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ZOOLOGICAL RECORD,

VOLUME THE THIRTY-THIRD.

BEING

RECORDS OF ZOOLOGICAL LITERATURE

RELATING CHIEFLY TO THE YEAR

1896.

BY J. A. THOMSON, R. LYDEKKER, R. BOWDLER SHARPE, G. A. BOUL-  
LENGER, W. A. HERDMAN, B. B. WOODWARD, A. W. BROWN, D. SHARP,  
FLORENCE BUCHANAN, R. T. GÜNTHER, AND R. VON LENDENFELD.

EDITED (FOR THE ZOOLOGICAL SOCIETY OF LONDON) BY

DAVID SHARP, M.A., F.R.S., F.Z.S., &c.,

*Curator in Zoology, University Museum of Zoology, Cambridge.*

Explorate solum : sic fit via certior ultrà.

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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.



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## PREFACE.

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THE EDITOR has again the pleasure of thanking the Recorders, to whom the appearance, without undue delay, of this volume is due. Special thanks are owing to Mr. A. W. Brown, of Christ Church, Oxford, who had only a short time in which to prepare his work.

It will be generally regretted that Mr. F. A. Bather has been unable to furnish his Record of *Echinoderma*, owing to his leaving London in the summer as a delegate to represent the British Museum (Natural History) at the International Geological Congress in St. Petersburg. The Record of the literature of *Echinoderma* for 1896 will therefore appear in combination with that for 1897, in the next volume of the ZOOLOGICAL RECORD.

Mr. J. Walker, the Librarian of the Radcliffe Library, having, at the request of Miss Buchanan, been so kind as to mark a list of our periodicals, we have been able to add to the list indications of those works in it that are contained in the Library in question.

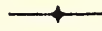
For several years past the Volumes of the Record have been very bulky. We have therefore now adopted a different method of arrangement of the type, so that the number of pages in this volume is considerably reduced.

D. SHARP.

CAMBRIDGE, *Sept. 4th*, 1897.



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ALPHABETICAL LIST  
OF THE  
ABBREVIATIONS  
USED IN THE  
ZOOLOGICAL RECORD, VOL. XXXIII, 1896,  
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 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; South Kensington 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, after C, or (C) = Cambridge Balfour, or Woodwardian Museum, or Physiological libraries respectively.  
 O. = Radcliffe library, Oxford.  
 § is appended to titles added since the last list.

- 
- Abeille*—L'Abeille: Journal d'entomologie publié par la Société entomologique de France. (Paris, 8vo.) Nz.
- Abh. Ak. Berlin*—Abhandlungen der königlichen 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. Böhmisches Gesellschaft. [Called also] Rozprawy tridy mathematicko-přírodvécke královske Ceske společnosti Nauk. (Prag, 4to.) N. K. R. L. C, p.
- 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, p.
- Abh. Ges. Görlitz*—Abhandlungen der naturforschenden Gesellschaft zu Görlitz. (Görlitz, 8vo.) N. K. R.
- Abh. Ges. Gotting.*—Abhandlungen der königlichen Gesellschaft der Wissenschaften zu Göttingen. (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. Königsb.*—[Part of *Schr. Ges. Königsb.*, q.v.]
- Abh. Ges. Nürnberg*—Abhandlungen der naturhistorischen Gesellschaft zu Nürnberg. (Nürnberg, 8vo.) N. K. C.



- Abh. Ges. Wien*—[Part of *Verh. Ges. Wien*, q.v.]
- 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.) N. Z. C.
- Abh. Preuss. geol. Landesanst.*—Abhandlungen der königlich Preussischen geologischen Landesanstalt (Neue Folge). [Formerly *Abh. geol. specialkarte 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.]
- 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.
- Act. 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.
- 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.
- Act. Soc. Bordeaux*—Actes de la Société Linnéenne de Bordeaux. [Includes Comptes rendus.] (Bordeaux, 8vo.) N. Z. C.
- Act. Soc. Chili*—Actes de la Société scientifique du Chili. (Santiago, 4to.) R. Z.
- Act. Soc. Espan.*—[Vide *An. Soc. Espan.*]
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- Afh. Mus. Lund.*—E museo Lundii. En Samling af Afhandlingar. (Kjobnhavn, 8vo.) N. R. Z. L.

- Agric. Gaz. N.S.W.*—The Agricultural Gazette of New South Wales. (Sydney, 8vo.) Nz. R.
- Amer. Geol.*—The American Geologist, a Monthly Journal of Geology and allied Sciences. (Minneapolis, 8vo.) Ng. K. 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. Natural.*—The American Naturalist. (Philadelphia, 8vo.) N. K. Z. L. C, b. O.
- Anat. Anz.*—Anatomischer Anzeiger. Centralblatt für die gesamte wissenschaftliche Anatomie. Amtliches Organ der anatomischen Gesellschaft. (Jena, 8vo.) Nz. K. Z. (C) b. O.
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- Arb. Ver. Riga*—Arbeiten des Naturforscher-Vereins zu Riga. Neue Folge. (Riga, 8vo.) N.
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- Arch. Anthropol.*—Archiv für Anthropologie. Zeitschrift für Naturgeschichte und Urgeschichte des Menschen. [Includes *CB. Ges. Anthropol.*] (Brunswick, 4to.) R. O.
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- Arch. Ver. Mecklenb.*—Archiv des Vereins der Freunde der Naturgeschichte in Mecklenburg. (Güstrow, 8vo.) N. L.
- Arch. Zeeuwsh Genoots.*—Archief. Vroegere en latere Mededeelingen voornamelijk in betrekking tot Zeeland, uitgeven door het Zeeuwsh Genootschap der Wetenschappen. (Middelburg, 8vo.)  
N.
- Arch. Zool. exp.*—Archives de Zoologie expérimentale et générale. [Includes Notes and Revue.] (Paris, 8vo.) Nz. K. R. Z. L. C, b. O.
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# THE ZOOLOGICAL RECORD

## FOR 1896.

### I. GENERAL SUBJECTS.\*

BY

J. ARTHUR THOMSON, M.A.

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1. ACLOQUE, L. La notion de l'espèce et la nomenclature. Rev. Scient. v, pp. 496-499.
2. ADOLPHI, H. Ueber Variationen der Spinalnerven und der Wirbelsäule anuren Amphibien. Part III. Morph. Jahrb. xxv, pp. 115-141, 1 pl.

\* It will be understood that papers recorded here may also be recorded under the various classes, II-XVIII. They are included here because of their bearing on some general question; their relevancy, if not obvious, will in most cases be made apparent in the Subject-Index.

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3. AFLALO, F. G. A sketch of the natural history of Australia, with some notes on sport. London and New York : 8vo, xxv & 307 pp., 31 illustrs.
4. AGASSIZ, A., & WOODWORTH, W. McM. Some variations in the genus *Eucope*. Bull. Mus. Harvard, xxx, pp. 121-150, 9 pls.
5. AITKEN, E. H. [EHA.] The influence of mind in evolution. Nat. Sci. ix, pp. 297-302.
6. ALCOCK, A. An instance of the natural repellent effect of "warning colours." J. Asiat. Soc. Bengal, lxxv, pp. 539 & 540.
7. ALLEN, F. J. The physical basis of life. Rep. Brit. Ass. 1896, pp. 983 & 984.
8. ALLEN, J. A. Alleged changes of colour in the feathers of Birds without moulting. Bull. Amer. Mus. viii, pp. 13-44.
9. \*——. Selater on rules for naming animals. The Auk, xiii, pp. 325-328.
10. ALTMANN, R. Ueber Granula- und Intergranularsubstanzen. Arch. Anat. 1896, pp. 360-362.
11. ———. Ueber das wesentliche in der Zelle. *T. c.* pp. 423-427.
12. AMBRONN, H., & HELD, H. Beiträge zur Kenntniss des Nervenmarks. I. Ueber Entwicklung und Bedeutung des Nervenmarks. *T. c.* pp. 202-213, 1 pl.
13. ——— & ———. II. Ueber Beobachtungen an lebenden und frischen Nerven und die Sichtbarkeit ihrer doppelten Contourirung. *T. c.* pp. 214-221.
14. AMMON, O. Der Abänderungsspielraum. Ein Beitrag zur Theorie der natürlichen Auslese. Nat. Wochschr. xi, pp. 137-143, 149-155, & 161-166 ; also separate : Berlin, 8vo, 55 pp.
15. [ANON.] "Das Tierreich" [a short account of this proposed great work]. Nat. Sci. viii, pp. 305-308.
16. APATHY, S. Ueber das leitende Element des Nervensystems und seine Lagebeziehungen zu den Zellen bei Wirbelthieren und Wirbellosen. Congr. Zool. Leyden, 1895, pp. 132-136.
17. ———. Die Microtechnik der thierischen Morphologie. Eine Kritische Darstellung der mikroskopischen Untersuchungsmethoden. I. Abth. Braunschweig : 8vo, 320 pp., 10 figg.
18. \*APSTEIN, C. Das Süsswasserplankton. Methode und Resultate der quantitativen Untersuchung. Kiel und Leipzig : 8vo, vi & 200 pp., 5 pls., 113 figg.
19. \*ARCHAMBAULT, L. De la polydaktylie au point de vue héréditaire. Coincidence des malformations avec les tares neuropathiques. Thèse. Paris : 4to, 69 pp.
- ARMS, J. M. [See HYATT & ARMS (346)].
20. ARNOLD, J. Zur Morphologie und Biologie der rothen Blutkörper. Virchow's Archiv. cxlv, pp. 1-29, 2 pls.
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## II.—SUBJECT-INDEX.

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clature ; CUNNINGHAM (143).—The notion of species and nomenclature ; ACLOQUE (1).

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Moluccas and Borneo; KÜKENTHAL (383).—Through Larapinta-land; narrative of scientific expedition to Central Australia; SPENCER (640).—Summary of zoological results of the same; SPENCER (641).—Natural history of France; GRANGER (275).—Natural history of Australia; AFLALO (3).—Birds, beasts, and fishes of the Norfolk Broadlands; EMERSON (198).

### 3. MORPHOLOGICAL.

#### a. Taxonomy and Anatomy.

Systematic phylogeny; HÆCKEL (296).

Chordate affinities of *Phoronis*. Suggested classification of *Chordata*:—

##### A. TRIMETAMERA.

1. DIPLOCHORDA.—*Phoronis*.

2. HEMICHORDA.—*Balanoglossus*, *Cephalodiscus*, *Rhabdopleura*.

##### B. POLYMETAMERA.

3. UROCHORDA.—*Ascidia*, &c.

4. CEPHALOCHORDA.—*Amphioxus*.

5. HOLOCHORDA.—*Pisces*, &c.

MASTERMAN (449).

Ancestry of Chordates; CASTLE (105).—Ancestral form of Vertebrates; JAEKEL (348).—Classification of *Vertebrata*; CLELLAND (121).—Origin of Vertebrates; GASKELL (253).—Ancestry of Vertebrates; LILLIE (416).

Very simple *Metazoa*, still adelotacta, *i.e.*, of dubious position:—*Pematodiscus socialis*, n. g. & sp., in jelly of *Rhizostoma pulmo*, diploblastic, gastrula-like, without organs or sex-cells, multiplying by division; *Treptoplax reptans*, triploblastic, with amoeboid movements, multiplying by division, like *Trichoplax*; MONTICELLI (479).

Embryonic and persistent segments of the body; SCHULTZE (617).—Development of the head; KUPFFER (384).—The primary segmentation of the Vertebrate head; LOGY (419).—The segmentation of the head; KINGSLEY (364).—Encephalocoele; HEUKELOM (334).—Evolution of Vertebral column of *Amphibia* and *Amniota*; GADOW (241).—The archipterygium and the limb of terrestrial Vertebrates; KLAATSCH (366).—Homology of the Vertebrate appendages; EISLER (195).—Asymmetry in limbs of man and higher Vertebrates; GULDBERG (287).—Morphology of carpus of *Anura*; EMERY (201).—Carpus of *Anura*, a seventh theory; PERRIN (534).—Ontogeny and phylogeny of hairs and feathers; KEIBEL (359).—A contribution to the phylogeny of hair; peculiar organs in the skin of some reptiles; OPPENHEIMER (509).

Phylogeny of the Vertebrate claw; GÖPPERT (270).

External morphology of Annelids; MESNIL (457).

Homology in the light of the germ-plasm theory; EMERY (200).

Comparative anatomy of the brain; EDINGER (185).—Fore-brain of *Craniota*; structure and development; STUDNIČKA (656).

Hypophysis and infundibular organs; HALLER (301).—Lateral lobes of the hypophysis; ROSSI (580).—Epiphysis and parietal organs; LEYDIG (413).—The so-called parietal eyes; LEYDIG (414).

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b. *Histology.*

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Minute structure of the retina; RAMÓN Y CAJAL (553).—Comparative histology of retina in Vertebrates; retina of *Selachii* in particular; NEUMAYER (495).

Lectures on the structure of the central nervous system in man and animals, enlarged edition; EDINGER (187).

Muscle-fibre; MARCHESINI (440).

Blood: Hæmoglobin-producing granulations or droplets in erythrocytes of tadpoles; GIGLIO-TOS (264) [see CELL].—Structure and development of red blood-corpuscles in Vertebrates; GIGLIO-TOS (265).—Morphology and biology of red blood-corpuscles; ARNOLD (20).—Origin of red and white blood-corpuscles; SAXER (603).—Report of recent work on red blood-cells; DISSE (162).—Morphology and development of blood-cells; MASSLOW (447).—Non-nucleation of Mammalian red blood-corpuscles; ISRAEL & PAPPENHEIM (347).—Blood-corpuscles in cold-blooded Vertebrates; KNOLL (369).

Histology and histogenesis of connective tissue; SPULER (642).—Development of fibrillar connective tissue; VON EBNER (182).—Cartilaginous tissue in general, with special reference to that of *Ammocetes*; SCHAFFER (604).—Intercellular bridges in columnar epithelium; CARLIER (104), SCHULZE (619).

Continuity of mesenchyme cells in Echinoid larvæ, considered in relation to adequacy or inadequacy of cell-theory of development. Cells are less free than they appear to be. "The cell-structure of the *Metazoa* is largely due to secondary differentiation, and a multinucleate Protozoon like *Actinosphærium* is to be compared to the Metazoon body, and not to a single unit of the same"; MACBRIDE (429).—Comparative histology of the Vertebrate stomach; OPPEL (506).—Stomach-glands of Vertebrates; OPPEL (507).—Comparative histology of the liver in Vertebrates; BRAUS (85).—Suprarenal capsules; PETTIT (535).

## 4. PHYSIOLOGICAL.

a. *General.*

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Relations of organisms to the air; DE VARIGNY (677).

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Periodicity of growth [see *Embryological and Variation*]; FISCHER (222).

The sense of sight: a new theory; BERNARD (61).—Physiology of compound eyes; CHUN (117).—The nature of vision in marine animals at great depths; CHUN (117).—The optic-sense (Lichtsinn) of eyeless animals; NAGEL (494).—Light perception in lower animals (*Lumbricidae*); HESSE (333).—Visual powers of higher animals; SCHLEICH (613).—Evolution of sight; EDINGER (186).—Pigment-migration in the eyes of *Palæmonetes*; PARKER (520).

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Skin sense-organs; VOM RATH (554).—Integumentary innervation in *Arthropoda*; HOLMGREN (338).

Function of lateral sense-organs; BONNIER (75).—Functions of lateral line; RICHARD (568).

Physiological conception of the stomach, gastric digestion and preparation for intestinal digestion; absence of a true stomach in many Vertebrates; OPPEL (508).—Proteid digestion by salivary juice of insect larvæ, &c.; NAGEL (493).—Regeneration of mucus epithelium in the alimentary tract of *Amphibia*. The mucus-cells arise in deeper strata, are secretory before they reach the surface, are specific elements before they attain their final position; SACERDOTTI (595).

Reactions of *Metridium* to food and other substances; PARKER (518).

Regulation of temperature in hibernating animals; PEMBREY & HALE WHITE (533).—Physiology of hibernation, sleep, and animal heat, with especial reference to the marmot; DUBOIS (175).

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Primitive skeletal tissue in pelagic larvæ of *Polychæta*; HAECKER (297).

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Reflex bleeding, a means of defence in certain insects; CUÉNOT (138, 139).

Phagocytosis in lower Vertebrates; RAMÓN Y CAJAL (551).—Phagocytic organs in *Oligochæta*; SCHNEIDER (615).—Phagocytosis in oysters; CHATIN (115).—Phagocytosis, &c., in leeches; KOWALEVSKY (381).—Phagocytes in degenerating ova of *Bryozoa*; KRÆPELIN (382).—Lymphocytes of *Oligochæta*; ROSA (577).

Animals free from Bacteria; NUTTALL & THIERFELDER (504).—Animal life without Bacteria; DE VARIGNY (678), GALIPPE (244).

Parasitic castration of *Donax* by a Trematode; PELSENEER (532).

Bibliographica physiologica; RICHET (569).

*Pigmentation and Colour.*

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Development of pigment in Amphibians. In larval Salamanders, the cells which become dark chromatophores have at first light granules (*Pigment-bildner*). These granules assume dark colour as the cells grow and become branched. Either they undergo a specific change, or are penetrated by a new pigment. Variations show that the pigment-content changes with the metabolism of the cell. Modifications towards lighter colouring are induced by warmth, towards darker colouring by cold ; FISCHER (223).—Pigmentation of Salamander larvæ affected by light [see *Environment*] ; FLEMMING (230).—Melanotic pigment in man and Vertebrates ; EHRMANN (189).—Grouping of pigment in developing ova of Amphibians ; VAN BAMBEKE (42).—Coloration of fishes ; SMITH (637).

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## 5. PROTOPLASM AND THE CELL.

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& SIEDLECKI (379).—The theory of panplasm: all the vital materials by their interaction produce the vital phenomena of protoplasm. These vital phenomena depend upon the arrangement and composition of the multifarious constituents of protoplasm; MINOT (471).—The physical basis of life; the importance of nitrogen as the critical element in metabolism; ALLEN, F. J. (7).—Physiology of protoplasm; Altmann's granulations; ZANIER (735).—Protoplasm as affected by chemical reagents and other influences; DAVENPORT (151).—Structure of protoplasm in nerve-cells; RAMÓN Y CAJAL (552).

Polar stimulation of living matter; VERWORN (679).—Polar stimulation of living matter by an electric current; ROUX (587).—Limits of divisibility of living matter; LILLIE (415).

### b. *Cell, Structure and Function.*

General treatise on the cell [and *Protozoa*]; DELAGE & HÉROUARD (157).—General book on the cell, especially *re* structure and multiplication; HENNEGUY (318).—Report on the cell; FLEMMING (229).—New views on the cell; MARPMANN (444).—Cell-structure; WILSON (720).—The cell and some of its supposed structures; FARMER (212).—General account of cell-structure, particularly of relations of centrosomes and cytoplasm; KOSTANECKI & SIEDLECKI (379).—Cell-boundaries; SCHULZE (618).

Physiology of the cell: Experiments on Rhizopods. (a) The material transport of plasmic material and the propagation of a stimulus are quite distinct results of stimulation. (b) Removal of oxygen first affects expansion of pseudopodia, then retraction, and ends by inducing total paralysis. (c) The maximum thermal stimulus for expansion is quite different from that for contraction; VERWORN (680).—Cell-chemistry and cell-physiology; WILSON (720).—Polar relations of the cell; LANOW (396).—The essential part of the cell; ALTMANN (11).—The cell and its life; GANDER (247).—Historical sketch of cell-theory; WILSON (720).—Criticism of the cell-theory; SEDGWICK (625, 627, 628).—Present position of the cell-theory; BOURNE (78).

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Cytotaxis of segmentation-cells; ROUX (582).

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Apparent contraction of the entire chromatophore-cell, and retraction of the processes in larval Salamanders; FISCHER (223).

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c. *Nucleus, Nucleolus, Centrosome.*

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## 6. OOGENESIS, SPERMATOGENESIS, MATURATION, FERTILISATION.

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## II. MAMMALIA.

BY

R. LYDEKKER, B.A., F.R.S., F.G.S.

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## INTRODUCTION.

FROM a systematic point of view the most important discovery of the year is that of the extinct *Nesopithecus* in Madagascar, next to which may be ranked MAJOR'S additions to the living fauna of the same island. Specific work still occupies a prominent position; among the chief workers being THOMAS and DE WINTON in Europe, ALLEN, BANGS, MERRIAM, and RHOADS in America, and BROOM, SPENCER, and WAITE in Australia. The work of the first named writer covers, as usual, a wide range, but his most important communication is that on the classification of the Rodents. Of more than usual interest is the pica-like leporine described by MERRIAM as *Romerolagus*. PARSON'S contribution to the myology of the Rodent group is likewise noteworthy. The Monotremes—especially their anatomy and development—have received a large amount of attention at the hands of BARDELEBEN, EGGELING, HILL, HOCHSTETTER, OPPEL, SEMON, SMITH, SYMINGTON, and TURNER, although the contribution of SEMON should properly have been noted in an earlier Record. Very significant is Hill's discovery of an imperfect placental connection in *Perameles*.

Of works on particular forms, HUBRECHT'S memoir on the affinities of *Tursius* claims especial notice, while BÜCHNER'S history of the wane of the European Bison has a somewhat mournful interest.

Dentition, as usual, has attracted the attention of several workers, among whom may be mentioned LECHE, KÜKENTHAL, TIMS, and WOODWARD. The nervous system has likewise been well worked, PARKER'S memoir on the brain being a notable contribution to this part of the subject. Geographical distribution has formed the subject of contributions by MATSCHIE, SCLATER, SCOTT, and the Recorder. The memoir of POUSARGUES on the Mammals of the French Congo is one of the first rank. DUVAL continues his researches on the embryology of Bats, on the reproduction of which group ROLLINAT & TROUESSART have likewise written. To sportsmen the second edition of Rowland Ward's "Horn Measurements" will be welcome.

*Pithecanthropus* has again claimed a considerable share of attention; the opinion of one eminent anatomist being strongly in favour of the view that all the remains assigned to this form are human.

Palæontology has engaged the attention, among others, of ADAMS, EARLE, FARR, LUCAS (editing a posthumous memoir of Leidy), OSBORN, SCOTT, and WORTMAN, the great preponderance of the work accomplished being American. The most important feature, if it be confirmed by future investigations, is WORTMAN'S recognition of the ancestors of the *Eulentata* in the *Ganodonta* (*Stylinodon* and *Psittacotherium*) of the North American Lower Eocene. EARLE'S comparisons of European and North American extinct types are also of special interest; while OSBORN'S work on the *Titanotheriidae*, and SCOTT'S memoir on *Hyracodon* are admirable examples of the modern advanced type of palæontological investigation. Equally satisfactory are the studies of ADAMS on the structure and classification of the extinct *Felidæ* of North America.

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Interossei of the manus ; HEPBURN, Tr. R. Soc. Edinb. xxxviii, p. 557 :  
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*thecus* ; ZIEHEN, Anat. Anz. xi, p. 470. Molar cusps of man and  
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#### HOMINIDÆ and SIMIDÆ.

*Pithecanthropus erectus*, DUBOIS, Anat. Anz. xii, p. 1, and Tr. Dublin  
 Soc. (2) vi, p. 1 ; MARSH, Amer. J. Sci. (4) i, p. 475 ; HEPBURN,  
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 remains are human.  
*Anthropopithecus*, *Gorilla*, *Simia*, *Hylobates*, literature ; KEITH, Nat. Sci.  
 ix, pp. 26, 250, 316, & 369.  
*Simia* : peculiarity in skull ; CUNNINGHAM, P. Zool. Soc. London, 1896,  
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*Macacus leoninus*, in Burma ; BROWN, P. Ac. Philad. 1896, p. 485.  
*Cercopithecus albotorquatus*, n. sp., POUSARGUES, Bull. Mus. Paris, No. 2,  
 p. 1, Africa. *C. stairsi*, note on ; SCLATER, P. Zool. Soc. London,  
 1896, p. 609. *C. ruber*, abnormal dentition ; CAMERANO, Boll. Mus.  
 Torino, No. vii. *Cercopithecus* and *Colobus*, species from Kong ;  
 POUSARGUES, Ann. Sci. Nat. (8) iii, p. 245 : *Colobus*, East African  
 forms ; NEUMANN, SB. Ges. naturf. Berlin, 1896, p. 151.  
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 iv, p. 164. *Papio pruinosus*, n. sp., THOMAS, P. Zool. Soc. London,  
 1896, p. 789, pl. xxxviii, Nyasaland.

## CEBIDÆ and HAPALIDÆ.

- Nyctipithecus*, note on ; CARRUCCIO, Boll. Soc. Rom. Zool. v, p. 147.  
*Hapale penicillata*, popular account ; HORNUNG, Zool. Garten, xxxvii,  
 p. 273.

## †NESOPITHECIDÆ.

- †*Nesopithecus*, n. g. for *N. roberti*, n. sp. ; MAJOR, Geol. Mag. (4) iii,  
 p. 436, Pleistocene, Madagascar.

## LEMURIDÆ, TARSIIDÆ, ETC.

- Dentition of living and fossil forms ; LECHE, Festschrift zur Gegenbaur,  
 ii, p. 128. The inclusion of *Adapis* in the group is maintained,  
 and the Recorder's identification of *Necrolemur* with *Microchærus*  
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 in skull ; CUNNINGHAM, P. Zool. Soc. London, 1896, p. 996.  
*Chirogale sibreei*, n. sp., MAJOR, Ann. Nat. Hist. (6) xviii, p. 325, Mada-  
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 Festschrift zur Gegenbaur, ii, p. 149. *T. sangirensis*, p. 9, n. sp.,  
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- Carponycteris crassa*, n. sp., THOMAS, Nov. Zool. ii, p. 163 (1895), Fer-  
 gusson I.  
*Pteropus aurinuchalis*, p. 77, pl. xii, Leyte I., *lucifer*, p. 78, pl. xiii, Panay,  
 Philippines, n. spp., ELLIOTT, Field Columbian Mus., Zool. i.  
*Boneia menadensis*, n. sp., THOMAS, Ann. Nat. Hist. (6) xviii, p. 242,  
 Celebes.  
*Harpnycteris*, p. 243, n. g. for *H. whiteheadi*, p. 244, n. sp., THOMAS, *t. c.*,  
 Mindoro, Philippines.

## RHINOLOPHIDÆ and VESPERTILIONIDÆ.

- Rhinolophus creaghi*, n. sp., THOMAS, Ann. Nat. Hist. (6) xviii, p. 244,  
 N. Borneo.  
*Vespertilio incautus*, p. 239, Texas, *chrysonotus*, p. 240, Wyoming, n. spp.,  
 J. A. ALLEN, Bull. Amer. Mus. viii.

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- Emballonura meeki*, n. sp., THOMAS, Nov. Zool. iii, p. 527, Kiriwina I.  
*Glyphonycteris*, p. 302, n. g. for *G. sylvestris*, p. 302, n. sp. ; THOMAS,  
 Ann. Nat. Hist. (6) xviii, Costa Rica.  
*Glossophaga villosa*, n. sp., H. ALLEN, P. U. S. Mus. xviii, p. 779, La  
 Guayra, Venezuela.  
*Thyroptera discifera*, distinct from *T. tricolor* ; MILLER, P. Soc. Washing-  
 ton, x, p. 109.

*Desmodus*, its milk-dentition; MILLER, *t. c.* p. 113: its relationship to *Diphylla*; H. ALLEN, P. U. S. Mus. xviii, p. 769. *Hematomycteris*, ALLEN, *t. c.* p. 777, a provisional n. g. for *D. ecaudata*, of Dobson, if distinct from typical form.

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Dentition: WOODWARD, P. Zool. Soc. London, 1896, p. 557, discusses especially homology of fourth premolar and its deciduous predecessor.

#### SORICIDÆ and TALPIDÆ.

*Sorex macrurus*, n. sp., BATCHELDER, P. Soc. Washington, x, p. 133, New York. *S. richardsoni* and *fumeus*, from N. Brunswick, COX, Canad. Rec. vii, p. 117.

Synopsis of N. American *Talpidae*; TRUE, P. U. S. Mus. xix, pp. 1-112, pls. i-iv.

*Scapanus orarius*, n. sp., TRUE, *t. c.* p. 52, W. N. America.

*Scalops texanus creus*, n. subsp., BANGS, P. Soc. Washington, x, p. 138, Stilwell, Ind. Terr.

*Talpa europæa*, in Italian Pleistocene, CORTI, Atti Soc. Ital. xxxv, p. 245.

#### ERINACEIDÆ.

Genealogy; LECHE, Festschrift für Lilljeborg, p. 139.

*Erinaceus albiventris atratus*, n. subsp., RHOADS, P. Ac. Philad. 1896, p. 544. *E. europæus*, pancreas during hibernation; CARLIER, J. Anat. Physiol. norm. path. (3) x, p. 334.

*Hylomys*, related to †*Necrogymnurus*; LECHE, *op. cit.* p. 144.

#### CENTETIDÆ.

*Limnogale*, p. 318, n. g. for *L. mergulus*, p. 319, n. sp.; MAJOR, Ann. Nat. Hist. (6) xviii, Madagascar.

*Microgale thomasi*, *talazaci*, p. 320, *longirostris*, p. 321, *taiva*, p. 461, *pusilla*, p. 461, n. spp., MAJOR, *op. cit.* Madagascar.

*Oryzoryctes gracilis*, p. 321, *niger*, p. 322, n. spp., MAJOR, *op. cit.* Madagascar.

*Hemicentetes*: milk-dentition; GHIGI, Monit. Zool. ital. vii, p. 267.

#### GALEOPITHECIDÆ.

*Galeopithecus*: development of dentition; DEPENDORE, Jena. Zeitschr. (2) xxiv, p. 623.

### IV. CARNIVORA.

#### FELIDÆ.

Distribution, MATSCHIE, SB. Ges. naturf. Berlin, 1895, p. 190; N. American Tertiary, ADAMS, Amer. J. Sci. (4) i, p. 419.

*Felis leo*: in India; HARTING, Zoologist (3) xx, p. 281: in Europe; KIRCHENRATH, Mt. Osterlande (2) vi, p. 80. *F. catus*; HAMILTON, (100). *F. maniculata mediterranea*, n. subsp., p. 15, Sardinia and Tuscany, *caudata*, Gray, also a subsp., p. 17; MARTORELLI, Atti Soc. Ital. xxxv, p. 15. Domestic and wild cats; KLOCHE, Jahresber. Westfal. Ver. 1894-5, p. 109. *F. lynx*, in Europe; LANGKAVEL, Zool. Garten, xxxvii, p. 239. †*F. antiqua* and †*F. spelæa*; FABRINI, Boll. Soc. geol. Ital. xiv, p. 164. †*F. arvernensis*; TUCCIMEI, Mem. Pontif. Ac. Lincei, xii (author's separately paged copy only seen).

- †*Hoplophoneus insolens*, p. 48, *robustus*, p. 49, n. spp., ADAMS, Amer. Natural. xxx, Tertiary, N. America.  
*Lynx texensis*, n. sp., J. A. ALLEN, Bull. Amer. Mus. vii, p. 188 [1895], Texas. See also *ibid.* viii, p. 78.

## VIVERRIDÆ and HYÆNIDÆ.

- Herpestes mungo*, in Jamaica; DUERDEN, J. Inst. Jamaica, ii, p. 273.  
*Cynictis selousi*, n. sp., DE WINTON, Ann. Nat. Hist. (6) xviii, p. 469, Matabeleland.  
*Hyæna*: range in Asia; LANGKAVEL, Zool. Garten, xxxvii, p. 170.

## CANIDÆ and URSIDÆ.

- Canis lupus*, in Mongolia; KÖHLER, Zool. Garten, xxxvii, p. 129: in Scotland; LOVAT FRASER, Antiquary, xxxii, p. 75. *C. familiaris*, Chinese races; KÖHLER, *t. c.* p. 257: foetal dentition without trace of prelacteal series; TIMS, Anat. Anz. xi, p. 537. *C. vulpes* and *lagopus* interbreeding; LÖNNBERG (144): terriers; LEE (140). *C. hadramanticus*, n. sp., NOACK, Zool. Anz. 1896, p. 356, Arabia.  
*Urocyon cinereo-argentatus fraterculus*, n. subsp., ELLIOTT, Field Columbian Mus., Zool. i, p. 80, San Felipe, Yucatan.  
*Lycæon pictus*, popular account; LANGKAVEL, Zool. Garten, xxxvii, p. 79.  
†*Temnocyon ferox* and †*Hypotemnodon coryphæus*, described and figured by EVERMAN, Amer. Geol. xvii, p. 268. Although both forms are stated to be new, they were named and recorded in 1894.  
*Ursus americanus emmonsii*, n. subsp., DALL, Science (2) ii, p. 26 (1895), Elias Range, Alaska. Synopsis of N. American forms; MERRIAM, P. Soc. Washington, x, p. 55. *U. middendorfi*, p. 69, *dalli*, p. 71, *sitkensis*, p. 73, Alaska, *floridanus*, p. 81, Florida, MERRIAM, *t. c.*; †*haplodon*, COPE, P. Ac. Philad. 1896, p. 383, Pleistocene, Pt. Kennedy: n. spp. *U. beringiana* [*us*], Middendorf, 1851, supersedes *piscator*, Pacheran, 1855; MERRIAM, *t. c.* p. 66.

## MUSTELIDÆ.

- Synopsis of N. American Weasels; BANGS & MERRIAM, *inf. cit.* Both writers regard all the American forms as distinct from *P. erminea* and *P. vulgaris*; *P. richardsoni*, *P. r. cicognani*, and *P. arcticus* being nearest to the former, and *P. rixosus* to the latter.  
*Putorius longicauda spadix*, p. 8, Minnesota, *rixosus*, p. 21, Arctic and Boreal America, BANGS, P. Soc. Washington, x; *vison*, note on, p. 1, *v. energumenos*, p. 5, California and Alaska, BANGS, P. Boston Soc. xxvii; *streatori*, p. 13, Puget Sound, *arcticus*, p. 15, Arctic America, *washingtoni*, p. 18, Washington, *suturatus*, p. 21, S. Oregon, *alleni*, p. 24, Black Hills, Dakota, *xanthogenys oregonensis*, p. 25, Oregon, *frenatus goldmani*, p. 28, S.E. Chiapas, *f. leucoparia*, p. 29, Mexico, *tropicalis*, p. 30, Mexico, MERRIAM, North American Fauna, No. 11: n. spp. & subspp. *P. (Putorius) sarmaticus*, from Eskischehir, Asia Minor; NEHRING, SB. Ges. naturf. Berlin, 1896, p. 67.  
*Mustela lutreola*, in Normandy and France; DE KERVILLE, Bull. Soc. Rouen, xxxi, p. 1; ANFRIE, *t. c.* p. 88; RASPAIL, Feuille Natural. xxvi, p. 80. *M. vulgaris* and *boccamela*, in Hungary; PASZLAVSKY, Termes. Kozl. Magyar Tars. xxxiii, p. 87.  
*Mephitis mephitis scrutator*, p. 141, Louisiana to Virginia, n. subsp., *m. elongata* (Zool. Rec. xxxi, *Mamm.*, p. 29) to rank as a sp.; BANGS, P. Soc. Washington, x.

- Lyncodon patagonicus*, nearly allied to *Galictis*; MATSCHIE, SB. Ges. naturf. Berlin, 1895, p. 190.  
*Latax lutris*, structure of hind foot; LYDEKKER, P. Zool. Soc. London, 1896, p. 235.  
 †*Pelycictis*, n. g. for *P. lobulatus*, n. sp.; COPE, P. Ac. Philad. 1896, p. 390, Pleistocene, Ft. Kennedy.

## OTARIIDÆ and PHOCIDÆ.

- “Fishery”; SOUTHWELL, Zoologist (3) xx, p. 41.  
*Otaria ursina*, popular account; GREVÉ, Zool. Garten, xxxvii, p. 25.  
*Phoca grœnlandica*, foetus; NEHRING, SB. Ges. naturf. Berlin, 1896, p. 63.  
*Halichoerus gryppus*, anatomy; HEPBURN, J. Anat. Physiol. norm. path. (3) x, pp. 413 & 488.

## †ARCTOCYONIDÆ.

- †*Arctocyon clœzii*; LEMOINE, Bull. Soc. geol. France (3) xxiv, p. 343, Lower Eocene, Rheims.

## V. RODENTIA.

Myology, especially *Myomorpha*; PARSONS, P. Zool. Soc. London, 1896, p. 151. Classification; THOMAS, *t. c.* p. 1012. Taking as a basis Alston's scheme of 1876, the chief object of this paper is to place in their proper positions the genera subsequently described. In regard to the larger groups, Alston's arrangement is followed so far as possible, but it has been thought better to elevate the subfamily *Bathyerginae* into a family, to make two families of the *Hystriidae*, one for the Old-World, and one (*Erithizontidae*) for the New-World Porcupines, and to give to the subfamilies *Geomysinae* and *Heteromyinae*, *Bathyerginae* and *Pedetinae* family rank, the latter group being transferred to the *Hystriomorpha*. For African forms, see DE WINTON (71).

