Ids. ; SARS, Zool. Jahrb. Syst. xxi : *L. longiremis*, Firth of Forth, p. 145, pl. xi, figg. 10–20 ; T. SCOTT, Rep. Fish. Board Scotland xxiii, Pt. iii : n. spp.
- Laophontina* n. g. (near *Laophonte*) *dubia*, Scilly Ids., p. 292 ; NORMAN & SCOTT, Ann. Nat. Hist. (7) xv, n. sp.
- Longipedia coronata*, p. 143, pl. x, figg. 15–17 ; T. SCOTT, Rep. Fish. Board Scotland xxiii, Pt. iii.
- Lophothrix humilifrons*, N. Atlantic, p. 22 ; SARS, Bull. Mus. Monaco xxvi, n. sp.
- Lovenula mea*, Orange River Colony, p. 300, pl. xviii, figg. 7–13 ; GURNEY, P. Zool. Soc. London 1904, ii (2) 1905, n. sp.
- Lepeophtheirus sturionis*, p. 110, pl. v, figg. 7–14 ; T. SCOTT, Rep. Fish. Board Scotland xxiii, Pt. iii : *L. thompsoni*, p. 619, pl. xviii, figg. 212–219, *nordmanni*, p. 623, pl. xix, *hippoglossi*, pl. xx, text-fig. 6, *salmonis*, p. 640, pl. xxiv, *pacificus*, p. 642, pl. xxv, figg. 304–310, *cossyphi*, p. 644, pl. xxv, figg. 311–313, *robustus*, p. 646, pl. xxv, figg. 314 & 315 ; WILSON, P. U. S. Mus. xxviii.
- L. longipes*, p. 618, pl. xviii, figg. 206–211 & 222, *edwardsi*, p. 627, pls. xxi & xxii, fig. 258 & text-figg., *dissimilatus*, p. 631, pl. xxii, *parviventris*, p. 635, pl. xxiii, figg. 275–284, *bifurcatus*, p. 637, pl. xxiii, figg. 285–293, N. America, *innominatus*, England, p. 656, pl. xxviii, figg. 345–352, *chilensis*, Chile, p. 658, pl. xxviii, figg. 353–364 ; WILSON, P. U. S. Mus. xxviii, n. sp.
- Lernaea lusci*, p. 113, pl. vi, fig. 18 ; T. SCOTT, Rep. Fish. Board Scotland xxiii, Pt. iii.
- Lernaeenicus sardinae*, fixation to host ; BAUDOUIN, C.R. Ac. Sci. cxl, p. 326 : *L. encrassicoli*, p. 299 ; BAUDOUIN, Bull. Mus. Paris xi, 1905 (5), pp. 299 & 300 : *L. sprattae* (?), p. 165 ; CLIGNY, C.R. Soc. Biol. lix, 1905.
- Lubbockia minuta*, W. of Ireland, p. 15 ; WOLFENDEN, Plankton Studies i, n. sp.
- Lucicutia atlantica*, p. 44, pl. xiii, figg. 5–10 ; FARRAN, Rep. Fish. Ireland 1902–03, Pt. ii : *L. grandis*, p. 8, pl. ii ; WOLFENDEN, Plankton Studies i.
- L. curta*, W. of Ireland, p. 44, pl. xii, figg. 1–7 ; FARRAN, Rep. Fish. Ireland 1902–03, Pt. ii : *L. gracilis*, p. 8, *intermedia*, p. 8, *aurita*, p. 8, N. Atlantic ; SARS, Bull. Mus. Monaco xl : *L. bicornuta* (locality?), p. 24, pl. ii ; WOLFENDEN, Plankton Studies i : n. spp.
- Machairopus*, p. 84, *minutus*, Norway, p. 86, pl. 1 ; SARS, Crust. Norway v, n. sp.
- Macrocalanus* n. g. (*Calanidæ*) *longicornis*, N. Atlantic, p. 7 ; SARS, Bull. Mus. Monaco xxvi, n. sp.
- Megacalanus princeps*, p. 3, pl. i ; WOLFENDEN, Plankton Studies i.
- M. bradyi*, p. 1, pl. i, W. of Ireland etc. ; WOLFENDEN, t. c. n. sp.
- Mesocheres* n. g. (near *Scottochères*), p. 297, *anglicus*, Plymouth, p. 298 ; NORMAN & SCOTT, Ann. Nat. Hist. (7) xv, n. sp.
- Mesochra meridionalis*, Chatham Ids., p. 389, pl. xvii, figg. 87–102 ; SARS, Zool. Jahrb. Syst. xxi, n. sp.
- Mesorhabdus* n. g. (*Heterorhabdidae*), *annectens*, N. Atlantic, p. 9 ; SARS, Bull. Mus. Monaco xl, n. sp.
- Metaboeckella* n. g. (near *Boeckella*), *dilatata*, p. 603, text-figg. 1 & 2 ; EKMAN, Zool. Anz. xxix.
- Metridia macrura*, N. Atlantic, p. 7 ; SARS, Bull. Mus. Monaco xl, n. sp.
- Microsetella rosea*, p. 213, pl. iii, figg. 1–4 ; BRADY, Tr. Soc. Northumb. (n. s.) i.

- Microthalestris* n. g. (*Thalestridæ*), p. 122, *forficula*, p. 123, pl. lxxvi ; SARS, Crust. Norway v.
- Monacilla* n. g. (*Pseudocalanidæ*), p. 8, *typica*, N. Atlantic, p. 9 ; SARS, Bull. Mus. Monaco xxvi, n. sp.
- Monstrilla* in *Salmacina*, at Port Erin ; ASHWORTH, P. Liverp. biol. Soc. xix, p. 16.
- Mormonilla atlantica*, Atlantic, p. 16 ; WOLFENDEN, Plankton Studies i, n. sp.
- Nesippus alatus*, Massachusetts, p. 130 ; WILSON, P. Soc. Washington xviii, n. sp.
- Nitocra simplex*, p. 435, text-fig. 7 ; DOUWE, Zool. Anz. xxviii : *N. palustris*, p. 519, text-figg. 1-6 ; DOUWE, op. cit. xxix.
- N. muelleri*, Ryckflusse, p. 434, text-figg. 1-6 ; DOUWE, op. cit. xxviii : *N. fragilis*, Chatham Ids., p. 386, pl. xvi, figg. 70-86 ; SARS, Zool. Jahrb. Syst. xxi : n. spp.
- Oithona rigida*, p. 1023, pl. xcix, fig. 42, *robusta*, p. 1024, figg. on pl. xcix, *linearis*, p. 1025, figg. on pl. xcix ; WOLFENDEN, Fauna Maldive ii, Suppl. i.
- O. tropica*, Maldive Ids., p. 1023, figg. on pl. xcix ; WOLFENDEN, t. c. n. sp.
- Oncaea anglica*, off Northumberland, p. 220, pl. vi, figg. 1-9 ; BRADY, Tr. Soc. Northumb. (n. s.) i, n. sp.
- Onchocalanus* n. g. (*Phaenoidæ*), p. 19, *trigoniceps*, p. 20, *hirtipes*, p. 20, N. Atlantic ; SARS, Bull. Mus. Monaco xxvi, n. spp.
- Oöthrix* n. g. (*Calanidæ*) *bidentata*, W. of Ireland, p. 42, pl. x, figg. 15-18, pl. xi, figg. 1-10 ; FARRAN, Rep. Fish. Ireland 1902-03, Pt. ii, n. sp.
- Parabroteas*, def. and notes, p. 598 ; EKMAN, Zool. Anz. xxix.
- Paracalanus parvus*, p. 997, var. *borealis* n. var., p. 997, var. *indicus* n. var., p. 998, pl. xcvi, figg. 7-11, 16, *aculeatus*, p. 998, pl. xcvi, figg. 12-15, var. *plumulosus* n. var., p. 999, pl. xcvi, fig. 23 ; WOLFENDEN, Fauna Maldive ii, Suppl. i.
- Parastenhelia anglica*, Cornwall, p. 289 ; NORMAN & SCOTT, Ann. Nat. Hist. (7) xv, n. sp.
- Parathalestris*, p. 110, *clausi*, p. 111, pls. lxv & lxvi, *harpacticoides*, p. 112, pl. lxvii, *hibernica*, p. 113, pl. lxviii, *jacksoni*, p. 114, pl. lxix ; SARS, Crust. Norway v.
- Peltidium conspicuum*, Scilly Ids., p. 296 ; NORMAN & SCOTT, Ann. Nat. Hist. (7) xv : *P. elegans*, Maldive Ids., p. 1033, figg. on pl. xcix ; WOLFENDEN, Fauna Maldive ii, Suppl. i : n. spp.
- Pennella balænopterae*, p. 80, text-fig. 3 ; ANTHONY & CALVET, Bull. Soc. Philom. vii (2) : *P. filosa*, post-larval stages ; THOMPSON, Biol. Bull. viii, pp. 296-307, 6 text-figg. : *P. balænopterae*, anatomy ; TURNER, P. R. Soc. Edinb. xxv, p. 480, and Tr. R. Soc. Edinb. xli (2), pp. 409-434, 4 pls. : *P. orthagorisci*, p. 119 ; STEBBING, S. African Crust. iii.
- Phyllopus bidentatus*, p. 45, pl. xi, figg. 12-21 ; FARRAN, Rep. Fish. Ireland 1902-03, Pt. ii.
- Phyllothalestris* n. g. (*Thalestridæ*), p. 115, *mysis*, p. 116, pls. lxx & lxxi ; SARS, Crust. Norway v.
- Pleuromamma abdominalis*, p. 1011, figg. on pl. xcvi, *ziphias*, p. 1012, figg. on pl. xcvi, *robusta*, p. 1012, figg. on pl. xcvi ; WOLFENDEN, Fauna Maldive ii, Suppl. i.
- P. indica*, Maldive Ids., p. 1011, figg. on pl. xcvi ; WOLFENDEN, t. c. n. sp.
- Pontella spinipes*, p. 1020, *mediterranea* var. *indica* n. var., p. 1021 ; WOLFENDEN, t. c.
- Pontellopsis krümeri*, p. 1021, figg. on pl. xcvi, *armata*, p. 1022, figg. on pl. xcix ; WOLFENDEN, t. c.
- Pontoptilus* n. g. (*Augaptilidæ*), p. 18, *mucronatus*, p. 18, *muticus*, p. 19, *robustus*, p. 19, *abbreviatus*, p. 19, *attenuatus*, p. 20, *acutilobus*, p. 21, N. Atlantic ; SARS, Bull. Mus. Monaco xl, n. spp.

- Poppella guernei*, p. 692, pl. xxv, figg. 15-17 ; VAN DOUWE, Zool. Jahrb. Syst. xxii. [See also *Calanipeda*.]
- Porcellidium tuberculatum*, Maldives Ids., p. 1034, figg. on pl. xcix ; WOLFENDEN, Fauna Maldives ii, Suppl. i, n. sp.
- Psamathe*, p. 82, *longicauda*, p. 83, pl. xlvi ; SARS, Crust. Norway v.
- Pseudeuchæta* n. g. (*Euchætidæ*) *brevicauda*, N. Atlantic, p. 18 ; SARS, Bull. Mus. Monaco xxvi, n. sp.
- Pseudoboeckella*, def., notes, and list of spp. ; EKMAN, Zool. Anz. xxix.
- Pseudocyclopia giesbrechti*, p. 141, pl. x, figg. 1-9 ; T. SCOTT, Rep. Fish. Board Scotland xxiii, Pt. iii.
- Rhynchothalestris* n. g. (*Thalestridae*), p. 119, *rufocincta*, p. 120, pls. lxxiii & lxxiv, *helgolandica*, p. 121, pl. lxxv ; SARS, Crust. Norway v.
- Saphirella tropica*, Maldives Ids., p. 1030, figg. on pl. xcix ; WOLFENDEN, Fauna Maldives ii, Suppl. i, n. sp.
- Sapphirina salpæ*, p. 2, pl. iv, fig. 9 ; BRIAN, Annuar. Mus. Univ. Napoli i (24).
- Schizopera* n. g. (*Diosaccidæ*), p. 383, *longicauda*, Chatham Ids., p. 384, pl. xvi, figg. 53-69 ; SARS, Zool. Jahrb. Syst. xxi, n. sp.
- Scolecithricella gracilis*, N. Atlantic, p. 21 ; SARS, Bull. Mus. Monaco xxvi, n. sp.
- Scolecithrix chelifer*, p. 36, pl. vii, figg. 18 & 19 ; FARRAN, Rep. Fish. Ireland 1902-03, Pt. ii.
- S. emarginata*, p. 36, pl. vii, figg. 6-17, *ovata*, p. 37, pl. vi, figg. 13-18, pl. vii, figg. 1-5, *echinata*, p. 37, pl. iv, figg. 15-18, pl. v, figg. 12-17, W. of Ireland ; FARRAN, t. c. n. spp.
- Scottocalanus* n. g. (*Scolecithridæ*) *acutus*, N. Atlantic, p. 7 ; SARS, Bull. Mus. Monaco xl, n. sp.
- Scottula abyssalis*, N. Atlantic, p. 22 ; SARS, t. c. n. sp.
- Sphaeronella minuta*, p. 149, pl. xii, fig. 18, pl. xiii, fig. 16, var. *valida* n. var., p. 149, pl. xiii, figg. 17-20 ; T. SCOTT, Rep. Fish. Board Scotland xxiii, Pt. iii.
- S. aoræ*, on *Aora gracilis*, Dornoch Firth, *vararensis*, on *Megaluropus agilis*, Moray Firth, p. 150, pl. xiii, figg. 12-15 ; T. SCOTT, t. c. n. spp.
- Spinocalanus magnus*, p. 30, pl. iii, figg. 1-12 ; FARRAN, Rep. Fish. Ireland 1902-03, Pt. ii.
- Stenelia meeki*, off Northumberland, p. 216, pl. iv, figg. 7-16 ; BRADY, Tr. Soc. Northumb. (n. s.) i : *S. pygmæa*, p. 284, *simulans*, p. 285, *neglecta*, p. 286, *varians*, p. 287, *longirostris*, p. 288, British coasts ; NORMAN & SCOTT, Ann. Nat. Hist. (7) xv : n. spp.
- Tetragoniceps bradyi*, p. 217, pl. v, figg. 1-10 ; BRADY, Tr. Soc. Northumb. (n. s.) i.
- Thalestris*, p. 103, *longimana*, p. 104, pls. lix & lx, *gibba*, p. 105, pl. lxi, *rufoviolacens*, p. 107, pl. lxii ; SARS, Crust. Norway v.
- T. robusta*, p. 218, pl. v, figg. 11-17, *denti*, p. 218, pl. vi, figg. 10-15, off Northumberland ; BRADY, Tr. Soc. Northumb. (n. s.) i : *T. brunnea*, p. 108, pl. lxiii, *purpurea*, p. 109, pl. lxiv, Norway ; SARS, Crust. Norway v : n. spp.
- Thaumaleus tropicus*, Maldives Ids., p. 1025, figg. on pl. xcix ; WOLFENDEN, Fauna Maldives ii, Suppl. i, n. sp.
- Thompsonula* n. g. for *Jonesiella hyænae* Thompson, p. 570 ; SCOTT, Ann. Nat. Hist. (7) xvi.
- Undeuchæta obtusa*, p. 13, *pustulifera*, p. 14, *scopularis*, p. 14, *dubia*, p. 15, N. Atlantic ; SARS, Bull. Mus. Monaco xxvi, n. spp.
- Valdiviella brevicornis*, N. Atlantic, p. 17 ; SARS, t. c. n. sp.
- Wolterstorffia blanchardi*, p. 683, pl. xxv, figg. 1-6 ; VAN DOUWE, Zool. Jahrb. Syst. xxii.
- Xanthocalanus borealis*, p. 38, pl. viii, figg. 14-17 ; FARRAN, Rep. Fish. Ireland 1902-03, Pt. ii.