## SCIURIDÆ, CASTORIDÆ, and HAPLODONTIDÆ.

- Sciurus tonkeanus*, p. 25, pl. x, fig. 1, Tonkean I., *tingahi*, p. 27, pl. x, fig. 4, Tagulanda and Ruang Is., MEYER, Abh. Mus. Dresden, No. 6; *ganana*, RHOADS, P. Ac. Philad. 1896, p. 522, Ganana R., E. Africa; *ludovicianus vicinus*, p. 150, N. Virginia, etc., *carolinensis extimus*, p. 158, Florida, *hudsonicus loquax*, p. 161, Connecticut, BANGS, P. Soc. Washington, x: n. spp. & subsp.  
*Tamias striatus venustus*, n. subsp., BANGS, P. Soc. Washington, x, p. 137, Stilwell, Ind. Terr.  
*Sciuropterus silus*, p. 163, W. Virginia, *volans querceti*, p. 166, Florida to Georgia, n. sp. & subsp., BANGS, *op. cit.*  
*Spermophilus mexicanus parvidens*, p. 443, Texas, *harrisi saxicolus* [a], n. subsp., MEARNS, P. U. S. Mus. xviii.  
*Arctomys marmotta*, in Italian Pleistocene; CORTI, Atti Soc. Ital. xxxv, p. 245: its hibernation; DUBOIS, Ann. Univ. Lyon, xxv, p. 268.  
*Castor fiber*, in Rhone Valley; MINGAUD, Bull. Soc. Nimes, xxiv, p. 31: in Elbe; FRIEDRICH (93).  
*Haplodon rufus*: its anatomy and relationship; TULLBERG, Festschrift für Lilljeborg, pp. 233–251, pls. xi & xii. The relationship to the *Sciuridae* is considered very close.

## MYOXIDÆ and MURIDÆ.

- Myoxus nanus*, n. sp., DE WINTON, P. Zool. Soc. London, 1896, p. 799, Mashonaland.
- Phloeomys cumingi*, pl. xii, *crateromys schadenbergi*, pl. xiii, figured by MEYER, Abh. Mus. Dresden, No. 6.
- Gerbillus pulvinatus*, p. 537, Lake Rudolf, E. Africa, *ruberrimus*, p. 538, Somaliland, n. spp., RHOADS, P. Ac. Philad. 1896.
- Steatomys parvus*, RHOADS, t. c. p. 529, Lake Rudolf, E. Africa; *opimus*, POUSARGUES, Bull. Soc. zool. France, xix, p. 131 (1894), and Ann. Sci. nat. (8) iii, p. 371, French Congo: n. spp.
- Mus musculus*, and allied wild forms, THOMAS, Zoologist (3) xx, p. 137, BARRETT-HAMILTON, t. c. p. 178, *fieldi*, p. 403, *hermannsburgensis*, p. 405, WAITE, Rep. Horn Exped. pt. ii, Zool., Centr. Australia, *nahomet*, RHOADS, P. Ac. Philad. 1896, p. 532, W. Somaliland, *fratrorum*, p. 246, *minahassæ*, p. 247, *calestis*, p. 248, Celebes, *amuli*, p. 249, Saleyer Group, THOMAS, Ann. Nat. Hist. (6) xviii; *chrysophilus*, p. 801, *auricomis*, p. 802, Mashonaland, DE WINTON, P. Zool. Soc. London, 1896: n. spp.
- Pseudocomomys*, n. subg. for *Mus* (*P.*) *proconodon*, RHOADS, P. Ac. Philad. 1896, p. 531, W. Somaliland.
- Lophuromys ansorgei*, n. sp., DE WINTON, P. Zool. Soc. London, 1896, p. 607, Uganda.
- Arvicanthis pumilio dilectus*, n. subsp., DE WINTON, t. c. p. 803, Mashonaland.
- Acomys louiseæ*, THOMAS, Ann. Nat. Hist. (6) xviii, p. 270, Somaliland; *selousi*, DE WINTON, op. cit. p. 807, pl. xl, fig. 2, Matabeleland: n. spp.
- Golunda dybowskii*, n. sp., POUSARGUES, Bull. Soc. zool. France, xviii, p. 163 (1893), and Ann. Sci. nat. (8) iii, p. 406, French Congo.
- Dasymys incomtus fuscus*, n. subsp., DE WINTON, P. Zool. Soc. London, 1896, p. 804, Mashonaland.
- Saccostomus mashonæ*, n. sp., DE WINTON, t. c. p. 804, *ibid.*
- Chiruromys pulcher*, n. sp., THOMAS, Nov. Zool. ii, p. 164 (1895), Fergusson I.
- Pithecochirus*, its nest; JENTINK, Notes Leyden Mus. xvii, p. 167.
- Craurothrix*, n. nom, THOMAS, Ann. Nat. Hist. (6) xviii, p. 246, to replace *Echiothrix*, Gray, 1867.
- Conilurus pedunculatus*, n. sp., WAITE, Rep. Horn Exped. Centr. Australia, pt. ii, Zoology, p. 395, Centr. Australia.
- Brachyuromys*, p. 322, n. g. for *B. ramirohitra*, p. 323, n. sp.; MAJOR, Ann. Nat. Hist. (6) xviii, Madagascar. *Nesomys betsilcoensis*, Bartlett, 1879, also belongs to this genus.
- Gymnuromys*, n. g. for *G. roberti*, n. sp.; MAJOR, op. cit. p. 324, Madagascar.
- Eliurus minor, tanala*, n. spp., MAJOR, op. cit. p. 462, Madagascar.
- Lophiomys smithi*, n. sp., RHOADS, P. Ac. Philad. 1896, p. 524, pl. xxv, W. Somaliland.
- Rhipidomys venezuelæ*, p. 303, Venezuela, *microtis, fulviventris*, p. 304, Colombia, n. spp., THOMAS, Ann. Nat. Hist. (6) xviii.
- Oryzomys nivipes*, p. 305, Colombia, *lugens*, p. 306, Venezuela, n. spp., THOMAS, op. cit.
- Eligmodon* [= *Calomys*] *moreni*, n. sp., THOMAS, op. cit. p. 308, Argentina.
- Ocymycterus iheringi*, n. sp., THOMAS, op. cit. p. 308, Rio Grande do Sul.
- Blarinomys*, n. g. for *Ocymycterus brevicaps*, Winge, 1887; THOMAS, op. cit. p. 310.

- Peromyscus canus*, xviii, p. 445, Texas, *tornillo*, p. 445, Rio Grande, Texas, *texanus medius*, p. 446, Lower California, *t. clementis*, p. 446, San Clemente I.; California, *merriami*, xix, p. 138, Mexico, *eremicus arenarius*, p. 138, Texas, *boylly penicillatus*, p. 139, Texas, MEARNs, P. U. S. Mus.; *michiganensis pallescens*, J. A. ALLEN, Bull. Amer. Mus. viii, p. 238, Texas; *leucopus nubiterræ*, p. 187, Rown Mt., N. Carolina, *gossypinus mississippiensis*, p. 189, Tennessee, RHOADS, Amer. Natural. xxx; *canadensis abietorum*, p. 49, Canada, *bellus*, p. 137, Stilwell, Ind. Terr., BANGS, P. Soc. Washington, x : n. spp. & subspp. *P. gossypinus*, note on; BANGS, *t. c.* p. 119.
- Onychomys torridus arenicola*, p. 139, Texas, *torridus perpallidus*, p. 140, Colorado R., n. subspp., MEARNs, P. U. S. Mus. xix.
- Ichthyomys sœderstrœmi*, n. sp., DE WINTON, P. Zool. Soc. London, 1896, p. 512, Rio Machangara, Ecuador.
- Rhithrodontomys laceyi*, n. sp., J. A. ALLEN, Bull. Amer. Mus. viii, p. 235, Texas.
- Microtine* : synopsis of the subfamily; MILLER, North American Fauna, No. 12. The genera recognized are *Synaptomys*, *Lemmus*, *Dicrostonyx (Cuniculus)*, *Phenacomys*, *Evotomys*, *Microtus*, and *Fiber*; *Neofiber* being regarded as a subgenus of *Microtus*.
- Microtus fontigenus*, P. Soc. Washington, x, p. 48, Lake Edward, Quebec, *enixus*, Amer. Natural. xxx, p. 1051, Labrador, n. spp., BANGS. *M. breweri*, described; MILLER, P. Boston Soc. xxviii, p. 83. *M. agrestis*, variability of molars, two races, viz., *agrestis typicus* and *a. neglectus*, Jenyns; BARRETT-HAMILTON, P. Zool. Soc. London, 1896, pp. 598 & 599.
- Myodes lemmus*, remains from Portugal; BARRETT-HAMILTON, *t. c.* p. 304.
- Eothenomys*, p. 45, n. subg. for *Arvicola melanogaster*, M.-Edwards, *Ante-liomys*, p. 47, n. g. for *Microtus chinensis*, Thomas, *Hyperacrius*, p. 54, n. subg. for *Arvicola fertilis*, True; MILLER, *op. cit.*
- Synaptomys*, synopsis of species, MERRIAM, P. Soc. Washington, x, p. 55; *fatuus*, BANGS, *t. c.* p. 47, Lake Edward, Quebec; *helaletes*, p. 59, Virginia, *h. gossii*, p. 60, Kansas, *dalli*, p. 62, Alaska, *truei*, p. 62, Washington, *wrangeli*, p. 63, Alaska, MERRIAM, *t. c.* : n. spp. & subspp.
- † *Anaptogonia cloacina*, n. sp., COPE, P. Ac. Philad. 1896, p. 380, Pleistocene, Port Kennedy. The genus is regarded as the ancestral type of *Microtus*.
- † *Microtus diluvianus*, n. sp., COPE, *op. cit.* p. 381, *ibid*

#### SPALACIDÆ, GEOMYIDÆ, HETEROMYIDÆ, and BATHYERGIDÆ.

- The third and fourth families adopted by THOMAS, P. Zool. Soc. London, 1896, p. 1022.
- Rhizomys sumatrensis*, note on; JENTINK, Notes Leyden Mus. xviii, p. 213.
- Macrogeomys cherriei*, note on; J. A. ALLEN, Bull. Amer. Mus. viii, p. 45.
- Perognathus mearnsi*, n. sp., J. A. ALLEN, *t. c.* p. 237, Texas.
- Georychus darlingi*, Thomas, figured, pl. xl, fig. 1, *nimrodi*, n. sp., p. 808, Matabeleland, DE WINTON, P. Zool. Soc. London, 1896.
- Heterocephalus glaber*, pelage; FRANCAVIGLIA, Boll. Soc. Rom. Zool. v, p. 1.

#### DIPODIDÆ.

- Zapus setchuanus*, n. sp., POUSARGUES, Bull. Mus. Paris, 1896, No. 1, p. 3, Szechuan.

## PEDETIDÆ and OCTODONTIDÆ.

- The former a new family ; THOMAS, P. Zool. Soc. London, 1896, p. 1024.  
*Pedetes* : zoological position and cranial nerves ; CARRUCCIO, Boll. Soc. Rom. Zool. iv, p. 263.  
*Ctenomys perrensi*, n. sp., THOMAS, Ann. Nat. Hist. (6) xviii, p. 311, Corrientes, Argentina.  
*Echinomys centralis*, n. sp., THOMAS, *op. cit.* p. 312, San Emilio, Lake Nicaragua.  
*Triulacodus*, n. n., LYDEKKER, Geographical History of Mammals, pp. 91 & 240, to replace *Aulacodus*, Temm., 1827, *nec* Eschsch., 1822 ; *Thryonomys*, Fitz., 1867, stands.

## HYSTRICIDÆ and ERITHIZONTIDÆ.

- The American Porcupines are regarded by THOMAS, P. Zool. Soc. London, 1896, p. 1025, as forming a family (*Erithizontidæ*) distinct from the *Hystricidæ*.  
*Hystrix cristata*, reproductive organs ; VESCOVI, Boll. Soc. Rom. Zool. iv, p. 146.

## LEPORIDÆ.

- Hyoid ; HOWES, J. Anat. Physiol. norm. path. (3) x, p. 513.  
 Popular account of capture of N. American species ; PALMER, Bull. U. S. Dep. Agriculture, Ornith. and Mamm., No. 8. Subgeneric divisions and synopsis of American forms ; MEARN'S, P. U. S. Mus. xvii, p. 551.  
*Macrotolagus*, n. subg. for *L. alleni* ; MEARN'S, *op. cit.* p. 552.  
*Lepus europæus*, popular account, MACPHERSON (150) ; *merriami*, p. 444, Texas, *sylvaticus holzneri*, p. 544, Carrizallo Mt., *arizonæ major*, p. 557, Sonora, *a. minor*, p. 557, Colorado, *gaillardi*, p. 560, Playas Valley, *texicanus griseus*, p. 562, Texas and N. Mexico, *t. deserticola*, Deserts of Arizona, Sonora, and California, MEARN'S, *op. cit.* ; *L. arcticus bangsi*, Newfoundland, *grænlandicus*, Greenland, RHOADS, Amer. Natural. xxx, p. 253 ; *sylvaticus alacer*, BANGS, P. Soc. Washington, x, p. 136, Stilwell, Ind. Terr. : n. spp. & subspp.  
*Romerolagus*, n. g. for *R. nelsoni*, n. sp. ; MERRIAM, P. Soc. Washington, x, p. 169, Mt. Popocateptl, Mexico.

## VI. UNGULATA.

- Evolution, FAIRCHILD (88) ; Horns, HEUDE (107), LATASTE (132) ;  
 Reproduction, BALDASSARE (16) ; Vestiges of clavicle, LESBRE (143).

## ARTIODACTYLA.

## BOVIDÆ.

- SCLATER & THOMAS, Book of Antelopes, pts. v & vi, describe the members of the groups *Neotraginæ* and *Cervicaprinæ*, adopting in the former the genera *Oreotragus*, *Ourebia*, *Raphicerus* [*Rhaphicerus*], *Nesotragus*, *Neotragus*, and *Madoqua*. Antelopes of Algeria and Sahara, PEASE, P. Zool. Soc. London, 1896, p. 809 ; Gazelles of Tunisia, WHITAKER, *t. c.* p. 815.



- Bos bonasus*, its waning in Bielowitza ; BÜCHNER, Mem. Ac. St. Petersb. (8) iii, art. 2 : in Caucasus ; WESTBERG, Festschrift Ver. Riga, p. 267 ; *taurus* and its extinct varieties, HUGHES, Archæologia, iv, p. 125 ; (*Bubalus*) *mindorensis*, figured, MEYER, Abh. Mus. Dresden, No. 6, pl. vii ; *indicus*, in Africa, KELLER, Festschrift. Ges. Zurich, p. 454 ; *mainitensis*, HEUDE, Mem. Hist. Nat. Chinois, iii, p. 45.
- Ovis nahura*, a goat, MATSCHIE, SB. Ges. naturf. Berlin, 1896, p. 97 ; *tragelaphus* breeding with *Capra hircus*, MILNE-EDWARDS, C.R. Ac. Sci. cxxii, p. 283 ; *ammon*, from Altai, BLANFORD, P. Zool. Soc. London, 1896, p. 787, fig.
- Capra ibex*, from German Pleistocene ; REICHENAU, N. Jahrb. Min. 1896, i, p. 221. *C. mengesi*, n. sp., NOACK, Zool. Anz., 1896, p. 353, Arabia.
- Capricornis marcolinus*, p. 151, *vilianus*, p. 154, HEUDE, Mem. Hist. Nat. Chinois, iii, Tonkin, n. spp.
- Suiga tartarica*, from Pleistocene of W. Prussia ; NEHRING, N. Jahrb. Min. 1896, i, p. 111 : from French cavern ; PARAT, Bull. Soc. Lyon, xlix, p. 45.
- Adenota thomasi*, described by NEUMANN, P. Zool. Soc. London, 1896, p. 192, as a new species, but already recorded, Zool. Rec. xxxii, Mamm., p. 33, as *Cobus thomasi*.
- R[h]aphiceros sharpei*, n. sp., THOMAS, t. c. p. 796, pl. xxxix, S. Angoniland.
- Connochætes taurinus johnstoni*, n. subsp., SCLATER, t. c. p. 616, Nyasaland : its habits, CRAWSHAY, t. c. p. 617.
- Orias cama*, abnormal horns of female (*Doratoceros triangularis*) ; SCLATER, t. c. p. 506.

## GIRAFFIDÆ and CERVIDÆ.

- Giraffa camelopardalis australis*, n. subsp., RHOADS, P. Ac. Philad. 1896, p. 518, S. Africa : popular account, MÜLLER, Zool. Garten, xxxvii, p. 289.
- Oriental *Cervidæ* ; HEUDE, Mem. Hist. Nat. Chinois, iii, pp. 47 & 98.
- Cervus bedfordianus*, LYDEKKER, P. Zool. Soc. London, 1896, p. 930, pls. xlviii & xlix, N. China, *steerii*, ELLIOTT, Field Columbian Mus., Zool. i, p. 72, pls. viii-x, Basilan, Philippines, n. spp. ; *elaphus*, habits, etc., CAMERON (48A), MACPHERSON (151) ; *truffi*, from Pleistocene of Posen, NEHRING, Deutsche Jäger-Zeitung, xxvii, p. 251 ; *dama*, placenta, LUZJ, Boll. Soc. Rom. Zool. iv, p. 164 : abnormal antlers, HOLDING, P. Zool. Soc. London, 1896, p. 855.
- Hippelaphus hamiltonianus*, p. 49, *macassaricus*, p. 50, *menadensis*, p. 50, *floresiensis*, p. 92, *burensis*, p. 93, *noëvellianns*, p. 94, n. spp., HEUDE, Mem. Hist. Chinois, iii, Malaysia.
- Sika sendaensis*, *blakistonius*, p. 98, *dolichorhinus*, *aplodonticus*, p. 100, *shizodonticus*, *orthopodicus*, p. 101, *mitratus*, p. 102, *ellipticus*, *elegans*, p. 103, *minoensis*, p. 104, *rutilus*, *yesoensis*, p. 105, n. spp., HEUDE, t. c. Japan.
- Cariacus osceola*, BANGS, P. Boston Soc. x, p. 26, Florida, *flavicornis*, COPE, P. Ac. Philad. 1896, p. 393, Pleistocene, Port Kennedy, n. spp. ; *dama americana*, Erxl., antedates, *virginianus*, Bodd., BANGS, op. cit. p. 25 ; *paludosus*, popular account, MÜLLER, Zool. Garten, xxxvii, p. 49.
- Puduua mephistopheles*, n. sp., DE WINTON, P. Zool. Soc. London, 1896, p. 508, pl. xix, Paramo, Ecuador.
- Rangifer terræ-novæ*, n. sp., BANGS (26), Newfoundland ; J. A. ALLEN, Bull. Amer. Mus. viii, p. 233.

## HIPPOPOTAMIDÆ.

*Hippopotamus tsirensis* (Pomel, 1890), p. 12, †*hipponensis*, Gaudry, †*ticosiensis*, p. 28, n. sp., Pleistocene, Algeria; POMEL, Carte geol. Algerie, 1896: note on various species; MAJOR, P. Zool. Soc. London, 1896, p. 976.

## † ANOPLOTHERIIDÆ.

†*Tapirulus* and †*Mixtotherium* belong here, pp. 306 & 308, †*Dacrytherium*, 4-toed, *Anoplotherium*, 3-toed, p. 665; EARLE, Amer. Natural. xxx.

## PERISSODACTYLA.

N. American Eocene forms; WORTMAN, Bull. Amer. Mus. viii, p. 81.

## EQUIDÆ.

*Equus burchelli* and *caballus* interbreeding, EWART, Veterinarian, Nov. 1896; *burchelli granti*, Masailand, *b. crawshaii*, Nyasaland, n. subspp., DE WINTON, Ann. Nat. Hist. (6) xvii, p. 319; *caballus*, Jacobson's organ, BROOM, P. Linn. Soc. N. S. Wales (2) xi, p. 9: wild in Russia, KÖPPEN (126).

†*Mesohippus*: osteology and description of species, together with genealogical table of *Equide*; FARR, P. Amer. Phil. Soc. xxxv, p. 147.

## † LOPHIODONTIDÆ and † PALÆOTHERIIDÆ.

†*Hyracotherium* and †*Pachynolophus*, comparison of European and American forms; EARLE, Amer. Natural. xxx, p. 131. *Systemodon primævus*, p. 89, *Hyracotherium cristatum*, p. 96, †*montanum*, p. 103, n. spp., WORTMAN, Bull. Amer. Mus. viii, Wahsatch Beds, U.S.A.

†*Protorohippus*, n. g. for *Hyracotherium venticolum*, Cope; WORTMAN, *t. c.* p. 105.

†*Palæotherium*, †*Paloplotherium*, †*Anchilophus*, etc., their affinities; EARLE, Amer. Natural. xxx, p. 480.

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*Rhinoceros (Atelodus) mauritanicus*, p. 13, †*subinermis*, p. 21, n. spp., POMEL, Carte Geol. Algerie, 1895, Pleistocene, Algeria.

†*Acerotherium platyodon*, description and figures; MERMIER, Ann. Soc. Linn. Lyon (2) xliii, pp. 224 & 257.

†*Hyracodon*: osteology; SCOTT, Festschrift zur Gegenbaur, ii, p. 353.

†*Cadurcotherium*: its affinity to †*Astrapotherium*; BOULE, C.R. Ac. Paris, cxxii, p. 1150, and Bull. Soc. geol. France (3) xxiv, p. 286.

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## † CONDYLARTHRA.

†*Plesiiphenacodus*, p. 343, n. g. for *P. remenensis*, p. 344, n. sp.; LEMOINE, Bull. Soc. geol. France (3) xxiv, Lower Eocene, Rheims.

†TOXODONTIA, HYRACOIDEA, AND PROBOSCIDEA.

Discussion on validity of species of *Toxodon*, *Typrotherium*, etc.; AMEGHINO, Bol. Inst. Geogr. Argent. xvii, pp. 87-119.

Hyoid of *Hyracoidea*; HOWES, J. Anat. Physiol. norm. path. (3) x, p. 513.  
Algerian fossil *Proboscidea*; POMEL, Carte Geol. Algerie, Pal. Mon. 1895.

*Elephas africanus*, atlas, CARRUCCIO, Boll. Soc. Rom. Zool. iv, p. 217 : domestication, BLANC, Bull. Soc. zool. France, xxi, p. 130; TROUES-SART, *ibid.* p. 187 : *africanus*, *atlanticus*, *meridionalis*, †*jolensis*, p. 32, n. sp., Algerian Pleistocene, POMEL, Carte Geol. Algerie, 1895; †*trogontherii*, from Silesia, VOLZ, Zeitschr. deutsch. geol. Ges. xlviii, p. 356, atlas of *antiquus*, PORTIS, Riv. ital. Pal. ii, p. 326; *primigenius* in Russia, KASTCHENKO, Bull. Ac. St. Petersb. v, p. 31.

†*Mastodon*, TOTH, Foldt. Kozl. xxv, p. 191.

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*Manatus*: dentition represents several series of teeth; KÜKENTHAL, Anat. Anz. xii, p. 513.

Nomenclature of extinct Patagonian *Cetacea*; AMEGHINO, Bol. Inst. Geogr. Argent. xvii, pp. 87-119. French Tertiary; FLOT, Bull. Soc. geol. France (3) xxiv, p. 270. Circulatory system; BEAUREGARD & BOULART, C.R. Soc. Biol. (10) iii, p. 125. Popular account; MARSHALL, Zool. Garten, xxxvii, pp. 17 & 40. "Fishery." SOUTHWELL, Zoologist (3) xx, p. 41. Scottish; SIMPSON, Ann. Scott. Nat. Hist. 1896, p. 1. Specimens in Paris Museum; FILHOL, Mem. Soc. zool. France, ix, p. 45.

BALÆNIDÆ.

†*Metopocetus*, n. g. for *M. durinasus*, n. sp.; COPE, P. Amer. Phil. Soc. 1896, p. 141, Miocene, Maryland.

†*Cephalotropis*, n. g. for *C. coronatus*, n. sp.; COPE, *op. cit.* p. 143, *ibid.*

†*Mesocetus aquitanicus*, n. sp., FLOT, Bull. Soc. geol. France (3) xxiv, p. 273, Tertiary, Aquitaine.

*Balænoptera musculus*, on French coast in 1887; BEAUREGARD, Rev. Sci. Nat. Ouest, vi, p. 103.

DELPHINIDÆ.

*Delphinapterus leucas* (*Beluga catodon*), fossil in Canada; DAWSON, Canad. Rec. vi, p. 351 (1895).

*Monodon monoceros*, on Norfolk coast; CHRISTY, Tr. Norfolk Soc. vi, p. 204.

*Tursiops* (?) sp., from Italian Tertiary; PRATA, Riv. ital. Pal. ii, p. 133.

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The former ordinal group adopted for Old-World Edentates; LYDEKKER, Geographical History of Mammals, pp. 187 & 192.

ORYCTEROPODIDÆ and MANIDÆ.

†*Orycteropus gaudryi*, skull; ANDREWS, P. Zool. Soc. London, 1896, p. 296.

*Manis javanica*, stomach; OPPEL, Denk. Ges. Jena, v, p. 277.

## BRADYPODIDÆ, MYRMECOPHAGIDÆ, and †MEGALOTHERIIDÆ.

*Cholæpus* : hyoid ; HOWES, J. Anat. Physiol. norm. path. (3) x, p. 513.

*Myrmecophaga jubata*, vertebral column ; ROSENBERG, Festschrift zur Gegenbaur, ii, p. 289.

†*Megalotherium* : emendation for *Megatherium*, Cuv. ; LYDEKKER, Geographical History of Mammals, p. 102.

## DASYPODIDÆ.

*Xenurus hispidus*, from Honduras ; TRUE, P. U. S. Mus. xviii, p. 345.

## †STYLINODONTIDÆ, ETC.

WORTMAN, Bull. Amer. Mus. viii, p. 259, includes in a group *Ganodonta* the Eocene families *Stylinodontidæ* and *Conoryctidæ*. The former, which includes *Hemiganus*, *Psittacotherium*, *Ectoganus*, and *Stylinodon*, is regarded as the ancestral type of the *Megalotheriidæ* ; and the latter, with *Conoryctes* and *Onychodectes*, as similarly related to the *Dasypodidæ*.

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## MACROPODIDÆ and PHALANGERIDÆ.

†*Macropus (Halmaturus) wombeyensis*, n. sp., BROOM, P. Linn. Soc. N. S. Wales, 1896, p. 48, Cave, N. S. W. Brain of *dorsalis* ; CONDORELLI, Boll. Soc. Rom. Zool. iv, p. 24.

†*Potorous tridactylus antiquus*, n. subsp., BROOM, *op. cit.* p. 50, *ibid.*

*Petrogale xanthopus*, its anatomy ; PARSONS, P. Zool. Soc. London, 1896, p. 683.

†*Burramys parvus*, BROOM [Zool. Rec. xxxii, *Mamm.*, p. 40], P. Linn. Soc. N. S. Wales (2) x, p. 563, regarded as connecting *Hypsiprymmonodon* with *Phalangeridæ*.

*Phalanger orientalis intercastellanus*, *breviceps*, for *orientalis breviceps*, 1888, THOMAS, Nov. Zool. ii, p. 165 (1895), Fergusson I. ; *lullula*, Woodlark I., *orientalis kiriwina*, Kiriwina I., THOMAS, *ibid.* iii, p. 528 ; *sangirensis*, MEYER, Abh. Mus. Dresden, No. 6, p. 34, pl. xv, Sangi I. : n. spp. & subspp.

†*Palæopetaurus*, n. g. for *P. elegans*, n. sp. ; BROOM, P. Linn. Soc. N. S. Wales (2) x, p. 568, Cavern, N. S. W. See also *ibid.* 1896, p. 53.

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†*Perameles wombeyensis*, n. sp., BROOM, P. Linn. Soc. N. S. Wales, 1896, p. 56, Cavern, N. S. W.

*Dasyuroides*, n. g. for *D. byrnei*, n. sp., SPENCER, P. Soc. Victoria (2) viii, pp. 5 & 6, and Rep. Horn Exped., Zool., p. 36, Central Australia.

*Sminthopsis psammophilus*, P. Soc. Victoria (2) vii, p. 223 (1895), and Rep. Horn. Exped., Zool., p. 35, *larapinta*, P. Soc. Victoria (2) viii, p. 8, and Rep. Horn. Exped. p. 33, n. spp., SPENCER, Central Australia.

*Phascologale macdonnellensis*, n. sp. ; (2) vii, p. 222 (1895), C. Australia, *cristata*, note on, viii, p. 10, SPENCER, P. Soc. Victoria ; see also Rep. Horn. Exped., Zool., p. 27 ; *flavipes*, WAITE, P. Linn. Soc. N. S. Wales (2) xi, p. 349, describes a female with nine young, and shows that just after birth there is a small pouch, which gradually shrinks.

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*Marmosa*, Gloger, 1841, to replace *Micoureus*, Lesson, 1842 ; THOMAS, Ann. Nat. Hist. (6) xvi, p. 58 (1895), and xviii, p. 314. *M. fuscata*, n. sp., THOMAS, *op. cit.* xviii, p. 313, Merida, Venezuela.

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*Ornithorhynchus* : olfactory bulb ; HILL, Anat. Anz. xi, p. 605 : cerebral hemispheres ; SMITH, J. Anat. Physiol. norm. path. (3) x, p. 465 : brain ; TURNER, *t. c.* p. 280 : dumb-bell bone ; SYMINGTON, *t. c.* p. 420.

*Echidna* : development of lungs ; NARATH, Denk. Ges. Jena, v, p. 247.



## III. AVES.

BY

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

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[See also GOODE BROWN, G. (211), HOLLAND, A. H. (267), and SHELLEY, G. E. (555)].

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*Galactochrysea liberia*, figured ; R. B. SHARPE, Cat. B. Brit. Mus. xxiv, pl. v, fig. 1. *G. emini*, figured ; *id. t. c.* pl. v, fig. 2.  
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*Phalacrocorax carbo*, nesting on the Lofoten Islands ; R. W. SHUFELDT, *Auk*, xiii, pp. 312-314, pl. v : nesting habits ; H. C. HART, *Zoologist*, 1896, pp. 231 & 232. *P. graculus*, notes on ; G. KOLOMBATOVIC, *Mt. ornith. Ver. Wien*, xx, pp. 25-28. *P. perspicillatus*, cranium described and figured ; F. A. LUCAS, *P. U. S. Mus.* xviii, p. 717, pls. xxxiv & xxxv.



## Order ACCIPITRIFORMES.

- Vultur monachus*, in Mecklenburg; F. DETTMANN, Ornith. Monber. iv, p. 159.
- Circus cyaneus* and *C. aeruginosus*, in Sussex; R. BUTTERFIELD, Zoologist, 1896, p. 144. *C. pygargus abdulla*, n. subsp., Caucasus; C. FLOERICKE, Ornith. Monber. iv, p. 155.
- Accipiter gularis*, remarks on; W. R. OGILVIE GRANT, Ibis, 1896, pp. 104-109. *A. zenkeri*, figured; A. REICHENOW, J. Ornith. 1896, tab. i. *A. nisus granti*, notes on; E. HARTERT, Ornith. Monber. iv, pp. 1-4.
- Astur brevipes*, figured; O. REISER & L. VON FÜHRER, Orn. Mater. Balcan. iv, taf. ii.
- Spilospizias trinotatus hæsitandus*, n. subsp., Bonthain Peak, S. Celebes; E. HARTERT, Nov. Zool. iii, p. 162.
- Buteo desertorum*, in Germany; ALTUM, Ornith. Monber. iv, pp. 49-51: egg figured; A. KOENIG, J. Ornith. 1896, Tab. vi, fig. 1.
- Plangus naevogæus*, Sundev. = *Harpyhaliaetus coronatus*; R. B. SHARPE, Bull. B. O. C. vi, p. xii.
- Aquila chrysaetus*, nesting in confinement; H. M. WALLIS, *op. cit.* v, pp. xxi & xxii.
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- Cerchneis cenchroides* in New Zealand; W. L. BULLER, Tr. N. Zealand Inst. xxviii, p. 359.

## Order STRIGIFORMES.

- Ketupa minor*, n. sp., Nias; J. BÜTTIKOFER, Notes Leyden Mus. xviii, pp. 165 & 166.
- Bubo maximus*, its reported occurrence in Ireland; R. J. USSHER, Zoologist, 1896, pp. 161-165. *B. virginianus saturatus*, nesting at Sandwich Bay, Labrador; W. RAINE, Auk, xiii, p. 257. *B. virginianus occidentalis*, n. subsp., Iowa; W. STONE, *t. c.* pp. 155 & 156.
- Megascops asio*, individual dichromatism; A. P. CHADBOURNE, *t. c.* pp. 321-325.
- Glaucidium kilimense* = *G. perlatum*; O. NEUMANN, J. Ornith. 1896, p. 250.
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- Asio accipitrinus*, breeding in Hungary ; E. CZYŃK, *Aquila*, iii, pp. 223 & 224 ; A. CERVA, *t. c.* pp. 224-226.  
*Syrnium willkonskii*, n. sp., Transcaucasia ; M. MENZBIER, *Bull. B. O. C.* vi, p. vi.

### Order CORACIIFORMES.

#### Sub-order PODARGI.

- Podargus papuensis*, nest and eggs described ; D. LE SOUEF, *Ibis*, 1896, pp. 312 & 313.

#### Sub-order CORACIÆ.

- Urutelornis chimaera*, figured ; W. ROTHSCHILD, *Nov. Zool.* iii, pl. 2.

#### Sub-order MEROPES.

- Merops apiaster*, near Augsburg ; J. KAHLER, *Ornith. Monber.* iv, p. 159.  
*M. persicus*, egg figured ; A. KOENIG, *J. Ornith.* 1896, tab. vi, fig. 3.

#### Sub-order HALCYONES.

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*Pelargopsis dichrorhyncha*, n. sp., Is. of Peling and Banggai, N. E. Celebes ; A. B. MEYER & L. W. WIGLESWORTH, *Abh. Mus. Dresden*, 1896-97, No. 2, p. 12.  
*Ceryle alcyon*, 300 miles from land (Lat. 37° 27' N., Long. 63° 20' W.) ; A. MILNE-EDWARDS, *Bull. Mus. Paris*, 1896, pp. 313 & 314. *C. alcyon* and *C. americana septentrionalis*, eggs figured ; C. BENDIRE, *Life-Hist. N. Amer. B.* pl. i, figg. 3 & 4.  
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#### Sub-order BUCEROTES.

- Ptilokemus austeni*, nesting ; E. C. STUART BAKER, *Ibis*, 1896, pp. 356 & 357.

#### Sub-order CAPRIMULGI.

- Caprimulgidae* : notes on the family ; E. HARTERT, *Ibis*, 1896, pp. 369-376.  
*Caprimulgus europæus*, habits of ; D. J. RICE, *Sci. Gossip* (2) ii, p. 177.  
*C. europæus meridionalis*, n. subsp., Southern Europe ; E. HARTERT, *Ibis*, 1896, p. 370. *C. macrurus ambiguus*, n. subsp., N. India ; *id. t. c.* p. 373. *C. macrurus nipalensis*, n. subsp., Nepal ; *id. t. c.* p. 373. *C. ægyptius*, figured ; LILFORD, *Col. Fig. Br. Birds*, pt. xxxiii : egg figured ; A. KOENIG, *J. Ornith.* 1896, tab. vi, fig. 2.  
*C. maculicaudus* in British Guiana ; P. L. SCLATER, *Bull. B. O. C.* v, p. xxiii.  
*Antrostomus carolinensis* and *A. vociferus*, eggs figured ; C. BENDIRE, *Life-Hist. N. Amer. B.* pl. i, figg. 8-11.

- Phalacroptilus nuttalli*, egg figured ; *id. t. c.* pl. i, fig. 23.  
*Chordeiles virginianus aserriensis*, n. subsp., San José, Costa Rica ; G. K. CHERRIE, Auk, xiii, p. 136. *C. virginianus*, *C. v. henryi*, *C. v. chapmani*, and *C. acutipennis texensis*, eggs figured ; C. BENDIRE, Life-Hist. N. Amer. B. pl. iii, figg. 1-10. *C. v. sennetti* in North Dakota ; L. B. BISHOP, Auk, xiii, pp. 134 & 135.  
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*Nyctidromus albicollis merrilli*, eggs figured ; C. BENDIRE, Life-Hist. N. Amer. B. pl. ii, figg. 1 & 2.  
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*Nyctiprogne leucopygia*, in British Guiana ; P. L. SCLATER, Bull. B. O. C. v, p. xxiii.  
*Agotheles rufescens*, n. sp., Moroka, S. E. New Guinea ; T. SALVADORI, Ann. Mus. Genova (2) xvi, p. 71. *A. insignis* and *A. affinis*, figured ; E. HARTERT, Ibis, 1896. pls. vi & vii. *A. leucogaster*, nest and eggs described ; D. LE SOUEF, *t. c.* p. 313.

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*Amazilia alfaroana*, n. sp., Volcano of Miravalles, Costa Rica ; C. F. UNDERWOOD, *t. c.* p. 441.  
*Thalurania balzani*, n. sp., Bolivia ; E. SIMON, Nov. Zool. iii, p. 259.  
*Aglæuctis aliciae*, n. sp., N. Peru ; O. SALVIN, Bull. B. O. C. v, pp. xxiv & xxv.  
*Trochilus colubris*, egg figured ; C. BENDIRE, Life-Hist. N. Amer. B. pl. i, fig. 27.

## Order TROGONES.

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*Pharomacrus xanthogaster*, figured ; E. OUSTALET, N. Arch. Mus. Paris (3) vii, pp. 229-231, pl. viii.  
*Hapaloderma rufiventre*, n. sp., Lake Tanganyika ; A. DUBOIS, P. Zool. Soc. London, 1896, p. 999.

## Order COCCYGES.

## Sub-order MUSOPHAGI.

- Turacus ruspolii*, n. sp., Somaliland ; T. SALVADORI, Ann. Mus. Genova (2) xvi, p. 44. *T. buffoni zenkeri*, n. sp., Kameruns ; A. REICHENOW, J. Ornith. 1896, p. 9.  
*Corythæola cristata*, lays a blue egg ; *id. t. c.* p. 96.

## Sub-order CUCULI.

See SALVIN, O., & GODMAN, F. D. (515).

- Cuculus canorus*, its eggs and foster-parents ; E. BIDWELL, Bull. B. O. C. v, pp. xxix-xxxv ; E. HARTERT, *t. c.* pp. xxx & xxxi : note on its foster-parents ; W. W. BLADEN, Tr. N. Staff. Nat. Field Club, 1896, pp. 1-19 : habits in confinement ; W. L. MELLERSH, Zoologist, 1896, pp. 357 & 358 : notes on ; A. H. MACPIERSON, *t. c.* pp. 336-340 : blue eggs ; F. VON CERVA, Aquila, iii, pp. 227 & 228.
- Coccyzus americanus*, *C. a. occidentalis*, and *C. erythrophthalmus*, eggs figured ; C. BENDIRE, Life-Hist. N. Amer. B. pl. v, figg. 1-4. *C. americanus*, figured ; LILFORD, Col. Fig. Br. Birds, pt. xxxiii.
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- Eudynamis taitensis*, its habits ; A. J. NORTH, P. Zool. Soc. London, 1896, p. 934 & 935.
- Centropus natalensis*, Shelley, = *C. burchelli*, Swains. ; A. REICHENOW, Ornith. Monber. iv, p. 53. *C. cupreicaudus*, n. sp., S.W. Africa ; *id. ibid.*
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- Crotophaga ani* and *C. sulcirostris*, eggs figured ; C. BENDIRE, Life-Hist. N. Amer. B. pl. i, figg. 6 & 7.

## Sub-order COLII.

- Colius indicus pallidus*, n. subsp., Kionga, E. Africa ; A. REICHENOW, Ornith. Monber. iv, p. 4.

## Order PSITTACIFORMES.

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- A monograph of the Lories, or Brush-tongued Parrots, composing the family *Loriidae* ; ST. GEORGE MIVART, London : 1896, 4to, liii & 193 pp., 61 pls.
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- Chrysotis aestiva xanthopteryx*, n. subsp., E. Bolivia ; H. VON BERLEPSCH, Ornith. Monber. iv, pp. 173 & 174.
- Conurus carolinensis*, egg figured ; C. BENDIRE, Life-Hist. N. Amer. B. pl. i, fig. 1.
- Spathopterus alexandrae*, figured ; A. J. NORTH, Horn Exped. Central Australia, ii, Zool. *Aves*, pl. v.
- Nanodes discolor*, notes on the hyoid bones ; ST. G. MIVART, P. Zool. Soc. London, 1896, pp. 236-240.
- Loriculus sclateri ruber*, n. subsp., Is. of Peling and Banggai, N.E. Celebes ; A. B. MEYER & L. W. WIGLESWORTH, Abh. Mus. Dresden, 1896-97, No. 2, p. 9.
- Neopsittacus pullicauda*, n. sp., Owen Stanley Mountains, New Guinea ; E. HARTERT, Nov. Zool. iii, p. 17.

*Agapornis zenkeri*, figured; A. REICHENOW, J. Ornith. 1896, tab. ii, fig. 1.

*Psittacella picta*, n. sp., S.E. New Guinea; W. ROTHSCHILD, Bull. B. O. C. vi, p. v.

## Order SCANSORES.

### Sub-order RHAMPHASTIDES.

See SALVIN, O., & GODMAN, F. D. (515).

Contributions to the anatomy of the Picarian birds: Part II. A note upon the pterylosis of the Barbets and Toucans; F. E. BEDDARD, P. Zool. Soc. London, 1896, pp. 555-557.

### Sub-order CAPITONES.

See SALVIN, O., & GODMAN, F. D. (515).

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*Tricholæma stictilæma*, n. sp., Central Africa; A. REICHENOW, Ornith. Monber. iv, p. 77.

*Cyanops robustirostris*, n. sp., N. Cachar; E. C. STUART BAKER, J. Bombay Soc. x, pp. 356 & 357. *C. rubescens*, n. sp., N. Cachar; E. C. STUART BAKER, Nov. Zool. iii, p. 258.

*Blax gymnophthalmus*, described and figured; A. REICHENOW, J. Ornith. 1896, p. 13, tab. iii, fig. 1 [= *Verreauxia africana*; *id.* Ornith. Monber. iv, p. 181].

### Sub-order PICI.

*Dendromus neumanni*, n. sp., Lake Naivascha; A. REICHENOW, Ornith. Monber. iv, p. 132. *D. scriptoricauda*, n. sp., E. Africa; *id. t. c.* p. 131.

*Picus badius* [*balius*] and *P. punctatus*, notes on; *id. t. c.* p. 130.

*Gecinus puniceus observandus*, n. subsp., Malacca, Borneo, and Sumatra; E. HARTERT, Nov. Zool. iii, p. 542.

*Gecinulus grantia*, nesting; E. C. STUART BAKER, Ibis, 1896, pp. 352 & 353.

*Chrysophlegma niasense*, n. sp., Nias; J. BÜTTIKOFER, Notes Leyden Mus. xviii, pp. 169 & 170. *C. flavinucha*, nesting; E. C. STUART BAKER, Ibis, 1896, pp. 351 & 352.

*Dryobates pubescens*, egg figured; C. BENDIRE, Life-Hist. N. Amer. B. pl. i, fig. 24. *D. pubescens nelsoni*, n. subsp., Alaska; H. C. OBERHOLSER, P. U. S. Mus. xviii, p. 549. *D. pubescens meridionalis*, S. Carolina to Texas; *id. t. c.* p. 547. *D. villosus montanus*, n. subsp., Rocky Mountains, from New Mexico to Montana; A. W. ANTHONY, Auk, xiii, pp. 31-34.

*Melanerpes carolinus*, on Long I., N. Y.; R. B. LAWRENCE, *t. c.* p. 82.

*Chrysocolaptes gutticristatus*, nesting; E. C. STUART BAKER, Ibis, 1896, p. 355.

*Pyrrhopicus pyrrhotis*, nesting; *id. t. c.* p. 354.

*Tiga shorei*, nesting; *id. t. c.* p. 355.

*Iyngipicus validirostris* and allies, note on; W. R. OGILVIE GRANT, *t. c.* pp. 471-473. *I. canicapillus*, nesting; E. C. STUART BAKER, *t. c.* pp. 353 & 354.

*Ceophlæus pileatus*, egg figured; C. BENDIRE, Life-Hist. N. Amer. B. pl. i, fig. 5.

## Sub-order BUCCONES.

See SALVIN, O., & GODMAN, F. D. (515).

*Bucco fulvidus*, n. sp., Panama; O. SALVIN & F. D. GODMAN, Biol. Centr.-Amer. ii, pt. cxxviii, p. 514.

## Sub-order GALBULÆ.

See SALVIN, O., & GODMAN, F. D. (515).

## Order PASSERIFORMES.

## Family CORVIDÆ.

*Corvus americanus*, feeding habits; S. D. JUDD, Auk, xiii, pp. 285-289.

*C. corax principalis*, in Illinois; F. M. WOODRUFF, t. c. pp. 83 & 84.

*C. corax sinuatus*, *C. c. principalis*, *C. cryptoleucus*, *C. americanus* (also pl. v, figg. 21 & 22), *C. a. floridanus*, *C. caurinus*, and *C. ossifragus*, eggs figured; C. BENDIRE, Life-Hist. N. Amer. B. pl. iv, figg. 1-17.

*Nucifraga columbiana*, eggs figured; C. BENDIRE, t. c. pl. iii, figg. 22 & 23.

*Pica rustica*, nesting in captivity; R. TOMLINSON, Ann. Scott. Nat. Hist. 1896, pp. 188 & 189: nesting-habits; X. RASPAIL, Mem. Soc. Zool. France ix, pp. 185-202. *P. mauritanica*, eggs figured; A. KOENIG, J. Ornith. 1896, tab. vi, figg. 4, a, b. *P. pica hudsonica* and *P. nuttalli*, eggs figured; C. BENDIRE, Life-Hist. N. Amer. B. pl. iii, figg. 11-14.

*Garrulus oatesi*, n. sp., Chin Hills, Burma; R. B. SHARPE, Bull. B. O. C. v, p. xlv. *G. cervicalis*, egg figured; A. KOENIG, J. Ornith. 1896, tab. vi, fig. 5.

*Cissa ornata*, nesting-habits; F. LEWIS, J. Ceylon Asiat. Soc. xiii, p. 21.

*Aphelocoma gracilis*, n. sp., Mexico; G. S. MILLER, Auk, xiii, pp. 34-37.

*A. floridana*, *A. woodhousei*, *A. californica*, and *A. sieberii arizonæ*, eggs figured; C. BENDIRE, Life-Hist. N. Amer. B. pl. v, figg. 13-20.

*Cyanocitta cristata*, *C. c. florincola*, *C. stelleri*, *C. s. frontalis*, and *C. s. macrolopha*, eggs figured; *id.* t. c. pl. v, figg. 5-12.

*Cyanocephalus cyanocephalus*, eggs figured; *id.* t. c. pl. iii, figg. 24 & 25.

*Xanthoura luxuosa*, eggs figured; *id.* t. c. pl. iii, figg. 15-17.

*Perisoreus canadensis*, *P. c. nigricapillus*, and *P. obscurus*, eggs figured; *id.* t. c. pl. iii, figg. 18-21.

*Pyrhacorax graculus*, in the Outer Hebrides; D. MACKENZIE, Ann. Scott. Nat. Hist. 1896, p. 122.

## Family PARADISEIDÆ.

Monograph of the *Paradiseidæ*, or Birds of Paradise, and *Ptilonorhynchide* [q.v.], or Bower-birds. Pt. VI: by R. B. SHARPE. London: 1896, folio. The following species are figured:—*Craspedophora mantoni*, *Iamprothorax wilhelmineæ*, *Epimachus ellioti*, *Ianthothorax bensbachii*, *Diphyllodes magnifica*, *D. seleucides*, *Paradisea raggiana*, *Xanthomelus ardens*, *Loria mariæ* [*Loria loræ*, Salvad.].

*Ptilorhis victoriae*, nest and eggs described; D. LE SOUEF, P. R. Soc. Victoria (2) vii, p. 22.

*Astrapia splendidissima*, note on two more specimens; W. ROTHSCHILD, Nov. Zool. iii, p. 19.

*Cicunurus regius coccineifrons*, n. subsp., Jobi I.; *id.* t. c. p. 10.

*Manucodia orientalis*, n. sp., Gerekanumu, S.E. New Guinea; T. SALVADORI, Ann. Mus. Genova (2) xvi, p. 103.

*Loboparadisea*, n. g., type *L. sericea*, n. sp., N.W. New Guinea; W. ROTHSCHILD, Bull. B. O. C. vi, p. xv.

*Diphyllodes xanthoptera*, n. sp., S.E. New Guinea; T. SALVADORI, Bull. B. O. C. v, p. xxii. Review of the genus; *id.* t. c. pp. xxi & xxii.; *id.* Ann. Mus. Genova (2) xvi, p. 110.

## Family PTILONORHYNCHIDÆ.

Monograph of the *Paradiseidæ* [q.v.], or Birds of Paradise, *Ptilonorhynchidæ*, or Bower-birds. Pt. VI: By R. B. SHARPE. London: 1896, folio. *Ptilonorhynchus violaceus* figured.

*Amblyornis macgregoriae*, De Vis, and *A. musgravianus*, Goodwin = *A. inornata* (Schleg.); W. ROTHSCHILD, Nov. Zool. iii, pp. 11-13, pl. i.

*Ailuredus maculosus*, nest and eggs described; D. LE SOUEF, P. R. Soc. Victoria (2) vii, pp. 20 & 21.

## Family STURNIDÆ.

*Sturnus sophia*, n. sp., Russia; V. BIANCHI, Ann. Mus. St. Petersb. i, pp. 129-131.

*Pastor roseus*, figured; O. HERMAN, Aquila, iii, pl. i.

*Gracupica tertia*, n. sp., Bali; E. HARTERT, Nov. Zool. iii, p. 547.

*Sturnornis senex*, nesting-habits; F. LEWIS, J. Ceylon Asiat. Soc. xiii, pp. 21 & 22.

*Lamprocolius ignitus* in Madeira; E. SCHMITZ, Ornith. Monber. iv, p. 78 [? an escaped cage-bird; A. REICHENOW, t. c. p. 79].

## Family PARAMYTHIDÆ.

*Paramythia montium* has ten primaries; E. HARTERT, Nov. Zool. iii, pp. 23 & 24.

## Family DICRURIDÆ.

*Dicrurus annectens* and *D. cineraceus*, nest and eggs described; E. C. STUART BAKER, Ibis, 1896, pp. 318 & 319.

## Family ORIOLIDÆ.

*Oriolus boneratus*, n. sp., I. of Bonerate, S. Celebes; A. B. MEYER & L. W. WIGLESWORTH, Abh. Mus. Dresden, 1896-97, No. i, p. 16. *O. chlorocephalus*, n. sp., Shiré Highlands, Nyasaland; G. E. SHELLEY, Ibis, 1896, p. 183, pl. iv. *O. indicus* and *O. tenuirostris*, notes on the nidification; E. C. STUART BAKER, t. c. p. 332. *O. steerii* and its allies; W. R. OGILVIE GRANT, t. c. pp. 532 & 533.

*Mimeta flavo-cincta*, nest and eggs described; D. LE SOUEF, P. R. Soc. Victoria (2) vii, p. 19.

*Sphecothebes flaviventris*, nest and eggs described; D. LE SOUEF, P. R. Soc. Victoria (2) vii, p. 20.

## Family ICTERIDÆ.

*Cassidix oryzivorus*, parasitic on *Cassicus persicus*; KUSCHEL, Ibis, 1896, p. 585.

*Molothrus* and *Callothrux*, their breeding habits; E. REY, Ornith. Monber. iv, pp. 33-35.

*Molothrus ater* and *M. a. obscurus*, eggs figured; C. BENDIRE, Life-Hist. N. Amer. B. pl. vi, figg. 3-8.

*Callothrux robustus*, egg figured; *id.* t. c. pl. vi, fig. 9.

*Agelæus phœniceus*, *A. gubernator*, and *A. tricolor*, eggs figured; *id.* t. c. pl. vi, figg. 13-19.

*Scolecophagus carolinus* and *S. cyanocephalus*, eggs figured; *id.* t. c. pl. vii, figg. 14-20.

*Quiscalus insularis*, n. sp., Margarita I.; C. W. RICHMOND, P. U. S. Mus. xviii, pp. 675 & 676. *Q. quiscalus*, *Q. q. agelæus*, *Q. q. æneus*, *Q. macrourus*, and *Q. major*, eggs figured; C. BENDIRE, Life-Hist. N. Amer. B. pl. vii, figg. 21-31.

- Xanthocephalus xanthocephalus*, eggs figured ; *id. t. c.* pl. vi, figg. 10-12.  
*Dolichonyx orizivorus*, eggs figured ; *id. t. c.* pl. vi, figg. 1 & 2.  
*Sturnella magna*, *S. m. mexicana*, and *S. m. neglecta*, eggs figured ; *id. t. c.*  
 pl. vi, figg. 20-24. *S. magna neglecta*, its song ; L. BELDING, *Auk*,  
 xiii, pp. 29 & 30.  
*Icterus audubonis*, *I. parisorum*, and *I. cucullatus*, eggs figured ; C. BEN-  
 DIRE, *Life-Hist. N. Amer. B.* pl. vi, figg. 25-32. *I. cucullatus nelsoni*,  
*I. spurius*, *I. galbula*, and *I. bullocki*, eggs figured ; *id. t. c.* pl. vii,  
 figg. 1-13.

#### Family PLOCEIDÆ.

- Vidua principalis*, figured ; A. G. BUTLER, *Foreign Finches in Captivity*,  
 pt. viii.  
*Chera procne*, figured ; *id. t. c.* pt. ix.  
*Steganura paradisea*, figured ; *id. ibid.*  
*Penthetria ardens*, figured ; *id. ibid.*  
*Penthetriopsis macrura*, figured ; *id. ibid.*  
*Pyromelana capensis*, *P. afra*, figured ; *id. ibid.* *P. flammiceps*, *P. oryx*,  
*P. franciscana*, figured ; *id. t. c.* pt. x.  
*Quelea quelea*, *Q. russi*, figured ; *id. ibid.*  
*Cryptospiza australis*, n. sp., Shiré Highlands ; G. E. SHELLEY, *Ibis*, 1896,  
 p. 184.  
*Clytospiza*, n. g., type *C. monteiri* (Hartl.) ; *id.* *Birds of Africa*, vol. i, p. 32.  
*Spermestes cucullata*, *S. bicolor*, figured ; A. G. BUTLER, *Foreign Finches*  
 in *Captivity*, pt. viii.  
*Hypochara aenea*, figured ; *id. ibid.*  
*Amauresthes fringilloides*, figured ; *id. ibid.*  
*Aidesmosyne modesta*, *A. malabarica*, *A. cantans*, figured ; *id. t. c.* pt. vii.  
*Stictoptera bichenovii* (*bichenosii* on plate), figured ; *id. ibid.*  
*Teniopygia castanotis*, figured ; *id. ibid.*  
*Munia punctulata*, a. var. *nisoria*, ♂, b. var. *topela*, ♂, figured ; *id. ibid.*  
*M. castaneithorax*, *M. malacca*, figured ; *id. ibid.* *M. atricapilla*,  
*M. maja*, *M. orizivora*, wild form ♂, and white var. ♀ figured ; *id.*  
*t. c.* pt. viii.  
*Uroloncha striata*, *U. acuticauda*, figured ; *id. t. c.* pt. vii.  
*Chlorura intermedia*, n. sp., Lombok ; E. HARTERT, *Nov. Zool.* iii, pp. 558  
 & 559.  
*Pachyphantes*, n. g., type *P. superciliosus* (Shelley) ; G. E. SHELLEY,  
*Birds of Africa*, vol. i, p. 36.  
*Othyphantes*, n. g., type *O. reichenowi* (Fischer) ; *id. t. c.* p. 37.  
*Neshyphantes*, n. g., type *N. flavicans* (E. Newton) ; *id. t. c.* p. 36.  
*Nesacanthis eminentissima*, figured ; A. G. BUTLER, *Foreign Finches in*  
*Captivity*, pt. x.  
*Symplectes dorsomaculatus*, figured ; A. REICHENOW, *J. Ornith.* 1896,  
 tab. iv, fig. 1.  
*Foudia madagascariensis*, figured ; A. G. BUTLER, *Foreign Finches in*  
*Captivity*, pt. x.  
*Hyphantornis dicrocephala*, n. sp., Somaliland ; T. SALVADORI, *Ann.*  
*Mus. Genova* (2) xvi, p. 45.  
*Malimbus erythrogaster*, figured ; A. REICHENOW, *J. Ornith.* 1896, tab. iv,  
 figg. 2 & 3.  
*Ploceus baya*, figured ; A. G. BUTLER, *Foreign Finches in Captivity*,  
 pt. x.

#### Family PROCNIATIDÆ.

The characters of this new family are given by R. RIDGWAY, *P. U. S. Mus.*  
 xviii, pp. 449 & 450. Osteological and pterylographical characters ;  
 F. A. LUCAS, *t. c.* pp. 505-507, figg. 1-5.



## Family TANAGRIDÆ.

- Calliste pretiosa*, in Argentina; A. H. HOLLAND, Ibis, 1896, p. 315. *C. xanthogastra rostrata*, n. subsp., Central Peru; H. VON BERLEPSCH & J. STOLZMANN, P. Zool. Soc. London, 1896, p. 339.
- Tanagra cœlestis major*, n. subsp., Central and Northern Peru; *iid. t. c.* p. 343.
- Rhamphocœlus festæ*, n. sp., Chiriqui; T. SALVADORI, Boll. Mus. Torino, xi, No. 249. *R. jucapa connectens*, n. subsp., Central and Southern Peru; H. VON BERLEPSCH & J. STOLZMANN, P. Zool. Soc. London, 1896, p. 344.
- Thlypopsis ornata macropteryx*, n. subsp., Central Peru; *iid. t. c.* p. 345.
- Buthraupis cucullata cyanonota*, n. subsp., Central Peru; *iid. t. c.* p. 342.
- B. cucullata intermedia*, n. subsp., Ecuador; *iid. t. c.* p. 342.
- Dubusia stictocephala*, figured; *iid. t. c.* pl. xiii.
- Pyrranga erythromelas*, habits; H. HALES, Auk, xiii, pp. 261-263.
- Buarremon poliophrys*, n. sp., Central Peru; H. VON BERLEPSCH & J. STOLZMANN, P. Zool. Soc. London, 1896, p. 347.
- Pseudospingus*, n. g., type *P. xanthophthalmus* (Tacz.), Central Peru; *iid. t. c.* p. 346.

## Family CÆREBIDÆ.

- Certhidea*: review of the genus, with a key to the species; R. RIDGWAY, P. U. S. Mus. xix, pp. 496-504.
- Conirostrum cinereum littorale*, n. subsp., Central Peru; H. VON BERLEPSCH & J. STOLZMANN, P. Zool. Soc. London, 1896, p. 336, note.
- Chlorophanes pulcherrima stigmatura*, n. subsp., Central Peru; *iid. t. c.* p. 338.
- Diglossopsis cerulescens pallida*, n. subsp., Central Peru; *iid. t. c.* p. 334.
- Dacnis cayana glaucogularis*, n. subsp., Peru, Ecuador, and Colombia; *iid. t. c.* p. 336.

## Family DREPANIDÆ.

- Pseudonestor xanthophrys*, figured; S. B. WILSON & A. H. EVANS, Aves Hawaiienses, pt. vi.
- Hemignathus affinis*, figured; *iid. ibid.*
- Himatione newtoni*, *H. wilsoni*, *H. virens*, and *H. chloris*, figured; *iid. ibid.*
- Loxops aurea* and *L. rufa*, figured; *iid. ibid.*
- Heterorhynchus olivaceus*, remarks on; A. NEWTON, P. Zool. Soc. London, 1896, pp. 990 & 991.

## Family FRINGILLIDÆ.

- Foreign Finches in Captivity; A. G. BUTLER, London, 1896, 4to, pts. vii-x.
- On the change of plumage in some exotic Finches; *id.* Zoologist, 1896, pp. 468 & 469.
- Geospiza*: review of the genus, with a key to the species; R. RIDGWAY, P. U. S. Mus. xix, pp. 507-544.
- Camarhynchus*: review of the genus, with a key to the species; *id. t. c.* pp. 544-566.
- Catamblyrhynchus diadema citrinifrons*, n. subsp., Central Peru; H. VON BERLEPSCH & J. STOLZMANN, P. Zool. Soc. London, 1896, p. 350.
- Eophona personata magnirostris*, n. subsp., E. Siberia; E. HARTERT, Bull. B. O. C. v, p. xxxviii.

- Coccothraustes vulgaris*, nesting in Lincolnshire; MRS. ANDERSON, *Zoologist*, 1896, pp. 257 & 258.
- Melopyrrha taylori*, n. sp., Grand Cayman; E. HARTERT, *Nov. Zool.* iii, p. 257.
- Cardinalis cardinalis yucatanicus*, n. subsp., Yucatan; R. RIDGWAY, *Man. N. Amer. B.* 2nd ed., p. 443. *C. c. floridanus*, n. subsp., Florida; *id. t. c.* p. 606.
- Carduelis carduelis* and its races; J. P. PRAZAK, *Ornith. Monber.* iv, pp. 36-40.
- Chrysomitris ambigua*, n. sp., Yun-nan; E. OUSTALET, *Bull. Mus. Paris*, 1896, p. 186.
- Spinus ictericus peruanus*, n. subsp., Central Peru; H. VON BERLEPSCH & J. STOLZMANN, *P. Zool. Soc. London*, 1896, p. 352.
- Fringilla montifringilla*, figured; LILFORD, *Col. Fig. Br. Birds*, pt. xxxii.
- Acanthis linaria*, breeding in East Prussia; C. FLOERICKE, *Ornith. Monber.* iv, pp. 156 & 157.
- Passer simplex zarudnyi*, n. subsp., Transcaspia; TH. PLESKE, *Ann. Mus. St. Petersb.* i, pp. 31-33. *P. domesticus*, feeding habits; S. D. JUDD, *Auk*, xiii, pp. 285-289: morphology of the brain; S. P. GAGE, *Tr. Amer. micro. Soc.* xvii, pp. 4-7, 185-222, & 223-238. *P. simplex*, egg figured; A. KOENIG, *J. Ornith.* 1896, tab. vii, fig. 10. *P. griseigularis*, in Russia; V. BIANCHI, *Ann. Mus. zool. Ac. St. Petersb.* i, p. 127. *P. montanus*, in Midlothian; W. E. CLARKE, *Ann. Scott. Nat. Hist.* 1896, pp. 121 & 122; R. S. SKIRVING, *t. c.* p. 190. *P. m. dilutus*, n. subsp., Kashgar; C. W. RICHMOND, *P. U. S. Mus.* xviii, p. 575.
- Serinus xantholema*, n. sp., Somaliland; T. SALVADORI, *Ann. Mus. Genova* (2) xvi, p. 44. *S. fugani*, n. sp., Machakos, E. Africa; R. B. SHARPE, *Bull. B. O. C.* vi, p. vii. *S. hortulanus*, breeding near Danzig; A. IBARTH, *Ornith. Monber.* iv, p. 159: breeding in East Prussia; C. FLOERICKE, *t. c.* p. 157: wintering in Hungary; S. MEDRECKY, *Aquila*, iii, p. 232.
- Pinicola enucleator*, in captivity; O. W. KNIGHT, *Auk*, xiii, pp. 21-24.
- Pyrrhula enucleator*, figured; LILFORD, *Col. Fig. Br. Birds*, pt. xxxii. *P. major*, figured; *id. t. c.* pt. xxxiii.
- Loxia curvirostra stricklandi*, notes on; D. E. LANTZ, *Tr. Kansas Ac.* xiv, pp. 124 & 125.
- Emberiza citrinella*, notes on colour; F. CIPOLLA, *Atti Ist. Veneto* (7) T. vi, disp. 8 & 9. *E. cioides*, figured; LILFORD, *Col. Fig. Br. Birds*, pt. xxxiii.
- Fringillaria saharae*, eggs figured; A. KOENIG, *J. Ornith.* 1896, tab. vii, figg. 9, a & b.
- Culcarius lapponicus*, in Venice; C. DAL FIUME, *Atti. Soc. Ital.* xxxv, pp. 27-32.
- Melospiza fasciata juddi*, n. subsp., North Dakota; L. B. BISHOP, *Auk*, xiii, pp. 132-134. *M. f. merrilli*, n. subsp., Idaho; W. BREWSTER, *t. c.* pp. 46 & 47.
- Ammodramus caudacutus* and its geographical races; J. DWIGHT, *t. c.* pp. 271-278, pl. iv.
- Oreospiza*, n. g., type *O. chlorura* (Audub.); R. RIDGWAY, *Man. N. Amer. B.* 2nd ed., p. 605 (1896).
- Arremonops*, n. g., type *A. rufivirgata* (Lawr.); *id. t. c.* p. 434.
- Phrygilus chloronotus*, n. sp., Central Peru; H. VON BERLEPSCH & J. STOLZMANN, *P. Zool. Soc. London*, 1896, p. 350.
- Plectrophenax nivalis*, changes of plumage; F. M. CHAPMAN, *Bull. Amer. Mus.* viii, pp. 9-12.

## Family ALAUDIDÆ.

- Certhilauda alaudipes*, eggs figured ; A. KOENIG, J. Ornith. 1896, tab. vii, figg. 5, *a* & *b*.
- Otocoris alpestris hoyti*, n. subsp., North Dakota ; L. B. BISHOP, Auk, xiii, pp. 130-132. *O. a. leucolæma*, *O. a. praticola*, *O. a. arenicola*, *O. a. giraudi*, *O. a. chrysolæma*, *O. a. rubea*, *O. a. merrilli*, and *O. a. adusta*, eggs figured ; C. BENDIRE, Life-Hist. N. Amer. B. pl. v. figg. 24-31. *O. bilopha*, eggs figured ; A. KOENIG, J. Ornith. 1896, tab. vii, figg. 8, *a* & *b*.
- Alauda arvensis*, eggs figured ; C. BENDIRE, Life-Hist. N. Amer. B. pl. v, fig. 23. *A. arborea cherneli*, notes on ; G. VON ALMASY, Aquila, iii, pp. 209-216. *A. cristata pallida*, further notes on ; J. I. S. WHITAKER, Ibis, 1896, p. 89.
- Mirafra collaris*, n. sp., Somaliland ; R. B. SHARPE, Bull. B. O. C. v, p. xxiv.
- Ammomanes algeriensis*, egg figured ; A. KOENIG, J. Ornith. 1896, tab. vii, fig. 6. *A. cinctura*, fig. 7.

## Family MOTACILLIDÆ.

- Notes on the Scandinavian Pipits ; O. V. APLIN, Zoologist, 1896, pp. 379-382.
- Motacilla borealis*, figured ; LILFORD, Col. Fig. Br. Birds, pt. xxxiii. *M. lugens*, in Borneo ; E. BARTLETT, Sarawak Note-book, Part viii, p. 43.
- Anthus cervinus*, in Sussex ; W. R. BUTTERFIELD, Zoologist, 1896, pp. 193 & 194 ; notes on, F. COBURN, *t. c.* pp. 256 & 257 ; O. V. APLIN, *t. c.* pp. 300-302 & 353 ; J. CORDEAUX, *t. c.* pp. 352 & 353. *A. infuscatus* = *A. richardi* ; C. B. RICKETT & J. D. DE LA TOUCHE, Ibis, 1896, p. 494. *A. spipoletta*, in Lincolnshire ; G. H. CATON HAIGH, Bull. B. O. C. v, p. xix.

## Family MNIOTILTIDÆ.

- Helminthophila rubricapilla*, its correct name ; W. FAXON, Auk, xiii, pp. 263 & 264. *H. bachmani*, in Arkansas ; O. WIDMANN, *t. c.* p. 264.
- Compsothlypis americana usnea*, n. subsp., Lake Umbagog, Maine ; W. BREWSTER, *t. c.* pp. 44-46.
- Peucedramus olivaceus aurantiacus*, n. subsp., Guatemala ; R. RIDGWAY, P. U. S. Mus. xviii, p. 441.
- Basileuterus uropygialis poliothrix*, n. subsp., Central Peru ; H. VON BERLEPSCH & J. STOLZMANN, P. Zool. Soc. London, 1896, p. 331.

## Family CERTHIDÆ.

- Certhia* : critical remarks on the Mexican forms of the genus ; H. C. OBERHOLSER, Auk, xiii, pp. 314-318. *C. familiaris*, L., and *C. f. brachydactyla*, notes on ; C. DEICHLER & O. KLEINSCHMIDT, J. Ornith. 1896, p. 449. *C. nepalensis*, its nidification ; E. C. STUART BAKER, Ibis, 1896, p. 321.
- Rhabdornis minor* and *R. inornatus*, n. spp., Samar ; W. R. OGILVIE GRANT, Bull. B. O. C. vi, pp. xvii & xviii.
- Tichodroma muraria*, notes on the breeding ; W. H. ST. QUINTIN, Zoologist, 1896, pp. 290-292.
- Climacteris superciliosa*, described and figured ; A. J. NORTH, Horn Expedition Central Australia, ii, Zool. Aves, p. 96, pl. vii, fig. 2.

## Family SITTIDÆ.

- Sitta europæa*, its method of climbing; E. RUSSOW, Ornith. Monber. iv, pp. 94 & 95. *S. cæsia*, in Perthshire; H. M. DRUMMOND-HAY, Ann. Scott. Nat. Hist. 1896, p. 24.
- Sittella striata*, nest and eggs described; D. LE SOUEF, Ibis, 1896, pp. 314 & 315.
- Xerophila nigricincta*, figured; A. J. NORTH, Horn Expedition Central Australia, ii, Zool. *Aves*, pl. vii, fig. 1.

## Family MELIPHAGIDÆ.

- Euthyrhynchus meyeri*, n. sp., Moroka, S.E. New Guinea; T. SALVADORI, Ann. Mus. Genova (2) xvi, p. 97.
- Ptilotis salvadorii*, n. sp., Owen Stanley Mountains, New Guinea; E. HARTERT, Nov. Zool. iii, pp. 531 & 532. *P. visi*, n. sp., S. New Guinea; *id. t. c.* p. 15. *P. spilogaster*, n. sp., Port Moresby; W. R. OGILVIE GRANT, Ibis, 1896, p. 251. *P. keartlandi*, figured; A. J. NORTH, Horn Expedition Central Australia, ii, Zool. *Aves*, pl. vi, fig. 1. *P. (Cleptornis) marcheii*, figured; E. OUSTALET, N. Arch. Mus. Paris (3) vii, p. 202, pl. 7.
- Stigmatops ocularis* (Gould), = *Ptilotis limbata* (S. Muller); E. HARTERT, Nov. Zool. iii, p. 558.
- Philemon novæguineæ subtuberosus*, n. subsp., Fergusson I.; *id. t. c.* p. 328.
- Melilestes fergussonis*, n. sp., Fergusson I.; *id. t. c.* p. 237. *M. celebensis meridionalis*, n. subsp., Mt. Bonthain, S. Celebes; A. B. MEYER & L. W. WIGLESWORTH, Abh. Mus. Dresden, 1896-7, No. 1, p. 11.
- Myzomela obscura*, nest and eggs described; D. LE SOUEF, Ibis, 1896, p. 313.

## Family NECTARINIIDÆ.

- Cinnyris frenata dissentiens*, n. subsp., Indrulaman, S. Celebes; E. HARTERT, Nov. Zool. iii, p. 152. *C. büttikoferi*, n. sp., Sumba; *id. t. c.* pp. 581 & 582.
- Æthopyga ignicauda*, *Æ. gouldiæ*, and *Æ. dabryi*, notes on the nidification; E. C. STUART BAKER, Ibis, 1896, pp. 342-345.
- Anthreptes meeki*, n. sp., Fergusson I.; E. HARTERT, Nov. Zool. iii, p. 239.
- Arachnothera longrostris*, notes on the nidification; E. C. STUART BAKER, Ibis, 1896, pp. 345-348.

## Family DICEIDÆ.

- Dicæum chrysorrhæum* and *D. olivaceum*, nesting; E. C. STUART BAKER, Ibis, 1896, pp. 348-350.
- Hermotimia porphyrokema scapulata*, n. subsp., E. Celebes; A. B. MEYER & L. W. WIGLESWORTH, Abh. Mus. Dresden, 1896-97, No. 2, p. 16.
- Piprisoma modestum*, nesting; E. C. STUART BAKER, Ibis, 1896, pp. 350 & 351.
- Pholidornis rubrifrons*, Sharpe and Ussher, belongs to the *Sylviidæ*; G. E. SHELLEY, Birds of Africa, i, p. 67.

## Family ZOSTEROPIDÆ.

- Lophozosterops*, n. g., type *L. dohertyi*, n. sp., Volcano of Tambora, Sambawa; E. HARTERT, Nov. Zool. iii, pp. 567 & 568.
- Zosterops anomala*, n. sp., S. Celebes; A. B. MEYER & L. W. WIGLESWORTH, Abh. Mus. Dresden, 1896-97, No. 1, p. 12. *Z. subatrifrons*, n. sp., I. of Peling, E. Celebes; *id. t. c.* No. 2, p. 17. *Z. neglecta*, Seebohm, = *Z. citrinella*, Bp.; E. HARTERT, Nov. Zool. iii, pp. 540 & 541. *Z. westernensis* = *Z. carulescens*, ptil. æstiv.; A. J. NORTH, Rec. Austral. Mus. ii, No. 7, pp. 98-100.