*Xanthocalanus greeni*, p. 39 (and addendum), pl. viii, figg. 1–13, *pinguis*, p. 39, pl. viii, figg. 18–24, pl. ix, figg. 1–6, *obtusus*, p. 40, pl. ix, figg. 10–19, sp. ?, p. 41, pl. ix, figg. 7–9, pl. xi, fig. 11, W. of Ireland; FARRAN, t. c. : *X. muticus*, N. Atlantic, p. 19; SARS, Bull. Mus. Monaco xxvi : n. spp.

### 3. BRANCHIURA.

[See also T. SCOTT (272).]

*Branchiura*, Notes on British spp.; SCOURFIELD, J. Quekett Club (2) ix, p. 40.

*Argulus*, notes on spp.; WILSON, Bull. Bureau Fisheries xxiv, pp. 117–131, text-figg.

### 4. OSTRACODA.

[See also BUCHINSKAO (47), CHUN (71), HUBER (141), †HUCKE (142), †JONKER (151), †KAZANSKI (156), LEBEDINSKI (166), MONTI (185), T. SCOTT (266), †SHIMER (281), MEISSNER (181).]

*Ostracoda*, list of marine and freshwater species from Ireland with notes on synonymy etc.; NORMAN, Irish Natural. xiv.

*Ostracoda*, list of British freshwater spp. with notes; SCOURFIELD, J. Quekett Club (2) ix, pp. 29–44.

*Anchistrocheles bradyi*, p. 373, pl. i, figg. 34 & 35, Gulf of Manaar; A. SCOTT, Rep. Ceylon Pearl Fisheries iii, n. sp.

†*Aparchites* (?) *anderssoni*, p. 45, pl. i, figg. 25–28, *fennicus*, p. 46, pl. iii, fig. 51, Silurian, N. Baltic region; WIMAN, Bull. Geol. Inst. Upsala vi, n. spp.

*Bairdia inornata*, p. 372, pl. i, figg. 11 & 12, *robusta*, p. 373, pl. i, figg. 13 & 14, Gulf of Manaar; A. SCOTT, Rep. Ceylon Pearl Fisheries iii, n. spp.

†*B. foveolata* (?), p. 272; CHAPMAN, P. Linn. Soc. N. S. Wales cxviii.

†*B. tenuis*, Oligocene, Mainz, p. 30, pl. ii, fig. 14; LIENENKLAUS, Ber. Senckenberg. Ges. 1905, n. sp.

†*Beyrichia dagon*, p. 918, pl. v, figg. 12–14; LOOMIS, Bull. N. York Mus. lxix.

†*B. argentina*, Devonian, Argentine, p. 250, pl. xi, fig. 4; THOMAS, Zeitschr. Deutsch. geol. Ges. lvii (2), n. sp.

†*Beyrichona gevalensis*, p. 46, pl. i, figg. 29, 30 & 35, *faba*, p. 47, pl. iii, fig. 52, (?) *alta*, p. 47, pl. iii, fig. 53, Silurian, N. Baltic region; WIMAN, Bull. Geol. Inst. Upsala vi, n. spp.

†*Bradorona nitida*, Silurian, N. Baltic region, p. 48, pl. i, figg. 34, 36, 37; WIMAN, t. c. n. sp.

*Candonia parva*, Paraguay, p. 258, pl. xvi, figg. 27–29, pl. xvii, figg. 1–7; DADAY, Zoologica xviii (44), n. sp.

†*C. rostrata*, p. 329, pl. viii, figg. 8–11, text-fig. 2, *fabaeformis*, p. 330, pl. viii, figg. 12–14, text-fig. 3; SIEBER, Jahresh. Ver. Wurttemb. lxi.

†*C. candidula*, p. 21, pl. i, fig. 5, *recta*, p. 22, pl. i, fig. 6, *rhenana*, p. 23, pl. i, fig. 7, Tertiary, Mainz; LIENENKLAUS, Ber. Senckenberg. Ges. 1905: †*C. steinheimensis*, Tertiary, Württemberg, p. 327, pl. viii, figg. 1–7, text-fig. 1; SIEBER, Jahresh. Ver. Wurttemb. lxi : n. spp.

*Candonopsis anisitsi*, Paraguay, p. 256, pl. xvi, figg. 16–26; DADAY, Zoologica xviii (44), n. sp.

†*C. arida*, Tertiary, Würtemberg, p. 332, pl. viii, figg. 15–19, text-fig. 4; SIEBER, Jahresh. Ver. Wurttemb. lxi, n. sp.

*Codonocera cruenta*, p. 367, pl. ii, figg. 43–45; A. SCOTT, Rep. Ceylon Pearl Fisheries iii.

- +Cuneocythere punctulata*, Oligocene, Mainz, p. 48, pl. iv, fig. 25; LIENENKLAUS, Ber. Senckenberg. Ges. 1905, n. sp.
- +Cyclocypris* sp., p. 346, text-fig. 16; SIEBER, Jahresh. Ver. Wurttemb. lxi.
- +C. similis*, Tertiary, Mainz, p. 18, pl. i, fig. 3; LIENENKLAUS, Ber. Senckenberg. Ges. 1905: *+C. nitida*, Tertiary, Württemberg, p. 333, text-fig. 5; SIEBER, Jahresh. Ver. Wurttemb. lxi : n. spp.
- Cypria pellucida*, p. 255, pl. xvi, figg. 10-15; DADAY, Zoologica xviii (44).
- C. denticulata*, Paraguay, p. 254, pl. xvi, figg. 5-9; DADAY, t. c. n. sp.
- +C. curvata*, Miocene, Mainz, p. 19, pl. i, fig. 4; LIENENKLAUS, Ber. Senckenberg. Ges. 1905: *+C. suborbicularis*, Tertiary, Württemberg, p. 334, pl. viii, figg. 20-22, text-fig. 6; SIEBER, Jahresh. Ver. Wurttemb. lxi : n. spp.
- Cypridina mediterranea*, female reproductive organs; RAMSCH, Zool. Anz. xxix, pp. 133-136, 1 text-fig.
- Cypridopsis villosa* var. *crassipes* n. var., p. 125, *dubia* n. nom. for *villosa*, partim, p. 125; MASI, Boll. Soc. zool. Ital. (2) vi.
- +C. sp.*, p. 345, text-fig. 15; SIEBER, Jahresh. Ver. Wurttemb. lxi.
- +C. kinkelini*, Miocene, Mainz, p. 27, pl. ii, fig. 12; LIENENKLAUS, Ber. Senckenberg. Ges. 1905: *+C. gracilis*, Tertiary, Württemberg, p. 339, pl. ix, figg. 5-9, text-fig. 10; SIEBER, Jahresh. Ver. Wurttemb. lxi : n. spp.
- Cyprinotus americanus*, Nantucket, p. 791, pl. i; CUSHMAN, Amer. Natural. xxxix, n. sp.
- Cypris bispinosa*, p. 243; MASI, Monit. Zool. ital. xvi: *C. incongruens* var. *rosea* n. var., p. 122, *kaufmanni* n. nom. for *reptans* Kauf., and var. *limbata* n. var., p. 123, *intermedia* var. *latialis* n. var., p. 124; MASI, Boll. Soc. zool. Ital. (2) vi.
- C. vinciguerrae*, Rome, p. 241; MASI, Monit. Zool. ital. xvi: *C. onusta*, Rome, p. 119, text-figs. 1 & 2; MASI, Boll. Soc. zool. Ital. (2) vi : n. spp.
- +C. (Cyprinotus) salina*, p. 336, pl. viii, figg. 25-27, text-fig. 8, *C. sp.*, p. 345, text-fig. 14; SIEBER, Jahresh. Ver. Wurttemb. lxi.
- +C. agglutinans*, p. 24, pl. i, fig. 8, *acuta*, p. 25, pl. ii, fig. 9, *parva*, p. 26, pl. ii, fig. 10, *frankofurti*, p. 26, pl. ii, fig. 11, Tertiary, Mainz; LIENENKLAUS, Ber. Senckenberg. Ges. 1905: *+C. risgoviensis*, pp. 335 & 346, pl. viii, figg. 23 & 24, text-figs. 7 & 16, *inequalis*, p. 337, pl. ix, figg. 1-4, text-fig. 9, Tertiary, Württemberg; SIEBER, Jahresh. Ver. Wurttemb. lxi : n. spp.
- Cythere knoxi*, p. 377, pl. ii, figg. 9 & 10, *chalmersi*, p. 378, pl. ii, figg. 11 & 12, *imthurni*, p. 378, pl. ii, figg. 13 & 14, *thompsoni*, p. 379, pl. ii, figg. 15 & 16, *donnani*, p. 379, pl. ii, figg. 17 & 18, *willeyi*, p. 379, pl. ii, figg. 19 & 20, *hornelli*, p. 380, pl. ii, figg. 21 & 22, *halyi*, p. 380, pl. ii, figg. 23 & 24, *kelaarti*, p. 380, pl. ii, figg. 25 & 26, *willisi*, p. 380, pl. ii, figg. 27 & 28, *colletti*, p. 381, pl. ii, figg. 29 & 30, *holdsworthi*, p. 381, pl. ii, figg. 31 & 32, Gulf of Manaar; A. SCOTT, Rep. Ceylon Pearl Fisheries iii, n. spp.
- +Cythereis ramosa*, p. 32, pl. iii, fig. 16, Tertiary, Mainz; LIENENKLAUS, Ber. Senckenberg. Ges. 1905, n. sp.
- Cytherella ondaatjei*, p. 382, pl. ii, figg. 33 & 34, *vraspillaii*, p. 382, pl. ii, figg. 35 & 36, Gulf of Manaar; A. SCOTT, Rep. Ceylon Pearl Fisheries iii, n. spp.
- +Cytheridea praesulcata*, p. 39, pl. iii, fig. 17, *rarefistulosa*, p. 41, pl. iii, fig. 18, *miocenica*, p. 42, pl. iii, fig. 19, *devexa*, p. 43, pl. iii, fig. 20, *parallela*, p. 45, pl. iv, fig. 21, *fragilis*, p. 46, pl. iv, fig. 22, *spathacea*, p. 46, pl. iv, fig. 23, *minuta*, p. 47, pl. iv, fig. 24, *spandeli*, p. 65, Tertiary, Mainz; LIENENKLAUS, Ber. Senckenberg. Ges. 1905, n. spp.
- Cytheridella* n. g. (*Cytheridæ*), p. 261, *ilosvayi*, Paraguay, p. 262, pl. xvii, figg. 15-18, pl. xviii, figg. 1-11; DADAY, Zoologica xviii (44), n. sp.

- †Cytheropteron punctulatum*, Oligocene, p. 56, pl. iv, fig. 30; LIENENKLAUS, Ber. Senckenberg. Ges. 1905, n. sp.
- Cytherura concinna*, Gulf of Manaar, p. 376, pl. ii, figg. 7 & 8; A. SCOTT, Rep. Ceylon Pearl Fisheries iii, n. sp.
- †C. sulcata*, p. 55, pl. iv, fig. 29, Tertiary, Mainz; LIENENKLAUS, Ber. Senckenberg. Ges. 1905, n. sp.
- †Entomis prosephina*, Upper Devonian, New York, p. 918, pl. v, figg. 10 & 11; LOOMIS, Bull. N. York Mus. lxix, n. sp.
- Erythrocypris herdmani*, Gulf of Manaar, p. 372, pl. i, figg. 15 & 16; A. SCOTT, Rep. Ceylon Pearl Fisheries iii, n. sp.
- Eucandona cyproides*, Paraguay, p. 260, pl. xvii, figg. 8-14; DADAY, Zoologica xviii (44), n. sp.
- Eucypris bennelong*, p. 247; DADAY, t. c.
- E. areguensis*, p. 243, pl. xv, figg. 11-13, *anisitsi*, p. 244, pl. xv, figg. 14-22, *tenuis*, p. 246, pl. xvi, figg. 1-4, Paraguay; DADAY, t. c. n. spp.
- †Eucytherura dentata*, Oligocene, Mainz, p. 57, pl. iv, fig. 31; LIENENKLAUS, Ber. Senckenberg. Ges. 1905, n. sp.
- †Hipponicharion matthewi*, Silurian, N. Baltic region, p. 49, pl. i, figg. 40-44; WIMAN, Bull. Geol. Inst. Upsala vi, n. sp.
- Ilyocypris decipiens*, Rome, p. 127; MASI, Boll. Soc. zool. Ital. (2) vi, n. sp.
- †Iliocypris bradyi*, p. 340, pl. ix, fig. 10, text-fig. 11; SIEBER, Jahresh. Ver. Wurttemb. lxi.
- †I. tribullata*, p. 28, pl. ii, fig. 13, *tuberculata*, p. 28, pl. iii, fig. 15, Tertiary, Mainz; LIENENKLAUS, Ber. Senckenberg. Ges. 1905: *†I. binocularis*, Tertiary, Würtemberg, p. 341, pl. ix, figg. 11, 18 & 19, text-fig. 12; SIEBER, Jahresh. Ver. Wurttemb. lxi : n. spp.
- †Indiana (?) minima*, Silurian, N. Baltic region, p. 48, pl. i, figg. 38 & 39; WIMAN, Bull. Geol. Inst. Upsala vi, n. sp.
- †Leperditia limatula*, Ordovician, Valcour Id., p. 380; RAYMOND, Amer. J. Sci. xx, n. sp.
- †Linnicythere zinndorfi*, Oligocene, Mainz, p. 58, pl. iv, figg. 32 & 33, LIENENKLAUS, Ber. Senckenberg. Ges. 1905: *†L. esphigmena*, Tertiary, Würtemberg, p. 343, pl. ix, figg. 12-17, text-fig. 13; SIEBER, Jahresh. Ver. Wurttemb. lxi : n. spp.
- Loxoconcha punctata*, p. 401, pl. xix, figg. 162-172; SARS, Zool. Jahrb. Syst. xxi.
- †L. intorta*, p. 52, pl. iv, fig. 26, *sphenoides*, p. 52, pl. iv, fig. 27, Tertiary, Mainz; LIENENKLAUS, Ber. Senckenberg. Ges. 1905, n. spp.
- Paracypris tenuis*, Chatham Ids., p. 404, pl. xx, figg. 173-186; SARS, Zool. Jahrb. Syst. xxi, n. sp.
- Paracytheridea perplexa*, Gulf of Manaar, pl. i, figg. 26 & 27; A. SCOTT, Rep. Ceylon Pearl Fisheries iii, n. sp.
- Paradoxostoma attenuatum*, p. 374, pl. i, figg. 32 & 33, *stebbingi*, p. 374, pl. ii, figg. 1 & 2, Gulf of Manaar; A. SCOTT, t. c. n. spp.
- Pontocypris robusta*, p. 370, pl. i, figg. 17 & 18, *elegans*, p. 371, pl. i, figg. 19 & 20, *rostrata*, p. 371, pl. i, figg. 21 & 22, *tumida*, p. 371, pl. i, figg. 30 & 31, Gulf of Manaar; A. SCOTT, t. c. n. spp.
- †P. brevis*, p. 16, pl. i, fig. 1, *splendida*, p. 16, pl. i, fig. 2, Oligocene, Mainz; LIENENKLAUS, Ber. Senckenberg. Ges. 1905, n. spp.
- †Primitia latimarginata*, Ordovician, Chazy, p. 380; RAYMOND, Amer. J. Sci. xx, n. sp.
- Pseudocythere minuta*, Gulf of Manaar, p. 373, pl. i, figg. 28 & 29; A. SCOTT, Rep. Ceylon Pearl Fisheries iii, n. sp.
- Sarsiella carinata*, p. 368, pl. i, figg. 1 & 2, pl. ii, figg. 40 & 41, *gracilis*, p. 368, pl. i, figg. 3 & 4, pl. ii, fig. 37, *similis*, p. 368, pl. i, figg. 5 & 6, pl. ii, fig. 38, *crispata*, p. 369, pl. i, figg. 7 & 8, pl. ii, fig. 39, *tumida*, p. 369, pl. i, figg. 9 & 10, pl. ii, fig. 42, Gulf of Manaar; A. SCOTT, t. c. n. spp.

- +Sellula* [? n. g.] *fallax*, Silurian, N. Baltic region, p. 48, pl. i, figg. 31 & 32 ; WIMAN, Bull. Geol. Inst. Upsala vi, n. sp.  
*Xestoleb[e]ris squamigera*, p. 375, pl. i, figg. 23–25, pl. ii, figg. 28 & 29,  
*irrassa*, p. 375, pl. ii, figg. 5, 6, 46 & 47, *tumida*, p. 375, pl. ii, figg. 3 & 4,  
 Gulf of Manaar ; A. SCOTT, Rep. Ceylon Pearl Fisheries iii, n. spp.  
*+X. rhenana*, Oligocene, Mainz, p. 53, pl. iv, fig. 28 ; LIENENKLAUS, Ber.  
 Senckenberg. Ges. 1905, n. sp.

### 5. CIRRIPEDIA.

[See also *+BIGOT* (16), BRAUN (37), *+COUFFON* (77), *+DONCIEUX* (99),  
*+JOHNSON* (149), KIÆR (161), *+WEGNER* (321).]

Cirripedia, anatomy ; GRUVEL, Arch. Mus. Paris vi (1 & 2), pp. 51–224,  
 8 pls., 27 text-figg.

*Alepas gigas*, Bali Straits, p. 80, pl. viii, figg. 3–3b, *malaysiana*, Gaspar  
 Straits, p. 81, pl. viii, figg. 4 & 4a ; ANNANDALE, Mem. Asiat. Soc.  
 Bengal. i (5), n. spp.

*Balanus* sp., cultivated for use as manure in Japan ; MITSUKURI, Bull.  
 Bureau Fisheries xxiv, p. 287 : *B. psittacus* ; VAYSSIÈRE, Ann. Fac.  
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*Dendrogastr arborescens* in *Dipsacaster sladeni*, Cape, p. 399, *ludwigi* in  
*Echinaster fallax*, Philippines, p. 401 ; LE ROI, Zool. Anz. xxix,  
 n. spp.

*Lepas fascicularis* off W. of Ireland ; FARRAN, Ann. Rep. Fish. Ireland  
 1902–1903, Pt. ii, App. vii, pp. 209 & 210.

*Proteolepas hansenii*, larva ; STEUER, Arb. Inst. Wien xv (2), pp. 113–117  
 (1–5), 4 text-figg.

*Scalpellum inerme*, p. 75, pl. viii, figg. 1 & 1a and text-fig. 1, *sociabile*,  
 p. 77, pl. viii, fig. 2 and text-figg. 2 & 3, Bali Straits ; ANNANDALE,  
 Mem. Asiat. Soc. Bengal i (5), n. spp.

*+S. studeri*, Molasse, Berne, p. 1, and pl. ; TIÈCHE, Mt. Ges. Bern 1904  
 (1905), n. sp.

## GIGANTOSTRACA

(XIPHOSURA, TRILOBITA, EURYPTERIDA).

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21. ROSENHEIM, OTTO. Chitin in the Carapace of *Pterygotus osiliensis*, from the Silurian Rocks of Oesel. P. R. Soc. London, B lxxvi, (No. 511), pp. 398-400.

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## II. SUBJECT-INDEX.

- Physiology of heart in *Limulus*; CARLSON (3 & 4).  
 Osmotic pressure of blood of *Limulus* and permeability of gill-membranes; GARREY (9).  
 Chitinous character of fossil *Pterygotus* from Oesel; ROSENHEIM (21).  
 Catalogue of *Trilobita* in Defrance collection; BIGOT (2).

## III. DISTRIBUTION.

Isle of Wight, occurrence of *Carcinoscorpius rotundicauda*; TEGETMEIER (26).

Carboniferous: Britain, *Trilobita*; HIND & others (10): Scotland, *Trilobita* and *Xiphosura* (lists); PEACH & HORNE (18): Coal Measures, Rochdale, *Xiphosura*; BALDWIN (1).

Devonian: Moravia, *Trilobita*; FELIX (8): Ural, *Trilobita*; KAZANSKIĬ (12): New York, *Eurypterida* n. spp.; SARLE (22): Upper Devonian, New York, *Trilobita*; LOOMIS (14): Devonian, Argentine, *Trilobita* n. spp.; THOMAS (27).

Silurian-Devonian, New South Wales, *Trilobita*; SHEARSBY (24): Silurian and Devonian, New York, *Trilobita*; SHIMER (25).

Silurian: Holland, *Trilobita*; JONKER (11): East Baltic region, *Trilobita*, n. spp.; SCHMIDT (23): N. Baltic region, *Trilobita* n. spp.; WIMAN (30): Quebec, *Trilobita*; CLARKE (5): Niagara, New Hampshire, *Trilobita*, n. sp.; LAMBERT (13).

Ordovician: Chazy, New York, *Trilobita* n. spp.; RAYMOND (19 & 20); Pennsylvania, *Trilobita* n. sp.; COLLIE (6).

Cambrian: "Shumardiaschiefer," Nerike, Sweden, *Trilobita* n. spp.; WIMAN (29); India, *Trilobita*; WALCOTT (28): Lower Cambrian, Yunnan, *Trilobita*; MANSUY (15): Upper Cambrian, Shantung, China, *Trilobita* n. spp.; MONKE (17): Cambrian, S. Australia, *Trilobita*; ETHERIDGE (7): Cape Breton, New Brunswick, *Trilobita* n. spp.; MATTHEW (16).

#### IV. SYSTEMATIC.

##### XIPHOSURA.

[See also GARREY (9), †PEACH & HORNE (18).]

†*Belinurus lunatus*, p. 126, text-fig. 2; BALDWIN, Tr. Manchester Geol. Soc. xxix (4).

*Carcinoscopius rotundicauda*, specimen found at Isle of Wight; TEGETMEIER, P. Zool. Soc. London 1904, ii (2), p. 181.

*Limulus*, physiology of heart; CARLSON, Biol. Bull. viii, p. 152, and Amer. J. Physiol. xiii, pp. 217-240, 16 text-figg.

†*Prestwichia anthrax*, p. 124, text-fig. 1; BALDWIN, Tr. Manchester Geol. Soc. xxix (4).

##### †TRILOBITA.

[See also BIGOT (2), FELIX (8), HIND AND OTHERS (10), JONKER (11), KAZANSKIĭ (12), MANSUY (15), PEACH & HORNE (18), SHEARSBY (24), SHIMER (25), WALCOTT (28).]

*Acerocare norvegicum*, p. 63, pl. iii, figg. 19-30; WIMAN, Bull. Geol. Inst. Upsala vi.

*Acidaspis*, see *Glaphurus*.

*Agnostus glabratus*, p. 12, pl. i, figg. 27 & 28, var. *ingricus*, p. 13, pl. i, figg. 23 & 24, *lentiformis*, p. 13, pl. i, figg. 21 & 22, A. sp., p. 14, pl. i, figg. 25 & 26; WIMAN, Arkiv Zool. ii, No. 11.

*A. koerferi*, Cambrian, Shantung, p. 111, pl. iii, figg. 1-9, pl. ix; MONKE, Jahrb. geol. Landesanst. Berlin xxiii (1), n. sp.

*Amphion canadensis*, p. 363, pl. xiv, figg. 10-13; RAYMOND, Ann. Carnegie Mus. iii (2).

*Ampyx brevicauda*, Cambrian, Sweden, p. 12, pl. i, figg. 19 & 20; WIMAN, Arkiv Zool. ii, No. 11, n. sp.

*Angelina* sp., p. 413, pl. xviii, fig. 9; MATTHEW, Bull. Soc. New Brunswick xx, n. sp.

*Apatocephalus pecten*, Cambrian, Sweden, p. 6, pl. i, figg. 7-12; WIMAN, Arkiv Zool. ii, No. 11, n. sp.

*Arionellus balticus*, Silurian, N. Baltic region, p. 44, pl. i, figg. 17-21; WIMAN, Bull. Geol. Inst. Upsala vi, n. sp.

*Asaphellus homfrayi* var., p. 413, pl. xviii, figg. 10a-e; MATTHEW, Bull. Soc. New Brunswick xx.

*A. (?) planus*, Cambrian, Cape Breton, p. 419, pl. xviii, fig. 11; MATTHEW, t. c. n. sp.

*Asaphus marginalis*, p. 339, pl. x, figg. 17-20, pl. xi, spp. (?), p. 341, pl. xii, figg. 8-10; RAYMOND, Ann. Carnegie Mus. iii (2).

*Bathyurellus brevispinus*, p. 337, pl. x, figg. 13-15, *minor*, p. 338, pl. x, fig. 16, Ordovician, Chazy; RAYMOND, t. c. n. spp.

*Bathyurus angelini*, p. 335, pl. x, figg. 11 & 12, text-fig. 1; RAYMOND, t. c. *Bronniartia trentonensis*, p. 418, pl. lix, figg. 1 & 2; COLLIE, Bull. Geol. Soc. Amer. xiv.