## Family PARIDÆ.

- Parus major*, figured ; LILFORD, Col. Fig. Br. Birds, pt. xxxii. *P. borealis*, in E. Prussia ; O. KLEINSCHMIDT, Ornith. Monber. iv, pp. 191 & 192. *Acredula rosea*, in Hesse ; C. DEICHLER & O. KLEINSCHMIDT, J. Ornith. 1896, p. 448. *A. caudata rosea*, figured ; *id. t. c.* taf. xvi, fig. 2.

## Family LANIIDÆ.

- Laniarius nigrifrons*, n. sp., Kilimanjaro ; A. REICHENOW, Ornith. Monber. iv, pp. 95 & 96. *L. bocagci*, figured ; A. REICHENOW, J. Ornith. 1896, tab. ii, fig. 2.
- Lanius infuscatus*, n. sp., Zaisansk ; P. SOUCHKINE, Ann. Mus. St. Petersburg. pp. 40 & 41. *L. senator*, in Hungary ; G. SZABO, Aquila, iii, p. 228 ; R. S. CHERNEL, *t. c.* p. 229. *L. cristatus*, nesting habits ; E. C. STUART BAKER, Ibis, 1896, pp. 330 & 331. *L. dealbatus*, eggs figured ; A. KOENIG, J. Ornith. 1896, tab. vi, figg. 6, a & b.
- Pelcinius* and allied genera ; SHELLEY, Ibis, 1896, pp. 234-236.
- Pachycephala fulviventris*, n. sp., Sumba I. ; E. HARTERT, Bull. B. O. C. v, p. xlvi. *P. bonthaina*, n. sp., Mt. Bonthain, S. Celebes ; A. B. MEYER & L. W. WIGLESWORTH, Abh. Mus. Dresden, 1896-97, No. 1, p. 10. *P. sharpei*, n. sp., Moroko, S.E. New Guinea ; T. SALVADORI, Ann. Mus. Genova (2) xvi, p. 88. *P. everetti*, n. sp., Djampea I., S. Celebes ; E. HARTERT, Nov. Zool. iii, p. 170. *P. schlegeli obscurior*, n. subsp., S.E. New Guinea ; *id. t. c.* p. 15. *P. fortis trobriandi*, n. subsp., Kiriwina, Trobriands ; *id. t. c.* p. 236. *P. falcata*, nest and eggs described ; D. LE SOUEF, Ibis, 1896, p. 314.
- Pœcilodryas armiti*, is a *Pachycephala* ; T. SALVADORI, Ann. Mus. Genova (2) xvi, p. 89.
- Pityriasis gymnocephala*, its egg described ; E. BARTLETT, Ibis, 1896, pp. 158 & 159 : *id.* Sarawak Note-book, Part i, p. 95.
- Rhectes ferrugineus brevipennis*, n. subsp., Aru I. ; E. HARTERT, Nov. Zool. p. 354.

## Family ARTAMIDÆ.

- Artamus superciliosus* and *A. personatus*, notes on ; R. HALL, Victorian Natural. xiii, pp. 36-40.

## Family AMPELIDÆ.

- Phainopepla nitens*, nesting habits in California ; F. A. MERRIAM, Auk, xiii, pp. 38-43.

## Family VIREONIDÆ.

- Hylophilus griseipes*, n. sp., Margarita I. ; C. W. RICHMOND, P. U. S. Mus. xviii, pp. 678 & 679.

## Family SYLVIIDÆ.

- Notes on a newly discovered habit in the Blackcap Warbler and other birds ; J. LOWE, Zoologist, 1896, pp. 1-10.
- Sylvia deserti*, egg figured ; A. KOENIG, J. Ornith. 1896, tab. vii, fig. 1.
- Melizophilus deserticolus*, egg figured ; *id. t. c.* tab. vii, fig. 2.
- Acanthopneuste viridana*, its nidification ; E. C. STUART BAKER, Ibis, 1896, p. 328.

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- Myiodynastes luteiventris*, egg figured; C. BENDIRE, Life-Hist. N. Amer. B. pl. ii, fig. 7.
- Myiozetetes texensis*, egg figured; *id. t. c.* pl. i, fig. 22.
- Myiarchus crinitus*, *M. mexicanus*, *M. m. majister*, *M. cinerascens*, and *M. c. nuttingi*, eggs figured; *id. t. c.* pl. ii, figg. 9-14.
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- Empidochanes pæcilurus peruanus*, n. subsp., Peru; *id. t. c.* p. 366.
- Empidonax flaviventris*, *E. difficilis*, *E. acadicus*, *E. pusillus*, *E. p. traillii*, *E. minimus*, *E. hammondi*, and *E. wrightii*, eggs figured; C. BENDIRE, Life-Hist. N. Amer. B. pl. ii, figg. 23-33.
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# IV. REPTILIA AND BATRACHIA.

BY

G. A. BOULENGER, F.R.S.

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- Ablepharus lineo-ocellatus*, D. & B., var. *ruficauda*, Lucas & Frost, described and figured by LUCAS & FROST, Rep. Horn Exped. ii, p. 144, pl. x, fig. 3. *A. greyi*, Gray: note by LUCAS & FROST, P. Linn. Soc. N. S. Wales, xxi, p. 282. *A. rhodonoides*, n. sp., *ibid.* p. 281, Mildura, Victoria. *A. tenuis* and *ornatus*, n. spp., R. BROOM, Ann. Nat. Hist. (6) xviii, pp. 342 & 343, Muldiva, N. Queensland.
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- Chalcides ocellatus*, Forsk.: notes by ANDERSON, Herp. Arab. p. 49: n. var. *humilis*; BOULENGER, Ann. Mus. Genova (2) xvi, p. 552, Erythrea.
- Sepsina ornaticeps*, n. sp., BOULENGER, Ann. Nat. Hist. (6) xvii, p. 448, Madagascar.
- Scelotes braueri*, n. sp., BÆTTGER, Zool. Anz. xix, p. 349, Seychelles.
- Pygomeles trivittatus*, n. sp., BOULENGER, *t. c.* p. 449, Madagascar.

## RHIPTOGLOSSA.

- Chamæleon calyptratus*, A. Dum.: on a specimen from Yemen; ANDERSON, Herp. Arab. p. 62. *C. dilepis*, Leach, p. 47, and *biteniatus*, Fisch.: remarks by TORNIER, Kriechth. O. Afr. *C. sphaeropholis*, Reichen., p. 55, pl. ii, fig. 3, *deremensis*, Matschie, p. 56, pl. ii, fig. 8, *taitensis*, Stdr., p. 57, pl. ii, fig. 9, *fischeri*, Reichen., p. 57, pl. ii, fig. 4, *temporalis*, Matschie, p. 62, pl. ii, fig. 5, and *spinus*, Matschie, p. 64, pl. ii, fig. 6, noticed and figured by TORNIER, *t. c.* *C. jacksonii*, n. sp., BOULENGER, Ann. Nat. Hist. (6) xvii, p. 376, Uganda.
- Rhampholeon brevicaudatus*, Matschie [= *brachyurus*, Gthr.]; described and figured by TORNIER, *t. c.* p. 64, pl. ii, fig. 7.

## OPHIDIA.

BOULENGER'S third and concluding volume of the Catalogue of Snakes deals with the *Colubridæ opisthoglyphæ* and *proteroglyphæ*, *Amblycephalidæ*, and *Viperidæ*. 1639 species of Snakes are regarded as valid.

C. PHISALIX, C.R. Soc. Biol. (10) iii, pp. 963-965, dealing with the physiological characters of the buccal glands of Snakes, confirms the views of the Recorder on the classification of the suborder.

Remarks on the dentition of Snakes and on the evolution of the poison-fangs; BOULENGER, P. Z. S. 1896, pp. 614-616.

On the buccal glands and teeth of certain Opisthoglyph and Proteroglyph Colubridæ; G. S. WEST, P. Z. S. 1895, pp. 812-826, pls. xlv-xlvi.

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- On the nervous terminations of the cells of the salivary glands in Snakes ;  
BISOGNI, *Int. J. Anat.* xiii, pp. 173-180, pl. x.
- On the upper lingual gland of Vipers ; C. BISOGNI, *Riv. ital. Sci. Nat.*  
xvi, pp. 33-35.
- On Snake-poison ; C. MÜLLER, *Zool. Garten*, xxxvii, pp. 161-170.
- On the poison of *Naja tripudians* ; PHISALIX & BERTRAND, *C.R. Soc.*  
*Biol.* (10) iii, p. 858.
- On the physiological action of the poison of *Pseudechis porphyriacus* ;  
C. J. MARTIN, *J. R. Soc. N. S. Wales*, xxix, pp. 146-277.
- On the preservation of the virulence of Snake-poison in specimens in  
spirit ; P. MAISONNEUVE, *C.R. Ac. Sci.* cxxiii, p. 513.
- On an easy method of collecting Snake-poison from living specimens ;  
P. GIBIER, *t. c.* p. 1012.

## TYPHLOPIDÆ.

- Helminthophis ternetzii*, n. sp., BOULENGER, *Cat. Sn.* iii, p. 584, Paraguay.
- Typhlops cuneirostris*, Ptrs., redescribed by BOULENGER, *Ann. Mus.*  
*Genova* (2) xvii, p. 10. *T. lineatus*, n. var. *numatrana* ; WERNER,  
*Verh. Ges. Wien*, xlvi, p. 13, Sumatra. *T. nigricauda*, n. sp.,  
BOULENGER, *P. Z. S.* 1895, p. 867, pl. xlix, fig. 1, Daly R., N.  
Australia.

## GLAUCONIIDÆ.

- Glauconia algeriensis*, n. sp., JAQUET, *Bibliog. Anat.* iv, p. 79, figg., near  
Biskra, Algeria [= *G. macrorhynchus*, Ptrs.—REC.]. *G. nursii*,  
n. sp., ANDERSON, *Herp. Arab.* p. 64, Aden. *G. dissecta*, n. sp.,  
COPE, *Amer. Natural.* xxx, p. 753, New Mexico.

## BOIDÆ.

- Eryx jaculus*, L. : notes on living specimens ; F. WERNER, *Zool. Garten*,  
xxxvii, p. 85.
- Lichanura roseofusca*, Cope : note by VAN DENBURGH, *P. Calif. Ac.* (2)  
v, p. 1006.

## ILYSIIDÆ.

- Cylindrophis isolepis*, n. sp., BOULENGER, *Ann. Nat. Hist.* (6) xviii,  
p. 62, Jampea I.

## UROPELTIDÆ.

- Rhinophis fergusonianus* n. sp., BOULENGER, *Cat. Sn.* iii, p. 596 ; J. Bom-  
bay Soc. x, p. 236, pl., Travancore.

## COLUBRIDÆ.

*Aglyphæ.*

- Liophidium*, n. g., allied to *Polyodontophis*, Blgr. ; BOULENGER, *Cat. Sn.* iii,  
p. 598. *L. trilineatum*, n. sp., *id. ibid.* p. 599, Madagascar.
- Tropidonotus tessellatus*, Laur. : on its distribution in Germany ; GEISEN-  
HEINER, *Verh. Ver. Rheinland*, lii, 1895, p. 33. *T. sarasinorum*,  
n. sp., BOULENGER, *Ann. Nat. Hist.* (6) xvii, p. 394, Celebes.
- Synophis*, n. g., allied to *Streptophorus*, D. & B., for *S. bicolor*, n. sp. ;  
PERACCA, *Boll. Mus. Torino*, xi, No. 266, fig., S. America.

- Pseudoxyrhopus occipitalis*, n. sp., BOULENGER, Cat. Sn. iii, p. 613, Madagascar.
- Zaocys tornieri*, n. sp., WERNER, Verh. Ges. Wien, xlvi, p. 15, pl. i, fig. 1, Sumatra [= *Herpetodryas carinatus*, L.—REC.].
- Bascanion piceum*, Cope: note by VAN DENBURGH, P. Calif. Ac. (2) v, p. 1006.
- Zamenis smithii*, Blgr., recorded from Assab by BOULENGER, Ann. Mus. Genova (2) xvi, p. 553. *Z. somalicus*, n. sp., *id. op. cit.* xvii, p. 11, Somaliland. *Z. glazunowi*, n. sp., NIKOLSKI, Annuaire Ac. St. Petersb. 1896, App. p. xiv, Turkestan [= *Z. ravergeri*, Ménétr.—REC.].
- Phrynonax poecilonotus*, Gthr. (= *guentheri*, Blgr., *lunulatus*, Cope, *fasciatus*, Ptrs.): notes by PERACCA, Boll. Mus. Torino, xi, No. 253, p. 6.
- Coluber polylepis*, n. sp., WERNER, Verh. Ges. Wien, xlvi, p. 347, pl. vi, fig. 3, Honduras [= *C. triaspis*, Cope.—REC.].
- Dendrophis caudolineolatus*, Gthr.: note by WERNER, Verh. Ges. Wien, xlvi, p. 9.
- Dromicus sanctæ-crucis*, Cope, var. *portoricensis*, R. & L.: notes by BOULENGER, Jahresber. Ver. Magdeburg, 1896, p. 113.
- Rhadinaea sagittifera*, Jan: remarks by KOSLOWSKY, Revist. Mus. La Plata, vi, 1895, p. 368; referred to *Liophis* by PERACCA, Boll. Mus. Torino, xi, No. 252, p. 3. *R. elegantissima*, n. sp., KOSLOWSKY, *op. cit.* vii, p. 155, pl. i, Sierra de la Ventana, Prov. Buenos Ayres. *R. pulveriventris*, n. sp., BOULENGER, Cat. Sn. iii, p. 635, Costa Rica.
- Coronella austriaca*, Laur.: notes on the habits; VIAUD-GRAND-MARAIS, Bull. Soc. Ouest France, vi, p. 307. *C. calligaster*, Harl.: on its habits in confinement; A. HANAU, Zool. Garten, xxxvii, p. 312. *C. dalmatica*, n. sp. (?), KATURIC, Glasnik Naravosl. druzt. viii, p. 116, Dalmatia.
- Drepanodon* [name preoccupied], n. g., for *Clælia anomala*, Jan; PERACCA, Boll. Mus. Torino, xi, No. 231, p. 3. *D. astigmaticus*, n. sp., *id. ibid.* p. 5, Upper Amazon [= ? *D. anomalus*, Jan.—REC.].
- Asthenophis*, n. g., allied to *Prosymna*, Gray, for *A. ruspolii*, n. sp., BOULENGER, Ann. Mus. Genova (2) xvii, p. 12, Somaliland.
- Scaphiophis albopunctatus*, Ptrs.: remarks by TORNIER, Kriechth. O. Afr. p. 71.
- Conopsis*, Gthr.: on the variations in scales and coloration; DUGÈS, Bull. Mus. Paris, 1896, p. 319, figg.
- Homalosoma lutrix*, L.: remarks by TORNIER, Kriechth. O. Afr. p. 72, pl. v, figg. 5-14.
- Atractus baettgeri*, n. sp., BOULENGER, Cat. Sn. iii, p. 645, Bolivia. *A. boulengeri* and *iridescens*, n. spp., PERACCA, Boll. Mus. Torino, xi, No. 252, pp. 1 & 2, figg., S. America.
- Geophis tecpanicus*, n. sp., DUGÈS, Naturaleza (2) ii, p. 455, pl. xxviii, Tecpan de Galeana, Mexico. [Belongs to *Atractus*, Wagl.—REC.]
- Geophis albonuchalis*, n. sp.; GÜNTHER, Ann. Nat. Hist. (6) xvii, p. 229, Sarawak. [Belongs to *Agrophis*, F. Müll.—REC.]
- Calamaria acutirostris* and *muelleri*, n. spp., BOULENGER, *t. c.* p. 394, Celebes. *C. nuchalis*, p. 62, *curta*, p. 62, and *gracilis*, p. 63, n. spp., *id. op. cit.* xviii, Celebes. *C. anceps*, n. sp., WERNER, Verh. Ges. Wien, xlvi, p. 18, Borneo [= *C. brachyura*, Blgr.—REC.]. *C. hoscii*, n. sp., GÜNTHER, Ann. Nat. Hist. (6) xvii, p. 229, Sarawak. *C. berezowskii*, n. sp., GÜNTHER, Annuaire Ac. St. Petersb. 1896, p. 205, pl. i, fig. A, Lun-ngan-fu, S. China.
- Dasypeltis scabra*, L.: notes on the mode of feeding; M. EDITH DURHAM, P. Z. S. 1896, p. 715, pl. xxxii.

*Opisthoglyphæ.*

- Hypsirhina indica*, Gray, and *chinensis*, Gray, figured by BOULENGER, Cat. Sn. iii, pl. i, figg. 1 & 2.
- Cerberus australis*, Gray, figured; *id. ibid.* pl. ii, fig. i. *C. microlepis*, n. sp., *id. ibid.* p. 18, pl. ii, fig. 2, Philippines.
- Alluaudina bellyi*, Mocq.: note by WERNER, Verh. Ges. Wien, xlvi, p. 361.
- Geodipsas*, n. g., for *Tachymenis infralineata*, Gthr., which is figured; BOULENGER, Cat. Sn. iii, p. 32, pl. iii, fig. 1.
- Stenophis*, n. g., for *Dipsas gaimardi*, D. & B., and allies; *id. ibid.* p. 39. *S. maculatus*, Gthr., and *betsileanus*, Gthr., figured; *id. ibid.* pl. iv, figg. 2 & 4. *S. guentheri*, p. 40, pl. iv, fig. 1, *inornatus*, p. 42, and *variabilis*, p. 43, pl. iv, fig. 3, n. spp., *id. ibid.*, Madagascar.
- Lycodryas sancti-johannis*, Gthr., figured; *id. ibid.* pl. iii, fig. 2.
- Turbophis guentheri*, And., recorded from Jerusalem by WERNER, Verh. Ges. Wien, xlvi, p. 361. *T. savignyi*, n. sp., BOULENGER, Cat. Sn. iii, p. 48, Syria, Lower Egypt.
- Dipsadomorphus nigriceps*, Gthr., figured; *id. ibid.* pl. iii, fig. 3. *D. barnesii*, Gthr.; note by WERNER, Verh. Ges. Wien, xlvi, p. 362.
- Himantodes inornatus*, n. sp., *id. ibid.* p. 88, pl. v, fig. 1, Nicaragua.
- Leptodira nigrofasciata*, Gthr., figured; *id. ibid.* pl. v, fig. 2.
- Oxyrhopus bitorquatus*, Gthr., figured; *id. ibid.* pl. vi, fig. 1. *O. maculatus*, n. sp., *id. ibid.* p. 110, pl. vi, fig. 2, Uruguay.
- Rhinostoma vittatum*, n. sp., *id. ibid.* p. 115, pl. v, fig. 3, Argentina.
- Tachymenis peruviana*, Wgm.: note by WERNER, Verh. Ges. Wien, xlvi, p. 356. *T. affinis*, n. sp., BOULENGER, *t. c.* p. 119, pl. vii, fig. 1, Peru.
- Pseudablades*, n. g., for *Eirenis agassizii*, Jan, *id. ibid.* p. 126.
- Philodryas burmeisteri*, Jan: note by WERNER, Verh. Ges. Wien, xlvi, p. 362. *P. bolivianus*, n. sp., BOULENGER, *t. c.* p. 132, pl. ix, fig. 1, Bolivia.
- Ialtris dorsalis*, Gthr., figured; *id. ibid.* pl. vii, fig. 2.
- Rhagerhis oxyrhynchus*, Reinh.: remarks by TORNIER, Kriechth. O. Afr. p. 79, fig.
- Psammophis schokari*, Forsk.: notes by ANDERSON, Herp. Arab. p. 53. *P. bocagii*, Blgr., and *longifrons*, Blgr., figured by BOULENGER, *t. c.* pl. viii, figg. 1 & 2. *P. jallæ*, n. sp., PERACCA, Boll. Mus. Torino, xi, No. 255, p. 2, figg., Upper Zambesi.
- Dryophis mycterizans*, L.: on a melanotic specimen; WERNER, Verh. Ges. Wien, xlvi, p. 362. *D. xanthozona*, Boie: note by WERNER, *l. c.*
- Dryophiops*, n. g., for *Dipsas rubescens*, Gray, BOULENGER, Cat. Sn. iii, p. 193. *D. philippina*, n. sp., *id. ibid.* p. 195, pl. ix, fig. 2, Philippines.
- Stenorhina degenhardti*, Berth.: on a case of simous malformation; BOULENGER, Ann. N. H. (6) xviii, p. 399, figg.
- Erythrolamprus asculapii*, L.: on some specimens without groove on the posterior teeth; G. S. WEST, J. Linn. Soc. xxv, p. 419, pl. xviii.
- Homalocranium longifrontale*, n. sp., BOULENGER, Ann. N. H. (6) xvii, p. 17, and Cat. Sn. iii, pl. ix, fig. 3, Colombia.
- Apostolepis quinquelineata*, British Guiana, and *nigroterminata*, N.-E. Peru, n. spp., BOULENGER, Cat. Sn. iii, p. 235, pl. x, figg. 1 & 2.
- Elapomorphus trilineatus*, Blgr., figured; *id. ibid.* pl. x, fig. 3.
- Macrelaps*, g. n., for *Uriechis microlepidotus*, Gthr.; BOULENGER, *t. c.* p. 255.
- Micrelaps boettgeri*, n. sp., BOULENGER, Ann. Mus. Genova (2) xvii, p. 13, Somaliland.

*Aparallactus weneri*, Blgr. : remarks by TORNIER, Kriechth. O. Afr. p. 79. *A. weneri*, Blgr., *guentheri*, Blgr., and *anomalus*, Blgr., figured ; *id. ibid.* pl. xi, figg. 1, 2, 3. *A. bouleengeri*, n. sp., WERNER, Verh. Ges. Wien, xlvi, p. 363, pl. vi, fig. 6, Cameroons.

*Proteroglyphæ.*

- Hydrelaps*, g. n., allied to *Hydrophis*, Daud. ; BOULENGER, Cat. Sn. iii, p. 270. *H. darwiniensis*, n. sp., *id. ibid.* pl. xii, fig. 1, Port Darwin, N. Australia.
- Hydrophis latifasciatus*, Gthr., pl. xiii, *cantoris*, Gthr., pl. xiv, and *melanocephalus*, Gray, pl. xv, figured ; *id. ibid.* *H. kingii*, p. 276, N. Australia, *pacificus*, p. 278, pl. xii, fig. 2, New Britain, and *leptodira*, p. 285, mouths of the Ganges, n. spp., *id. ibid.*
- Distira belcheri*, Gray, figured ; *id. ibid.* pl. xvii, fig. 2. *D. grandis*, p. 293, pl. xvi, Indian Ocean, and *macfarlandi*, p. 294, pl. xvii, fig. 1, Torres Straits, n. spp., *id. ibid.*
- Aipysurus eydouxi*, Gray : note by WERNER, Verh. Ges. Wien, xlvi, p. 363.
- Platurus muelleri*, n. sp., BOULENGER, *t. c.* p. 309, South Pacific.
- Glyphodon tristis*, Gthr., figured, *id. ibid.* pl. xviii, fig. 1.
- Diemenia nuchalis*, Gthr. : note by LUCAS & FROST, Rep. Horn Exped. ii, p. 148. *D. olivacea*, Gray, figured by BOULENGER, *t. c.* pl. xviii, fig. 2.
- Pseudechis cupreus*, n. sp., *id. ibid.* p. 329, Murray River.
- Denisonia damelii*, Gthr., figured ; *id. ibid.* pl. xviii, fig. 3. *D. punctata*, n. sp., *id. ibid.* p. 341, pl. xviii, fig. 4, N.-W. Australia.
- Hoplocephalus stirlingi*, n. sp., LUCAS & FROST, *t. c.* p. 149, pl. xii, fig. 5, Central Australia [= *Denisonia frenata*, Ptrs.—REC.].
- Micropechis*, n. g. for *Coluber ikaheka*, Less. ; BOULENGER, *t. c.* p. 346.
- Tropidechis carinatus*, Gthr., figured ; *id. ibid.* pl. xix, fig. 1.
- Notechis*, n. g., for *Naia scutata*, Ptrs. ; *id. ibid.* p. 351.
- Brachyaspis*, n. g., for *Naia curta*, Schleg. ; *id. ibid.* p. 353.
- Elapognathus*, n. g., for *Hoplocephalus minor*, Gthr., which is figured ; *id. ibid.* p. 356, pl. xix, fig. 2.
- Bouleengerina stormsi*, Dollo, redescribed and figured by BOULENGER, P. Z. S. 1895, p. 866, pl. xlviii.
- Elapechis*, n. n. for *Elapsoidea*, Bocage nec Boie ; BOULENGER, Cat. Sn. iii, p. 358. *E. niger*, Gthr., figured ; *id. ibid.* pl. xx, fig. 1.
- Bungarus ceylonicus*, Gthr., and *bungaroides*, Cant., figured ; *id. ibid.* pl. xviii, figg. 3 & 5.
- Naia nigricollis*, Reinh. : notes on habits, bite, &c. ; MACLAUD, Arch. Médecine Nav. et Colon. 1896, p. 392. *N. sputatrix*, Reinw. : note by WERNER, Verh. Ges. Wien, xlvi, p. 20. *N. goldii*, Blgr., figured by BOULENGER, *t. c.* pl. xx, fig. 2. *N. guentheri*, n. n. for *Pseudonaia nigra*, Gthr., *id. ibid.* p. 388 ; figured, pl. xxi. *N. yakomæ*, n. sp. [= *N. goldii*, Blgr.], MOCQUARD, Congr. Zool. Leyden, p. 233, Upper Ubangi, French Congo.
- Hornea*, n. g., allied to *Rhynchelaps*, Jan, for *H. pulchella*, n. sp., LUCAS & FROST, *t. c.*, p. 150, pl. xii, fig. 6, Central Australia.
- Elaps elegans*, Jan : note by WERNER, Verh. Ges. Wien, xlvi, p. 353. *E. michoacanensis*, Dugès : note by DUGÈS, Bull. Mus. Paris, 1896, p. 60. *E. buckleyi*, p. 416, pl. xxii, fig. 1, N. Brazil, E. Ecuador, *anomalus*, p. 417, pl. xxii, fig. 2, Colombia, *fraseri*, p. 432, pl. xxii, fig. 3, Ecuador, and *mentalis*, p. 432, pl. xxii, fig. 4, Colombia, Ecuador, n. spp., *id. ibid.*
- Dendraspis angusticeps*, Smith : noticed and figured as *Chlorophis*, sp., by TORNIER, Kriechth. O. Afr. p. 70, fig.

## AMBLYCEPHALIDÆ.

- Amblycephalus monticola*, Cant., figured by BOULENGER, Cat. Sn. iii, pl. xxiii, fig. 1.  
*Leptognathus albifrons*, Sauv., and *alternans*, Fisch. : notes by WERNER, Verh. Ges. Wien, xlvi, pp. 363 & 364, pl. vi, fig. 7. *L. ventrimaculata*, Blgr., figured by BOULENGER, t. c. pl. xxiv, fig. 2. *L. leucomelas*, n. sp., *id.*, Ann. Nat. Hist. (6) xvii, p. 17, and Cat. pl. xxiv, fig. 1, Colombia. *L. andiana*, p. 452, pl. xxiii, fig. 2, Ecuador, and *elegans*, p. 452, pl. xxiii, fig. 3, Tehuantepec, n. spp., *id.* Cat. *Pseudoparcas*, n. g., for *Leptognathus vagus*, Jan ; *id. ibid.* p. 462.

## VIPERIDÆ.

- On the structure of the envelope of the egg of vipers ; BISOGNI, Int. J. Anat. xiii, pp. 173-180, pl. ix.  
*Causus resimus*, Ptrs. : remarks by TORNIER, Kriechth. O. Afr. p. 86.  
*Vipera berus*, L. : notes on specimens from Normandy ; BOULENGER, Bull. Soc. Rouen, xxxi, p. 149 : on specimens from Saxony ; MEYER & HELM, vii-x. Jahresber. Ornith. Beob. Sachsen, p. 146.  
*Pseudocerastes*, n. g., for *Cerastes persicus*, D. & B. ; BOULENGER, Cat. Sn. iii, p. 501.  
*Echis coloratus*, Gthr., figured ; *id. ibid.* pl. xxv, fig. 1.  
*Atheris*, Cope : note on the specific characters ; GÜNTHER, Ann. Nat. Hist. (6) xvii, p. 266. *A. ceratophorus*, Werner : remarks by TORNIER, Kriechth. O. Afr. p. 85.  
*Atractaspis corpulenta*, Hallow. : note by WERNER, Verh. Ges. Wien, xlvi, p. 364. *A. reticulata*, n. sp., SJÖSTEDT, Zool. Anz. xix, p. 516, Ekundu, Cameroon.  
*Provipera battgeri*, Kink. (foss.) : tooth described and figured by KINKELIN, Abh. Senckenb. Ges. xx, p. 36, fig.  
*Lachesis okinavensis*, Blgr., and *flavomaculatus*, Gray, figured ; BOULENGER, t. c. pl. xxv, figg. 2 & 3. *L. bicolor*, Bocourt, and *aurifer*, Salv. : notes by WERNER, Verh. Ges. Wien, xlvi, pp. 348 & 355, pl. vi, figg. 4 & 5. *L. fasciatus*, n. sp., BOULENGER, Ann. Nat. Hist. (6) xviii, p. 63, Jampea I.  
*Bothrops burmeisteri*, n. sp., KOSLOWSKY, Rev. Mus. La Plata, vi, 1895, p. 369, pl. iv, Chilecito, Argentina, = *L. ammodytoides*, Leybold ; BERG, An. Mus. Buenos Aires, v, p. 163.

## INCERTÆ SEDIS.

- Symoliophis delgadoi*, n. sp., for a vertebra from the Cretaceous of Portugal ; SAUVAGE, C.R. Ac. Sci. cxxii, p. 251. [Should perhaps be referred to *Dolichosauria*.—REC.]

## ORNITHOSAURIA.

- On the quadrate bone of a gigantic Pterodactyl from Bahia ; A. S. WOODWARD, Ann. Nat. Hist. (6) xvii, p. 255, fig.

## DINOSAURIA.

- O. C. MARSH, Rep. U. S. Geol. Surv. xvi, pp. 133-244, figg., pls. ii-lxxxv, gives a very full summary of our knowledge of American Dinosaurs, accompanied by reprints of nearly all the figures previously published by him.



- The same author also gives restorations of some European Dinosaurs, with suggestions as to their place among the Reptilia; *Geol. Mag.* (2), Dec. iv, iii, pp. 1-9, pls. i-iv.
- The following is MARSH'S classification as drawn up in *Amer. J. Sci.* 1, pp. 491-498, and *Geol. Mag.* (2), Dec. iv, iii, pp. 388-400, figg. :—
- Ord. THEROPODA. Fam. *Megalosauridæ*, *Dryptosauridæ*, *Labrosauridæ*, *Plateosauridæ*, *Anchisauridæ*, *Cæduridæ*, *Compsognathidæ*, *Ceratosauridæ*, *Ornithomimidæ*, *Hallopidæ*.
- Ord. SAUROPODA. Fam. *Atlantosauridæ*, *Diplodocidæ*, *Morosauridæ*, *Pleurocalidæ*, *Titanosauridæ*, *Cardiodontidæ*.
- Ord. PREDENTATA. Fam. *Stegosauridæ*, *Scelidosauridæ*, *Nodosauridæ*, *Ceratopsidæ*, *Cumptosauridæ*, *Laosauridæ*, *Hypsilophodontidæ*, *Iguanodontidæ*, *Trachodontidæ*, *Clasauridæ*, *Nanosauridæ*.
- O. C. MARSH, *Congr. Zool. Leyden*, pp. 196-211, figg., pl. i, also deals with the affinities and classification of the Dinosaurs.
- J. B. HATCHER, *Amer. Natural.* xxx, pp. 113-118, writes on the history of the discovery of Laramie horned Dinosaurs, and on the localities whence they were procured.
- On Dinosaurian remains from Madagascar; DEPÉRET, *C.R. Ac. Sci.* cxxii, p. 483; M. BOULE, *Bull. Mus. Paris*, 1896, p. 347.
- Megalosaurus crenatissimus*, n. sp., DEPÉRET, *Bull. Soc. geol. France* (3) xxiv, p. 188, pl. vi, figg. 4-8, Upper Cretaceous, Madagascar.
- Titanosaurus madagascariensis*, n. sp., DEPÉRET, *C.R. Ac. Sci.* cxxii, p. 485, and *Bull. Soc. geol. France* (3) xxiv, p. 181, pl. vi, figg. 1-3, Upper Cretaceous, Madagascar.

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- Tomistoma schlegelii*, S. Müll.: recorded from Perak, Malay Peninsula, by BOULENGER, *P. Z. S.* 1896, p. 628: remarks on specimens from Borneo and Sumatra; H. LENZ, *Mt. Ges. Lubeck* (2) Heft x, p. 146, pl.
- Crocodylus porosus*, Laur.: on its occurrence far above the tideway in a Sumatran river; E. DUBOIS, *Notes Leyden Mus.* xviii, p. 134. *C. blavieri*, Gray (foss.): note by SAUVAGE, *Bull. Soc. zool. France*, xxi, p. 206.
- Capellinosuchus*, n. g., allied to *Plesiosuchus*, for *C. mutinensis*, n. sp. (foss.), SIMONELLI, *Rend. Acc. Lincei* (5) v, ii, p. 11, figg., Cretaceous, San Valentino, Italy.
- Goniopholis pugnax*, Koken (foss.): further notes and figures by KOKEN, *Pal. Abh.* (2) iii, p. 119, pls. xi & xii.
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- Cynodontosuchus*, n. g., allied to the preceding, for *C. rothi*, n. sp. (foss.); *id. ibid.* p. 18, pl. ii, Red Sandstone, Neuquen Territory, Argentine Republic.
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*S. intermedius*, n. sp. (foss.), *id. ibid.*, p. 5, pl. i, Jurassic, Beuzeval, Normandy.  
*Suchodus durobrivensis*, Lyd. (foss.): recorded from the Oxfordian of Villers, Normandy, by A. BIGOT, *t. c.* p. 9, pl. ii, figg. 3-8.

## CHELONIA.

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 J. F. VAN BEMMELEN, in Gegenbaur's Festschrift, ii, pp. 279-286, describes the skull of *Dermochelys coriacea*, and discusses the value of its characters from the phylogenetic point of view.  
 On the presence of the "præsplénial" bone in *Toxochelys* and *Callichelys*; BAUR, Anat. Anz. xi, p. 569.  
 On the spinal ganglia of *Chelydra serpentina*; G. C. HUBER, *op. cit.* xii, pp. 424 & 425.  
 On the brain of *Trionyx muticus*; S. P. GAGE, Tr. Amer. Micr. Soc. xvii, pp. 185-238, pls. i-v.  
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 On the origin and development of the hæmovasal tissue in *Emys*; MEHNERT, Morphol. Arbeit. vi, pp. 1-47, pls. i-iii.  
*Trionyx pontanus*, n. sp. (foss.), LAUBE, Schildkrötenreste Böhm. (Prague, 1896, 4to), Brown Coal of Bohemia.  
*Sternotherus nigricans*, Donnd., and *sinuatus*, Smith: remarks by TORNIER, Kriechth. O. Afr. p. 4, fig.; BOULENGER, Ann. Mus. Genova (2) xvii, p. 15.  
*Pelomedusa galeata*, Schœpff: on its habits in confinement; A. HANAU, Zool. Garten, xxxvii, p. 311.  
*Testudo emys*, Schleg. & Müll.: notes by VAN LIDTH DE JEUDE, with figures of the plastron and skull, Notes Leyden Mus. xvii, p. 197, pls. v & vi. *T. ephippium*, Gthr.: notes by GÜNTHER, Nov. Zool. iii, p. 329, pls. xx-xxii. W. ROTHSCHILD, *op. cit.* p. 85, has further notes on gigantic Land Tortoises. *T. zarudnyi*, n. sp., NIKOLSKI, Annuaire Ac. St. Petersb. 1896, p. 369, E. Persia. *T. kalksburgensis*, n. sp. (foss.), TOULA, Zeitschr. Deutsch. Geol. Ges. xviii, pp. 915-924, figg., Tertiary, Kalksburg, near Vienna.  
*Emys orbicularis*, L.: further notes on its occurrence in Switzerland; FISCHER-SIGWART, Arch. Sci. Nat. (4) i, p. 610, and Zool. Garten, xxxvii, p. 244.  
*Cistudo carolina*, L.: on its habits in confinement; A. HANAU, *t. c.* p. 308. *C. bauri*, Taylor: remarks by LOENNBERG, P. U. S. Mus. xix, p. 253.  
*Brookeia*, n. g., for *Hardella baileyi*, E. Bartl.; E. BARTLETT, Sarawak Gazette, June 1, 1896, and Note-Book Sarawak, No. 2, 1896, p. 81.  
*Cinosternum odoratum*, Daud.: on its habits in confinement; A. HANAU, *t. c.* p. 309.  
*Adelochelys crussa*, n. g. & sp., allied to *Staurotypus*, for a skull of unknown origin; BAUR, Anat. Anz. xii, p. 314, figg. [Has not been compared with *Claudius*, Cope.—REC.]