- Ceratopyge forficula*, p. 64, pl. iii, fig. 39 ; WIMAN, Bull. Geol. Inst. Upsala vi.
- Ceraurus pompilius*, p. 365, pl. xiv, fig. 14, text-figg. 4-9 ; RAYMOND, Ann. Carnegie Mus. iii (2).
- C. hudsoni*, Ordovician, Valcour Id., p. 367, pl. xiv, fig. 15, RAYMOND, t. c. n. sp.
- Cheirurus*, def. of subgenera, p. 373 ; RAYMOND, t. c.
- Cryphaeus boothi* var. *calliteles*, p. 917, pl. v, fig. 15 ; LOOMIS, Bull. N. York Mus. lxix.
- Cybele valcurensis*, Ordovician, New York, p. 362, pl. xiv, fig. 9 ; RAYMOND, Ann. Carnegie Mus. iii (2), n. sp.
- Dalmanites lunatus*, Silurian, New Hampshire, p. 480, pl. xliv ; LAMBERT, Bull. Geol. Soc. Amer. xv : *D. drevermanni*, p. 247, pl. xi, figg. 1a, 2a, 3, spp., p. 249, pl. xi, figg. 7 & 10a, Devonian, Argentine ; THOMAS, Zeitschr. Deutsch. Geol. Ges. lvii (2) : n. spp.
- Dicranurus limenarcha*, Silurian, Quebec, p. 153, text-fig. ; CLARKE, Bull. N. York Mus. lxxx.
- Drepanura premesnili*, p. 124, pl. v, figg. 5-19, pl. ix ; MONKE, Jahrb. geol. Landesanst. Berlin xxiii (1).
- D. ketteleri*, Cambrian, Shantung, p. 132, pl. vi, figg. 1-14, pl. ix ; MONKE, t. c. n. sp.
- Ellipsocephalus* sp., p. 45, pl. i, fig. 23 ; WIMAN, Bull. Geol. Inst. Upsala vi.
- E. latus*, Silurian, N. Baltic region, p. 44, pl. i, figg. 22 & 24 ; WIMAN, t. c. n. sp.
- Encrinurus tuberculosis*, Ordovician, Pennsylvania, p. 418, p. lix, fig. 3 ; COLLIE, Bull. Geol. Soc. Amer. xiv, n. sp.
- Glypturus* n. subg. of *Acidaspis*, *pustulatus*, p. 357, pl. xiv, figg. 4-6, text-fig. 3 ; RAYMOND, Ann. Carnegie Mus. iii (2).
- G. primus*, Ordovician, Chazy, p. 362, pl. xiv, figg. 7 & 8 ; RAYMOND, t. c. n. sp.
- Harpina antiquatus*, p. 330, pl. x, fig. 1, *ottawaensis*, p. 331, pl. x, fig. 2 ; RAYMOND, t. c.
- Heliomera* n. subg. (of a genus not named), *sol*, p. 381 ; RAYMOND, Amer. J. Sci. xx.
- Homalonotus kayseri*, Devonian, Argentine, p. 245, pl. ix, figg. 5, 6a, b ; THOMAS, Zeitschr. Deutsch. geol. Ges. lvii (2), n. sp.
- Illaeus indeterminatus*, p. 347, pl. xiii, figg. 1 & 2, *bayfieldi*, p. 348, pl. xiii, figg. 11 & 12, *globosus*, p. 350, pl. xiii, figg. 6 & 7 ; RAYMOND, Ann. Carnegie Mus. iii (2).
- I. punctatus*, p. 347, pl. xiii, fig. 10, *erastusi*, p. 351, pl. xiii, figg. 8 & 9, Ordovician, Chazy ; RAYMOND, t. c. n. spp.
- Isotelus obtusum*, p. 344, pl. xii, figg. 1 & 2 ; RAYMOND, t. c.
- I. harrisi*, p. 343, pl. xii, figg. 3-7, *angusticaudum*, p. 345, pl. xiii, figg. 3 & 4, *bearsi*, p. 345, pl. x, figg. 21 & 25, Ordovician, Chazy ; RAYMOND, t. c. n. spp.
- Liostracina* n. g. *krausei*, Cambrian, Shantung, p. 114, pl. iii, figg. 10-17, pl. ix ; MONKE, Jahrb. geol. Landesanst. Berlin xxiii (1), n. sp.
- Lonchodus halli*, p. 332, pl. x, figg. 3-7 ; RAYMOND, Ann. Carnegie Mus. iii (2).
- Megalaspides nericiensis*, Cambrian, Sweden, p. 8, pl. ii, figg. 1-4 ; WIMAN, Arkiv Zool. ii, No. 11, n. sp.
- Megalaspis planilimbata*, p. 8, pl. ii, figg. 5-10 ; WIMAN, t. c.
- Nileus armadillo*, p. 64, pl. viii, figg. 12-18, text-fig. 6 ; SCHMIDT, Mem. Ac. St. Petersb. (8) xiv (10).
- Niobe* spp., p. 10, pl. ii, figg. 12 & 14 ; WIMAN, Arkiv Zool. ii, No. 11.
- Ogygia dilatata* var. *panderi*, p. 59, pl. viii, figg. 10a & b, var. *plautini* n. var., p. 62, pl. viii, fig. 11 ; SCHMIDT, Mem. Ac. St. Petersb. (8) xiv (10).

- Olenellus* sp., p. 247, pl. xxv, fig. 1; ETHERIDGE, Tr. R. Soc. S. Austral. xxix; *O.* sp., p. 43, pl. i, figg. 1-15; WIMAN, Bull. Geol. Inst. Upsala ii.
- Orometopus* sp., p. 15, pl. i, figg. 16-18; WIMAN, Arkiv Zool. ii, No. 11.
- Parabolinella quadrata*, Cambrian, Cape Breton, p. 411, pl. xviii, fig. 7; MATTHEW, Bull. Soc. N. Brunswick xx, n. sp.
- Paradoxides* sp., p. 44, pl. i, fig. 16; WIMAN, Bull. Geol. Inst. Upsala vi.
- Phacops argentinus*, Devonian, Argentine, p. 246, pl. xi, figg. 8, 9a, b; THOMAS, Zeitschr. Deutsch. geol. Ges. lvii (2), n. sp.
- Platymetopus minganensis*, p. 355, pl. xiv, figg. 1-3; RAYMOND, Ann. Carnegie Mus. iii (2).
- Proetus clelandi*, Ordovician, Chazy, p. 354, pl. xiii, figg. 13 & 14; RAYMOND, t. c. n. sp.
- Pseudasaphus* n. subg. of *Ptychopyge* (q.v.), p. 4; SCHMIDT, Mem. Ac. St. Petersb. (8) xiv (10).
- Pseudosphaerexochus vulcanus*, p. 367, pl. xiv, fig. 16, text-figg. 10 & 11, var. *billingsi* n. var., p. 369, pl. xiv, fig. 17, (*Nieszkowskia*) *satyrus*, p. 371, pl. xiv, fig. 21; RAYMOND, Ann. Carnegie Mus. iii (2).
- P. approximus*, p. 369, pl. xiv, fig. 18, *chazyensis*, p. 370, pl. xiv, figg. 19 & 20, Ordovician, Chazy; RAYMOND, t. c. n. spp.
- Pterygometopus annulatus*, Ordovician, Valcour Id., p. 376, pl. xiv, figg. 24 & 25; RAYMOND, t. c. n. sp.
- Ptychopyge* (*Pseudasaphus*) *globifrons*, p. 6, pl. i, figg. 1-10, text-fig. 1, *tecticaudatus*, p. 12, pls. ii & iii, text-figs. 2 & 3, var. *præcurrens* n. var., p. 18, pl. ii, fig. 3, (*Basilicus*) *lawrowi*, p. 23, pl. iv, figg. 1-7, text-fig. 4, *kuckersianus*, p. 26, pl. iv, figg. 8-14, *kegelensis*, p. 29, pl. v, figg. 1-3, (*Ptychopyge*) *angustifrons*, p. 34, pl. v, figg. 4, 5, 7-10, var. *gladiifera* n. var., p. 38, pl. v, fig. 6, *truncata*, p. 39, pl. vi, figg. 1-4, var. *bröggeri* n. var., p. 42, pl. vi, figg. 5-9, text-figs. 5 & 5a, *cincta*, p. 45, pl. vii, fig. 8, pl. viii, figg. 1-9; SCHMIDT, Mem. Ac. St. Petersb. (8) xiv (10).
- P. (Pseudasaphus) (?) mickwitzi*, p. 11, pl. i, figg. 11 & 12, (*Ptychopyge*) *plautini*, p. 49, pl. vii, figg. 3-6, *wöhrmanni*, pl. vii, figg. 2 & 2a, *knyrhoi*, p. 53, pl. vii, figg. 1 & 1a, *pahleni*, p. 55, pl. vi, figg. 9-11, Silurian; SCHMIDT, t. c. n. spp.
- Romipleurides canadensis*, p. 334, pl. x, figg. 8-10; RAYMOND, Ann. Carnegie Mus. iii (2).
- Shumardia oelandica* (?), p. 65, pl. iii, figg. 32-34; WIMAN, Bull. Geol. Inst. Upsala vi.
- S. bottnica*, Silurian, N. Baltic region, p. 65, pl. iii, figg. 35-38; WIMAN, t. c.: *S. nericiensis*, Cambrian, Sweden, p. 14, pl. i, figg. 13-15; WIMAN, Arkiv Zool. ii, No. 11 : n. spp.
- Sphaerexochus parvus*, p. 372, pl. xiv, fig. 22; RAYMOND, Ann. Carnegie Mus. iii (2).
- Sphaerocorphe goodnovi*, Ordovician, Chazy, p. 371, pl. xiv, fig. 23; RAYMOND, t. c. n. sp.
- Stephanocare* n. g. *richthofeni*, Cambrian, Shantung, p. 136, pls. vii & ix; MONKE, Jahrb. geol. Landesanst. Berlin xxiii, n. sp.
- S. sinense*, p. 143, sp. ?, p. 144, pl. viii, figg. 1-4, pl. ix; MONKE, t. c.
- Sympysurus breviceps*, p. 11, pl. i, figg. 1-6; WIMAN, Arkiv Zool. ii, No. 11.
- Teinistion* n. g. *lansi*, p. 117, pls. iv & ix, *sodeni*, pl. v, figg. 1-4, Cambrian, Shantung; MONKE, Jahrb. geol. Landesanst. Berlin xxiii (1), n. spp.
- Thaleops ovata*, p. 352, pl. xiii, fig. 5, text-fig. 2; RAYMOND, Ann. Carnegie Mus. iii (2).
- Triarthrus belli*, Cambrian, Cape Breton, p. 412, pl. xviii, fig. 8; MATTHEW, Bull. Soc. New Brunswick xx, n. sp.

## †EURYPTERIDA.

[See also ROSENHEIM (21).]

*Eurypterus pittsfordensis*, Devonian, New York, p. 1098, figg. on pls. x-xxv; SARLE, Bull. N. York Mus. lxix, n. sp.

*Hughmilleria* n. g., p. 1087, *socialis*, p. 1091, figg. on pls. vi-xxvi, var. *robusta* n. var., p. 1097, pl. xxi, figg. 1 & 2, Devonian, New York; SARLE, t. c. n. sp.

*Pterygotus monroensis*, Devonian, New York, p. 1102, pl. xxiv, figg. 7 & 9; SARLE, t. c. n. sp.

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## PYCNOGONIDA.

## I. TITLES.

APPELLØF. [See NORDGAARD (12).]

1. BOUVIER, E. L. Observations préliminaires sur les Pycnogonides recueillis dans la région antarctique par la mission du "Français." Bull. Mus. Paris xi (1905), pp. 294-298.
2. CARPENTER, GEORGE H. The Marine Fauna of the Coast of Ireland. Part vi. Pycnogonida. Fisheries, Ireland, Sci. Invest. 1904, iv (1905), 8 pp., 3 pls.
3. COLE, LEON J. Pycnogonida collected at Bermuda in the summer of 1903. P. Boston Soc. xxxi (8), pp. 315-328, pls. xx-xxii (1904).
4. —. Ten-legged Pycnogonids, with remarks on the Classification of the Pycnogonida. Ann. Nat. Hist. (7) xv, pp. 405-415.  
Note on p. 413 by T. V. HODGSON.
5. COLGAN, NATHANIEL. Notes on the Invertebrate Fauna of Skerries, Co. Dublin. Irish Natural. xiv, pp. 205-213.

DANTAN. [See HALLEZ (7).]

6. HALLEZ, PAUL. Observations sur le parasitisme de larves de *Phoxichilidium* chez *Bougainvillia*. Arch. Zool. exp. (4) iii, pp. 133-144, pl. vi.
7. —. Notes fauniques. Arch. zool. exp. Notes (4) iii, pp. xlvi-l. Pantopodes, by DANTAN, p. l.
8. HODGSON, T. V. Preliminary report of the Biological collections of the "Discovery." Geogr. Journ. 1905, pp. 396-400.
9. —. Scotia Collections.—On *Decalopoda australis* Eights—an old Pycnogonid rediscovered. P. Phys. Soc. Edinb. xvi, pp. 35-42, pls. iii & iv.
10. —. *Decalopoda* and *Colossendeis*. Zool. Anz. xxix, pp. 254-256.  
—. [See also COLE (4).]
11. LOMAN, J. C. C. *Decolopoda* Eights oder *Colossendeis* Jarz. Zool. Anz. xxviii, pp. 722 & 723.
12. NORDGAARD, O. [& others]. Hydrographical and biological investigations in Norwegian Fjords.... 4to, Bergen, 1905, 254 pp., 21 pls., 10 text-figg.  
*Pycnogonida*, p. 189, by APPELLØF.

## II. SUBJECT-INDEX.

Morphology, Phylogeny and Classification of *Pycnogonida*, with special reference to *Pentanymphon* and *Decolopoda*; COLE (4).

Morphology and habits of *Decolopoda*; HODGSON (9 & 10).