- Chelydra rossignoni*, Bocourt : note by WERNER, Verh. Ges. Wien, xlvii, p. 344.
- Toxochelys latiremis*, Cope (foss.) : description and figure of the skull by O. P. HAY, Publ. Field Col. Mus. i, p. 101, pls. xiv & xv. The genus *Toxochelys* is regarded as the type of a family intermediate between *Chelydridæ* and *Chelonidæ*.
- Archelon*, n. g., a connecting form between the *Dermochelyidæ* and the *Chelonidæ*. *A. ischyros*, n. sp. (foss.), G. R. WIELAND, Amer. J. Sci. (4) ii, p. 399, figg., pl. vi, Cretaceous, South Dakota.
- Dermochelys coriacea*, L. : on a specimen from the Adriatic ; B. KOSIĆ, Glasnik Naravosl. druzt. viii, p. 117. On the digestive tract and food ; VAILLANT, C.R. Ac. Sci. cxxiii, p. 654.

## PLESIOSAURIA.

G. A. BOULENGER, Tr. Zool. Soc. London, xiv, p. 8, proposes the following classification, and defines the Suborders and Families :—

### I. MESOSAURIA.

#### 1. Mesosauridæ.

### II. NOTHOSAURIA.

#### 1. Lariosauridæ ; 2. Nothosauridæ.

### III. SAUROPTERYGIA.

#### 1. Pliosauridæ ; 2. Plesiosauridæ ; 3. Elasmosauridæ.

W. DAMES monographs the Plesiosaurs of the South German Lias ; Abh. Ak. Berlin, 1895, No. 2, 83 pp., figg., 3 pls.

On the structure of the Plesiosaurian skull, with figure of *Plesiosaurus macrocephalus*, Buckl. ; C. W. ANDREWS, Quart. J. Geol. Soc. lii, pp. 246–253, pl. ix.

*Plesiosaurus degenhardti*, Koken (foss.) : further notes and figures by KOKEN, Pal. Abh. (2) iii, p. 122, pls. xiii & xiv. *P. nothosauroides*, p. 12, figg., *guilelmi-imperatoris*, p. 16, pls. i–iii, and *bavaricus*, p. 68, pl. v, n. spp., DAMES, *i. c.* Lias, South Germany.

*Cryptoclidus oxoniensis*, Phillips : notes on the pelvis ; C. W. ANDREWS, Geol. Mag. (2) Dec. iv, iii, p. 145, figg.

*Lariosaurus balsami*, Curioni : description and figure of a small specimen from Perledo, apparently referable to this species ; BOULENGER, Tr. Zool. Soc. London, xiv, p. 1, figg., pl. i.

## THECODONTIA.

*Stegomus arcuatus*, n. g. & sp., for dermal armour allied to *Belodon*, from the Triassic Sandstone of New Haven, Conn. ; MARSH, Amer. J. Sci. (4) ii, p. 59, pl. i.

## ACROSAURIA.

W. DAMES, Sitzb. Ak. Berl. 1896, pp. 1107–1125, pl. vii, contributes to our knowledge of this extinct group of Reptiles.

## RHYNCHOCEPHALIA.

On the minute structure of the skin of *Sphenodon* ; G. OSAWA, Arch. mikr. Anat. xlvii, pp. 570–583, pl. xxix.

*Naosaurus mirabilis*, n. sp. (foss.), A. FRITSCH, SB. Bohmisch. Ges. 1895, No. lii, p. 2, fig., Permian, Bohemia.

- Cotylosauria* : E. D. COPE, Amer. Natural. xxx, p. 301, gives an abstract of his paper reported in the preceding Record.  
*Otocelidae*, n. fam. *Cotylosauria*, regarded as ancestral to the Chelonians; COPE, Amer. Natural. xxx, p. 399.  
*Otocelus*, n. g., for *O. testudineus*, n. sp. (foss.) ; *id. ibid.* Permian, Texas.  
*Conodectes*, n. g., for *C. favosus*, Cope (foss.) ; *id. ibid.* Permian, Texas.

## ANOMODONTIA.

- Aristodesmus*, n. g., for *Labyrinthodon rutimeyeri*, Wiedersh., which is referred to the Procolophonia, forming a link between the Anomodont Reptiles and the Monotremes, which the author proposes to unite under the name *Theropsida* ; SEELEY, P. R. Soc. lix, p. 167.

## BATRACHIA.

- On the brain and spinal cord of Batrachians ; STUDNIČKA, SB. Böhmisch. Ges. Nos. xxxiii, 1 & li.  
 On the lateral line system of sense organs in some North American Batrachians ; B. F. KINGSBURY, Tr. Amer. Micr. Soc. xvii, pp. 115-146, pls. i-v.  
 On the nature of the claws of Batrachians ; GÖPPERT, Morphol. Jahrb. xxv, pp. 1-30, figg., pl. i.  
 On the adipose bodies of Batrachians ; GIACOMINI, Monit. Zool. ital. vii, pp. 214-230 & 249-253.  
 On the regeneration of the slime-epithelium of the digestive canal in Batrachians ; C. SACERDOTTI, Arch. mikr. Anat. xlviii, pp. 359-369, pl. xv.  
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 G. WILSON, Tr. R. S. Edinb. xxxviii, pp. 509-526, 2 pls., writes on the development of the Müllerian duct in Batrachians.  
 On the influence of the vitellus in the gastrulation of Batrachian ova ; SAMASSA, Arch. Entwicklmech. ii, pp. 370-393, pl. xxiii.  
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 On the influence of electricity on the development of Batrachian ova ; U. ROSSI, *op. cit.* iv, pp. 273-297, fig., pls. ix-xiv.

## ECAUDATA.

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- On the carpus of the Tailless Batrachians ; A. PERRIN, Bull. Sci. France Belgique, xxvii, pp. 419-431, pl. xvi, and CR. Congr. Soc. Sav. Sorbonne, 1896, pp. 206-216, pl. v, and EMERY, Bull. Sci. France Belgique, xxix, pp. 288-291.
- On variation in the spinal nerves and the vertebral column in *Bufo vulgaris* ; H. ADOLPHI, Morphol. Jahrb. xxv, pp. 115-142, pl. viii.
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- On the so-called nasal- and skin-muscles of Tailless Batrachians ; GAUPP, Anat. Anz. xii, pp. 23-31, figg.
- H. H. WILDER, Zool. Jahrb. Anat. ix, pp. 273-318, figg., pls. xix-xxi, investigates the larynx of Batrachians.
- On the pseudothyroid gland of the Frog ; KOHN, Anat. Anz. xi, pp. 602-605, fig.
- On an abnormality in the arterial system of the Frog, in which the left lung is connected with the mesenteric artery by a well-developed functional vessel ; B. B. WATSON, Zool. Anz. xix, p. 442, fig.
- On the communication between peritoneal cavity and renal veins through the nephrostomial tubules in the Frog ; E. J. BLES, P. Cambridge Soc. ix, pp. 73-75.
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- On the evolution of the respiratory function in the Frog-embryo ; BATAILLON, CR. Soc. Biol. (10) iii, pp. 730-733.
- On development and resorption of chorda and hypochorda in *Alytes obstetricans* ; A. BERGFELDT, Anat. Hefte. Arb. vii, pp. 53-102, 3 pls.
- On the reproduction of limbs in Frog-larvæ ; D. BARFURTH, Arch. Entwicklmech. i, 1895, pp. 117-123, pl. vi.

- On the artificial formation of double embryos in Frog-larvæ; O. SCHULTZE, *t. c.* pp. 269-305, pls. xi & xii; J. LOEB, *t. c.* pp. 453-472, figg.
- Experiments of artificial fusion of Frog-larvæ; G. BORN, *op. cit.* iv, pp. 349-465 & 517-623, pls. xvi-xxii.
- Experiments of grafting with eggs of *Rana temporaria*; ENDRES & WALTER, *op. cit.* ii, pp. 38-51 & 517-543, pls. v-viii.
- On spermatogenesis in Tailless Batrachians; BERTACCHINI, *Int. J. Anat.* xiii, pp. 409-446, pls. xxi & xxii.

## PHANEROGLOSSA.

## RANIDÆ.

- R. esculenta*, L., erroneously recorded from Kincardineshire by P. J. WHITE, *Ann. Scott. Nat. Hist.* 1896, p. 162 [The frog observed being *R. temporaria*.—REC.]. *R. macrocnemis*, Blgr., redescribed by BOULENGER, *P. Z. S.* 1896, p. 548. *R. camerani*, Blgr., redescribed and figured; *id. ibid.* p. 550, pl. xxi, fig. 1. *R. ornata*, Ptrs.: on the tadpole; BOULENGER, *Ann. Mus. Genova* (2) xvii, p. 22. *R. bravana*, Ptrs.: redescribed by TORNIER, *Kriechth. O. Afr.* p. 92, fig. [= *R. galamensis*, D. & B.—REC.]. *R. oubanghiensis*, n. sp., MOCQUARD, *Congr. Zool. Leyden*, p. 234, Upper Ubangi, French Congo, = *R. galamensis*, D. & B., *id. C.R. Soc. Philom.* 1896, p. 44. *R. nutti* and *pulchra*, n. spp., BOULENGER, *Ann. Nat. Hist.* (6) xviii, pp. 468 & 469, L. Tanganyika. *R. luzonensis*, n. sp., BOULENGER, *op. cit.* xvii, p. 401, N. Luzon, Philippines.
- Nanorana*, n. g., allied to *Rana*; GÜNTHER, *Annuaire Ac. St. Petersb.* 1896, p. 207. *N. pleskei*, n. sp., *id. ibid.* p. 20, Prov. Sze-Chuen, China.
- Oreobatrachus*, n. g., allied to *Phrynobatrachus*, Gthr., for *O. baluensis*, n. sp.; BOULENGER, *Ann. Nat. Hist.* (6) xvii, p. 401, pl. xvii, fig. 1, Kina Balu, N. Borneo.
- Cornufer baluensis*, n. sp., BOULENGER, *t. c.* p. 449, Kina Balu, N. Borneo.
- Arthroleptis sechellensis*, n. sp., BETTGER, *Zool. Anz.* xix, p. 350, Seychelles.
- Mantidactylus majori*, n. sp., BOULENGER, *Ann. Nat. Hist.* (6) xviii, p. 420, Madagascar.
- Rhacophorus mocquardii* and *majori*, n. spp., BOULENGER, *op. cit.* xvii, p. 402, Madagascar. *R. macroscelis*, n. sp., *id. t. c.* p. 403, Kina Balu, N. Borneo. *R. peracæ*, n. sp., *id. op. cit.* xviii, p. 421, Madagascar. *R. monticola*, n. sp., *id. op. cit.* xvii, p. 395, Celebes. *R. chiropterus*, n. sp., WERNER, *Verh. Ges. Wien*, xlv, p. 22, pl. i, fig. 2, N. Borneo [= *R. dulitensis*, Blgr.—REC.].
- Rappia*, Gthr.: TORNIER, *Kriechth. O. Afr.* p. 96, discusses the characters on which species have been based in this genus, and deals very fully with the evolution of the markings, of which he gives a figure, pl. iv.
- Megalixalus brachynemis*, n. sp., BOULENGER, *Ann. Nat. Hist.* (6) xvii, p. 403, pl. xvii, fig. 2, British Central Africa.
- Hylambates aubryi*, A. Dum.: notes and figures by TORNIER, *t. c.* p. 158, pl. v, figg. 1-4. *H. ragazzii*, n. sp., BOULENGER, *Ann. Mus. Genova* (2) xvi, p. 554, Shoa.

## ENGYSTOMATIDÆ.

- Calophrynus brevis*, n. sp., BOULENGER, *Ann. Nat. Hist.* (6) xvii, p. 403, Madagascar.
- Diplopelma bunguranum*, Gthr., figured by GÜNTHER, *Nov. Zool.* iii, pl. viii, figg. 2 & 3.

*Sphenophryne variabilis*, n. sp., BOULENGER, Ann. Nat. Hist. (6) xviii, p. 64, Jampea I.

*Xenorhina oxycephala*, Schleg. : note on the type specimen ; GÜNTHER, t. c. p. 184. *X. atra*, n. sp., *id. ibid.* pl. viii, fig. 1, New Guinea.

## DYSCOPHIDÆ.

*Dyscophus grandidieri*, n. sp., BOULENGER, Ann. Nat. Hist. (6) xvii, p. 404, Madagascar.

## CYSTIGNATHIDÆ.

*Telmatobius hauthali*, n. sp., KOSLOWSKY, Rev. Mus. La Plata, vi, 1895, p. 359, pl. i, Andes of Catamarca, 13,000 feet.

*Hylodes leptopus*, Bell : note by WERNER, Verh. Ges. Wien, xlvi, p. 357.

*H. raniformis*, p. 19, *bufoniformis*, p. 19, and *erythropleura*, p. 20, n. spp., BOULENGER, Ann. Nat. Hist. (6) xvii, Colombia. *H. underwoodi*, n. sp., *id. op. cit.* xviii, p. 340, Costa Rica. *H. lavissimus* and *rostralis*, n. spp., WERNER, Verh. Ges. Wien, xlvi, pp. 349 & 350, Honduras.

*Ceratophrys occidentalis*, n. sp., BERG, An. Mus. Buenos Aires, v, p. 168, Arroyo Agri, Argentina.

*Hylorhina silvatica*, Bell : note by WERNER, t. c. p. 358.

*Paludicola muelleri*, n. sp., WERNER, Verh. Ges. Wien, xlvi, p. 358, Chili.

*Leptodactylus maculilabris*, n. sp., BOULENGER, Ann. Nat. Hist. (6) xvii, p. 404, Costa Rica.

*Borborocetes roseus*, D. & B., and *tæniatus*, Gir. : notes by WERNER, t. c. pp. 358 & 359. *B. pliciferus*, n. sp., *id. ibid.* p. 360, Chili.

*Limnodynastes ornatus*, Gray, noticed and figured by B. SPENCER, Rep. Horn Exped. ii, p. 156, pls. xiii, figg. 3 & 4, and xv, figg. 18-25.

*Chiroleptes platycephalus*, Gthr., and *brevipalmatus*, Gthr., noticed by B. SPENCER, t. c. pp. 161 & 165 ; the former figured, pls. xiii, fig. 1, and xiv, figg. 5-9. *C. dahlîi*, n. sp., BOULENGER, P. Z. S. 1895, p. 867, pl. xlix, fig. 2, Daly R., N. Australia.

*Helioporus pictus*, Ptrs., noticed and figured by B. SPENCER, t. c. p. 166, pls. xiii, fig. 2, and xiv, figg. 10-13.

## BUFONIDÆ.

*Nectophryne everetti*, n. sp., BOULENGER, Ann. Nat. Hist. (6) xvii, p. 450, Kina Balu, N. Borneo.

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## V. PISCES.

BY

G. A. BOULENGER, F.R.S.

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## II.—GENERAL SUBJECT.

GOODE & BEAN'S Oceanic Ichthyology, Washington, 1896, deals with the deep-sea and pelagic Fishes of the world, a great number of which are figured, the figures being either original or copied from other works.

MCINTOSH, Rep. Fish. Board Scotland, xiv, pt. iii, pp. 171-185, pl. v, continues his contributions to the life-histories and development of Fishes on the Scottish coasts, and W. WALLACE, *t. c.* pp. 223-227, publishes a list of the pelagic ova, larvæ, and young Fishes collected by the ss. 'Garland,' in 1895.

O. JAEKEL, SB. Ges. naturf. Fr., 1896, pp. 107-129, discusses the phylogeny of the higher groups of Fishes.

H. KLAATSCH investigates the structure of the pectoral fin in Crossopterygian Fishes, and discusses the Archipterygium theory. Gegenbaur Festschrift, i, pp. 259-291, figg., 4 pls.

B. DEAN, Anat. Anz. xi, pp. 673-679, figg., writes on the fin-fold origin of the paired limbs, in the light of the ptychopterygia of Palæozoic Sharks.

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#### TELEOSTEI.

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- Helicolenus*, n. g., for *Sebastes dactylopterus*, De la Roche; GOODE & BEAN, t. c. p. 248. *H. maderensis*, n. sp., *iid.* t. c. p. 250, pl. lxviii, fig. 244, Madeira.
- Pontinus rathbuni*, p. 255, pl. lxviii, fig. 245, *macrolepis*, p. 257, pl. lxix, fig. 247, and *longispinis*, p. 258, pl. lxviii, fig. 246, n. spp., GOODE & BEAN, t. c. N.-W. Atlantic, 80-130 faths.
- Sebastes marinus*, L., figured by GOODE & BEAN, t. c. pl. lxix, fig. 248. *S. kuhli*, Bowd., and *maderensis*, C. & V.: notes by COLLETT, Poiss. Hirondelle, pp. 13 & 15.
- Setarches parmaris*, Goode, figured by GOODE & BEAN, t. c. pl. lxx, fig. 249.
- Tetraroge albomarginata*, n. sp., PERUGIA, Ann. Mus. Genova (2) xvi, p. 51, Mentawi Is.
- Hexagrammus asper*, Steller, p. 239, *superciliosus*, Pall., p. 239, and *ordinatus*, Cope, p. 383: notes by J. H. & B. A. BEAN, P. U. S. Mus. xix. *H. asper*, Stell.: note by STEINDACHNER, Ann. Hofmus. Wien, xi, p. 202.
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## BERYCIDÆ.

- Beryx splendens*, Lowe, figured by GOODE & BEAN, Ocean. Ichthyol. pl. liii, fig. 197.
- Plectromus suborbitalis*, Gill, and *beanii*, Gthr., figured by GOODE & BEAN, t. c. pl. liv, figg. 201 & 202.
- Poromitra capito*, Goode & Bean, figured by GOODE & BEAN, t. c. pl. liii, fig. 200.
- Anoplogaster cornutus*, C. & V., figured by GOODE & BEAN, t. c. pl. liv, fig. 203.
- Caulolepis longidens*, Gill, figured by GOODE & BEAN, t. c. pl. lv, fig. 204.
- Stephanoberyx monæ*, Gill, figured by GOODE & BEAN, t. c. pl. lv, fig. 205. *S. gillii*, n. sp., *iid.* t. c. p. 187, pl. lvi, fig. 206, N.-W. Atlantic, 1209-2949 faths.
- Hoplostethus mediterraneum*, C. & V., figured by GOODE & BEAN, t. c. pl. lvi, fig. 208. *H. atlanticum*, Coll., redescribed and figured by COLLETT, Poiss. Hirondelle, p. 17, pl. iii, fig. 12.

## BATHYCLUPEIDÆ.

- A new family to include *Bathyclupea*, Alcock, which is referred to the neighbourhood of the *Berycidæ*; GILL in GOODE & BEAN, Ocean. Ichthyol. p. 190.
- Bathyclupea argentina*, n. sp., GOODE & BEAN, t. c. p. 190, pl. cxxiii, fig. 415, N.-W. Atlantic, 365 faths.

## ANOMALOPIDÆ.

The genus *Anomalops*, Kner., is raised to family rank, near the *Berycidae*; GILL in GOODE & BEAN, Ocean. Ichthyol. p. 190.

## POLYNEMIDÆ.

*Polynemus antillarum*, n. sp., PERUGIA, Ann. Mus. Genova (2) xvi, p. 16, Martinique.

## SCIÆNIDÆ.

*Plagioscion ternetzi*, Blgr., figured by BOULENGER, Tr. Zool. Soc. London, xiv, pl. iii.

*Umbrina pecchiolii*, Lawl. (foss.): notes by DE ANGELIS, Riv. ital. Pal. ii, pp. 100 & 255.

## XIPHIIDÆ.

*Cœlorhynchus rectus*, Ag. (foss.): on a gigantic rostrum from Belgium; DELHEID, Bull. Soc. malac. Belgique, xxix, p. lxxxv.

## TRICHIURIDÆ.

*Lepidopus caudatus*, Euphr., figured by GOODE & BEAN, Ocean. Ichthyol. pl. lvii, fig. 213.

*Euoxymetopon tæniatus*, Poey, figured by GOODE & BEAN, t. c. pl. lviii, fig. 214.

*Benthodesmus atlanticus*, n. sp., GOODE & BEAN, t. c. p. 205, pl. lviii, fig. 215, N.-W. Atlantic, 25-208 faths.

*Trichiurus lepturus*, L., figured by GOODE & BEAN, t. c. pl. lix, fig. 217.

## CARANGIDÆ.

*Trachurus picturatus*, Bowd.: notes by COLLETT, Poiss. Hirondelle, p. 22.  
*Caranx equula*, Schleg.: note by STEINDACHNER, Ann. Hofmus. Wien, xi, p. 210.

*Seriola lalandii*, C. & V.: note by GARMAN, Bull. Lab. Iowa, iv, p. 80.

*Trachynotus goodei*, n. sp., JORDAN & EVERMANN, Fish. N. Am. i, p. 943, Florida Keys and West Indies.

## CYTTIDÆ.

*Cyttus hololepis*, n. sp., GOODE & BEAN, Ocean. Ichthyol. p. 225, pl. lxxv, fig. 233, off Yucatan, 220 faths.

## STROMATEIDÆ.

*Parapsettus anomalus*, Schleg.: note by STEINDACHNER, Ann. Hofmus. Wien, xi, p. 211.

*Lirus bennetti*, Lowe, described by COLLETT, Poiss. Hirondelle, p. 27.

## CORYPHÆNIDÆ.

*Schedophilus medusophagus*, Cocco: notes on young specimens by COLLETT, Poiss. Hirondelle, p. 29.

## NOMEIDÆ.

- Nomeus gronovii*, Gm., figured by GOODE & BEAN, Ocean. Ichthyol. pl. lxiii, fig. 227.  
*Psenes pellucidus*, Lützk., figured by GOODE & BEAN, *t. c.* pl. lxiii, fig. 228. *P. maculatus*, Lützk., described and figured by COLLETT, Poiss. Hirondelle, p. 31, pl. iv, fig. 17.  
*Cubiceps gracilis*, Lowe : young specimens described by COLLETT, *t. c.* p. 33.

## SCOMBRIDÆ.

- Scomber colias*, Gm. : note by STEINDACHNER, Ann. Hofmus. Wien, xl, p. 209.  
*Euthynnus alliteratus*, Raf. : note by STEINDACHNER, *t. c.*  
*Pelamys sarda*, Bl. : on a specimen from the Upper Solway ; TRAQUAIR, Ann. Scott. Nat. Hist. 1896, p. 158.  
*Cybium proosti*, n. sp. (foss.), R. STORMS, Bull. Soc. Belge Geol. ix, p. 160, Brussels Tertiary.  
*Thyrsitops violaceus*, Bean, figured by GOODE & BEAN, Ocean. Ichthyol. pl. lvii, fig. 209.  
*Bipinnula*, n. g. for *Thyrsitops violaceus*, Bean ; JORDAN & EVERMANN, Fish. N. Am. i, p. 878.  
*Ruvettus pretiosus*, Cocco, figured by GOODE & BEAN, *t. c.* pl. lvii, fig. 210.  
*Epinnula magistralis*, Poey, figured by GOODE & BEAN, *t. c.* pl. lvii, fig. 211.  
*Dicrotus parvipinnis*, n. sp., GOODE & BEAN, *t. c.* p. 201, pl. lvii, fig. 212, N.-W. Atlantic.  
*Pteraclis carolinus*, C. & V., figured by GOODE & BEAN, *t. c.* pl. lix, fig. 218.  
*Centrolophus pompilus*, Gm., figured by GOODE & BEAN, *t. c.* pl. lxi, fig. 222.  
*Schedophilopsis spinosus*, Sldr., figured by GOODE & BEAN, *t. c.* pl. cxxiii, fig. 416.  
*Acrotus willoughbyi*, Bean, figured by GOODE & BEAN, *t. c.* pl. lxii, fig. 225.  
*Steinegeria*, n. g., type of a new family, *Steinegeriidae*, allied to *Brama* ; JORDAN & EVERMANN, Fish. N. Am. p. 960. *S. rubescens*, n. sp., *id.* *t. c.* p. 961, off Pensacola, Florida.

## TRACHINIDÆ.

- Latilus argentatus*, C. & V. : note by STEINDACHNER, Ann. Hofmus. Wien, xl, p. 208.  
*Lopholatilus chamæleonticeps*, Goode & Bean, figured by GOODE & BEAN, Ocean. Ichthyol. pl. lxxv, fig. 265.  
*Hypsicometes gobioides*, Goode, figured by GOODE & BEAN, *t. c.* pl. lxxiv, fig. 263.

## BATRACHIDÆ.

- Porichthys porosissimus*, C. & V., figured by GOODE & BEAN, Ocean. Ichthyol. pl. lxxvi, fig. 267.

## PEDICULATI.

- Lophius piscatorius*, L., figured by GOODE & BEAN, Ocean. Ichthyol. pl. cxviii, fig. 400.  
*Chaunax pictus*, Lowe, figured by GOODE & BEAN, *t. c.* pl. cxvii, fig. 398.

- Mancalias shufeldtii*, Gill, figured by GOODE & BEAN, *t. c.* pl. cxix, fig. 401.
- Cryptosaras couesii*, Gill, figured by GOODE & BEAN, *t. c.* pl. cxix, fig. 402.
- Melanocetus johnsonii*, Gthr., figured by GOODE & BEAN, *t. c.* pl. cxx, fig. 406.
- Caulophryne*, n. g., for *C. jordani*, n. sp.; GOODE & BEAN, *t. c.* p. 496, pl. cxxi, fig. 409.
- Halieutella lappa*, Goode & Bean, figured by GOODE & BEAN, *t. c.* pl. cxxii, fig. 412.
- Dibranchus atlanticus*, Ptrs., figured by GOODE & BEAN, *t. c.* pl. cxxii, fig. 413.
- Halieutichthys aculeatus*, Mitch., figured by GOODE & BEAN, *t. c.* pl. cxxii, fig. 414: noticed and figured by GARMAN, Bull. Lab. Iowa, iv, p. 87, pl. iv, fig. 1. *H. caribæus*, n. sp., *id. t. c.* fig. 2, Barbados to Jamaica.
- Antennarius ocellatus*, Bl. Schn., and *multiocellatus*, C. & V.: notes by GARMAN, *t. c.* p. 82. *A. nuttingii* and *radiosus*, n. spp., *id. t. c.* pp. 83 & 85, pls. i & ii, Gulf of Florida and Bahama Banks.
- Chaunax nuttingii*, n. sp., GARMAN, *t. c.* p. 86, pl. iii, fig. 2, Gulf of Florida, 120 faths.
- Malthopsis*, n. g., allied to *Malthe*, for *M. mitriger*, n. sp., GILBERT & CRAMER, P. U. S. Mus. xix, p. 434, pl. xlvi, Hawaiian Is., 298-310 faths.

## COTTIDÆ.

- Cottus scorpius*, L.: on the eggs and development; MCINTOSH, Rep. Fish. Board Scotland, xiv, pt. iii, p. 181. *C. axillaris*, Gill: note by T. H. & B. A. BEAN, P. U. S. Mus. xix, p. 241. *C. rhotheus*, Rosa Smith: notes by EVERMANN, Bull. U. S. Fish Comm. f. 1896, p. 200.
- Acanthocottus polyacanthocottus*, Pall.: note by STARKS, *t. c.* p. 556.
- Icelus (Centridermichthys) marmoratus*, Stdr. & Döderl.: note by STEINDACHNER, Ann. Hoffmus. Wien, xi, p. 205.
- Icelinus strabo*, n. sp., STARKS, P. Calif. Ac. (2) vi, p. 551, Port Ludlow, Washington Territory.
- Artedius asperulus*, n. sp., STARKS, *t. c.* p. 553, Port Ludlow, Washington Territory.
- Axyrias*, n. g., allied to *Artedius*, for *A. harringtoni*, n. sp.; STARKS, *t. c.* p. 554, pl. lxxiv, Port Ludlow, Washington Territory.
- Artediellus uncinatus*, Reinh., figured by GOODE & BEAN, Ocean. Ichthyol. pl. lxxi, fig. 255.
- Triglops pingelii*, Reinh., figured by GOODE & BEAN, *t. c.* pl. lxxi, fig. 256.
- Cottunculus microps*, Coll., pl. lxxii, fig. 257, and pl. lxxiii, fig. 261, and *thomsonii*, Gthr., pl. lxxii, fig. 258, and pl. lxxiii, fig. 262, figured by GOODE & BEAN, *t. c.*
- Platycephalus indicus*, L., and *punctatus*, C. & V.: notes by STEINDACHNER, Ann. Hofmus. Wien, xi, pp. 206 & 207.
- Trigla simonellii*, n. sp. (foss.), BONOMI, Riv. ital. Pal. ii, p. 234, pl. v, fig. 10, Miocene, Mondaino, Italy.
- Prionotus tribulus*, C. & V.: note by GARMAN, Bull. Lab. Iowa, iv, p. 88. *P. alatus*, Goode & Bean, figured by GOODE & BEAN, Ocean. Ichthyol. pl. cxi, fig. 382. *P. militaris*, p. 464, pl. cxi, fig. 380, and pl. cxii, fig. 384, Gulf of Mexico, 24-60 faths., *egretta*, p. 465, pl. cxi, fig. 381, off Barbados, 100-200 faths., and *beanii*, p. 468, pl. cxii, fig. 383, off Trinidad, 73 faths., n. spp., *id. t. c.*



*Peristedion miniatum*, Goode, pl. cxiii, fig. 385, *longispatha*, Goode & Bean, pl. cxiv, fig. 386, and *platycephalum*, Goode & Bean, pl. cxiv, fig. 388, figured by GOODE & BEAN, *t. c.* *P. gracile*, n. sp., *id. t. c.* p. 473, pl. cxiv, fig. 387, Gulf of Mexico, 142 faths. *P. hians*, n. sp., GILBERT & CRAMER, P. U. S. Mus. xix, p. 419, pl. xli, figg. 1 & 2, Hawaiian Is., 295-298 faths.

## CATAPHRACTI.

*Agonus cataphractus*, L. : on the spawning period and the vitality of the ova ; MCINTOSH, Ann. Nat. Hist. (6) xviii, p. 57.  
*Pallasina aix*, n. sp., STARKS, P. Calif. Ac. (2) vi, p. 558, pl. lxxv, Port Ludlow, Washington Territory.  
*Aspidophoroides monopterygius*, Bl., figured by GOODE & BEAN, Ocean. Ichthyol. pl. lxxii, fig. 260. *A. obriki*, Lütke. : notes by COLLETT, Poiss. Hirondelle, p. 39.

## DISCOBOLI.

*Cyclopterus lumpus*, L., on the eggs and development ; MCINTOSH, Rep. Fish. Board Scotland, xiv, pt. iii, p. 173, pl. v.  
*Eumicrotremus spinosus*, Müll., figured by GOODE & BEAN, Ocean. Ichthyol. pl. lxx, fig. 250.  
*Careproctus ranula*, Goode & Bean, figured by GOODE & BEAN, *t. c.* pl. lxx, fig. 251.  
*Amitra liparina*, Goode, figured by GOODE & BEAN, *t. c.* pl. lxx, fig. 252.  
*Neoliparis fissuratus*, n. sp., STARKS, P. Calif. Ac. (2) vi, p. 560, Port Ludlow, Washington Territory.  
*Liparis calliodon*, Pall., and *tunicata*, Reinh. (?), notes by T. H. & B. A. BEAN, P. U. S. Mus. xix, pp. 242 & 243. *L. gibba*, Bean, redescribed by T. H. & B. A. BEAN, *t. c.* p. 385.  
*Paraliparis copei*, n. sp., GOODE & BEAN, *t. c.* p. 279, pl. lxxi, fig. 253, N.-W. Atlantic, 353-538 faths.  
*Hilgendorfia*, n. g., for *Paraliparis membranaceus*, Gthr. ; GOODE & BEAN, *t. c.* p. 280.

## GOBIIDÆ.

*Gobius*, Art. : on the Italian species ; G. DAMIANI, Riv. ital. Sci. Nat. xvi, pp. 58 & 77. *G. clapoides*, Gthr., recorded from St. John's I., off the coast of S. China ; F. A. SMITT, Ann. Nat. Hist. (6) xviii, p. 196. *G. venetatus*, C. & V., note by HERZENSTEIN, Annuaire Ac. St. Petersb. 1896, p. 4. *G. bothriorrhynchus*, n. sp., *id. t. c.* p. 3, Philippines. *G. hilgendorffii*, n. sp., PFEFFER, Fische O. Afr. p. 5, fig., Kingani river, E. Africa. *G. eremius*, n. sp., ZIETZ, Rep. Horn Exped. ii, p. 180, pl. xvi, fig. 5, Central Australia. *G. eigenmanni*, n. sp., GARMAN, Bull. Lab. Iowa, iv, p. 88, pl. iii, fig. 1, off Key West, Florida, 60 faths.  
*Lebetus orca*, Coll. : notes by COLLETT, Poiss. Hirondelle, p. 41.  
*Crystallogobius nilssonii*, Düb. & Kor., on the post-larval stage ; MCINTOSH, Ann. Nat. Hist. (6) xviii, p. 60.  
*Sicydium tenuurum*, Gthr. : remarks by PERUGIA, Ann. Mus. Genova (2) xvi, p. 52. *S. punctatum*, n. sp., PERUGIA, *t. c.* p. 18, Martinique.  
*Eleotris siamensis*, Gthr. : note by HERZENSTEIN, Annuaire Ac. St. Petersb. 1896, p. 5. *E. pictus*, Kner & Stdr., note by RUTTER, P. Calif. Ac. (2) vi, p. 265. *E. larapintæ*, n. sp., ZIETZ, Rep. Horn Exped. ii, p. 179, pl. xvi, fig. 4, Central Australia.  
*Callionymus curvicornis*, C. & V. : note by STEINDACHNER, Ann. Hofmus. Wien, xi, p. 212. *C. himantophorus*, n. sp., GOODE & BEAN, Ocean. Ichthyol. p. 296, pl. lxxvi, fig. 268, N.-W. Atlantic, 26-231 faths.

## BLENNIIDÆ.

- Anarrhichas lupus*, L., fig. 269, *minor*, Olafs., fig. 270, and *latifrons*, Steenstr., fig. 271, figured by GOODE & BEAN, Ocean. Ichthyol. pl. lxxvii.
- Macrurrhynchus*, n. g., allied to *Petroscirtes*; DOUGLAS-OGILBY, P. Linn. Soc. N. S. Wales, xxi, p. 136. *M. maroubra*, n. sp., *id. t. c.* p. 137, coast of New South Wales.
- Lipophrys*, n. g., for *Blennius pholis*, L.; GILL, Amer. Natural. xxx, p. 498.
- Pholis ornatus*, Gir., and *ruberrimus*, C. & V.: notes by T. H. & B. A. BEAN, P. U. S. Mus. xix, p. 247. *P. tænia*, Pall., redescribed by T. H. & B. A. BEAN, *t. c.* p. 388.
- Pholidapus*, n. g., allied to *Pholis*; T. H. & B. A. BEAN, *t. c.* p. 389. *P. grebnitzkii*, n. sp., *id. t. c.* p. 390, pl. lxxxiv, Yesso.
- Opisthocentrus quinquemaculatus*, Kner, noticed and figured by T. H. & B. A. BEAN, *t. c.* p. 391, pl. xxxv.
- Murænoides nebulosus*, Schleg.: note by STEINDACHNER, Ann. Hofmus. Wien, xi, p. 213.
- Anoplarchus alectrolophus*, Pall.: notes by T. H. & B. A. BEAN, P. U. S. Mus. xix, p. 246.
- Neogunellus homacanthus* and *microchirus*, n. spp., HERZENSTEIN, Annuaire Ac. St. Petersb. 1896, pp. 5 & 7, Gulf of St. Vincent.
- Lumpenus anguillaris*, Pall., and *medius*, Reinh., redescribed by T. H. & B. A. BEAN, P. U. S. Mus. xix, pp. 386 & 387.

## MASTACEMBELIDÆ.

- Mastacembelus congicus*, n. sp., BOULENGER, Ann. Nat. Hist. (6) xvii, p. 311, Upper Congo. *M. shiranus*, n. sp., GÜNTHER, *t. c.* p. 397, Upper Shiré river, E. Africa.

## SPHYRÆNIDÆ.

- Sphyræna schlegelii*, Stdr.: note by STEINDACHNER, Ann. Hofmus. Wien, xi, p. 209.

## ATHERINIDÆ.

- Chirostoma humboldtianum*, C. & V., *estor*, Jord., *grandocule*, Stdr., and *breve*, Stdr., figured by STEINDACHNER, Denk. Ak. Wien, lxii, pls. i & ii. *C. mauleanum* and *itatanum*, n. spp., STEINDACHNER, Ann. Hofmus. Wien, xi, pp. 231 & 232, Chili. *C. bartoni*, n. sp., JORDAN & EVERMANN, Fish. N. Am. i, p. 793, Guanajuato, Mexico.
- Lethostole*, n. g., for *Chirostoma estor*, Jord.; JORDAN & EVERMANN, *t. c.* p. 792.
- Kirtlandia*, n. g., for *Chirostoma vagrans*, Goode & Bean; JORDAN & EVERMANN, *t. c.* p. 794.
- Eurystole*, n. g., for *Atherinella eriarcha*, Jord. & Gilb.; JORDAN & EVERMANN, *t. c.* p. 802.
- Tetragonurus cuvieri*, Risso, figured by GOODE & BEAN, Ocean. Ichthyol. pl. cxxiii, fig. 417.
- Nematocentris tatei* and *winneckei*, n. spp., ZIETZ, Rep. Horn Exped. ii, pp. 178 & 179, pl. xvi, figg. 2 & 3, Central Australia.
- A family, *Melanoteniidæ*, is proposed by DOUGLAS-OGILBY, P. Linn. Soc. N. S. Wales, xxi, p. 120, to embrace *Neoatherina*, Casteln., *Pseudomugil*, Kner, *Rhombatractus*, Gill, *Aida*, Casteln., and *Melanotænia*, Gill, all of which aberrant genera of Atherines are defined and the species enumerated.

## MUGILIDÆ.

- Mugil thoburni*, n. sp., JORDAN & EVERMANN, Fish. N. Am. i, p. 812, Pacific Coast of Central America.  
*Agonostomus nasutus*, Gthr.: note by RUTTER, P. Calif. Ac. (2) vi, p. 263.

## GASTROSTEIDÆ.

- Gastrosteus*, L.: on the individual variations of the Californian species; C. RUTTER, P. Calif. Ac. (2) vi, p. 245. *G. cataphractus*, Pall., *microcephalus*, Gir., and *pungitius brachypoda*, Bean: notes by T. H. & B. A. BEAN, P. U. S. Mus. xix, pp. 250 & 251. *G. inconstans*, Kirtl.: notes by EVERMANN & COX, Rep. U. S. Fish Comm. f. 1894, p. 416. *G. gladiunculus*, n. sp., KENDALL, P. U. S. Mus. xviii, p. 623, Coast of Maine.

## CENTRISCIDÆ.

- Macrorhamphosus scolopax*, L., figured by GOODE & BEAN, Ocean. Ichthyol. pl. cxvii, fig. 396.

## GOBIESOCIDÆ.

- Crepidogaster simus*, n. sp., HUTTON, Tr. N. Zealand Inst. xxviii, p. 316, New Zealand.  
*Lepadogaster bimaculatus*, Penn.: on the eggs and young; MCINTOSH, Rep. Fish. Board Scotland, xiv, pt. iii, p. 178.

## LABYRINTHICI.

- Ctenopoma*, Ptrs.: synopsis of the species by GÜNTHER, Ann. Nat. Hist. (6) xvii, p. 268. *C. gabonense* and *nanum*, n. spp., *id. t. c.* p. 269, pl. xiii, figs. C & B, Gaboon. *C. kingsleyæ*, n. sp., *id. t. c.* p. 270, pl. xiii, fig. A, Ogowe. *C. weeksii*, n. sp., BOULENGER, *t. c.* p. 310, Upper Congo.

## TRACHYPTERIDÆ.

- Trachypterus arcticus*, Brünn.: on a specimen from Orkney; J. W. CURSITER, Ann. Scott. Nat. Hist. 1896, p. 160: on one from Shetland; TRAQUAIR, *t. c.* p. 159.

## NOTACANTHIDÆ.

- Notacanthus rostratus*, Coll., redescribed and figured by COLLETT, Poiss. Hirondelle, p. 48, pl. v, fig. 21. *N. analis*, Gill, pl. 1, fig. 184, and pl. lii, fig. 191, and *phasganorus*, Goode, pl. 1, fig. 186, figured by GOODE & BEAN, Ocean. Ichthyol.  
*Gigliolia*, n. g., allied to *Notacanthus*, for *G. moseleyi*, n. sp.; GOODE & BEAN, *t. c.* p. 169, S. Pacific, 400 fath.  
*Macdonaldia*, n. g., for *Notacanthus rostratus*, Coll., GOODE & BEAN, *t. c.* p. 171; figured, pl. li, fig. 189, and pl. lii, fig. 195.

## ICOSTEIDÆ.

- Bathymaster signatus*, Cope: note by T. H. & B. A. BEAN, P. U. S. Mus. xix, p. 245.

*ACANTHOPTERYGII PHARYNGOGNATHI.*

## LABRIDÆ.

- P. GOURRET, Ann. Mus. Marseille, Zool. iv, 1893, No. 3, monographs the *Labridæ* of the Mediterranean coast of France, figuring all the species.
- Labrichthys macleayi*, n. sp., HERZENSTEIN, Annuaire Ac. St. Petersb. 1896, p. 10, Gulf of St. Vincent.
- Protautoga longidens*, n. sp. (foss.), DE-ALESSANDRI, Atti Acc. Torino, xxxi, p. 729, pl. i, fig. 11, Tertiary, Parana, Argentina.
- Lachnolaimus maximus*, Walb.: note by GARMAN, Bull. Lab. Iowa, iv, p. 90.
- PlatyGLOSSUS pyrroGRAMMA*, Schleg., and *POECILOPTERUS*, Schleg.: notes by STEINDACHNER, Ann. Hofmus. Wein, xi, pp. 214 & 215.
- Hoplognathus fasciatus*, Schleg.: note by STEINDACHNER, *t. c.* p. 214.
- Callyodon japonicus*, C. & V.: note by STEINDACHNER, *t. c.* p. 215.

## CHROMIDES.

- Chromis ogowensis*, n. sp., GÜNTHER, Ann. Nat. Hist. (6) xvii, p. 271, Ogowe. *C. jalla*, n. sp., BOULENGER, Boll. Mus. Torino, xi, No. 260, Upper Zambesi.
- Ctenochromis sauvagei*, n. sp., PFEFFER, Fische O. Afr. p. 15, Victoria Nyanza.
- Hemichromis bimaculatus*, Gill, and *schwebischi*, Sauv., redescribed by GÜNTHER, *t. c.* pp. 272 & 273. *H. serranus* and *gigliolii*, n. spp., PFEFFER, *t. c.* pp. 23 & 24, Bukoba and Kingani R., East Africa. *H. jalla*, n. sp., BOULENGER, *l. c.* Upper Zambesi.
- Pelmatochromis guentheri*, n. sp., BOULENGER, Ann. Nat. Hist. (6) xvii, p. 310, Upper Congo.
- Geophagus duodecimspinosus*, Blgr., figured by BOULENGER, Tr. Zool. Soc. London, xiv, pl. iv, fig. 1.

## ANACANTHINI.

## LYCODIDÆ.

- Lycodes esmarkii*, Coll., pl. lxxviii, fig. 272, *reticulatus*, Reinh., pl. lxxviii, fig. 273, and pl. lxxxix, fig. 281, *frigidus*, Coll., pl. lxxviii, fig. 274, *mucosus*, Rich., pl. lxxviii, fig. 275, and pl. lxxxix, fig. 283, and *perspicillum*, Kröy., pl. lxxx, fig. 278, figured by GOODE & BEAN, Ocean. Ichthyol. *L. zoarchus*, n. sp., *id. t. c.* p. 308, pl. lxxxix, fig. 283, off Nova Scotia, 130 faths. *L. terræ-novæ*, n. sp. (?), COLLETT, Poiss. Hirondelle, p. 55, Newfoundland coast, 25 faths.
- Nemalycodes*, n. g., near *Lycodes*, for *N. grigorjewi*, n. sp.; HERZENSTEIN, Annuaire Ac. St. Petersb. 1896, p. 14, Novaja-Zemla.
- Lycenchelys verrillii*, Goode & Bean, pl. lxxix, fig. 277, and *paxillus*, Goode & Bean, pl. lxxx, fig. 279, and pl. lxxxix, fig. 282, figured by GOODE & BEAN, *op. cit.*
- Lycodon mirabilis*, Goode & Bean, figured by GOODE & BEAN, *t. c.* pl. lxxx, fig. 280.
- Melanostigma gelatinosum*, Gthr., figured by GOODE & BEAN, *t. c.* pl. lxxxii, fig. 284.

## GADIDÆ.

- Gadus pollachius*, L.: on the eggs and young; MCINTOSH, Rep. Fish. Board Scotland, xiv, pt. iii, p. 171.
- Phycis regius*, Walb., pl. lxxxviii, fig. 309, *chuss*, pl. lxxxviii, fig. 311, *tenuis*, Mitch., pl. lxxxix, fig. 312, and *chesteri*, Goode & Bean, pl. lxxxix, fig. 313, figured by GOODE & BEAN, Ocean. Ichthyol. *P. cirratus*, n. sp., *iid. t. c.* p. 358, pl. lxxxviii, fig. 310, Gulf of Mexico, 210-324 faths.
- Lemonema barbatula*, Goode & Bean, figured by GOODE & BEAN, *t. c.* pl. xc, fig. 315. *L. melanurum*, n. sp., *iid. t. c.* p. 363, pl. xc, fig. 316, N.-W. Atlantic, 208-1467 faths.
- Physiculus fulvus*, Bean, figured by GOODE & BEAN, *t. c.* pl. xci, fig. 319.
- Uraleptus maraldi*, Risso, figured by GOODE & BEAN, *t. c.* pl. xci, fig. 320.
- Lotella maxillaris*, Bean, figured by GOODE & BEAN, *t. c.* pl. xcii, fig. 321. *L. maximowiczi*, n. sp., HERZENSTEIN, Annuaire Ac. St. Petersb. 1896, p. 13, Japan.
- Antimora viola*, Goode & Bean, figured by GOODE & BEAN, *t. c.* pl. xciii, fig. 324.
- Onos ensis*, Reinh., figured by GOODE & BEAN, *t. c.* pl. xciv, fig. 327.
- Rhinonemus cimbricus*, L., figured by GOODE & BEAN, *t. c.* pl. xciv, fig. 328.
- Brosmius brosmæ*, Müll., figured by GOODE & BEAN, *t. c.* pl. xciv, fig. 329.
- Merluccius bilinearis*, Mitch., figured by GOODE & BEAN, *t. c.* pl. xciv, fig. 330.
- Bregmaceros atlanticus*, Goode & Bean, figured by GOODE & BEAN, *t. c.* pl. xciv, fig. 331.
- Chiasmodus niger*, Johns., figured by GOODE & BEAN, *t. c.* pl. lxxiv, fig. 264.
- Haloporphyrus eques*, Gthr., redescribed by KOEHLER, Ann. Univ. Lyon, xxvi, p. 487.
- Onus guttatus*, Coll., and *biscayensis*, Coll., redescribed and figured by COLLETT, Poiss. Hirondelle, pp. 60 & 65, pl. i, figg. 2 & 3.

## OPHIDIIDÆ.

- Otophidium omostigma*, Jord. & Gilb., figured by GOODE & BEAN, Ocean. Ichthyol. pl. lxxxvii, fig. 305.
- Leptophidium cervinum*, Goode & Bean, *profundorum*, Gill, and *marmoratum*, Goode & Bean, figured by GOODE & BEAN, *t. c.* pl. lxxxvii, figg. 306, 307, 308.
- Brotula multibarbata*, Schleg.: note by STEINDACHNER, Ann. Hofmus. Wien, xi, p. 216.
- Dermatopsis*, n. g., allied to *Dinematichthys*; DOUGLAS-OGILBY, P. Linn. Soc. N. S. Wales, xxi, p. 138. *D. macrodon*, n. sp., *id. t. c.* p. 140, coast of New South Wales.
- Dermatorus melampeplus*, n. sp., ALCOCK, J. Asiat. Soc. Bengal, lxxv, p. 305, Laccadive Sea, 931 faths.
- Paradicrolene*, Alcock, = *Dicrolene*, Goode & Bean; ALCOCK, *t. c.* p. 309.
- Celema*, n. g., for *Porogadus nudus*, Vaill., and *P. subarmatus*, Vaill.; GOODE & BEAN, *op. cit.* p. 329.
- Moebia*, n. g., for *Bathynectes gracilis*, Gthr.; GOODE & BEAN, *t. c.* p. 331.
- Barathrodemus manatinus*, Goode & Bean, figured by GOODE & BEAN, *t. c.* pl. lxxxiv, fig. 294.
- Nematonus pectoralis*, Goode & Bean, figured by GOODE & BEAN, *t. c.* pl. lxxxiv, fig. 295.
- Porogadus miles*, Goode & Bean, figured by GOODE & BEAN, *t. c.* pl. lxxxiii, fig. 292.

- Penopus*, n. g., allied to *Porogadus*, Goode & Bean; GOODE & BEAN, *t. c.* p. 335. *P. macdonaldi*, n. sp., *iid. t. c.* p. 336, pl. lxxxiv, fig. 293, N.-W. Atlantic, 1631 faths.
- Dicrolene intronigra*, Goode & Bean, figured by GOODE & BEAN, *t. c.* pl. lxxxv, p. 297.
- Barathronus bicolor*, Goode & Bean, figured by GOODE & BEAN, *t. c.* pl. lxxxv, fig. 298.
- Aphyonus mollis*, Goode & Bean, figured by GOODE & BEAN, *t. c.* pl. lxxxv, fig. 299.
- Dicromita*, n. g., allied to *Catetix*, Gthr., to embrace *Sirembo metriostoma*, Vaill., and allies; GOODE & BEAN, *t. c.* p. 319. *D. agassizii*, n. sp., *iid. t. c.* p. 319, pl. lxxxii, fig. 285, off Granada, 291 faths.
- Bassozetus normalis*, Gill, fig. 287, and *catena*, Goode & Bean, fig. 286, figured by GOODE & BEAN, *t. c.* pl. lxxxiii.
- Neobythites gillii*, Goode & Bean, fig. 289, and *marginatus*, Goode & Bean, fig. 290, figured by GOODE & BEAN, *t. c.* pl. lxxxiii. *N. (Monomitopus) conjugator*, n. sp., ALCOCK, J. Asiat. Soc. Bengal, lxxv, p. 304, Ceylon and Travancore coast, 296-406 faths.
- Benthocometes*, n. g., for *Neobythites robustus*, Goode & Bean; GOODE & BEAN, *op. cit.* p. 327. The species figured, pl. lxxxii, fig. 288.
- Bassogigas*, n. g., allied to *Neobythites*; GOODE & BEAN, *t. c.* p. 328. *B. gillii*, n. sp., *iid. t. c.* p. 328, pl. lxxxiii, fig. 291, off Delaware, 1106 faths.
- Alcockia*, n. g., for *Porogadus rostratus*, Gth.; GOODE & BEAN, *t. c.* p. 329.

## MACRURIDÆ.

- Macrurus berglax*, Lacép., and *bairdii*, Goode & Bean, figured by GOODE & BEAN, Ocean. Ichthyol. pl. xcvi, figg. 334 & 335. *M. rupestris*, Müll., p. 69, pl. iii, fig. 11, *aqualis*, Gthr., p. 75, pl. ii, fig. 9, *guentheri*, Vaill., p. 80, pl. iii, fig. 10, *holotrachys*, Gthr., p. 83, pl. ii, fig. 6, and *italicus*, Gigl., p. 85, pl. ii, fig. 7, described and figured by COLLETT, Poiss. Hirondelle. *M. hirundo*, n. sp., *id. t. c.*, p. 72, pl. ii, fig. 8, Azores, 800 faths. *M. levis*, Lowe, p. 492, and *aqualis*, Gthr., p. 495: notes by KOEHLER, Ann. Univ. Lyon, xxvi. *M. labiatus*, p. 497, pl. xxvii, figg. 7 & 8, and *caudani*, p. 500, pl. xxvi, fig. 3, and pl. xxvii, fig. 9, n. spp., KOEHLER, *t. c.*, Bay of Biscay, 250-700 faths. *M. heterolepis*, Alcock = *M. cavernosus*, Goode & Bean; ALCOCK, J. Asiat. Soc. Bengal, lxxv, p. 309. *M. ectenes*, p. 423, pl. xlv, fig. 1, *propinquus*, p. 424, pl. xlv, fig. 2, *holocentrus*, p. 425, pl. xlv, and *gibber*, p. 426, pl. xlv, fig. 2, n. spp., GILBERT & CRAMER, P. U. S. Mus. xix, Hawaiian Is., 313-375 faths.
- Trachyrhynchus longirostris*, Gthr.: notes by KOEHLER, *t. c.* p. 504.
- Cælorhynchus carminatus*, Goode, pl. xcvi, fig. 336, *occa*, Goode & Bean, pl. xcvi, figg. 332, 333, and pl. xcvi, fig. 337, and *caribbæus*, Goode & Bean, pl. xcvi, fig. 338, figured by GOODE & BEAN, *op. cit.* *C. gladius*, n. sp., GILBERT & CRAMER, P. U. S. Mus. xix, p. 421, pl. xli, fig. 3, Hawaiian Is., 295 faths.
- Cælocephalus*, n. g., allied to *Cælorhynchus*, for *C. acipenserinus*, n. sp., GILBERT & CRAMER, *t. c.* p. 422, pl. xlv, fig. 1, Hawaiian Is., 298-351 faths.
- Coryphaenoides carapinus*, Goode & Bean, figured by GOODE & BEAN, *op. cit.* pl. xcvi, fig. 339.
- Hymenocephalus goodei*, Gthr., and *cavernosus*, Goode & Bean, figured by GOODE & BEAN, *t. c.* pl. xcvi, figg. 340 & 341. *H. untræus*, n. sp., GILBERT & CRAMER, *t. c.* p. 428, pl. xlv, fig. 2, Hawaiian Is., 298-343 faths.

- Trachonurus sulcatus*, Goode & Bean, figured by GOODE & BEAN, *op. cit.* pl. xxviii, fig. 343. *T. sentipellis*, n. sp., GILBERT & CRAMER, *t. c.* p. 429, pl. xlv, fig. 1, Hawaiian Is., 375 faths.
- Chalinura simula*, Goode & Bean, figured by GOODE & BEAN, *t. c.* pl. xxviii, fig. 345. *C. breviparbis*, n. sp., *id. t. c.* p. 413, N.-W. Atlantic, 956-1731 faths. *C. ctenomelas*, n. sp., GILBERT & CRAMER, *t. c.* p. 430, pl. xlv, fig. 2, Hawaiian Is., 295-343 faths.
- Moseleya*, n. g., for *Macrurus longifilis*, Gthr.; GOODE & BEAN, *t. c.* p. 417.
- Abyssicola*, n. g., for *Macrurus macrochir*, Gthr.; GOODE & BEAN, *t. c.*
- Optonurus atherodon*, n. sp., GILBERT & CRAMER, *t. c.* p. 431, pl. xlvi, fig. 1, Hawaiian Is., 298-375 faths.
- Steindachneria*, n. g., for *S. argentea*, n. sp., GOODE & BEAN, *t. c.* p. 419, pl. ci, fig. 351, Gulf of Mexico, 68 faths.
- Bathygadus favosus*, Goode & Bean, figured by GOODE & BEAN, *t. c.* pl. ci, fig. 352. *B. melanobranchus*, Vaill., and *longifilis*, Goode & Bean: young specimens described by COLLETT, *t. c.* pp. 88 & 90.

## PLEURONECTIDÆ.

- E. EHRENBAUM, *Wiss. Meeresunters. Kiel Helgol.* (2) ii, pp. 253-318, pls. iii-vi, contributes to our knowledge of the eggs and larvæ of Pleuronectoid Fishes in the Baltic.
- On the variations and relationships of *Pleuronectes fesus*, L., *pseudofesus*, Gottsche, and *platessa*, L.; G. DUNCKER, *Wiss. Meeresunters. Kiel Helgol.* (2) ii, p. 47, figg., 4 pls.
- On the size of the Plaice, Turbot, and Brill, on different fishing grounds in the North Sea; J. T. CUNNINGHAM, *J. Mar. Biol. Ass.* (2) iv, p. 97.
- Rhombus maximus*, L.: on the ova, larval, post-larval, and young forms, with remarks on the adults in confinement; MCINTOSH, *Ann. Nat. Hist.* (6) xviii, p. 44: additional note on the eggs; MCINTOSH, *Rep. Fish. Board Scotland*, xiv, pt. iii, p. 172. *R. lævis*, L.: on a colour-variation; W. BATESON, *P. Z. S.* 1895, p. 890.
- Palometa*, n. subg. for *Rhombus palometa*, Jord. & Bollm.; JORDAN & EVERMANN, *Fish. N. Am.* i, p. 966.
- Drepanopsetta platessoides*, Fabr.: on the ova and larvæ; MCINTOSH, *Ann. Nat. Hist.* (6) xviii, p. 51.
- Boopsetta*, n. g., closely allied to *Pleuronectes*, for *B. umbrarum*, n. sp.; ALCOCK, *J. Asiat. Soc. Bengal*, lxxv, p. 305, off Colombo, Ceylon, 180-217 faths.
- Pleuronichthys cornutus*, Schleg.: note by STEINDACHNER, *Ann. Hofmus. Wien*, xi, p. 217.
- Paralichthys olivaceus*, Schleg.: note by STEINDACHNER, *t. c.* p. 217.
- Limanda beanii*, Goode, figured by GOODE & BEAN, *Ocean. Ichthyol.* pl. cii, fig. 355.
- Glyptocephalus cynoglossus*, L., figured by GOODE & BEAN, *t. c.* pl. cii, fig. 356.
- Hippoglossus vulgaris*, Flem., figured by GOODE & BEAN, *t. c.* pl. cv, fig. 363.
- Platysomaticthys hippoglossoides*, Walb., figured by GOODE & BEAN, *t. c.* pl. cv, fig. 364.
- Notosema dilecta*, Goode & Bean, figured by GOODE & BEAN, *t. c.* pl. civ, fig. 362, and pl. cvi, fig. 365.
- Hippoglossoides platessoides*, Fabr., figured by GOODE & BEAN, *t. c.* pl. cvii, fig. 367.
- Trichopsetta ventralis*, Goode & Bean, figured by GOODE & BEAN, *t. c.* pl. cix, fig. 372.

- Arnoglossus lophotes*, Gthr., described and figured by COLLETT, Poiss. Hirondelle, p. 95, pl. iii, fig. 13.
- Citharichthys arctifrons*, Goode, pl. cvi, fig. 366, *unicornis*, Goode, pl. cviii, fig. 369, *spilopterus*, Gthr., pl. cviii, fig. 370, and *patulus*, Goode & Bean, pl. cix, fig. 373, figured by GOODE & BEAN, *t. c.*
- Etropus rimosus*, Goode & Bean, figured by GOODE & BEAN, *t. c.* pl. civ, figg. 360 & 361.
- Cyclopsetta fimbriata*, Goode & Bean, figured by GOODE & BEAN, *t. c.* pl. cvii, fig. 368.
- Monolene sessilicauda*, Goode, and *atrimana*, Goode & Bean, figured by GOODE & BEAN, *t. c.* pl. ciii, figg. 357 & 358. *M. sessilicauda*, Goode : note by GARMAN, Bull. Lab. Iowa, iv, p. 91.
- Pelecanichthys*, n. g.; GILBERT & CRAMER, P. U. S. Mus. xix, p. 432. *P. crumenalis*, n. sp., *id. t. c.* p. 433, pl. xlvii, Hawaiian Is., 295 faths.
- Solea (Achirus) kobensis*, n. sp., STEINDACHNER, Ann. Hofmus. Wien, xi, p. 218, Japan.
- Aphoristia nebulosa*, Goode & Bean, fig. 375, *marginata*, Goode & Bean, fig. 376, *nigra*, Goode & Bean, fig. 377, *diomedean*, Goode & Bean, fig. 378, and *pusilla*, Goode & Bean, fig. 379, figured by GOODE & BEAN, *t. c.* pl. cx.
- Cynoglossus robustus*, Gthr., and *interruptus*, Gthr. : notes by STEINDACHNER, Ann. Hofmus. Wien, xi, pp. 219 & 220.

## PHYSOSTOMI.

## SILURIDÆ.

- Clarias gabonensis*, Gthr., and *buthupogon*, Sauv., redescribed by GÜNTHER, Ann. Nat. Hist. (6) xvii, pp. 274 & 275. *C. walkeri*, n. sp., *id. t. c.* p. 274, pl. xiv, fig. B, Ogowe. *C. smithii*, n. sp., *id.* P. Z. S. 1896, p. 219, fig., Shebeli, Somaliland. *C. dolloi*, n. sp., BOULENGER, Ann. Nat. Hist. (6) xvii, p. 311, Upper Congo. *C. microphthalmus* and *guentheri*, n. spp., PFEFFER, Fische O. Afr. p. 23, E. Africa.
- Plotosus argenteus*, n. sp., ZIETZ, Rep. Horn Exped. ii, p. 410, pl. xvi, fig. 7, C. Australia.
- Schilbe emini*, n. sp., PFEFFER, *t. c.* p. 32, Uniamwesi, E. Africa.
- Eutropius möbiusii*, n. sp., PFEFFER, *t. c.* p. 30, Kingani R., E. Africa.
- Amiurus prosthiti*, Cope : note by COPE, Amer. Natural. xxx, p. 943.
- Haustor*, n. subg., for *Amiurus catus*, L., and allies ; JORDAN & EVERMANN, Fish. N. Am. i, p. 137.
- Villarius*, n. g., allied to *Amiurus*, but differing in the presence of scattered cilia on the sides ; C. RUTTER, P. Calif. Ac. (2) vi, p. 256, fig. *V. pricei*, n. sp., *id. t. c.* p. 257, Rio Yaqui, Sonora.
- Rabidus*, n. subg., for *Noturus furiosus*, Jord. & Meek, and allies ; JORDAN & EVERMANN, Fish. N. Am. i, p. 146.
- Euanemus nigripinnis*, Blgr., figured by BOULENGER, Tr. Zool. Soc. London, xiv, pl. iv, fig. 2.
- Oxydoras eigenmanni*, Blgr., figured by BOULENGER, *t. c.* pl. iv, fig. 3.
- Synodontis*, Cuv. : revision of the species by VAILLANT, Arch. Mus. Paris (3) viii, pp. 87-178, pls. ix-xiv. *S. schal*, Bl. Schn., described and head figured by GÜNTHER, P. Z. S. 1896, p. 221, fig. *S. geledensis*, p. 220, fig., and *smithii*, p. 222, pl. ix, n. spp., *id. t. c.* Somaliland. *S. leopardus*, n. sp., PFEFFER, *t. c.* p. 35, Korogwe, E. Africa.
- Callichthys pectoralis*, Blgr., figured by BOULENGER, Tr. Zool. Soc. London, xiv, pl. iv, fig. 4.
- Plecostomus ternetzi*, Blgr., figured by BOULENGER, *t. c.* pl. v.
- Chetostomus gigas*, Blgr., figured by BOULENGER, *t. c.* pl. vi.



- Loricaria parva*, Blgr., pl. viii, fig. 1, *labialis*, Blgr., pl. vii, fig. 1, and *apellogaster*, Blgr., pl. vii, fig. 2, figured by BOULENGER, *t. c.*  
*Trichomycterus goeldii*, n. sp., BOULENGER, Ann. Nat. Hist. (6) xviii, p. 154, Organ Mts., Rio Janeiro, 2600 faths.

## SCOPELIDÆ.

- Bathylaco*, n. g., allied to *Saurus*, Cuv., for *B. nigricans*, n. sp.; GOODE & BEAN, Ocean. Ichthyol. p. 57, pl. xviii, fig. 69, N.-W. Atlantic, off Santa Cruz, Atlantic, 2393 faths.  
*Bathysaurus ferox*, Gthr., figured; GOODE & BEAN, *t. c.* pl. xviii, figg. 65 & 66.  
*Chlorophthalmus agassizii*, Bp., fig. 70, and *chalybeius*, Goode, fig. 71, figured; GOODE & BEAN, *t. c.* pl. xix. *C. truculentus*, n. sp., *iid. t. c.* p. 61, fig. 72, off Barbadoes, 158 faths.  
*Benthosaurus grillator*, Goode & Bean, figured; GOODE & BEAN, *t. c.* pl. xix, fig. 73.  
*Bathypterois quadrifilis*, Gthr., and *longipes*, Gthr., figured; GOODE & BEAN, *t. c.* pl. xx, figg. 75 & 76. *B. dubius*, Vaill., described and figured by COLLETT, Poiss. Hirondelle, p. 105, pl. iv, fig. 19: notes by KOEHLER, Ann. Univ. Lyon, xxvi, p. 507. *B. atricolor*, n. sp., ALCOCK, J. Asiat. Soc. Bengal, lxxv, p. 306, Laccadive Sea, 891 faths.  
*Ipnops murrayi*, Gthr., figured; GOODE & BEAN, Ocean. Ichthyol. pl. xviii, figg. 67 & 68.  
*Chlorophthalmus proridens*, n. sp., GILBERT & CRAMER, P. U. S. Mus. xix, p. 406, pl. xxxvi, fig. 2, Hawaiian Is., 298-351 faths.  
*Scopelus*, Cuv. *Myctophum*, Raf., is substituted by GOODE & BEAN, *t. c.* *M. punctatum*, Raf., fig. 80, *humboldtii*, Risso, fig. 82, and *benoiti*, Cocco, fig. 83, figured; *iid. t. c.* p. xxii. *M. opalinum*, p. 72, fig. 81, and *remiger*, p. 74, fig. 84, n. spp., *iid. t. c.* N.-W. Atlantic. *M. fibulatum*, n. sp., GILBERT & CRAMER, P. U. S. Mus. xix, p. 411, pl. xxxviii, fig. 3, Hawaiian Is., 310 faths.  
*Scopelus humboldti*, Risso, p. 110, *caninianus*, C. & V., p. 111, *rissoi*, Cocco, p. 113, *maderensis*, Lowe, p. 114, and *coccoi*, Cocco, p. 116: notes by COLLETT, Poiss. Hirondelle.  
*Diaphus wrolampus* and *chrysorhynchus*, n. spp., GILBERT & CRAMER, P. U. S. Mus. xix, pp. 408 & 409, pl. xxxviii, figg. 1 & 2, Hawaiian Is., 295-310 faths.  
*Dasyscopelus pristilepis*, n. sp., GILBERT & CRAMER, *t. c.* p. 412, pl. xxxix, fig. 1, Hawaiian Is.  
*Benthoema*, n. g., for *Scopelus muelleri*, Gm., and allies; GOODE & BEAN, Ocean. Ichthyol. p. 75. *B. muelleri*, Gm., figured; *iid. t. c.* pl. xxii, fig. 85.  
*Lampanyctus crocodilus*, Risso, fig. 86, and *gemerallii*, Cocco, fig. 87, figured; *iid. t. c.* pl. xxiii. *L. alatus*, p. 79, pl. xxiv, fig. 92, *guentheri*, p. 79, fig. 90, *gemmifer*, p. 80, fig. 88, and *lacerta*, p. 81, fig. 89, n. spp. *iid. t. c.* N.-W. Atlantic.  
*Ceratoscopelus maderensis*, Lowe, figured by GOODE & BEAN, *t. c.* pl. xxiv, fig. 91.  
*Notoscopelus caudispinosus*, Johns., figured by GOODE & BEAN, *t. c.* pl. xxv, fig. 96. *N. quercinus*, p. 83, pl. xxvi, fig. 97, *margaritiferus*, p. 84, fig. 98, and *castaneus*, p. 84, fig. 95, n. spp., *iid. t. c.*, N.-W. Atlantic.  
*Lempadena*, n. g., allied to *Scopelus*, for *L. speculigera*, n. sp.; GOODE & BEAN, *t. c.* p. 85, pl. xxvi, fig. 99, N.-W. Atlantic.  
*Æthoprora*, n. g., for *Scopelus metopoclampus*, Cocco; GOODE & BEAN, *t. c.* p. 86. *Æ. metopoclampa*, Cocco, figured; *iid. t. c.* pl. xxvii, fig. 101. *Æ. lucida* and *effulgens*, n. spp., *iid. t. c.* p. 87, figg. 102 & 103, N.-W. Atlantic.

- Collettia*, n. g., for *Scopelus rufinesquii*, Cocco; GOODE & BEAN, *t. c.* p. 88. The species figured, pl. xxvi, fig. 100.
- Rhinoscopelus coccoi*, Cocco, figured by GOODE & BEAN, *t. c.* pl. xxviii, fig. 104.
- Neoscopelus macrolepidotus*, Johns., figured by GOODE & BEAN, *t. c.* pl. xxix, figg. 108 & 109.
- Nanobranchium macdonaldi*, n. sp., GOODE & BEAN, *t. c.* p. 94, pl. xxix, fig. 110, N.-W. Atlantic.
- Paralepis pseudogorgonoides*, Sarato: notes by COLLETT, Poiss. Hiron-delle, p. 117.
- Scopelarchus*, n. g., a remarkably generalized form showing affinities with *Saurus*, *Chlorophthalmus*, *Scopelus*, *Odontostomus*, and *Paralepis*, for *S. guentheri*, n. sp.; ALCOCK, J. Asiat. Soc. Bengal, lxxv, p. 307, Indus Delta, 947 faths.
- Alepidosaurus ferox*, Lowe, figured by GOODE & BEAN, *t. c.* pl. xxxviii, fig. 142.
- Paralepis borealis*, Reinh., figured by GOODE & BEAN, *t. c.* pl. xxxviii, fig. 143.
- Anapterus macrocephalus*, n. sp. (foss.), BONOMI, Riv. ital. Pal. ii, p. 222, pl. v, fig. 7, Miocene, Mondaino, Italy.

## CYPRINIDÆ.

- K. KNAUTH, Biol. Centralbl. xvi, pp. 410-416, has notes on the biology of German Cyprinoids.
- On Cyprinoid hybrids from the lakes near Berlin; K. KNAUTH, Forscher. Plou, iv, p. 262.
- Catostomus commersonii*, Lacép.: notes by EVERMANN & COX, Rep. U. S. Fish Comm. f. 1894, p. 392.
- Pantosteus jordani*, Everm., and *macrocheilus*, Gir.: notes by EVERMANN, Bull. U. S. Fish Comm. f. 1896, p. 172.
- Labeo steindachneri*, Kingani river, E. Africa, and *rüppellii*, Victoria Nyanza, n. spp., PFEFFER, Fische O. Afr. p. 51.
- Onychostoma*, n. g., allied to *Tylognathus*, Heck., for *O. laticeps*, n. sp., GÜNTHER, Annuaire Ac. St. Petersb. 1896, p. 211, pl. i, fig. B, Kansu, China.
- Oapoeta holmwoodii*, n. sp., BOULENGER, Ann. Nat. Hist. (6) xviii, p. 152, Smyrna.
- Barbus schlegelii*, Gthr.: note by STEINDACHNER, Ann. Hofmus. Wien, xi, p. 220. *B. faoensis*, n. sp., GÜNTHER, Ann. Nat. Hist. (6) xvii, p. 397, Fao, Persian Gulf. *B. lydianus*, n. sp., BOULENGER, *op. cit.* xviii, p. 152, Smyrna. *B. salmo*, p. 56, Pangani river, E. Africa, *carpio*, p. 57, Tararo, *tetraspilus*, p. 59, Bukoba and Kavilli, *altus*, p. 60, Kingani river and Uniamwese, *vinciguerrai*, p. 62, Wembere, *quadrimaculatus*, p. 62, Kongaran Botto, *quadriunctatus*, p. 64, Korogwe, and *innocens*, p. 66, Mbusini, n. spp., PFEFFER, *t. c.*
- Hybopsis gelidus*, Gir., and *meeki*, Jord. & Everm.: notes by EVERMANN & COX, Rep. U. S. Fish Comm. f. 1894, pp. 409 & 410. *H. meeki*, n. sp., JORDAN & EVERMANN, Fish. N. Am. i, p. 317, Missouri river.
- Yuriria*, n. subg., for *Hybopsis altus*, Jord.; JORDAN & EVERMANN, *t. c.* p. 321.
- Leucogobio*, n. g., allied to *Gobio*; GÜNTHER, Annuaire Ac. St. Petersb. 1896, p. 212. *L. herzensteini*, p. 213, pl. ii, fig. B, Kansu, China, and *taniatus*, p. 214, pl. ii, fig. A, Head-waters of the Yangtse-kiang, n. spp.; GÜNTHER, *t. c.*
- Acanthogobio guentheri*, Herz., redescribed by GÜNTHER, *t. c.* p. 215.
- Pimephales promelas*, Raf.: notes by EVERMANN & COX, Rep. U. S. Fish Comm. f. 1894, p. 397.