Parasitism of larvæ of *Phoxichilidium* in *Bougainvillia*; HALLEZ (6).

Protective colouration; COLE (3).

## III. DISTRIBUTION.

Norway, list of spp.; NORDGAARD (12).

Ireland, n. spp.; CARPENTER (2): Off Co. Dublin, *Nymphon rubrum* and *Pycnogonum littorale*; COLGAN (5).

Boulogne, list of spp.; DANTAN in HALLEZ (7).

Bermuda; COLE (3).

Antarctic Seas, n. spp.; BOUVIER (1): HODGSON (8): South Orkneys; HODGSON (9).

## IV. SYSTEMATIC.

*Ammothea gracilis*, p. 317, pl. xxi, figg. 4-14; COLE, P. Boston Soc. xxxi (8).

*A. antarctica*, Antarctic Seas, p. 297; BOUVIER, Bull. Mus. Paris xi (1905), n. sp.

*Ammothella appendiculata*, p. 323, pl. xxi, figg. 15-18, pl. xxii, figg. 19 & 20; COLE, P. Boston Soc. xxxi (8).

*Anoplodactylus insignis bermudensis* n. subsp., p. 325, pls. xx & xxii, figg. 21-29; COLE, t. c.: *A. typhlops*, ♂, p. 5, pl. iii, figg. 12-19; CARPENTER, Fisheries, Ireland, Sci. Invest. 1904, iv (1905).

*A. oculatus*, W. of Ireland, 306 fath., p. 4, pl. ii, figg. 7-11; CARPENTER, t. c. n. sp.

*Colossendeis*, characters; HODGSON, Zool. Anz. xxix, p. 255.

*C. antarctica*, p. 295, *C. (?) charcoti*, p. 296, Antarctic Seas; BOUVIER, Bull. Mus. Paris xi (1905), n. spp.

*Cordylochela turqueta*, Antarctic Seas, p. 297; BOUVIER, t. c. n. sp.

*Decolopoda australis*, South Orkneys; HODGSON, P. Phys. Soc. Edinb. xvi, pp. 35-42, pls. iii & iv: [*Decalopoda*] characters; HODGSON, Zool. Anz. xxix, p. 254: *D.*, morphology; COLE, Ann. Nat. Hist. (7) xv, pp. 405-415: *D.*, as synonym of *Colossendeis*; LOMAN, Zool. Anz. xxviii, p. 722.

*Nymphon gracile* and other spp., notes on synonymy, p. 2; CARPENTER, Fisheries, Ireland, Sci. Invest. 1904, iv (1905).

*Pallenopsis holti*, W. of Ireland, 382 fath., p. 4, pl. i, figg. 1-6; CARPENTER, t. c. n. sp.

*Pentanymphon*, morphology; COLE, Ann. Nat. Hist. (7) xv, pp. 405-415.

*Phoxichilidium femoratum*, larvæ in *Bougainvillia*; HALLEZ, Arch. Zool. exp. (4) iii, pp. 133-144, pl. vi.

# XI. ARACHNIDA

(Including TARDIGRADA AND PENTASTOMIDA).

BY

A. S. HIRST.

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## II. BIOLOGY.

### 1. Morphology and Classification.

- Relationships of *Arachnida*; ZIEGLER (197).
- Review of genera of *Hydrachnidæ*; WOLCOTT (193).
- Classification: of *Scorpiones*; KRÆPELIN (79); of *Pedipalpi* (*Thelyphonidæ*); TARNANI (162); of *Araneæ*; DAHL (37).
- Segmentation and phylogeny of Arachnids; CARPENTER (27).
- Morphology: of *Tardigrada*; BASSE (10); of *Pedipalpi* (*Tartarides*); HANSEN & SØRENSEN (63); of *Solifugæ*; HEYMONS (64).
- Secondary sexual characters of *Gagrellinæ*; WITH (191).
- Phylogeny and structure of heart of scorpion; GADZIKICWICZ (59).
- Musculature of *Araneæ* and *Acarí*; SNETHLAGE (156).
- Anatomy: of *Tardigrada*; BASSE (10); of digestive and genital organs of *Ixodidae* (*Acarí*); LAVARRA (84); of *Boophilus annulatus* (*Acarí*); WILLIAMS (190).
- Anatomy and histology: of *Acarí* (*Ixodes*); NORDENSKIÖLD (118); of poison glands of *Araneæ* (*Latrodectus*); BORDAS (18); of eyes of *Hydrachnidæ* (*Acarí*); LANG (83).
- Glands: of *Holothyridæ* and *Hydrachnidæ* (*Acarí*); THON (165, 166 & 168); of *Ixodidae* (*Acarí*); NEWSTEAD (112).
- Respiratory organs of *Acarí* (*Holothyrus*); THON (167).
- Ganglia of chelicerae of Scorpion; POLICE (138).
- “Coxal sac” of *Pseudoscorpiones*; WITH (192).

### 2. Physiology.

- Secretion in ovary of *Hydrachnidæ*; THON (164); coloured secretion in *Opiliones*; LOMAN (96).
- Physiology of poison-glands of *Latrodectus* (*Araneæ*); BORDAS (18); Venom, of Tunisian scorpion; NICOLLE & CATOUILARD (113 & 114), of Spiders; MITCHELL (104).
- Chemical composition of integument of *Arachnida*; MIRANDE (103).

### 3. Reproduction and Development.

- Copulation of *Acarí*; DÖNITZ (42).
- Development of *Ornithodoros moubata* (*Acarí*); NEWSTEAD (112); of *Solifugæ*; HEYMONS (64 & 65); Post-embryonic development of *Acarí*; TRÄGÅRDH (177).
- Eggs of *Acarí* (*Hydrachna*); PRINCE (139); Minute structure of ova of Spiders; STRAND (161).
- Spermatophores? in *Schizomus* (*Pedipalpi*); HANSEN & SØRENSEN (63).
- Spermatogenesis of *Araneæ* and *Opiliones*; BÖSENBERG (20); of *Araneæ*; WALLACE (188), MONTGOMERY (105).

## 4. General Bionomics, Habitats, etc.

A mite (*Erythraeus*) adapted to pelagic life; PASSERINI (133).

Habits of Spiders and Scorpions, FABRE (53A): of *Scorpiones*; CHAIGNON (32), FABRE (54): of *Araneæ*; ARMITT (2), LÉCAILLON (91), WOOD (195): of *Pseudoscorpiones*; BERGER (11): of *Acari* (*Ornithodoros*); DUTTON & TODD (43).

Life history: of *Hydrachnidæ*; SOAR (157): of black-currant gall-mite; EMBLETON (50): of social spider; JAMBUNATHAN (71).

Colour change and protective colouration in *Araneæ*; PACKARD (132), DAHL (38).

"Spider calls"; DAVIS (41).

Hearing and smelling of spiders; DAHL (39).

Influence of food on ovogenesis of Spiders; LÉCAILLON (90).

Longevity of unfed Ticks; ROBERTSON (145): long fasts of spiders; LÉCAILLON (88).

Bionomics and psychology of *Chiracanthium* spp. and of other spiders; LÉCAILLON (92).

Nesting, habits and life-history of Australian *Araneæ*; RAINBOW (140).

*Lycosidae* and their cocoons; LÉCAILLON (89).

Trapdoor Spider destroyed by wasp; DAVIDSON (40).

Earwigs feed on spiders; PLANET (135).

Habitats and hosts of *Acari*; VOIGTS & OUDEMANS (187).

## 5. Parasitism, etc.

Ticks and disease; DÖNITZ (42), BRUMPT (24), DUTTON & TODD (43), FELDMAN (56), WELLMAN (189), NEWSTEAD (112), MASSEY (101), LAVERAN & VALLÉE (86).

Ticks and the piroplasmosis of dogs; NUTTALL (120), BOWHILL & LE DOUX (22): of horses; BOWHILL (21): of oxen; LAVERAN & VALLÉE (86).

*Pentastomum* in man; THIROUX (163).

Tyroglyphid endoparasitic in man; BANKS (7).

*Acari* on Parrots, list of hosts; FAVETTE & TROUESSART (55).

*Hyalomma* and the gregarines of Tortoises; NICOLLE & COMPTÉ (115).

Tick infested with parasitic protozoon; LAVERAN & NÈGRE (85).

*Acari* parasitic on mosquitoes; DYÉ (44).

*Argas* and the spirillosis of fowls; BORREL & MARCHOUX (19).

Economic. *Acari* injurious to vegetation and fruit; CARPENTER (28 & 29), APPEL & BÖRNER (1), MARCHAND (99), NOËL (116), REUTER & NORDENSKIÖLD (143), JACOBI (70); TROTTER (180).

*Acari* and hog-mange, its treatment; STEVENSON (160).

Vegetable galls and *Acari*; REUTER (142), MARCHAL & CHATEAU (98), and see *Eriophyidæ* in systematic index.

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Apparatus for collecting *Acari* etc.; BERLESE (12).

Photomicrographs of *Hydrachnidæ*; ZACHARIAS (196).

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## A. GEOGRAPHICAL.

Distribution of Scorpions; KRÆPELIN (79).

Distribution of *Analgesinæ* (*Acari*); FAVETTE & TRQUESSART (55).

## 1. Arctic and Antarctic.

Arctic Regions, *Acari* n. spp.; TRÄGÅRDH (178).

Antarctic, *Tardigrada*, list and n.spp.; RICHTERS (144).

## 2. Europe and Mediterranean Islands.

Europe, Basses-Alpes, *Pseudoscorpiones* n. sp.; SIMON (149); Rhætian Alps, *Araneæ*, *Opiliones*, *Chernetes*; LESSERT (94); Central Europe, *Acari* n. sp.; JACOBI (70); Frisian Islands, Borkum and Wangeroog, *Acari*; OUDEMANS (128); Ticino, *Hydrachnidæ*; MAGLIO (97).

Russia, Kiew, *Acari*; KARAWAIEW (73); Krym, cave fauna, *Arachnida*; LEBEDINSKY (87).

Norway, *Acari* n. sp.; BERLESE (13); THOR (172 & 170).

Germany, *Acari*; WOLTERSTORFF (194); *Acari* n. sp.; SPEISER (158); Bremen, *Acari* n. spp., KOENIKE (76), list of *Acari*; VOIGTS & OUDEMANS (187); Plön, *Acari*; VOIGT (186); North W. Germany, *Acari*; KOENIKE (78).

Britain, *Walckenaeria* (*Araneæ*), revision of spp.; SMITH (155).

England, Yarmouth, *Araneæ* n. sp.; SMITH (154); Norfolk Broads, *Hydrachnidæ*; SOAR (157); Lincolnshire, *Hydrachnidæ* n. spp.; GEORGE (62); Isle of Man, *Pseudoscorpiones*; IMMS (68).

Scotland, *Araneæ*, local lists; EVANS (51 & 53); Edinburgh, *Araneæ*; CARPENTER & EVANS (31); Upper Elf Loch, *Acari*; EVANS (52); Forth Valley, *Tardigrada* n. spp.; MURRAY (108).

Ireland, *Acari*; CARPENTER (28-30); *Acari* n. var. and n. sp.; BERLESE (13).

France (R. Loire nr. Lyons), *Acari* n. sp.; THOR (169); S. France, *Pseudoscorpiones*; ELLINGSEN (49).

Switzerland, *Acari* n. sp.; THOR (173); *Acari*; GALLI-VALERIO (60).

Italy, *Araneæ*; TRANI (179); *Acari* n. spp.; CORTI (33), BERLESE (15); *Acari*; TROTTER (182); *Acari* n. sp.; MONTI (106); *Pseudoscorpiones*; ELLINGSEN (49).

Roumania, *Araneæ*, *Pseudoscorpiones* and *Acari*; JAQUET (72).

Austria, Tyrol, *Acari* n. sp.; KOENIKE (75); South Tyrol, *Araneæ* and *Acari*; HUBER (67).

Hungary, *Acari*, list and n. spp.; VIDOR (185),

Herzegovina, *Araneæ* n. spp.; NOSEK (119).

## 3. India and Further India.

India, *Acari* n. spp.; OUDEMANS (123); S. India, *Araneæ* n. spp.; SIMON (150); Bengal, *Acari*; KIEFFER (74).

Siam, Bangkok, *Pedipalpi* n. sp.; HANSEN & SÖRENSEN (63).

## 4. Malay Peninsula and Archipelago.

Singapore, *Pedipalpi* n. spp.; HANSEN & SÖRENSEN (63).

Java, *Araneæ* n. spp.; SIMON (151); *Opiliones* n. sp.; LOMAN (95); *Pseudoscorpiones* n. spp.; TULLgren (184); *Acari* n. spp.; BERLESE (14).

Borneo, *Opiliones* n. spp.; WITH (191).

## 5. Africa.

Egypt and the Soudan, *Acaris* (*Hydrachnidæ*) n. spp.; NORDENSKIÖLD (117); *Acaris* n. spp.; TRÄGÅRDH (177).

Tunis and Sahara, *Scorpiones* n. sp.; BIRULA (17); Tunis, *Scorpiones*; CHAIGNON (32).

Freetown, *Pedipalpi* n. sp.; HANSEN & SÖRENSEN (63).

Sahara, *Scorpiones*, *Araneæ*, *Solifugæ* and *Acaris*; FOUREAU (57).

Algeria and German E. Africa, *Acaris* n. spp.: NEUMANN (111).

Senegal, *Pentastomidæ*; THIROUX (163).

Bukota District, *Acaris*; FELDMAN (56).

Congo, *Pseudoscorpiones*; ELLINGSEN (46).

Congo and Uganda, *Acaris*; DUTTON & TODD (43).

Kilima-Nja'ro, *Pseudoscorpiones* n. sp.; WITH (192).

West Africa, *Acaris* n. spp.; OUDEMANS (127); Portuguese West Africa, *Acaris* (*Ixodidæ*); MASSEY (101).