- Campostoma ornatum*, Gir. : note by RUTTER, P. Calif. Ac. (2) vi, p. 259.  
*C. pricei*, n. sp., JORDAN & EVERMANN, Fish. N. Am. i, p. 205, S. Arizona.
- Hybognathus nuchale evansi*, Gir. : notes by EVERMANN & COX, Rep. U. S. Fish Comm. f. 1894, p. 396.
- Algansea lacustris*, Sldr., and *tarascorum*, Sldr., figured by STEINDACHNER, Denk. Ak. Wien, lxii, pl. iii.
- Rhinichthys cataractæ dulcis*, Gir. : notes by EVERMANN & COX, Rep. U. S. Fish Comm. f. 1894, p. 408.
- Agosia chrysogaster*, Gir. : note by RUTTER, P. Calif. Ac. (2) vi, p. 260.  
*A. nubila*, Gir. : notes by EVERMANN, Bull. U. S. Fish Comm. f. 1896, p. 177.
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- Notropis cayuga*, Meek, *blennius*, Gir., *topeka*, Gilb., *hudsonius*, Clint., *lutrensis*, B. & G., *cornutus*, Mitch., *jejunus*, Forbes, and *dilectus*, Gir. : notes by EVERMANN & COX, *t. c.* pp. 401-407. *N. buchanani*, n. sp., S. E. MEEK, *op. cit.* 1895, p. 342, Indian Territory. *N. braytoni*, n. sp., JORDAN & EVERMANN, Fish. N. Am. i, p. 264, Cadereita and Nuevo Leon, North Mexico.
- Azteca*, n. subg., for *Notropis aztecus*, Woolm. ; JORDAN & EVERMANN, *t. c.* p. 258.
- Orcella*, n. subg., for *Notropis orca*, Woolm. ; JORDAN & EVERMANN, *t. c.* p. 289.
- Ptychocheilus oregonensis*, Rich. : notes by EVERMANN, Bull. U. S. Fish Comm. f. 1896, p. 175.
- Leuciscus balteatus*, Rich. : notes by EVERMANN, *t. c.* p. 177. *L. purpureus*, Gir. : note by RUTTER, P. Calif. Ac. (2) vi, p. 260. *L. nachtriebi*, n. sp., U. O. COX, Rep. U. S. Fish Comm. f. 1894, p. 615, Upper Mississippi Basin, Minnesota. *L. smyrnæus*, n. sp., BOULENGER, Ann. Nat. Hist. (6) xviii, p. 153, Smyrna. *L. ceconii* and *sauvagei*, n. spp. (foss.), BONOMI, Riv. ital. Pal. ii, pp. 230 & 231, pl. v, figg. 8 & 1, Miocene, Mondaino, Italy.
- Iotichthys*, n. subg., for *Leuciscus phlegethontis*, Cope ; JORDAN & EVERMANN, Fish. N. Am. i, p. 243.
- Squalius schmidti*, n. sp., HERZENSTEIN, Annuaire Ac. St. Petersb. 1896, p. 224, L. Issykkul.
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- Chondrostoma genei*, Bp. : on its presence in the Prov. Teramo, Italy ; M. A. GATTI, Boll. Soc. Rom. Zool. v, p. 211.
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- Opsariichthys bidens*, Gthr. : remarks on the secondary sexual characters ; GÜNTHER, Annuaire Ac. St. Petersb. 1896, p. 216.
- Abramis* : on hybrids between *A. brama* and *A. blicca* ; KNAUTH, Forschber. Plon, iv, p. 263.
- Cliola smithii*, n. sp., EVERMANN & COX, Rep. U. S. Fish Comm. f. 1894, p. 400, S. Dakota.
- Opsopæa*, n. subg., for *Opsopæodus bollmani*, Gilb. ; JORDAN & EVERMANN, Fish. N. Am. i, p. 249.
- Nemachilus berezowskii*, p. 217, pl. ii, fig. c, Kansu, China, and *potanini*, p. 218, River Ya, China, n. spp. ; GÜNTHER, Annuaire Ac. St. Petersb. 1896.

## CHARACINIDÆ.

- Alestes kingsleyæ*, n. sp., GÜNTHER, Ann. Nat. Hist. (6) xvii, p. 279, pl. xv, fig. B, Ogowe. *A. stuhlmannii*, n. sp., PFEFFER, Fische O. Afr. p. 44, Kingani R., East Africa.

- Tetragonopterus ternetzi*, Blgr., and *ubreyi*, Blgr., figured by BOULENGER, Tr. Zool. Soc. London, xiv, pl. viii, figg. 2 & 3.  
*Anacyrtus prognathus*, Blgr., figured by BOULENGER, t. c. pl. viii, fig. 4.  
*Distichodus rudolphi*, n. sp., GÜNTHER, P. Z. S. 1896, p. 223, L. Rudolf.  
*D. petersii*, n. sp., PFEFFER, t. c. p. 41, Kingani R., East Africa.

## CYPRINODONTIDÆ.

- Characodon luitpoldii*, Stdr., figured by STEINDACHNER, Denk. Ak. Wien, lxii, pl. ii, fig. 3. *C. eiseni*, n. sp., RUTTER, P. Calif. Ac. (2) vi, p. 266, Tepic, Mexico.  
*Haplochilus atripinna*, n. sp., PFEFFER, Fische O. Afr. p. 46, East Africa.  
*Fundulus sciadicus*, Cope: notes by EVERMANN & COX, Rep. U. S. Fish Comm. f. 1894, p. 416. *F. scartes*, n. sp., S. E. MEEK, Bull. U. S. Fish Comm. f. 1895, p. 347, St. Francis R., Arkansas. *F. melanospilus*, n. sp., PFEFFER, t. c. p. 48, fig., East Africa and Seychelles.  
*Fontinus*, n. subg., for *Fundulus seminolis*, Gir., and allies; JORDAN & EVERMANN, Fish. N. Am. i, p. 645. *Gambusinus*, n. subg., for *Fundulus rathbuni*, Jord. & Meek, and allies; *id. t. c.* p. 649.  
*Glaridichthys*, n. n. for *Glaridodon*, Garm., preoccupied; GARMAN, Amer. Natural. xxx, p. 232.  
*Xiphophorus guentheri*, n. sp., JORDAN & EVERMANN, *op. cit.* p. 702, Rio Chisoy, Guatemala.  
*Pacilia occidentalis*, B. & G.: note by RUTTER, P. Calif. Ac. (2) vi, p. 261.

## SCOMBRESOCIDÆ.

- Cololabis*, n. g., for *Scombrox brevirostris*, Ptrs.; GILL, in JORDAN & EVERMANN, Fish. N. Am. i, p. 726.  
*Exocoetus holubi*, Stdr., described and figured by COLLETT, Poiss. Hiron-delle, p. 123, pl. iv, fig. 18. *E. lutkeni*, n. sp., JORDAN & EVERMANN, *op. cit.* p. 736, Cuba.

## ESOCIDÆ.

- Kenoza*, n. subg., for *Lucius americanus*, Gm., and allies; JORDAN & EVERMANN, Fish. N. Am. i, p. 626.

## GALAXIIDÆ.

- Galaxias*, Cuv.: synopsis of the New Zealand species by HUTTON, Tr. N. Zealand Inst. xxviii, p. 317.

## MORMYRIDÆ.

- Mormyrus lepturus*, Gthr., p. 280, *simus*, Sauv., p. 282, *affinis*, Sauv., p. 283, and *marchei*, Sauv., p. 284, redescribed by GÜNTHER, Ann. Nat. Hist. (6) xvii. *M. kingsleyæ* and *amblystoma*, n. spp., *id. t. c.* p. 281, pl. xv, fig. A, and pl. xiv, fig. A, Old Calabar and Ogowé.

## STERNOPTYCHIDÆ.

- A list of the Mediterranean species by G. DAMIANI, Atti Soc. Ligustica, vii, p. 100.  
*Sternoptyx diaphana*, Lowe, figured by GOODE & BEAN, Ocean. Ichthyol. pl. xxxix, fig. 146.

- Argyroplecus hemigymnus*, Cocco, and *olfersii*, Cuv., figured by GOODE & BEAN, *t. c.* pl. xxxix, figg. 147 & 148. *A. olfersii*, Cuv., figured by COLLETT, Poiss. Hirondelle, pl. iii, fig. 14.
- Maurolicus amethystinopunctatus*, Cocco, recorded from the Gulf of Genoa by DAMIANI, Atti Soc. Ligustica, vii, p. 98. *M. borealis*, Nilss., figured by GOODE & BEAN, Ocean. Ichthyol. pl. xxx, fig. 111.
- Vinciguerria*, n. g., for *Maurolicus attenuatus*, Cocco; JORDAN & EVERMANN, Fish. N. Am. i, p. 577.
- Valenciennellus*, n. g., for *Maurolicus tripunctulatus*, Esmark; JORDAN & EVERMANN, *t. c.* p. 577.
- Argyripnus*, n. g. (*Maurolicin.*), for *A. ephippiatus*, n. sp., GILBERT & CRAMER, P. U. S. Mus. xix, p. 414, pl. xxxix, fig. 2, Hawaiian Is., 295 faths.
- Chauliodus sloanii*, Schn., figured by GOODE & BEAN, Ocean. Ichthyol. pl. xxxi, fig. 115.
- Gonostoma brevidens*, Kn. & Sldr., figured by GOODE & BEAN, *t. c.* pl. xxxi, fig. 117.
- Manducus*, n. g., for *Gonostoma maderense*, Johns.; GOODE & BEAN, *t. c.* p. 514.
- Cyclothone*, Goode & Bean: remarks by COLLETT, Bull. Soc. zool. France, xxi, p. 94. *C. grandis*, n. sp., *id. t. c.* p. 99, Azores, 2000 faths. *C. microdon*, Gthr., pl. xxx, fig. 114, *bathyphila*, Vaill., pl. xxxi, fig. 118, and *elongata*, Gthr., pl. xxxii, fig. 119, figured by GOODE & BEAN, Ocean. Ichthyol.
- Bonapartia*, n. g., allied to *Gonostoma*, for *B. pedaliota*, n. sp., GOODE & BEAN, *t. c.* p. 102, pl. xxxii, fig. 120, N.-W. Atlantic, 217 faths.
- Yarrella*, n. g., allied to *Gonostoma*, for *Y. blackfordi*, n. sp., GOODE & BEAN, *t. c.* p. 103, pl. xxxii, fig. 121, N.-W. Atlantic, 324 faths.
- Melanostoma argyreum*, n. sp., GILBERT & CRAMER, P. U. S. Mus. xix, p. 416, pl. xxxix, fig. 3, Hawaiian Is., 295-298 faths.

## STOMIATIDÆ.

- Stomias ferox*, Reinh., figured by GOODE & BEAN, Ocean. Ichthyol. pl. xxxiv, fig. 127.
- Photostomias guernei*, Coll., redescribed and figured by COLLETT, Poiss. Hirondelle, p. 131, pl. i, fig. 5.
- Echiostoma barbatum*, Lowe, figured by GOODE & BEAN, Ocean. Ichthyol. pl. xxxv, fig. 130. *E. margarita*, n. sp., *id. t. c.* p. 109, fig. 131, Gulf of Mexico, 420 faths.
- Grammastomias*, n. g., allied to *Echiostoma*, for *G. dentatus*, n. sp.; GOODE & BEAN, *t. c.* p. 110, pl. xxxv, fig. 133, N.-W. Atlantic, 2069 faths.
- Photonectes gracilis*, n. sp., GOODE & BEAN, *t. c.* p. 112, pl. xxxvi, fig. 137, off Martinique, 472 faths.
- Malacosteus niger*, Ayres, figured by GOODE & BEAN, *t. c.* pl. xxxvii, fig. 138.
- Astronesthes niger*, Rich., and *richardsoni*, Poey, figured by GOODE & BEAN, *t. c.* pl. xxxiii, figg. 123 & 125. *A. gemmifer*, n. sp., *id. t. c.* p. 105, fig. 124, N.-W. Atlantic, 300 faths. *A. abyssorum*, n. sp., KOEHLER, Ann. Univ. Lyon, xxvi, p. 511, pl. xxvii, fig. 10, Bay of Biscay, 400 faths.

## SALMONIDÆ.

- Salmo salar*, L.: on a supposed land-locked mature specimen from Ireland; SCHARFF, Irish Natural. v, p. 16. *S. salar ouaniche*, n. subsp.; MCCARTHY in JORDAN & EVERMANN, Fish. N. Am. i, p. 487, Saguenay R., Canada. *S. mykiss*, Walb.: notes by EVERMANN, Bull.

- U. S. Fish Comm. f. 1896, p. 198. *S. mykiss lewisii*, Gir.; notes by EVERMANN & COX, Rep. U. S. Fish Comm. f. 1894, p. 413. *S. lacustris*, L.: on the artificial production of monstrous specimens; F. SUPINO, Bull. Soc. Veneto-Trent. vi, p. 43.
- Salvelinus leucomenis*, Pall., redescribed by T. H. & B. A. BEAN, P. U. S. Mus. xix, p. 382.
- Oncorhynchus chouicha*, Walb.; further notes on its introduction in the lake of Castel Gandolfo, Italy; VINCIGUERRA, Boll. Soc. Rom. Zool. v, p. 11. *O. tschawytscha*, Walb., and *nerka*, Walb.: notes by EVERMANN, Bull. U. S. Fish Comm. f. 1896, pp. 180 & 187, pls. lxxi & lxxii.
- Coregonus*, Art.: a revision of the North American species by EVERMANN & H. M. SMITH, Rep. U. S. Fish Comm. f. 1894, pp. 283-324, figg., pls. xi-xxviii: remarks on recent additions to our knowledge of the forms of Switzerland; FATIO, Arch. Sci. Nat. (4) i, p. 275. *C. labradoricus*, Rich.: notes by EVERMANN & KENDALL, Rep. U. S. Fish Comm. f. 1894, p. 590. *C. williamsoni*, Gir.: notes by EVERMANN, Bull. U. S. Fish Comm. f. 1896, p. 178.
- Osmerus mordax*, Mitch.: notes by EVERMANN & KENDALL, Rep. U. S. Fish Comm. f. 1894, p. 593. *O. scarabellii*, n. sp. (foss.), BONOMI, Riv. ital. Pal. ii, p. 218, pl. v, fig. 6, Miocene, Mondaino, Italy.
- Spirinchus*, n. subg., for *Osmerus thuleichthys*, Ayres; JORDAN & EVERMANN, Fish. N. Am. i, p. 522.
- Argentina silus*, Ascan.; figured by GOODE & BEAN, Ocean. Ichthyol. pl. xvii, fig. 61. *A. striata*, n. sp., *id. t. c.* p. 52, fig. 62, N.-W. Atlantic, 111 faths.
- Nansenia*, n. g., for *Microstomus groenlandicus*, Reinh.; JORDAN & EVERMANN, *t. c.* p. 528.
- Bathylagus euryops* and *benedicti*, n. spp., GOODE & BEAN, *op. cit.* p. 55, pl. xvii, figg. 63 & 64, N.-W. Atlantic, 693-1796 faths.

## GONORHYNCHIDÆ.

On the fossil Fishes of the genus *Notogoneus*, Cope; A. S. WOODWARD, P. Z. S. 1896, p. 500, pl. xviii.

## CLUPEIDÆ.

- Clupea*, L.: notes on the species of the Caspian and Black Seas; BORODINE, Annuaire Ac. St. Petersb. 1896, pp. 81-94, figg. *C. sprattus*, L.: on the eggs and larvæ; E. EHRENBAUM, Wiss. Meeresunters. Kiel Helgol. (2) ii, p. 318, pl. iv, figg. 16-18. *C. pilchardus*, Walb.: on the eggs and development on the Atlantic coast of France; FABRE-DOUMERGUE & BIÉTRIX, C.R. Ac. Sci. cxxii, p. 1347: on the eggs and fry of the Sardine at Concarneau; FABRE-DOUMERGUE & BIÉTRIX, C.R. Soc. Biol. (10) iii, p. 551. *C. ilisha*, Ham. Buch., and *palasah*, C. & V., described by STEINDACHNER, Ann. Hofmus. Wien, xi, pp. 228 & 229. *C. tenuissima*, Ag. (foss.), figured by BONOMI, Riv. ital. Pal. ii, pl. v, fig. 2. *C. mondainensis*, *macrocerca*, and *bosniaskii*, n. spp. (foss.), *id. t. c.* pp. 211, 213 & 215, pl. v, figg. 3, 4 & 5, Miocene, Mondaino, Italy.
- Alosa alabamae*, n. sp., EVERMANN, Rep. U. S. Fish Comm. f. 1895, p. 203, Alabama.
- Turpon*, n. g., for *Megalops atlanticus*, C. & V.; JORDAN & EVERMANN, Fish. N. Am. i, p. 409.
- Jenkinsia*, n. g., for *Dussumieria stolifera*, Jord. & Gilb., and allies; JORDAN & EVERMANN, *t. c.* p. 418.
- Lile*, n. subg., for *Sardinella stolifera*, Jord. & Gilb.; JORDAN & EVERMANN, *t. c.* p. 431.

*Anchovia*, n. g., for *Engraulis macrolepidotus*, Kner & Stdr. ; JORDAN & EVERMANN, *t. c.* p. 449.

*Chatoessus horni*, n. sp., ZIETZ, Rep. Horn Exped. ii, p. 180, pl. xvi, fig. 6, Central Australia.

## ALEPOCEPHALIDÆ.

*Alepocephalus agassizii*, Goode & Bean, fig. 45, *productus*, Gill, fig. 46, and *bairdii*, Goode & Bean, fig. 47, figured by GOODE & BEAN, Ocean. Ichthyol. pl. xiii. *A. giardi*, n. sp., KOEHLER, Ann. Univ. Lyon, xxvi, p. 513, pl. xxvi, fig. 1, Bay of Biscay, 400-700 faths.

*Mitchillina*, n. g., for *Alepocephalus bairdii*, Goode & Bean; JORDAN & EVERMANN, Fish. N. Am. i, p. 453.

*Conocara*, n. g., for *Alepocephalus macropterus*, Vaill., and *C. macdonaldi*, n. sp. ; *iid. t. c.* p. 39, pl. xiii, fig. 48, N.-W. Atlantic, 955 faths.

*Talismania*, n. subg., for *Bathytroctes homopterus*, Vaill., and *B. antillorum* and *aequatoris*, n. spp. ; *iid. t. c.* pp. 44 & 45, pl. xiv, figg. 49 & 50, N.-W. Atlantic, 420 & 741 faths.

*Aleposomus copei*, Gill, figured ; *iid. t. c.* pl. xiv, fig. 51.

*Bathytroctes mollis*, n. sp., KOEHLER, Ann. Univ. Lyon, xxvi, p. 517, pl. xxvi, fig. 2, Bay of Biscay, 900 faths.

*Xenodermichthys socialis*, Vaill. : noticed and figured by KOEHLER, *t. c.* p. 520, pl. xxvii, fig. 11, and described by COLLETT, Poiss. Hirondelle, p. 138.

## HALOSAURIDÆ.

*Halosaurus oweni*, Johns., figured by GOODE & BEAN, Ocean. Ichthyol. pl. xl, fig. 152. *H. güntheri*, n. sp., *iid. t. c.* p. 131, N.-W. Atlantic, 594 fath. *H. johnsonianus*, Vaill., described and figured by COLLETT, Poiss. Hirondelle, p. 143, pl. iv, fig. 20.

*Halosauropsis*, n. g., p. 143, for *Halosaurus macrochir*, Gthr., described and figured, p. 146, pl. v, fig. 23, COLLETT, *t. c.*

*Aldrovandia*, n. g., for *H. rostratus*, Gthr., and allies ; GOODE & BEAN, Ocean. Ichthyol. p. 132. *A. gracilis* and *pallida*, n. spp., *iid. t. c.* pp. 134 & 135, pl. xlii, figg. 157 & 158, N.-W. Atlantic, 769-1430 faths.

## GYMNOTIDÆ.

*Eigenmannia*, n. g., for *Sternopygus humboldtii*, Stdr. ; JORDAN & EVERMANN, Fish. N. Am. i, p. 341.

## MURÆNIDÆ.

B. GRASSI & S. CALANDRUCCIO summarize their conclusions on the development of Murænoids ; Rend. Acc. Lincei (5) v, pp. 348 & 349, and v, ii, p. 241.

*Anguilla vulgaris*, Flem. : GRASSI has been able to ascertain by direct observation that, as already suspected from an examination of the myomeres, *Leptocephalus brevirostris* is the larva of the common Eel, which, according to the author, matures and spawns in the depths of the sea ; P. R. Soc. London, lx, p. 260. On the supposed reproduction of the Eel in fresh water in Switzerland and Germany ; IMHOF, Biol. Centralbl. xvi, p. 431, and KNAUTHE, *t. c.* p. 847. On the habits of the Eel in Lake Cauma, Switzerland ; P. LORENZ, Jahresber. Ges. Graubund. (2) xxxix, p. 81. On Eels with ripe ovaries ; J. T. CUNNINGHAM, J. Mar. Biol. Ass. (2) iv, p. 87, fig.

- Conger myriaster*, Brev., described and figured by STEINDACHNER, Ann. Hofmus. Wien, xi, p. 222, pl. iv, fig. 2.
- Congromurana flava*, n. sp., GOODE & BEAN, Ocean. Ichthyol. p. 138, pl. xlii, fig. 159, N.-W. Atlantic, 31-111 faths. *C. aquorea*, n. sp., GILBERT & CRAMER, P. U. S. Mus. xix, p. 405, pl. xxxvii, Hawaiian Is., 375 faths.
- Simenchelys parasiticus*, Gill, figured by GOODE & BEAN, *t. c.* pl. xliii, fig. 161, and by COLLETT, Poiss. Hirondelle, p. 156, pl. v, fig. 22, and pl. vi, fig. 2.
- Synaphobranchus pinnatus*, Gron., figured by GOODE & BEAN, *t. c.* pl. xliv, fig. 164.
- Histiobranchus infernalis*, Gill, figured by GOODE & BEAN, *t. c.* pl. xliv, fig. 165.
- Pisoodonophis cruentifer*, n. sp., GOODE & BEAN, *t. c.* p. 147, pl. xliv, fig. 166, N.-W. Atlantic, 120-245 faths.
- Venefica procera*, Goode & Bean, figured by GOODE & BEAN, *t. c.* pl. xliv, fig. 168.
- Nemichthys scolopaceus*, Rich., figured by GOODE & BEAN, *t. c.* pl. xlvi, fig. 170.
- Labichthys carinatus*, Gill & Ryder, pl. xlvi, fig. 171, *elongatus*, Gill & Ryder, pl. xlvi, fig. 172, and *infans*, Gthr., pl. xlvii, fig. 173, figured by GOODE & BEAN, *t. c.*
- Serrivomer beanii*, Gill & Ryder, figured by GOODE & BEAN, *t. c.* pl. xlvii, fig. 175.
- Saccopharynx flagellum*, Mitch., figured by GOODE & BEAN, *t. c.* pl. xlix, figg. 179 & 180.
- Gastrostomus bairdii*, Gill & Ryder, figured by GOODE & BEAN, *t. c.* pl. xlix, figg. 181 & 182.
- Derichthys serpentinus*, Gill, figured by GOODE & BEAN, *t. c.* pl. xlv, fig. 169.
- Verma*, n. g., for *Sphagebranchus kendallii*, Gilb.; JORDAN & EVERMANN, Fish. N. Am. i. p. 374.
- Todarus*, n. g., for *Nettastoma brevirostre*, Facciola; GRASSI & CALANDRUCCIO, Rend. Acc. Lincei (5) v, p. 349.
- Synaphobranchus pinnatus*, Gron.: notes by COLLETT, Poiss. Hirondelle, p. 154.
- Muræna mieraszewskii*, n. sp., STEINDACHNER, Ann. Hofmus. Wien, xi, p. 222, Japan.
- Scutica*, n. subg., *Gymnomuræna nectura*, Jord. & Gilb.; JORDAN & EVERMANN, Fish. N. Am. i, p. 404.
- P. STRÖMMAN, in a Dissertation published at Upsala, describes the Leptocephalids in the Upsala Zoological Museum.
- Euleptocephalus*, n. subg., for *Leptocephalus sicanius*, Facciola, *L. yarrellii*, Kaup, and allies; P. STRÖMMAN, Leptoceph. Zool. Mus. Upsala, p. 5. *Leptocephalus eckmanni*, p. 16, pl. i, figg. 1-3, *immaculatus*, p. 20, pl. i, figg. 4 & 5, *scheelii*, p. 21, pl. i, figg. 6 & 7, *forsströmi*, p. 24, pl. ii, figg. 1-3, *undulatus*, p. 27, pl. ii, figs. 4-6, *humilis*, p. 29, pl. ii, figg. 7-9, *crenatus*, p. 32, pl. iii, figg. 4 & 5, *fuliginosus*, p. 34, pl. iii, figg. 6 & 7, *lanceolatus*, p. 37, pl. iv, figg. 3 & 4, *hyoproroides*, p. 39, pl. iv, figg. 4 & 6, *curvirostris*, p. 41, pl. v, figg. 1 & 2, and *tiluroides*, p. 43, pl. v, figg. 3-5, Atlantic, *L. javanicus*, p. 30, pl. iii, figg. 1-3, Bali Straits, and *L. subinornatus*, p. 36, pl. iv, figg. 1 & 2, E. Coast of S. Africa, n. spp.; STRÖMMAN, *t. c.*
- Promyllantor alcocki*, n. sp., GILBERT & CRAMER, P. U. S. Mus. xix, p. 405, pl. xxxvi, fig. 1, Hawaiian Is., 295 faths.



## LOPHOBRANCHII.

- Siphostoma poeyi*, n. n. for *S. tenuis*, Poey; JORDAN & EVERMANN, Fish' N. Am. i, p. 766. *S. starksi*, Jord. & Culv.: note by RUTTER, P. Calif. Ac. (2) vi, p. 263.

## PLECTOGNATHI.

- Menacanthus poliakowi* and *maximowiczi*, n. spp., HERZENSTEIN, Annuaire Ac. St. Petersb. 1896, pp. 8 & 9, Japan.  
*Orthogoriscus mola*, L.: notes by COLLETT, Poiss. Hirondelle, p. 163, pl. vi, fig. 1.

## GANOIDEI.

- H. SCUPIN, Arch. Naturg. lxii, pp. 145-186, pls. ix & x, makes a comparative study of the histological structure of Ganoid scales.  
 G. W. KOSMAK writes on the dermal armour of the Sturgeons; J. N. York Micr. Soc. xi, 1895, pp. 1-21, pls. xlv-xlvi.  
 On the odontography of Chondrosteous Ganoids; N. ZOGRAF, Ann. Sci. nat. (8) i, pp. 197-219, pls. iv & v. Abstract in Congr. Zool. Leyden, pp. 320-322.  
 On the minute structure of the notochord of *Acipenser ruthenus*; V. v. EBNER, SB. Ak. Wien, civ, iii, pp. 149-159, fig.  
 On the development of the paired fins of the Sturgeon; S. MOLLIER, Anat. Anz. xii, pp. 193-197.  
 B. DEAN writes on the larval development of *Amia calva*; Zool. Jahrb. Syst. ix, pp. 639-672, figg., pls. ix-xi, and Quart. J. Micr. Sci. xxxviii, pp. 413-444, pls. xxx-xxxii.  
 On the cleavage of the egg in *Amia calva*; H. VIRCHOW, SB. Ges. naturf. Fr. 1896, pp. 31-42.  
 On gastrulation in *Amia calva*; SOBOTTA, Verh. Anat. Ges. x, pp. 108-111, figg.  
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*Polyplocodus leptognathus*, n. sp. (foss.), TRAQUAIR, in HARVIE-BROWN & BUCKLEY, *Vert. Fauna Moray Basin*, ii, p. 255, pl. vii, figg. 1 & 2, Upper Devonian, Nairn, Scotland.

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E. RAY LANKESTER discusses the external characters of *Lepidosiren* and *Protopterus*, and remarks on the supposed distinctions on which *Lepidosiren articulata* was founded by Ehlers. *Lepidosiren* and *Protopterus* are figured side by side. *Tr. Zool. Soc. London*, xiv, p. 11, figg., pl. ii.

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- Scapanorhynchus rhapsiodon*, Ag., and *subulutus*, Ag. (foss.): teeth described and figured by PRIEM, *t. c.* p. 15, pl. ii, figg. 1-10.
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- On the blood-corpuses of Lampreys; GIGLIO TOS, Mem. Acc. Torino (2) xlvi, pp. 219-252, 1 pl.
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## VI. TUNICATA.

BY

PROFESSOR W. A. HERDMAN, D.Sc., F.R.S.

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## INTRODUCTION.

THE most important papers of the year are certainly those upon development—both blastogenesis and embryogenesis—and not the least important of these come from America. We owe to CASTLE a most detailed and careful account of the cell-lineage and early stages in the embryology of a Simple Ascidian (*Ciona*), while RITTER gives us his promised memoir on budding in Compound Ascidiens (*Perophora* and *Goodsiria*). HJORT has also a memoir on the general subject of budding in these forms; while SEELIGER, KOROTNEFF, HEIDER, and others, have papers on the development of various species of *Salpa*.

KIAER gives a useful revision of the Norwegian and Arctic Simple Ascidiens. He discusses the tangled synonymy of several puzzling species, including *Styela rustica*, L., in regard to which there has been much difference of opinion. He describes 4 new species and 36 previously known.

We owe to LOHMANN a very full account of the *Appendiculariidae* collected during the Plankton Expedition; which, as he has been able to include the examination of several other collections, almost amounts to a monograph of the group. In addition to a revision of the classification and definitions he describes a large number of new species, and also describes more fully the new species and genera which he had diagnosed briefly in his previous work. There is also a lengthy analysis of the geographical and bathymetrical distribution of the species.

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## II.—BIOLOGY.

### A. ANATOMY.

RITTER, in his description of *Perophora annectens*, reaffirms with further evidence what he had already stated—that this Californian form shows within the limits of variability of a single species a complete transition from the Simple and "Social" to the Compound Ascidiæ.

GARSTANG proposes a modification of Lahille's classification based upon anatomical and embryological facts.

METCALF has a variety of anatomical notes, chiefly on minute glands in the pharynx and cloaca of *Cynthia partita*, and on points in the nervous system and sense-organs of *Salpa* and various other Tunicates. He also gives reasons for regarding the ciliated funnel in *Boltenia*, &c., as a sense-organ.

CAULLERY deals with the reconstitution of the colony in *Diazona*.

RITTER describes and discusses fully in all its relations a new species of *Goodsiria* (*G. dura*) found on the Californian coast. He considers in some detail its systematic position, and its relations to other members of the family *Polystyelidæ*. A short account of the anatomy is also given, and of the relations of the zooids in the colony in their connection with budding (see under Development).

## B. EMBRYOLOGY.

[Including budding and changes in the colony.]

CAULLERY describes the origin of the buds in *Colella*. He finds a polymorphism, some buds having an abundant store of reserve materials in the outer layer, while others are without this supply. The former are deep in the stalk, develop slowly, and probably serve to regenerate the colony when the head portion has been removed or has died down. Where the ectoderm is given over to storing the reserve material all the organs are formed from the endoderm.

KOROTNEFF has two important papers on the development of *Salpa*. One deals with the species *S. cordiformis-zonaria* and *S. musculosa-punctata*, the other with *S. runcinata-fusifformis*. The blastomeres are of two kinds, formative and nutritive. According to Korotneff the kalymmocytes, although present among the blastomeres, do not play such an important part in embryogenesis as was formerly supposed.

HEIDER also gives an account of the development of *Salpa*, his species being *S. fusiformis*. He considers it still unproved that the kalymmocytes have any formative as well as a nutritive rôle.

METCALF shows that in *Salpa cylindrica* the early disappearance of the eleoblast is correlated with the precocious development of the testis which occupies the position usually held by the eleoblast.

WILLEY gives an interesting account of the process of evisceration which he observed in a species from New Britain, allied to Sluiter's *Styeloides abranchiata*. If he is correct in supposing that this observation explains the remarkable anatomical condition of Sluiter's specimens, then in all probability the genus *Styeloides* (Sluiter) must lapse. As far as can be made out from Willey's description and figures, *S. eviscerans* is, in structure, a member of the genus *Styela*.

GIARD & CAULLERY show how, in autumn, the colonies of *Clavelina* die down and disappear, with the exception of dormant winter buds, or masses of reserve material, of a whitish colour, in the stolons. They are compared to the gemmules of sponges and the statoblasts of *Polyzoa*. The reserve material is stored both in ectodermal and mesodermal cells of the stolon, which also contains the usual epicardial (endoderm) prolongation. This modified stolon breaks up into pieces, which the following summer swell and grow like ordinary buds into complete individuals, and so the colonies are regenerated. It is a process of wintering comparable to what is known in the *Polyclinidae*.

CAULLERY has investigated the structure and the buds of some colonies of the genus *Colella*, Herdman, from Australia and Cape Horn. He finds the buds are of two kinds, one close to the head of the colony of ordinary type, and another placed further down the peduncle and characterised by having the outer layer of cells filled with reserve material. He thinks that the latter may lie dormant for long, and serve to regenerate the colony after the head has been amputated.

CASTLE gives us what is probably the most complete and detailed description we yet have of the early stages in the development of an Ascidian. Notwithstanding the amount that has been written since Kowalevsky's epoch-making work in 1866, there still remain many questions unsettled in regard to the embryology of the Tunicates. Even on so fundamental a point as the derivation of the primary germ-layers in the embryo, contradictory opinions have been expressed within the last ten years by observers of world-wide reputation. Castle's method of study, by tracing the cell-lineage, made it clear that some of the conflicting statements of his predecessors arose from errors on their part, due to incorrect orientation of the embryos. One of the most important of his conclusions is that the mesoderm of Ascidians, and probably that

of *Amphioxus* and the Vertebrates, is derived from both primary layers, ectoderm and endoderm.

CASTLE found that *Ciona* produces both ova and sperms at the same time, but that self-fertilization very rarely occurs. The eggs are laid just before dawn, and the larva is hatched during the following night. The test-cells adhering to the young homogeneous test have, it is now well known, no connection with the cells found later on in the adult test. The larvæ are free-swimming for from one to several days. They avoid the light.

The sperm archoplasm is alone concerned in bringing the pronuclei together. It divides into two attraction spheres, and forms the first cleavage spindle. Hence, as Castle shows, the archoplasm cannot be a bearer of heredity. The polar globules invariably form at the dorsal pole. The spermatozoon enters at the ventral hemisphere, and that point determines the median plane and the posterior end of the embryo. The ventral is the animal pole. The cleavage is from the beginning bilateral. The first cleavage plane is vertical, and divides the right and left halves of the embryo. The four smaller dorsal cells with yolk give rise to the endodermal hemisphere, the four larger, more protoplasmic cells form the ventral ectodermal hemisphere. The cells of the latter hemisphere divide more rapidly, and form the future aboral surface. When the dorsal hemisphere has twenty-two cells, the ventral has fifty-four.

The gastrulation is a combination of epiboly and invagination; the ventral ectoderm grows over, so as to envelop the dorsal hemisphere, while the latter sinks down, and becomes saucer-shaped. In the centre of the dorsal surface ten cells form the future endoderm. Round these comes a ring of cells, the chorda-mesenchyme ring, from which the notochord and mesenchyme arise. Outside this ring is a row of cells, the neuro-muscular ring. The more anterior of these cells form the medullary plate, the more posterior the longitudinal musculature of the larva. The remainder of the cells (in the 112-cell stage) form ectoderm. By growth at the anterior end the blastopore gets pushed posteriorly, and the anterior chorda cells are covered up, and come to lie in the dorsal wall of the archenteron, sixteen cells in two rows, one over the other. The blastopore closes in the posterior part of the dorsal surface. In front of it is the medullary plate, with a continuation back at the sides of the blastopore. This region forms the trunk of the larva, the part posterior to it being drawn out to form the tail. The chorda cells pass back into the tail, while the mesenchyme cells shift forwards into the trunk. The muscle cells, derived from the neuro-muscular ring, lie behind the blastopore, and form the muscles of the tail. The closure of the medullary canal takes place from the blastopore forwards, and then the nerve cord is grown over by ectoderm. After closure of the blastopore the mesenchyme cells lie as lateral masses in the trunk; later on they become the blood corpuscles and the mantle cells, &c.

CASTLE also discusses some important theoretical questions. He points out that, in *Ciona* at least, the chorda-mesenchyme ring takes part along with the endoderm in the primary invagination, and so belongs to the primary endoderm; while the rest of the mesoderm, the muscle cells of the neuro-muscular ring, are carried in by a secondary invagination, and belong to the outer layer of the young gastrula, or primary ectoderm. He considers that the chorda must be regarded as a mesodermal organ. He agrees with former observers in seeing no trace of enterocœle formation, and he doubts whether any Chordata are Enterocœla. He does not believe in distinguishing those Metozoa with a "mesoderm" from those with a "mesenchyme." He considers that embryology gives no support to the Annelid hypothesis as to the origin of Chordates.