## 6. North America.

North America, *Araneæ* (*Erigoneæ*) n. spp.; CROSBY (35); cave fauna, Mo., *Araneæ*; CROSBY (34), *Phalangida* n. sp.; BANKS (5); *Acaris* n. spp.; BANKS (9); *Araneæ* n. spp.; BANKS (8); *Acaris* (*Hydrachnidæ*) n. sp.; MARSHALL (100).

## 7. Central and South America and the West Indies.

South America, *Opiliones* n. spp.; CAMBRIDGE, F. O. P. (25); *Acaris* n. spp.; OUDEMANS (122 & 123), NEUMANN (111), SILVESTRI (147); *Acaris*; RÜBSAAMEN (146); *Pseudoscorpiones* n. spp.; ELLINGSEN (45 & 48).

Tropical America, *Acaris* n. spp.; OUDEMANS (123 & 124).

Gran Chaco & Cordilleras, *Araneæ* n. spp.; TULLGREN (183).

Brazil, *Acaris* n. sp.; KOENIKE (75).

Chili, *Opiliones* n. sp.; SILVESTRI (147).

Paraguay, *Acaris* (*Hydrachnidæ*) and *Tardigrada*; DADAY (36).

Patagonia, *Araneæ* n. spp.; SIMON (152).

Venezuela and Martinique, *Pedipalpi* n. spp.; HANSEN & SÖRENSEN (63).

## 8. Australasia.

Australia, *Araneæ* n. sp.; RAINBOW (140 & 141); West Australia, *Acaris* (*Ixodidæ*) n. sp.; NEUMANN (111).

New Guinea, *Acaris* n. spp.; OUDEMANS (125 & 126); *Pedipalpi* n. sp.; HANSEN & SÖRENSEN (63).

Australasia, *Pseudoscorpiones* n. sp.; WITH (192).

## 9. Atlantic Islands (not included above).

Madeira, *Araneæ* n. spp.; KULCZYŃSKI (82).

Windward Islands, *Pseudoscorpiones* n. sp.; WITH (192).

## 10. Indian Ocean Islands (not included above).

Cocos Island, *Araneæ* and *Phalangida* n. spp.; BANKS (6).

Maldives and Laccadive Archipelagoes n. spp.; POCOCK (136).

Socotra, *Pseudoscorpiones* n. sp.; WITH (192).

Seychelles, *Pedipalpi* n. sp.; HANSEN & SÖRENSEN (63).

11. *Pacific Islands* (*not included above*).

New Caledonia, *Acaris* n. sp.; BERLESE (13).  
 New Britain, *Pedipalpi* n. sp.; HANSEN & SØRENSEN (63).  
 Luzon, *Pedipalpi* n. sp.; HANSEN & SØRENSEN (63).  
 Juan Fernandez Islands, *Araneæ* n. spp.; SIMON (148).  
 Chatham Islands, *Araneæ* n. spp.; SIMON (153).  
 Sandwich Islands, *Pseudoscorpiones*; WITH (192).

## B. GEOLOGICAL.

Middle coal measures, Rochdale, *Scorpiones*, *Pseudoscorpiones*, and *Opiliones*; BALDWIN (3).

## IV. SYSTEMATIC INDEX †.

Relations of *Arachnida*, p. 174; ZIEGLER, Verh. Deutsch. zool. Ges. 1904.  
 [See also CARPENTER (27).]

## I. SCORPIONES.

[In addition to papers quoted below see also BIRO (16), FABRE (53A, 54), FOUREAU (57), GADZIKIEWICZ (59), MIRANDE (103).]

*Scorpiones*, classification and geogr. distrib.; KRÆPELIN, Zool. Jahrb. Syst. xxii (3), pp. 321-364.

*Anomalobuthus rickmersi*, p. 449; BIRULA, Zool. Anz. xxix.

*Buthiscus* n. g. p. 621, *bicalcaratus*, Tunis and Sahara, p. 622; BIRULA, t. c. n. sp.

*Buthus australis*, Tunis, p. 82, *occitanus*, p. 83, *bicolor*, p. 84; CHAIGNON, Bull. Soc. Autun xvii: *B. zarudnianus* nom. nov. for *Hemibuthus zarudnyi*, p. 450; BIRULA, Zool. Anz. xxix.

†*Eobuthus rakovnicensis*, middle coal measures, Rochdale, p. 80; BALDWIN, Tr. Rochdale Soc. 1903-5, viii.

†*Eoscorpius sparthensis*, middle coal measures, Rochdale, p. 79; BALDWIN, t. c.

*Euscorpius* sp., ganglia of chelicerae, p. 130; POLICE, Boll. Soc. Napoli (1) xviii.

*Heterometrus*, subdivided into 3 genera, p. 161; SIMON, Ann. Soc. ent. France lxxiv: *H. maurus*, venom, pp. 100 & 231; NICOLLE & CATOULLARD, C.R. Soc. Biol. lviii.

*Microbuthus litoralis*, p. 445, text-figg. 1 & 2; BIRULA, Zool. Anz. xxix.

*Scorpio* [see *Heterometrus*] *maurus*, p. 84; CHAIGNON, Bull. Soc. Autun xvii.

## II. PEDIPALPI.

[See also BIRO (16), SIMON (150).]

Classification of *Thelyphonidae*, p. viii; TARNANI, Horæ Soc. ent. Ross. xxxvii.

*Oxopoei*, characters, p. 27; HANSEN & SØRENSEN, Arkiv Zool. ii.

*Schizomus*, conspectus of species, p. 38, *crassicaudatus*, Ceylon, p. 40, pl. 3; HANSEN & SØRENSEN, t. c.

† This sign when prefixed to a quotation indicates a fossil form or forms. Where the character of a reference is not indicated the words "description" or "descriptive notes" are to be understood.

- S. simonis*, Venezuela, p. 42, pls. 1 & 2, *flavescens*, Venezuela, p. 44, pl. 2, *dispar*, Martinique, p. 46, pl. 3, *insignis*, Martinique, p. 47, pl. 3, *latipes*, Seychelles, p. 49, pl. 4; HANSEN & SØRENSEN, t. c. n. spp.  
*Tartarides*, characters, p. 29; HANSEN & SØRENSEN, t. c.  
*Trithyreus*, conspectus of species, p. 51, *suboculatus*, Ceylon, p. 54, pls. 4 & 5, *grassii*, Burma, p. 65, pls. 6 & 7, *cambridgei*, Lower Burma, p. 69, pl. 7, *pentapeltis*, p. 70; HANSEN & SØRENSEN, t. c.  
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*Koenenia mirabilis*, p. 242, pl. xxi, *berlesei*, p. 247, pl. xxii, *subangusta*, p. 249, pls. xxii & xxiii; SILVESTRI, Redia ii: *K. mirabilis*, p. 197; OUDEMANS, Ent. Ber. Nederland. 1904.

### IV. ARANEÆ.

[See also ARMITT (2), BIRO (16), BÖSENBERG (20), CAMBRIDGE, O. P. (26), CARPENTER & EVANS (31), DAHL (39), EVANS (51 & 53), FOUREAU (57), FRESTON (58), HUBER (67), JAQUET (72), LÉCAILLON (88–92), MEISSNER (102), MIRANDE (103), MITCHELL (104), MONTGOMERY (105), PLANET (135), SNETHLAGE (156), STRAND (161).]

*Araneæ*, classification, p. 614, key to suborders, p. 616; DAHL, Zool. Anz. 1905, xxix: North American *Araneæ*, key to families and genera, p. 293; BANKS, Amer. Natural. xxxix.

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- ✓ *Diplothelopsis* n. g. *ornatus*, Quinta, p. 5, pl. 1; TULLGREN, t. c. n. sp.
- ✓ *Euryopelma* sp., Argentine, p. 14; TULLGREN, t. c.
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*Moneta grandis*, p. 176 ; SIMON, Ann. Soc. ent. France lxxiv, n. sp.

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- Colopsgus cancellatus*, Java, p. 71; SIMON, Mt. Mus. Hamburg xxii.  
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[Vacant.]

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- Metaparasitus*, characters of genus, p. 235, pl. xix, *suboles*, p. 236, pl. xix ; VOIGTS & OUDEMANS, Abh. Ver. Bremen xviii.
- Michælia setigera*, p. 13, pl. i ; BERLESE, Redia ii, n. sp.
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- Neophyllobius americanus*, N. America, p. 133 ; BANKS, P. ent. Soc. Washington vii, n. sp.
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- Notaspis subseminulum*, p. 29, pl. iii ; OUDEMANS, Mem. Soc. zool. France xvi : *N. lacustris*, p. 149 ; VIDOR, Allatt. Kozl. Magyar Tars. iv : *N.*, key to species, p. 22, *confervæ*, p. 22, pl. i, text-figg. 28 & 29, *lucorum*, p. 23, *exilis* var. *crassipes*, p. 23, text-fig. 30, *bipilis* var. *sphaerica*, p. 24, text-figg. 31-34, *arctica*, p. 25 ; TRÄGÅRDH, Fauna Arctica iv.
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- Opilionacarus platensis*, South America, p. 257, pls. xxiii & xxiv ; SILVESTRÌ, Redia ii, n. sp.
- O.*, p. 198 ; OUDEMANS, Ent. Ber. Nederland. 1904.
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- Oribates gracilis* var. *major* n. var., Ireland, p. 29, pl. ii, *elimatus* var. *longiplumus* n. var., Italy, p. 30, pl. i, *alatus* var. *integer* n. var., Italy, p. 30, pl. i ; BERLESE, Redia ii : *O. elimatus* var. *corniculatus* n. var., p. 171, pl. xvii ; BERLESE, t. c.
- O. lophothrichus*, p. 27, pl. ii, *lagenula*, p. 28, *connexus*, p. 28, pl. ii, *cribeliger*, p. 28, pl. ii, *superbulus*, p. 29, pl. ii ; BERLESE, t. c. : *O. sphærula*, Java, p. 171, pl. xvii ; *ampulla*, Java, p. 172, pl. xvii ; BERLESE, t. c. : n. spp.
- Oribatidæ*, key to Arctic subfamilies, p. 11, variation of Arctic species, p. 68 ; TRÄGÅRDH, Fauna Arctica iv.

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- P. siculos*, p. 5, pl. i, *tetragonoides*, p. 7, pl. i; OUDEMANS, Mem. Soc. zool. France xvi.
- Paraphytoptus septemscutatus*, p. 142, pl. iii; NALEPA, Denk. Ak. Wien lxxvii.
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- P. delta*, France, p. 223, pl. 8, *iota*, Netherlands, p. 225, pl. 8, *affinis*, p. 227, pl. 9; OUDEMANS, Tijdschr. Ent. xlviii: *P.*, list of hosts, p. 206, *coleoptratorum*, p. 210, *bremensis*, p. 210, pl. xii, *consanguineus*, p. 212, pls. xii & xiii, *eta*, p. 215, pl. xiii, *consimilis*, p. 216, pl. xiv, *congener*, p. 218, pl. xiv, *beta*, p. 219, pl. xv, *alpha*, p. 220, pl. xv, *theta*, p. 222, pls. xv & xvi, *zeta*, p. 222, pl. xvi, *setosus*, p. 224, pl. xvi, *consors*, p. 225, pl. xvii; VOIGTS & OUDEMANS, Abh. Ver. Bremen xviii: *P.*, key to species, p. 35, *bomborum*, p. 35, text-fig. 65, *spinipes*, p. 36, text-figg. 66-70, *coleoptratorum*, p. 39; TRÄGÅRDH, Fauna Arctica iv: *P. crinitus*, p. 79, pl. ii, *burchanensis*, p. 80, pl. iii, *tricuspidatus*, p. 81, pl. iii; OUDEMANS, Abh. Ver. Bremen xviii: *P. minor*, p. 202; OUDEMANS, Tijdschr. Nederland. Dierk. Ver. 1904 (viii).
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- P. agilis*, Java, p. 157, pl. xv; BERLESE, Redia ii, n. sp.
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- Phytoptipalpus n. g. paradoxus*, p. 10, pl. i: TRÄGÅRDH, Res. Swedish Zool. Exped. Egypt and White Nile ii, 1905, n. sp.
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- Pimeliaphilus n. g. podapolipophagus*, Egypt, p. 32, pl. ii; TRÄGÅRDH, Res. Swedish Zool. Exped. Egypt and White Nile ii, 1905, n. sp.
- Piona anisitsi*, Paraguay, p. 321, pl. xxiii; DADAY, Zoologica xliv, n. sp.
- Platylælaps* n. subg. of *Pachylælaps*, p. 165; BERLESE, Redia ii.

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- Polyxo* n. g. *placophora*, p. 170, 2 pls. ; MONTI, Rend. Ist. Lombardo (2) xxxviii, n. sp.
- P. placophora*, p. 832, pls. i & ii ; MONTI, Zool. Anz. xxviii.
- Polyxo* = *Hydrovolzia*, p. 283 ; THOR, op. cit. xxix.
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- Proctophyllodinæ*, key to genera, p. 240 ; OUDEMANS, t. c.
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- Pterygosoma*, key to spp. ; TRÄGÅRDH, Res. Swedish Zool. Exped. Egypt and White Nile ii, 1905.
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- S. levis*, p. 232, pl. xviii; VOIGTS & OUDEMANS, Abh. Ver. Bremen xviii: *S. armatus*, p. 32, text-figg. 52-54; TRÄGÅRDH, Fauna Arctica iv.
- Seius quadripilis*, Florida, p. 138; BANKS, P. ent. Soc. Washington vii, n. sp.
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- Sphaerolichus* n. g. *armipes*, p. 14, pl. i; BERLESE, Redia ii, n. sp.
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- Thrombus* n. g. *gymnus*, p. 91, pl. vii ; OUDEMANS, Abh. Ver. Bremen xviii.
- Trachytes*? *lagenæformis*, Canada, p. 21, pl. ii ; BERLESE, Redia ii, n. sp.
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- Trichotarsus affinis*, Cairo, p. 119, pl. v ; TRÄGÅRDH, Res. Swedish Zool. Exped. Egypt and White Nile ii, 1905, n. sp.
- Triopchtonius badius*, p. 237 ; BERLESE, Redia ii, n. sp.
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- Trombicula minor*, Jaya, p. 155, pl. xv ; BERLESE, t. c. n. sp.
- Trombidiidae*, key to Arctic subfamilies, p. 41, variation of Arctic species, p. 71 ; TRÄGÅRDH, Fauna Arctica iv.
- Trombidium bicolor* var. *curtipalpe*, p. 51, text-figg. 94-98, *sucidum*, p. 52, text-figg. 99-101 ; TRÄGÅRDH, t. c. ; *T. tectocervix*, p. 96, pl. viii ; OUDEMANS, Abh. Ver. Bremen xviii : *T. granulatum*, p. 17, pl. ii ; OUDEMANS, Mem. Soc. zool. France xvi.
- T. euthrichum*, Java, p. 154, pl. xv, *marmoratum*, Java, p. 155, pl. xv, *macropodium*, Java, p. 155, pl. xv ; BERLESE, Redia ii : *T. vandersandei*, New Guinea, p. 216, *wichmanni*, p. 217 ; OUDEMANS, Ent. Ber. Nederland. 1905 : *T. ferociforme*, White Nile, p. 75, pl. iv, *oblongum*, p. 76, pl. iv, *crassipalpe*, p. 77, pl. iv, *niloticum*, p. 78, pl. iv, *cercopitheci*, p. 82, pl. iv, *ardeæ*, p. 83, pl. iv ; TRÄGÅRDH, Res. Swedish Zool. Exped. Egypt and White Nile ii, 1905 : n. spp.
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- Uroplitella leonardiana* var. *beccarii* n. var., p. 22 ; BERLESE, t. c.
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*Zetorchesites consanguineus*, p. 28, pl. iii ; OUDEMANS, Mem. Soc. zool. France xvi.

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*D. scoticum*, Fife, p. 162, fig. 1, *bullatum*, Lock Leven, p. 164, fig. 2 ; MURRAY, t. c. n. spp.

*Echiniscus kerguelensis*, Antarctic, p. 239 ; RICHTERS, Verh. Deutsch. zool. Ges. 1904, n. sp.

*Macrobiotus macronyx*, Paraguay, p. 270 ; DADAY, Zoologica 1905, xliv.

*M. vanhoffeni*, Antarctic, p. 239, *antarcticus*, p. 239 ; RICHTERS, Verh. Deutsch. zool. Ges. 1904, n. spp.

#### XI. PENTASTOMIDA.

*Pentastomum constrictum*, Senegal, p. 78, text-figg. a-d ; THIROUX, C.R. Soc. Biol. lix.



## XII. MYRIOPODA AND PROTOTRACHEATA.

BY

F. SILVESTRI.

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## INTRODUCTION.

THE number of papers published on Myriopoda in the year 1905 is 48 ; rather less than in 1904.

Morphology has received contributions by SINCLAIR (38) in a paper on some points of the anatomy of *Platydesmus*, and by VERHOEFF (40-44) on *Lithobiidae* and *Scutigeridae*, in which the authors treat also the post-embryonal development of the Chilopoda in question.

The spermatogenesis of *Scutigera* and *Scolopendra* has been carefully studied by MEDES (26) and BLACKMAN (3); and the cytoplasmic formations of germ-cells in *Scolopendra* by BOUIN (5).

KRAEPELIN has published an important paper (24) on the distribution of *Scolopendridæ*.

In the systematic department, BRÖLEMANN (6-9), CARL (10), RIBAUT (31), SILVESTRÌ (36), and VERHOEFF (41-46) have contributed descriptions of new genera and species, but their number is not large.

For the *Prototracheata* the year 1905 is memorable for the publication of the first part of the valuable monograph of BOUVIER.

## MYRIOPODA.

### I. TITLES.

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2. BERTHOUMIEU, —. Revision de l'entomologie dans l'antiquité. *Rev. Sci. Bourbonnaise*, Dec. 1904. *Myriopodes*, p. 197.
3. BLACKMAN, M. W. The spermatogenesis of the Myriapods. III. The spermatogenesis of the *Scolopendra heros*. *Bull. Mus. Harvard* xlviii, pp. 1-138, 9 pls., A-I text-figg. *Abstract, Zool. Jahresber.* 1905, *Arthropoda*, pp. 46 & 47.
4. —. IV. On the karyosphere and nucleolus in the spermatocytes of *Scolopendra subspinipes*. *P. Amer. Ac.* xli, No. 13, pp. 331-344, 1 pl.
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6. BRÖLEMANN, H. W. Symphyles et Diplopodes Monegasques. I. Liste des Symphyles et Diplopodes recueillis sur le territoire de la principauté ou dans ses environs immédiats. II. Description des espèces nouvelles. *Bull. Mus. Monaco* No. 23, pp. 1-11, 8 text-figg.
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8. —. Myriapodes de la Mission du Chemin de fer Thies-Kayes recueillis par le Dr Conan. *Mem. Soc. zool. France* xviii, pp. 201-213, pls. iv & v.
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10. CARL, J. Diplopodes de la Guinée espagnole. *Mem. Soc. Espan.* (i) 15, pp. 261-284, pls. vi & vii.
11. CARPENTER, G. H. XIV. Injurious insects and other animals observed in Ireland during the year 1904. *Econ. P. Dublin Soc.* (i) vi, pp. 281-305, pls. xxiii & xxiv. [*Myriopoda*, p. 295.]
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15. FAES, H. Un nouveau myriopode du Valais. Rev. Suisse Zool. xiii, pp. 581-583. [Title given also in Arch. Sci. Nat. (4) xx, p. 697.]
16. FAUVEL, P. Histoire naturelle de la presqu'île du Cotentin. III. La Faune. Cherbourg et le Cotentin, pp. 47-92. [*Myriopoda*, p. 57.] Abstract, Zool. Zentrbl. xii, pp. 156-159.
17. FELT, E. P. 19th report of the State Entomologist on injurious and other insects of the State of New York, 1903. Bull. N. York Mus. 76. [*Myriopoda*, p. 220.]
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20. HANDLIRSCH, A. Vorläufige Notiz über die Phylogenie der Arthropoden. Anz. Ak. Wiss. xxvi, pp. 1-5. Abstract, Zool. Jahresber. 1905, *Arthropoda*, p. 24.
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34. SILVESTRI, F. Nuova contribuzione alla conoscenza dell' *Anajapyx vesiculosus* Silv. (Thysanura). Ann. Scoul. Agric. Portici vi, pp. 1-15, 12 text-figg. Abstract, Zool. Jahresber. 1905, *Arthropoda*; p. 51, Zool. Zentralbl. xii, p. 405.
35. ——. Elenco dei Miriopodi, Tisanuri, Termitidi, raccolti all' isola d' Elba e di Pianosa. Boll. Mus. Torino xx, No. 501, pp. 1 & 2.
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43. ——. Über Scutigeriden. 5 Aufsatz. Zool. Anz. xxix, pp. 73-119.
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## II. BIOLOGY, SUBJECT-INDEX.

## 1. Morphology and Classification.

Segmentation of the body and phylogeny of Myriopoda, CARPENTER (12).

Morphology of the maxillæ of *Polyxenus lagurus*, CARPENTER (12).

Phylogeny of Myriopoda, HANDLIRSCH (20).

Morphology of head, of segments, of nervous system in *Platydesmus mexicanus*, SINCLAIR (38).

Morphology of legs in *Scutigeridæ*, VERHOEFF (41, 43 & 44).

Morphology of segments and legs, of mouth parts, of tracheal-system, of copulatory appendages in *Lithobiidæ*, VERHOEFF (42).

Systematic position of *Platydesmidæ*, SINCLAIR (38).

Relationship of some Myriopoda with *Projapygidæ*, SILVESTRI (34).

Phylogeny and classification of *Scutigeridæ*, VERHOEFF (41, 43 & 44).

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## 3. Reproduction and Development.

Postembryonal development of *Chilopoda*, VERHOEFF (40), of *Scutigeridæ*, VERHOEFF (41), of *Lithobiidæ* (42).

Dorsal-organ of the embryo of *Scolopendra*, HEYMONS (22).

Remarks on the entoderm and mesoderm of Myriopoda, HEYMONS (21).

Spermatogenesis of *Scolopendra heros*, BLACKMAN (3), of *Scutigera forceps*, MEDES (26).

Karyosphere and nucleolus in the spermatocytes of *Scolopendra subspinipes*, BLACKMAN (4).

Cytoplasmic formations (ergastoplasm, pseudochromosomes, mitochondria) in the germ-cells of *Scolopendra cingulata*, BOUIN (5).

Crystals in the eggs of *Scutigera*, GIARDINA (18).

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Damage of *Blaniulus venustus* to potatoes, CARPENTER (11).

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Centipede eating a snake, OKEDEN (29).

Voracity of a centipede, WELLS (48).

## 5. Miscellaneous.

Myriopoda in Aristotle, BERTHOMIEU (2).

Collection of Myriopoda, PORTER (30).

Collection of Myriopoda in caves, ALZONA (1).

Review of literature for 1904, GIESBRECHT & MAYER (19).

## III. DISTRIBUTION.

## A. GEOGRAPHICAL.

Geographical distribution of *Scolopendridæ*, KRAEPELIN (23).

## (1) Arctic and Antarctic.

(Vacant.)

## (2) Europe and Mediterranean Islands.

Crimea, list of 37 species of Myriopoda, LIGNAU (25).

Bohemia, catalogue of species of Myriopoda, VALIS (39).

Hungary, *Scutigera*, VERHOEFF (43).

Marburg, list of species of Chilopoda and Diplopoda, ELLINGSEN (14).

France, *Diplopoda* n. spp., BRÖLEmann (9), observations on described species and n. spp., RIBAUT (31 & 32), CHALANDE (13).

Switzerland, Valais, *Craspedosoma* n. sp., FAES (15).

Monaco, *Sympyla* and *Diplopoda*, list of species and *Diplopoda* n. spp., BRÖLEmann (6).

Elba and Pianosa, Italy, *Chilopoda* and *Diplopoda*, list, SILVESTRÌ (35).

Portugal, a few localities, Annuar. Ac. Portò 1900-1901, pp. 83 & 84.

## (3) Asia (Palaearctic).

Turkestan, Cilicia and Syria, *Scutigeridæ*, VERHOEFF (43).

China, *Scutigeridæ*, VERHOEFF (41, 43 & 44).

Japan, *Scutigeridæ*, VERHOEFF (41 & 44).

## (4) India and Further India.

India, *Scutigeridæ*, VERHOEFF (43).

Ceylon, *Scutigeridæ*, VERHOEFF (41 & 43).

## (5) Malay Peninsula and Archipelago.

Borneo, *Scutigeridæ*, VERHOEFF (43).

Java, *Scutigeridæ*, VERHOEFF (41).

## (6) Africa.

Spanish Guinea, *Diplopoda*, observations on described species and n. spp., CARL (10).

Senegal, Sudan, *Chilopoda*, list of species, *Diplopoda* n. spp., BRÖLEmann (8).

West-Africa, *Scutigeridæ*, VERHOEFF (43).

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## (7) North America.

U. S. North America, *Scutigera*, FELT (17), VERHOEFF (43).

## (8) South and Central America and West Indies.

Costa Rica, *Chilopoda* and *Diplopoda*, list and n. spp., BRÖLEMANN (7). Chile, *Myriopoda* list, redescriptions of described species and n. spp., SILVESTRI (36 & 37).

## (9) Australasia. (10) Atlantic Islands. (11) Indian Ocean Islands. (12) Pacific Ocean Islands.

(Vacant.)

## B. GEOLOGICAL.

(Vacant.)

## IV. SYSTEMATIC INDEX†.

[See also BRÖLEMANN (6 & 7), ELLINGSEN (14), SILVESTRI (35), VALIS (39).]

*CHILOPODA.*

## NOTOSTIGMATA.

## Ordo SCUTIGEROMORPHA.

- Allothereua* n. gen. (*Scutigeridae*) for *Scutigera maculata* Wood; VERHOEFF, Zool. Anz. xxix, p. 101.  
*Ballonemini*, characters; VERHOEFF, t. c. p. 75.  
*Lassophora* n. gen. (*Scutigeridae*); VERHOEFF, t. c. p. 116.  
*L. madagascariensis*, Madagascar; VERHOEFF, t. c. p. 117, n. sp.  
*Microtheraea* n. subgen. of *Thereuopoda*; VERHOEFF, t. c. p. 114.  
*Orthothereua* n. gen. (*Scutigeridae*) for *Scutigera longicornis* Newp.; VERHOEFF, t. c. p. 106.  
*Pselliophora*, analytical key to the species; VERHOEFF, t. c. p. 97.  
*P. annuligera*, characters; VERHOEFF, t. c. p. 92.  
*P. marmorata*, West-Africa, pp. 92 & 93, *maculata*, West-Africa, p. 94, *vagans*, Kongo, p. 95, *massaica*, West-Africa, p. 96; VERHOEFF, t. c. n. spp.  
*P. pulchritarsis*, p. 60, figg. 10-12; VERHOEFF, SB. Ges. naturf. Berlin 1905.  
*Podothereua* n. gen. (*Scutigeridae*), p. 11; VERHOEFF, t. c., and pp. 102 & 108, id. Zool. Anz. xxix.  
*P. insularum*, p. 20, figg. 6 & 7; VERHOEFF, t. c. n. sp., and postembryonal development.  
*Scutigera*, characters emend. and analytical key to the species and subspecies; VERHOEFF, Zool. Anz. xxix, p. 76.  
*S. muscivora*, Hungary, pp. 76 & 78, *asiæminoris*, Cilicia, pp. 77 & 80, *rubrovittata*, Keos, pp. 77 & 82; VERHOEFF, t. c. n. spp.  
*S. coleoptrata natalensis*, Natal, pp. 77 & 83, *coleoptrata græca*, Greece, p. 77, *coleoptrata insularum*, Thera, pp. 78 & 84; VERHOEFF, t. c. n. subspp.

† "Where the character of a reference is not indicated the words "description" or "descriptive notes" are to be understood."

- S. coleoptrata*, p. 77, *coleoptrata (genuina)*, South Tyrol, Portugal, Canary-  
Ids., p. 78; VERHOEFF, t. c.
- S. coleoptrata*, postembryonal development, p. 45, figg. 1-5; VERHOEFF,  
SB. Ges. naturf. Berlin 1905: crystaloids in the eggs; GIARDINA,  
Monit. Zool. ital. xvi, pp. 202-205.
- S. forceps*, p. 86; VERHOEFF, Zool. Anz. xxix: habitat of; FELT, Bull. N. York  
Mus. 76, p. 220.
- S. forceps*, spermatogenesis; MEDES, Biol. Bull. ix, pp. 156-186, pls. ii-vi.
- Scutigeridae*, morphology of legs, postembryonal development, characters  
of systematic value, n. subfam. tribes, gen. and spp.; VERHOEFF, SB.  
Ges. naturf. Berlin, 1905, pp. 9-60: id. Zool. Anz. xxix, pp. 73-103,  
105-119, 353-371: id. Gliedufüssler, Arthropoda, Brönn's Klassen etc.  
Lief. 72-74.
- Scutigerinæ*, analytical key to the tribe; VERHOEFF, Zool. Anz. xxix, p. 75.
- Scutigerini* n. trib. (*Scutigerinæ*); VERHOEFF, t. c. p. 75.
- Sphendononema annulipes*, Kamerun; VERHOEFF, t. c. p. 99, n. sp.
- S. camerunense*, characters; VERHOEFF, t. c. pp. 99 & 100.
- Tachythereua* n. gen. (*Scutigeridae*), pp. 12 & 53; VERHOEFF, SB. Ges.  
naturf. Berlin 1905.
- T. maroccana*, Marocco, p. 54, figg. 8 & 9; VERHOEFF, t. c.
- Thereuonema*, characters, p. 10; VERHOEFF, t. c.; and analytical key to the  
species, pp. 86 & 354, id. Zool. Anz. xxix.
- T. tuberculata*, China, p. 58, A-C text-figg. and figg. 13 & 14, pl.; VERHOEFF,  
SB. Ges. naturf. Berlin, 1905, and pp. 87 & 356, id. Zool. Anz. xxix.
- T. turkestan*, Turkestan, pp. 87, 88 & 355, *syriaca*, Syria, pp. 88, 89 & 356,  
*annulata*, Tsingtan, p. 355, *hilgendorfi*, Japan, p. 356; VERHOEFF, t. c.  
n. spp.
- T. annulata spinigera*, Japan, n. subsp., pp. 356, 357 & 367, var. *spinigera*,  
n. var. p. 356, var. *japonica* n. var. p. 356, *syriaca* var. *aegyptiaca*  
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- Thereuonomini* n. trib. (*Scutigerinæ*), p. 75, analytical key to the genera,  
p. 107; VERHOEFF, t. c.
- Thereuopoda* subgen. elev. to gen., characters, p. 11, and analytical key to  
the species, p. 13; VERHOEFF, SB. Ges. naturf. Berlin 1905, and pp.  
102 & 108, Zool. Anz. xxix.
- T. flagellifera*, Ceylon, p. 108, *decipiens*, India, p. 110, *nana*, Borneo, p. 111;  
VERHOEFF, t. c. n. spp.
- T. multidentata*, pp. 14 & 17; VERHOEFF, SB. Ges. naturf. Berlin 1905,  
n. sp.
- T. rubrolineata*, Ceylon, pp. 13 & 15, *clunifera*, Japan, pp. 13 & 16,  
*amokiana*, Eastjava, p. 14, *longicornis*, pp. 14 & 19; VERHOEFF, t. c.
- T. clunifera*, Japan, characters of *Pseudomaturus*; VERHOEFF, Zool. Anz.  
xxix, p. 113.
- T. (Microthereua) chinensis*, China; VERHOEFF, t. c. p. 114, n. sp.
- Thereuopodina* n. gen. (*Scutigeridae*); VERHOEFF, t. c. p. 102.
- T. tenuicornis*, Ceylon; VERHOEFF, t. c. p. 105, n. sp.

## PLEUROSTIGMATA.

### Ordo LITHOBIMORPHA.

- Anopsobius*; SILVESTRI, Zool. Jahrb. Syst. Suppl. vi, p. 749.
- A. productus*, Temuco (Chile), p. 750, pl. xxxvi, figg. 44-49; SILVESTRI,  
t. c.
- Lamyctes inermipes* var. *pacificus*, Chile, p. 748; SILVESTRI, t. c. n. var.
- Lithobiidae*, morphology of segments and legs, of mouth parts, of tracheal  
system, of copulatory appendages, postembryonal development,

- moults; VERHOEFF, Zool. Jahrb. Syst. Suppl. vii, pp. 195-298, pls. vi-viii.  
*Lithobius curtipes*, p. 207, *mutabilis*, p. 210, *erythrocephalus*, p. 212, *forficatus*, p. 216, postembryonal development; VERHOEFF, t. c.  
*L. grossipes*, cannibalism; VERHOEFF, t. c. p. 293.  
*L. (s. s.) platensis*, Santiago, Montevideo, p. 747; SILVESTRI, Zool. Jahrb. Syst. Suppl. vi.  
*L. (Polybothrus) nodulosus* n. sp., Thessalia, *cæsar valonensis* n. subsp., Thessalia; VERHOEFF, Zool. Anz. xxix, p. 513.  
*L. pantocratoris, intrepidus siculus*, remarks; VERHOEFF, t. c. p. 511.  
*L. vulcani costaricensis*, Costa Rica, p. 339; BRÖLEMANN, Ann. Soc. ent. France lxxiv, n. var.  
*Monotarsobius* n. gen. (*Lithobiidæ*) for *Lithobius curtipes* C. Koch; VERHOEFF, Zool. Jahrb. Syst. Suppl. vii, p. 249.  
*Paralamyctes chilensis*, S. Vincente (Chile), p. 749; SILVESTRI, Zool. Jahrb. Syst. Suppl. vi.

### Ordo SCOLOPENDROMORPHA.

- Geographical distribution of the genera and species of the order; KRAEPELIN, Zool. Jahrb. Syst. Suppl. viii, pp. 167-194.  
*Asanada brevicornis*, Sénégal-Soudan, p. 201; BRÖLEMANN, Mem. Soc. zool. France xviii.  
*Cryptops monilis*, Chile, p. 753, *detectus*, Temuco, p. 754, *armatus*, Santiago, p. 754, *triserratus*, Valdivia, p. 755; SILVESTRI, Zool. Jahrb. Syst. Suppl. vi.  
*C. silvaticus* and *pallens*, remarks on figg. of C. L. Koch and synonymy; VERHOEFF, Zool. Anz. xxix, p. 498.  
*Hemiscolopendra chilensis*, p. 751, *michælseni*, p. 752, *platei*, p. 752, Chile; SILVESTRI, Zool. Jahrb. Syst. Suppl. vi.  
*Newportia rogersi*, Costa Rica, p. 340; BRÖLEMANN, Ann. Soc. ent. France lxxiv.  
*Rhysida togoensis*, Sénégal-Soudan, p. 201; BRÖLEMANN, Mem. Soc. zool. France xviii.  
*Scolopendra heros*, spermatogenesis, BLACKMAN, Bull. Mus. Harvard xlviii, pp. 1-138, 9 pls. A-I text-figg.  
*Scolopendra subspinipes*, Karyosphere and nucleolus in the spermatocytes, BLACKMAN, P. Amer. Ac. xli, No. 13, pp. 331-344, 1 pl.

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- Apogeophilus* n. gen.; SILVESTRI Zool. Jahrb. Syst. Suppl. vi, p. 766.  
*A. claviger*, Santiago, p. 767, pl. xxxvii, figg. 61-66; SILVESTRI, t. c. n. sp.  
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*E. gracile*, Santiago, p. 762, pl. xxxvii, fig. 55; SILVESTRI, t. c.  
*Linotænia araucanensis*, Temuco (Chile), p. 767, pl. xxxvii, fig. 67; SILVESTRI, t. c.  
*Pachymerinus* n. gén.; SILVESTRI, t. c. pp. 755 & 761.  
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*Schendyla montana*, Santiago (Chile), p. 768; SILVESTRI, t. c.  
*Schizotænia*; SILVESTRI, t. c. p. 761.  
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***PAUROPODA.***

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*Platydesmus*, p. 353 ; BRÖLEMANN, Ann. Soc. ent. France lxxiv.  
*P. lankesteri*, Costa Rica, p. 354, figg. 4 & 5, pl. ix, fig. 15 ; BRÖLEMANN, t. c. n. sp.  
*P. mexicanus*, morphology of head, segments, nervous system ; SINCLAIR, Quart. J. Micr. Sci. xlix, pp. 507-519, pl. 29.

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*rosendinus*, pl. xxxvi, figg. 38-41, S. Rosendo (Chile), p. 722 ; SILVESTRI, Zool. Jahrb. Syst. Suppl. vi.  
*P. lagurus*, morphology of maxillæ ; CARPENTER, Quart. J. Micr. Sci. xlix, pp. 478-480, pl. 28.

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*G. pusilla*, *marginata*, p. 503, *connexa* var. *lunatosignata*, Costa, p. 505, remarks on the figg. and Berlese's descriptions ; VERHOEFF, t. c.

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*A. pulchellum*, remarks ; VERHOEFF, t. c. p. 506.

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*Ceratosoma pectiniger*, generic change ; VERHOEFF, t. c. p. 223.  
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*C. montemorensis*, Valais, p. 581, fig. 3 ; FAES, Rev. Suisse Zool. xiii, n. sp.  
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*L. inermis*, remarks on description and synonymy ; VERHOEFF, t. c. p. 502.  
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- Abatodesmus* ; SILVESTRI, Zool. Jahrb. Syst. Suppl. vi, p. 735, and Revist. chilena, p. 229.  
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*Diaphorodesmus dorsicornis*, Cabo S. Juan, p. 271, pl. vi, figg. 1 & 1a; CARL, t. c.  
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- Allaiulus occultus* C. Koch = *Julus cœrulans* Nem. = *Cylindroiulus*; VERHOEFF, Zool. Anz. xxix, p. 500.  
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- B. venustus*, damages to potatoes; CARPENTER, Econ. P. Dublin (1) vi, p. 295.
- Cylindroiulus apenninorum albanensis* n. subsp.; VERHOEFF, Zool. Anz. xxix, p. 511.
- C. deubeli* Att. = *horvathi* Verh., *hyperopherus* Att. = *abaligetanus* Verh.; VERHOEFF, t. c. p. 512.
- C. londinensis* var. *finitimus* var. nov., Pyrénées, p. 3; RIBAUT, Bull. Soc. Sci. Toulouse 1905.
- C. londinensis* var. *psilopygus* = *J. psilopygus*, Pyrénées, p. 4; RIBAUT, t. c.
- C. perforatus* nom. nov. for *Julus occultus*; VERHOEFF, Zool. Anz. xxix, p. 501.
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- J. (Leptoziulus) silvicola umbratilis*, Pyrénées, p. 1, pl. i, figg. 1-4; RIBAUT, Bull. Soc. Sci. Toulouse 1905, n. subsp.
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- J. (Typhloziulus) sculterorum* n. sp.; BRÖLEMANN, Feuille Natural. Ann. 35, p. 5, figg. 79 & 80.
- Mesoiulus*, remarks; VERHOEFF, Zool. Anz. xxix, p. 504.
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- P. (Typhlopachyiulus) siculus*, remarks; VERHOEFF, t. c.
- Trichoblanziulus hirsutus* subsp. *cavernicola*, Basses-Alpes, p. 1, figg. 74 & 75; BRÖLEMANN, Feuille Natural. Ann. 35<sup>e</sup> (iv), n. subsp.
- Typhloblanziulus dollfusi*, Pyrénées, p. 4, figg. 1-5; RIBAUT, Bull. Soc. Sci. Toulouse 1905.
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- Dimerogonus chilensis*, Chile, p. 744; SILVESTRI, Zool. Jahrb. Syst. Suppl. vi.
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- Julomorpha chilensis* n. sp.; SILVESTRI, Revist. chilena ix, p. 233 (= *Dimerogonus chilensis*).

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- Autostreptus* n. gen.; SILVESTRI, Zool. Jahrb. Syst. Suppl. vi, p. 742.
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- Spirobolus simulans*, Cabo S. Juan, p. 277, pl. vii, figg. 8 & 8A; CARL, Mem. Soc. Espan. i, n. sp.

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1. BOUVIER, E. L. Monographie des Onychophores. Ann. Sci. nat. (n. s.) ii, pp. 1-383, 13 pls. and 140 text-figg. (not yet completed).
2. CARPENTER, G. H. Notes on the segmentation and phylogeny of the Arthropoda, with an account of the maxillæ in *Polyxenus lagurus*. Quart. J. Micr. Sci. xlix, pp. 469-491, pl. 28.
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Ecuador, *Peripatus*, BOUVIER.

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