RITTER gives a full account, well illustrated, of the process of budding,

from his observations on *Goodsiria dura* and *Perophora annectens*. In *Goodsiria* he finds the budding to be pallial, and that the buds become separated at a very early stage from the young zooids which produce them. He finds no evidence for believing that buds can be formed in the vessels of the common test by the aggregation of undifferentiated cells from the blood. The inner (future endodermal) vesicle of the bud is formed from the wall of the peribranchial cavity of the parent (? of epiblastic origin). The pericardium and heart arise from the postero-ventral wall of the inner vesicle. The hypophysis and ganglion arise as a "dorsal tube" which is nipped off at a very early period from the dorsal wall of the inner vesicle. The ganglion is a thickening on the ventral surface of the tube, or a cell mass that forms the connection between the tube and the vesicle, and so is of "endodermal" origin.

In *Perophora* the buds are, of course, derived from the stolon, and one of the most remarkable points established by Ritter is that the developing blastozoid is connected with the partition of the stolon, not by its branchial sac, but by the left peribranchial sac. Ritter has specially directed his attention to the points left in doubt by Kowalevsky. He considers that the more recent writings of Van Beneden, Julin, and Pizon have obscured rather than cleared up these points. He comes to the conclusion, not without some hesitation, that the origin of the pericardium and heart is from the inner vesicle. He also shows conclusively that the relations of the pericardium in *Perophora* differ very greatly from those described in *Clavelina* by Van Beneden and Julin. There is no epicardium in *Perophora*, and the pericardium does not at any time communicate with the partition of the stolon. Ritter considers that the process of budding has probably arisen independently in these two genera—*Perophora* and *Goodsiria*.

PIZON has studied the formation and fate of the follicle cells in *Molgula socialis*. He finds there are also cells expelled from the ovum which form a layer inside the follicle. FLODERUS has also studied the same subject, from the ovarian egg onwards, in many species of Simple Ascidians. He gives a detailed account of the formation of the layers of the follicle.

### C. GEOGRAPHICAL DISTRIBUTION.

WILLEY gives some notes on the Ascidians present at Ralum, New Britain, and describes a new species, *Styeloides eniscerans*.

KRISTINE BONNEVIE describes eleven species of Simple Ascidians, and ten species of Compound Ascidians from the Norwegian North Atlantic Expedition. Five of the Simple Ascidians are new species. They were found on the Norwegian coast, in the North Atlantic, and in the Arctic Ocean.

LOHMANN gives three new species of Appendicularians which were collected by Vanhöffen on his expedition to Greenland. He also describes the formation of the "house" as a cuticular formation.

BORGERT discusses the distribution of the *Doliolide* collected on the 'Vettor Pisani' Expedition. *Doliolum tritonis* and *D. nationalis* are now recorded from the Pacific.

ROULE describes the Simple and CAULLERY the Compound Ascidians collected during the 'Caudan' expedition in the Bay of Biscay. One new species, allied to *Ascidia mentula*, was found.

KLÆR gives an account of the distribution round the Scandinavian coasts of forty species of Simple Ascidians.

LOHMANN gives a very full discussion of the distribution, both bathymetrical and horizontal, of the numerous species of *Appendiculariidae* collected during the Plankton Expedition. It is illustrated by tables, coloured maps, and charts.

## SYSTEMATIC.

## LARVACEA.

LOHMANN'S memoir on the *Appendiculariida* of the Plankton Expedition is by far the most detailed account of this group of *Tunicata* we have had since Fol's classic memoir in 1872. The classification which he adopts is as follows :—

CLASS : COPELATA—1 order, *Archipneusta*.

Fam. 1. *Kowalevskiida* (genus *Kowalevskia*).

Fam. 2. *Appendiculariida*.

Subfam. 1. *Fritillariina* (genera *Appendicularia* and *Fritillaria*).

Subfam. 2. *Oikopleurina* (genera *Oikopleura*, *Stegosoma*, *Megalocercus*, *Folia*, and *Althoffia*).

The new species described are :—

- Fritillaria fertilis*, n. sp., LOHMANN, p. 29.  
*F. gracilis*, n. sp., LOHMANN, p. 31.  
*F. frandax*, n. sp., LOHMANN, p. 35.  
*F. aberrans*, n. sp., LOHMANN, p. 36.  
*F. magna*, n. sp., LOHMANN, p. 37.  
*F. aequatorialis*, n. sp., LOHMANN, p. 43.  
*F. tenella*, n. sp., LOHMANN, p. 44.  
*F. venusta*, n. sp., LOHMANN, p. 46.  
*F. bicornis*, n. sp., LOHMANN, p. 47.  
*F. borealis*, n. sp., LOHMANN, p. 49.  
*F. sargassi*, n. sp., LOHMANN, p. 51.  
*Oikopleura intermedia*, n. sp., LOHMANN, p. 62.  
*O. gracilis*, n. sp., LOHMANN, p. 65.  
*O. parva*, n. sp., LOHMANN, p. 70.

Also in another work (Bibl. Zool., 20 Hft.)—

- O. labradoriensis*, n. sp., LOHMANN, p. 31.  
*O. vanhoeffeni*, n. sp., LOHMANN, p. 33.  
*Fritillaria borealis*, n. sp., LOHMANN, p. 35.

## THALIACEA.

- Salpa asymmetrica*, n. sp., FOWLER, p. 994.

## ASCIDIACEA.

## MOLGULIDÆ.

- Molgula arctica*, n. sp., KLÆR, p. 14.  
*M. norvegica*, n. sp., KLÆR, p. 15.  
*Paramolgula arctica*, n. sp., BONNEVIE, p. 9.  
*P. rara*, n. sp., KLÆR, p. 17.  
*Eugyra translucida*, n. sp., KLÆR, p. 18.  
*Gamaster dakarensis*, n. sp., PIZON, p. 1345.

## CYNTHIIDÆ.

- Styeloides eviscerans*, n. sp., WILLEY, p. 161.  
*Styela bathybia*, n. sp., BONNEVIE, p. 5.  
*S. cylindriciformis*, n. sp., BONNEVIE, p. 6.  
*S. uniplicata*, n. sp., BONNEVIE, p. 7.  
*S. uniplicata*, n. var. *minuta*, BONNEVIE, p. 8.

ASCIDIIDÆ.

*Ciona gelatinosa*, n. sp., BONNEVIE, p. 3.  
*Ascidia guttulata*, n. sp., ROULE.

CLAVELINIDÆ.

*Ecteinascidia euphues*, n. sp., SLUTER, p. 49.  
*E. psammodes*, n. sp., SLUTER, p. 50.

## VII. MOLLUSCA.

BY

B. B. WOODWARD, F.L.S., F.G.S., &c.

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### INTRODUCTION.

A CONSIDERABLE falling off in the amount of Molluscan work done during 1896, as contrasted with that of the last few years, is observable. There have been just 100 fewer papers, judging by the number of titles, published in the year than appeared in 1895; but the diminution is fortunately in quantity rather than in quality.

TRYON'S Manual (355, 356), under the able conduct of Mr. PILSBRY, is still the most important systematic work in course of publication. The "First Series," or Marine Univalves, is now complete as planned by its founder, but a supplemental volume dealing with some families not heretofore considered is promised. In the "Second Series," or Terrestrial Molluscs, the *Bulimi* and *Bulimuli* are still being dealt with.

The Molluscan portion of BRONN'S "Klassen und Ordnungen der Thier-Reichs," under the editorship of Dr. SIMROTH (38), proceeds with Teutonic 1896. [VOL. XXXIII.] D 1

stateliness, only two lieferungen, or 64 pages, have appeared—a snail-like rate of progression much to be deplored, since the first parts promise to be well out of date ere the end of the work is approached.

TAYLOR (345) has issued two more parts of his Monograph of the British non-marine Mollusca, and is still engaged with the introductory portion.

M. COSSMANN, in the continuation of his *Paléontologie Comparée* (63), begins with a new suborder, *Entomoteniata*, for *Nerinea* and its allies, which he considers exhibit shell characters indicative of a transition between Tectibranchs and Prosobranchs. The other papers by the same author also merit the attention of students.

Prof. VERRILL (362), in a most important paper, effectually disposes of the "Archi-Mollusc," and points out that all Mollusca were probably derived from free-swimming forms similar to modern veligers and proveligers, and that each of the great classes, and perhaps some of the subclasses, had already become differentiated while still having veliger-like forms and modes of life.

SIMROTH (305), on the other hand, is disposed to treat the primitive Mollusc seriously, and attributes to it an inter-tidal habitat and a hemipelagic larva.

Amongst faunistic works attention may be drawn to CROSSE's additions (72) to the non-marine fauna of New Caledonia, and to QUADRAS & MOELLENDORFF's further description of new Philippine non-marine shells, as well as to GUDE's (123) list of Helicoid shells found in the Canary Islands. DALL's "Insular Land-shell Faunas" (77) contains some highly suggestive remarks, founded mainly on a study of the terrestrial fauna of the Galapagos Islands.

A series of most important researches into the life-history and habits of the *Nautilus* have been initiated by WILLEY (380, 381), of which more will be heard another year.

LÖNNBERG (193) endeavours to show that Pelseneer's conclusions concerning the affinities of *Spirula* are incorrect, and though we have doubts as to his success, his paper will undoubtedly stimulate further research.

In fossil *Cephalopoda*, CRICK (68) has an important paper on the proostracum of the *Belemnite*, which he shows to be the homologue of the gladius in *Loligo*. Dr. WOODWARD (390) describes the first-known example of a fossil Octopus; whilst attention may be directed to the valuable papers of ARTHABER (9), and MOJSISOVICS VON MOJSVÁR (221).

*Conularia*, long referred by palæontologists to *Pteropoda*, mainly apparently from doubt as to where else to place it, is claimed by VERRILL (361, p. 80) as very likely an ancestral form of Dibranchiate Cephalopod, for which he proposes to found a new order *Conulariaceae*. It has been shown by RUEDEMANN (285) to have been attached by its apex.

For the *Pulmonata*, PILSBRY (252) proposes a new classification into three main divisions, viz., *Agnatha*, *Aulacopoda*, and *Holopoda*. The two latter, the details concerning which are given in the proper place, are founded on the presence or absence of the pedal grooves and gland.

HECHT (132) gives a most valuable summary of what is known concerning the structure and habits of the *Nudibranchiata*, with special reference to those occurring at Roscoff.

M. BERNARD (21), in two further notes, has set forth the results of his researches into the development and morphology of the hinge of *Pelecypoda*. In these he deals with the Taxodonts and the *Anisomyaria*, in all of which the hinge of the prodisoconch begins with a crenulated margin, the true teeth developing within this last at a later stage, except in *Ostrea*. The author's ultimate conclusions have yet to appear.

SABBA STEFANESCU (326), who used his forename after new species to prevent confusion with Stefani, gives a most interesting account of the



Miocene fauna of Roumania, and especially treats of the genus *Unio*, which ignorant of the Swedish custom of the time, he persists in attributing to Philipson, instead of to Retzius, its real author. Judging from the figures, many of the species must greatly resemble forms now living in the United States.

The methods of the species-maker are notoriously beyond the comprehension of the real student, and still more so of the recorder. In 1895 an instance was met with where a new genus of fossil Cephalopod was founded for a single fragment which the author was fain to put down as "sp. indet."; this is now surpassed by the individual who creates a new genus, *Roncania*, for a unique scrap which he proceeds to describe as "*Roncania? prima.*"

In conclusion, it seems only fair to malacologists generally to warn them that the dates on the parts of the Journal de Conchyliologie are grossly misleading, the four received in England during the year were:—

Avril, 1895,	received	27 April, 1896.
Juillet, 1895	„	13 June, 1896.
Octobre, 1895	„	12 Sept., 1896.
Janvier, 1896	„	31 Dec., 1896.

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## II.—BIOLOGY.

### A.—ANATOMY, PHYSIOLOGY.

#### 1. GENERAL.

Remarks on points in Molluscan morphology; VERRILL (361, 362).—Anatomy of *Nautilus* (various interesting points and observations); WILLEY (380, 381).—Organisation of *Nautilus*; VAYSSIÈRE (359).—Anatomy of *Trichotoxon*, *Leptichnus*, n. g., *Dendrolimax* and *Microcyclus*, n. g.; SIMROTH (307).—Anatomy of *Agriolimax*, n. spp., and other Slugs from the Sandwich Is.; COLLINGE (57).—Anatomy of American species of *Agriolimax* and of *Aphallarion*, n. g.; PILSBRY & VANATTA (265).—Anatomy and histology of the buccal mass of *Helix pomatia*; PARAVICINI (238).—Notes on the anatomy of *Chloritis strophora* and *rehsei*;

MOSS & WEBB (224).—Anatomy of *Bulimus ovatus* and *proximus*; PLATE (270).—*Amphidromus chloris*, and *A. interruptus*; JACOBI (148).—Anatomy of *Neohyalimax brasiliensis*, n. g. & sp.; SIMROTH (306).—Anatomy of Nudibranchs; HECHT (132).—Anatomy of *Learchis*, *Myja*, and *Funnoia*, three new genera of Eolidians; BERGH (19).—Anatomy of *Conidæ*; BERGH (17).—Notes on the anatomy of species of *Bythinia*, *Microphyura*, *Thersites*, *Xanthomelon*, and *Lipærus*, from Central Australia; HEDLEY in TATE (343).—Structure of the mesoderm in *Paludina vivipara*; TOENNIGES (348).—Anatomy of *Narica* and *Onustus* (= *Xenophora*); BERGH (18).—Notes on the histology and physiology of *Pelecypoda*; CARAZZI (47).—Notes on the anatomy of *Yoldia*; BROOKS & DREW (39).—Anatomy of *Scioberetia australis*; BERNARD (22).—Anatomy of *Sphærium soleatum*; DREW (93).—Organisation of Chitons; PLATE (266, 267).—Notes on the anatomy of *Hanleya abyssorum*; BURNE (45).

## 2. SHELL AND INTEGUMENT.

Note on shell structure; CONSOLANI (58).—Development of the sculpturing and markings on marine shells; LINDEN (178).—Shell-coloration in British non-marine *Mollusca*; BOYCOTT (33).—Erosion of the shell in non-marine *Mollusca*; BOYCOTT (34).—Weight and size of shells; WINKLEY (383).—Note on the proöstracum of a Belemnite; CRICK (68).—Armature of Helicoid Land-shells; GUDE (126).—Variation in the shell of *Pterocera lambis*; WILLEY (379).—Development and morphology of the hinge in *Pelecypoda*; BERNARD (21).—Observations on the hinge of Heterodonts; DOUVILLÉ (92).—Pearls from *Modiola modiolus*, L.; MOEBIUS (219).—On the Chitin enclosed in the shells of freshwater Mussels; WINTER (384).

## 3. MUSCULAR SYSTEM.

Musculature of Chiton; SAMPSON (286).

## 4. DIGESTIVE SYSTEM.

Chemical and histological observations on the beaks of *Cephalopoda*; NERI (226, 227).—Semper's organ in the *Stylomatophora* is a salivary gland; BABOR (11).—Anatomy and histology of the buccal mass of *Helix pomatia*; PARAVICINI (238).—Buccal apparatus of the higher *Stenoglossa*; AMAUDRUT (5).—Buccal and œsophageal sacs of *Prosobranchiata*; AMAUDRUT (4).—Salivary glands of *Ancillaria*; AMAUDRUT (3).—Embryonic development of the radula of *Paludina vivipara*; BLOCH (28).—Buccal musculature of Chitons; PLATE (268).

## 5. CIRCULATORY SYSTEM.

Circulation in *Onchidium*; FUJITA (113).—In *Paludina vivipara* the amœbocytes are replaced by the fission of the young free globules, whilst the gland of the auricle, discovered by Perrier, is a phagocytary organ; CUÉNOT, C.R. Acad. Paris, cxxiii, p. 1078.—An oxydizer is present in the blood of *Pelecypoda*; PIÉRI & PORTIER (246).—Phagocytosis in the Oyster, and on the origin and localization of its macroblasts; CHATIN, (52, 53).

## 6. RESPIRATORY SYSTEM.

Cutaneous respiration of *Limnæa*; WILLEM (378).—Respiration in *Onchidium*; FUJITA (113).

## 7. EXCRETORY AND SECRETORY SYSTEMS.

Kidneys of *Mollusca*; PELSENEER (242).—Secondary kidney in larval Opisthobranchs; MAZZARELLI (210).—Formation of epiphragm in *Helix aspersa*; ALLMAN (2).

## 8. NERVOUS SYSTEM.

Nerve terminations in the smooth fibres of the muscular sheath to the vas deferens of *Limax subfuscus* and *agrestis*; BISOGNI (25).—Nervous system of *Phyllobranchus borgninii*; TRINCHESE (353).—Nervous system of the mantle of *Maetra elliptica*, BROWN; FREIDENFELT (110).

## 9. SENSORY SYSTEM.

Visual organs of the *Mollusca*; HORNELL (145).—Histology of the optic lobes of *Cephalopoda*; LENHOSSÉK (177).—Eyes of *Pecten* and *Lima*; SCHREINER (294).

## 10. GENERATIVE ORGANS.

Genitalia of *Mollusca*; PELSENEER (242).—Genitalia of some Corsican Slugs; POLLONERA (271).—Genitalia of *Cerion yumaense*; PILSBRY & VANATTA (264).—Spermatogenesis of *Paludina vivipara*; AUERBACH (10).—Notes on the female organs of *Neritina fluviatilis*; GILSON (119).—Hermaphroditism in *Patella*; GEMMILL (117).

## 11. EMBRYOLOGY.

Experiments on Molluscan eggs; FUJITA (112).—Development of *Cephalopoda*; FAUSSEK (102).—Eggs and young of *Cephalopoda*; HORNELL (144).—Experimental studies on Gastropod development; CRAMPTON (65).—Development of *Limax maximus*; MEISENHEIMER (211).—On the Nebenkern and the formation of the spindle in the spermatocytes of *Helix*; LEE (175).—On the so-called achromatin substances in the fertilized egg of *Physa fontinalis*; KOSTANECKI & WIERZEJSKI (170).—Protovum and polar globules of *Amphorina caerulea*; TRINCHESE (354).—Yolk-lobe and centrosome in *Fulgur carica*; McMURRICH (195).—Embryonic development of the radula in *Paludina vivipara*; BLOCH (28).—Larval Pelecypods of the Plankton of the Atlantic; SIMROTH (305).—Embryology and development of *Scioberetia australis*; BERNARD (22).—Organization of larva and post-larval development of a ship-worm [*Xylotrya fimbriata*]; SIGERFOOS (297).

## 12. PHYLOGENY AND CLASSIFICATION.

*Spirula* is allied to the Sepia-Loligo group and not to Cegopsids, and was derived from *Ammonia*; LÖNNBERG (193).—PILSBRY (252) proposes two new main divisions of Pulmonata monotremata, viz.: *Aulacopoda* (= *Zonitida*, *Limacida*, *Endodontida*, *Arionida*, and *Philomycida*) and *Holopoda* (= *Helicida*, *Bulimulida*, *Cylindrellida*, *Pupida*, and *Achatinida*).—BAKER (12) proposes a new classification of the *Muricida*.—Classification of *Pelecypoda*; WOODWARD (386).

## 13. STRAY NOTES.

Molluscan terminology; FELTGEN (103).—Habits of *Octopus digueti*; ROCHEBRUNE (278).—Carnivorous habits of *Limax*; OLDHAM, Zoologist, 1896, p. 264; THEOBALD, t. c. p. 307.—Biological notes on *Helix pomatia*;

LANG (173).—Influence of environment upon the form and colour of *Helix* [*Pyramidula*] *alternata*; ORMSBEE (235).—*Physa acuta* in the aquarium; BUCK (42).—Habits of Nudibranchs; HECHT (132).—Habits and mode of crawling of *Cæcum auriculatum*; PLATE (269).—Mode of life of *Lima hians*; GILCHRIST (118).—Mode of burrowing of *Pholadidea penita*; LLOYD (179).—Monochromism in the animal kingdom; SIMROTH (311).—Occurrence of coloration of hepatic origin in the Oyster; CHATIN (54).—On the purple extracted from *Mollusca*; LACAZE-DUTHIERS (171).—Enemies of British non-marine *Mollusca*; GAIN, *Natural. J.* 1896, pp. 78 & 79.

#### 14. ECONOMICS.

Economic uses of *Mollusca* in New Caledonia and surrounding islands; LOCARD (183).—Oyster culture; CRESPI (66).—Statistics on the cultivation of the Oyster in France; ROCHE, *C.R. Ac. Sci.* cxxii, pp. 955-957.—Cultivation and storage of Oysters in relation to occurrence of diseases in man; THORNE, 24th Ann. Rept. Local Govt. Board, 1894-95.

### B.—DISTRIBUTION.

#### GEOGRAPHICAL.

N.B.—The numbers in brackets refer to the "Titles." A reference is thus given to each memoir containing any notice affecting the Molluscan fauna of the several geographical divisions here adopted. Synonymic notes and changes of systematic position are, however, not included here. References to minor notes, which are not included in the List of Titles, but which contain faunistic facts of any value, are given to the work direct.

#### NON-MARINE MOLLUSCA.

##### a. PALÆARCTIC ZONE.

##### 1. Septentrional Region.

European and Western-Asiatic species of *Daudebardia*; WAGNER (371).

British Islands:—Monograph, Pts. 3 & 4 (introductory only); TAYLOR (345).—Introduction of *Mollusca* into; KENNARD (159).

England:—Lake district *Mollusca*; FARRER (101).—Cheshire: Fauna; OLDHAM (232).—Hampshire: notes on the fauna; EYRE (99).—Kent: interesting forms; ADAMS (1): Land *Mollusca*; KENNARD (161).—Norfolk: Fauna; MAYFIELD (208): Fauna of Western; PETCH (245).

Scotland:—Berwickshire: Fauna of eastern; EVANS (98).

Ireland:—West Coast Conchological notes; COLLIER & STANDEN (56): Fauna of Clonbrock, Co. Galway; SCHARFF (289).

France:—Testaceous land *Mollusca* collected in the greenhouses of the Jardin des Plantes; DAUTZENBERG (84).—Fauna of the Dept. of Vienne; CAZIOT (50).—Fauna of the Ile de Ré (Charente Inf.); ROUSSEAU (284).

Germany:—*Pisidium ovatum*, Cless., a survival from Glacial times in the Black Forest; SANDBERGER (287).—Biological notes on the freshwater *Mollusca* of Plön; BROCKMEIER (37).

Austro-Hungary:—Fauna of Elbe-Tümpel (near Neratovic, N.-E. of Prag); BLAŽKA (27).

Sweden:—*Anodonta*, 3 alleged new species; DROUET (94).

Russia:—Living and subfossil *Mollusca* of the Riga district; DOSS (91).  
Kolguev I.:—Freshwater shells; SMITH (313).

2. *Circum-Mediterranean Region.*

France:—Fauna of Aude; FAGOT (100).—Fauna of the "Ile de Crémieu" (Isère); JACQUEMET (150).—*Pupa mortilleti*, Stab., new to France; MARGIER, Feuille Natural. xxvi, p. 240.

Corsica:—Notes on Slugs, with *Agriolimax cazioti*, n. sp.; POLLONERA (271).

Italy:—*Agriolimax ceconii*, n. sp.; POLLONERA (271).

Sicily:—3 new species of *Unio*; MONTEROSATO (222).

Austro-Hungary:—Siebenburgen: *Daudebardia kimakowiczi*, n. sp.; WAGNER (371).—Croatia: *Daudebardia stussineri*, n. sp.; WAGNER (371).

Balkan Peninsular:—*Unio*, alleged new species; DROUET (94).—Macedonia: Freshwater shells with *Ginaia*, n. g., and *Chilopyrgula*, n. subg.; BRUSINA (40).

Asia Minor:—5 new species of *Pomatia*; KOBELT & ROLLE (168): *Unio*, alleged new species; DROUET (94): *Clausilia alajana*, n. sp.; BÖTTGER (32).—Cyprus: *Clausilia rollei*, n. sp.; BÖTTGER (32).

Transcaucasia:—*Daudebardia jetschini*, n. sp.; WAGNER (371).

Transcaspia:—*Buliminus goebeli*, *Pisidium impar*, n. spp.; WESTERLUND (374).

Persia:—*Trigonochlamys* (?) *problema* and *Buliminus leptoceras*, n. spp.; WESTERLUND (374).

3. *Central Asiatic Region.*

Turkestan:—New species of *Parmacella*, *Vitrina*, *Microchlamys*, *Helix*, *Buliminus*, and *Bythinia*; WESTERLUND (374): *Anodonta sogdiana*, n. sp.; KOBELT (165).

4. *Chinese Region.*

China:—Notes on collecting in; HENDERSON (136): China? *Strep-taxis paulus*, n. sp.; GUDE (124).

5. *Japanese Region.*

[None.]

6. *Atlantidean Region.*

Makaronesian Is. [= Azores, Madeira, Canaries, and Cape Verde Is.]:—Notes on the fauna; KOBELT (163).

Canaries:—List of Helicoids, with *Vitrina parryi*, n. sp.; GUDE (123).

## b. PALÆOTROPICAL AFRICAN ZONE.

7. *Central African Region.*

E. Africa:—*Trichotoxon*, 4 new species, *Leptichnus fischeri*, n. g. & sp.; SIMROTH (307).

8. *West African Region.*

W. Africa:—*Dendrolimax continentalis*, n. sp., *Microcylus baumanni*, n. g. & sp.; SIMROTH (307).

9. *South African Region.*

South Africa:—New species of *Ennea*, *Subulina*, *Pupa*, and *Cyclostoma*; MELVILL & PONSONBY (215).

10. *Malagasy Region.*

[None.]

11. *Afro-Arabian Region.*

Arabia:—New species of *Stenogyra*, *Hyalinia*, *Otopoma*, *Planorbis*, and *Paludestrina* from the Hadramaut; MELVILL & PONSONBY (214).

## c. PALÆOTROPICAL ORIENTAL ZONE.

12. *Indian Region.*

[None.]

13. *Indo-Chinese Region.*

Siam:—*Amphidromus roseolabiatum*, n. sp.; FULTON (114): new species of *Lacunopsis*, *Pachydrobia*, *Hydrorissoia*, n. g., and *Stenothyra*, from the Mekong River; BAVAY (14).

Tonkin:—Land-shells from, with *Camæna vanbuensis*, *Pterocyclus vanbuensis*, n. spp.; SMITH (315).

Annam:—*Amphidromus smithii*, n. sp.; FULTON (114).

14. *Indo-Malay Region.*

Engano I., W. Sumatra:—*Amphidromus enganoensis*, n. sp.; FULTON (114).

Java:—*Amphidromus alticola*, *robustus*, n. spp.; FULTON (114): *Melania*, 4 new species; SCHEPMAN (290).

Lombok I.:—Fauna with *Nanina fruhstorferi*, *Trochonanina oxyconus*, *Helix infracta*, and *Stenogyra discernibilis*, n. spp.; MARTENS (201).

Sumbawa I.:—*Amphidromus pæcilochroa*, n. sp.; FULTON (114).

Sumba I.:—*Amphidromus sumbaensis*, n. sp.; FULTON (115).

Borneo:—*Amphidromus placidus*, *angulatus*, *pictus*, n. spp.; FULTON (114): *Opisthostoma linteræ*, n. sp.; SOWERBY (322): *Melania*, 4 new species; SCHEPMAN (290).—Labuan I.: *Amphidromus hamatus*, n. sp.; FULTON (114).

15. *Philippine Region.*

Philippines:—Fauna; CASTO DE ELERA (49): Notes on some species of *Cochlostyla*, with *C. sowerbyi*, n. n.; HIDALGO (139): *Corasia lauræ*, n. sp.; GUDE (125): New species of land *Mollusca* and of *Tricula* and *Bythinia*; QUADRAS & MOELLENDORFF (274).—Palawan: *Amphidromus everetti*, n. sp.; FULTON (114).—Balabac: *Amphidromus versicolor*, *dubius*, n. spp.; FULTON (114).

## d. AUSTRALIAN ZONE.

16. *Austro-Malayan Region.*

Celebes:—Land-shells from South Celebes, many new species; SMITH (312): Land-shells, with new species of *Sitala*, *Kaliella*, *Xesta*, *Patula*, *Satsuma*, *Camæna*, *Clausilia*, *Leptopoma*, *Lagochilus*, and *Cyclotus*; MOELLENDORFF (220): Shells from the N.-E. coast and the I. of Banggai, with new species of *Xesta*, *Helix*, *Olausilia*, and *Cyclotus*; KOBELT (167).



Selayar I.:—New species of *Microcystina*, *Xesta*, *Helicostyla*, *Bulinus*; SMITH (316).

Boneratu I.:—Fauna; MARTENS (201).

Jampea I.:—New species of *Microcystina*, *Trochomorpha*, *Planispira*, and *Cyclotus*; SMITH (316).

Kalao I.:—New species of *Microcystina*, *Xesta*, *Plectotropis*, *Hypslostoma*, and *Helicina*; SMITH (316): *Amphidromus kalaoensis*, n. sp.; FULTON (115).

Moluccas:—List of shells from Batchian, Ternate, and Gilolo, with *Planispira*, 2 new species; SMITH (314).

New Guinea:—Land-shells, with new species of *Charopa*, *Macrochlamys*, *Omphalotropis*, and *Pupinella*; SMITH (319): *Thersites septentrionalis*, n. sp.; HEDLEY (133).

New Britain:—*Helicina pachystoma*, n. sp.; SMITH (319).

### 17. Australian Region.

Central Australia:—Shells, with new species of *Endodonta*, *Pupa*, and *Isidorella*; TATE (343).

New Hebrides:—Shells from, with new species of *Neritina*, *Navicella*, *Helicina*, *Melampus*, *Placostylus*; MABILLE (194): New species of *Endodonta*, *Melania*, and *Neritina*; ANCEY (7).

New Caledonia:—*Placostylus leucolenus*, n. sp.; CROSSE (72).

### 19. Polynesian Region.

Hawaiian Is.:—Bibliography; SYKES (342): new species of *Macrochlamys*, *Endodonta*, *Leptachatina*, *Amastra*, and *Newcombia*; SYKES (340): Slugs, with new species of *Agriolimax*; COLLINGE (57): *Partulina hayseldeni*, *Amastra aurostoma*, n. sp.; BALDWIN (13).

### 20. Neozelanian Region.

New Zealand:—Further additions to the Fauna; SUTER (337): *Flammulina chion*, n. sp.; SYKES (339): new species of *Lagochilus*, *Athoracophorus*, *Endodonta*, *Laoma*; SUTER (336).

Macquarie I.:—*Laoma hamiltoni*, n. sp.; SUTER (336).

## e. NEANTARCTIC ZONE.

### 21. Patagonian Region.

Argentina:—Shells collected in; PILSBRY & RUSH (263): *Anctus stearnsianus*, n. sp.; PILSBRY (258).—Buenos Ayres:—*Bulinulus ventanensis*, n. sp.; PILSBRY in TRYON (356).—Rio de la Plata: *Glabaris simpsonianus*, n. sp.; PILSBRY (251).

Uruguay:—Shells collected in; PILSBRY & RUSH (263): *Potamolithus*, n. g., many new species; PILSBRY (261): new species of *Chilina*, *Planorbis*, and *Corbicula*; PILSBRY (251).

### 22. Chilean Region.

Chili: List of *Mollusca*; DAUTZENBERG (86): *Bulinulus metamorphus*, n. sp.; PILSBRY in TRYON (356).

## f. NEOTROPICAL ZONE.

23. *Peruvian Region.*

List of *Clausiliae*, with *Clausilia evæ*, n. sp. ; SYKES (341).

Peru :—*Helix (Xenothauma) baroni*, *Porphyrobaphe vicaria*, n. spp. ; FULTON (115) : *Bulimulus ceroplasta*, *flagellatus*, n. spp. ; PILSBRY in TRYON (356) : *Planorbis heteropleurus*, n. sp., Lake Titicaca ; PILSBRY (251).

Galapagos Is. :—Fauna with *Bulimulus nesioticus*, n. sp. ; DALL (77) : Fauna, review of Dall ; KOBELT (166).

24. *Columbian Region.*

List of *Clausiliae*, with *Clausilia evæ*, n. sp. ; SYKES (341).

Bogota :—*Porphyrobaphe approximata*, n. sp. ; FULTON (114).

25. *Brazilian Region.*

Brazil :—*Neohyalimax brasiliensis*, n. g. & sp. ; SIMROTH (306).

26. *Mexican Region.*

Central America :—*Pachycheilus dalli*, n. sp. ; PILSBRY (250).

Mexico :—*Polygyra*, 4 new species ; PILSBRY (248) : Shells of the northern boundary, with new species of *Cælocentrum*, *Anisospira*, and *Streptostyla* ; DALL (78).

27. *Caribbean Region.*

San Domingo :—*Sagda (?) gabbi*, n. sp. ; PILSBRY (249).

Cuba :—*Cerion*, 2 new species ; PILSBRY & VANATTA (264).

Bahamas :—*Cerion niteloides*, n. sp. ; DALL (76) : *Cerion*, 7 new species ; PILSBRY & VANATTA (264).

## g. NEARCTIC ZONE.

*Pisidium trapezoideum*, n. sp. ; STERKI (328).

28. *American Region.*

United States :—Distribution of *Planorbis umbilicatellus* ; VANATTA (357).—Eastern U. S. : *Pisidium*, 2 new species ; STERKI (331).—Mississippi Valley *Unionidae* in the St. Lawrence and Atlantic drainage areas ; SIMPSON (301) : *Mollusca* of Mexican boundary ; DALL (78).—Alabama : *Pomatiopsis hinkleyi*, n. sp. ; PILSBRY (257).—Florida : *Ancylus peninsulae*, n. sp. ; PILSBRY (255) : *Unio hartwrightii*, n. sp. ; WRIGHT (388) : *Cyrenoidea floridana*, n. sp. ; DALL (83).—Illinois : *Ancylus eugraptus*, n. sp. ; PILSBRY (255).—Louisiana : *Unio friersoni*, n. sp. ; WRIGHT (389).—Minnesota : Freshwater shells of Clearwater, Wright co. ; SARGENT (288).—Michigan : *Pisidium vesiculare*, n. sp. ; STERKI (330).—Ohio : *Pisidium fulax*, n. sp. ; STERKI (330).—Tennessee : *Gastrodonta collisella*, n. sp. ; PILSBRY (254).—Texas : *Polygyra latispira*, n. sp. ; PILSBRY (248) : *Unio askewi*, n. sp. ; MARSH (199).—Virginia : *Unio bursa-pastoris*, n. sp. ; WRIGHT (389).

29. *Californian Region.*

California:—*Aphallarion buttoni*, n. g. & sp.; PILSBRY & VANATTA (265).

New Mexico:—Land *Mollusca* from rejectamenta of the Rio Grande; COCKERELL (55): Small land *Mollusca*; STERKI (327).

Washington, State:—*Spheria* and *Pisidia* with *Pisidium randolphii*, n. sp.; ROPER (281): Shells of Seattle; RANDOLPH (275).

30. *Canadian Region.*

Canada:—Notes on recent *Mollusca*; LATCHFORD (174).—Ontario: Notes on some shells; LEMON, *Nautilus*, x, pp. 10 & 11.—British Columbia: List of species; TAYLOR (344).

## MARINE MOLLUSCA.

1. *Arctic Province.*

[None.]

2. *Boreal Province.*

Norway: West coast fauna; GRIEG (122).

3. *Celtic Province.*

British Isles:—Note on the Aplacophorous *Amphineura*; GARSTANG (116): *Mollusca* of Teignmouth Bay; BYNE (46): Fauna of Cornwall; TREGELLES (352): Fauna of Norfolk [poor list]; MAYFIELD (208).—Scotland: *Mollusca* dredged on W. Coast; SCOTT, P. Phys. Soc. Edinb. xiii, p. 166.—Arran I.: *Mollusca* dredged; KNIGHT, Tr. Soc. Glasgow, iv, p. 169.—Aberdeen: Supplement to fauna; SIMPSON (304).—Irish Sea: additions to fauna; HERDMAN, 10th Ann. Rept. Liverp. Mar. Biol. Committee, pp. 22 & 23.—Ireland, west coast: Conchological notes; COLLIER & STANDEN (56).

France:—Species of *Ostrea*; LOCARD (185): The *Cypræidæ*; LOCARD (188).

Heligoland: *Mollusca* with n. spp. *Æolidiella* and *Cratena*; HEINCKE (135).

Gulf of Riga: Living and subfossil *Mollusca* around Riga; DOSS (91).

4. *Lusitanian Province.*

North Atlantic:—*Mastigoteuthis levimana*, n. sp., and other rare Cephalopods; LÖNNBERG (191): *Pelecypoda* of the Plankton, with *Planktomya henseni*, n. g. & sp.; SIMROTH (305).

Azores:—*Gastropoda* and *Polyplacophora* dredged by the Prince of Monaco, with very many new species; DAUTZENBERG & FISCHER (88).

Teneriffe:—*Sepia verrucosa*, n. sp., and a new var. of *Ommatostrephes bartramii*; LÖNNBERG (192).

Portugal:—Fauna; NOBRE (231): *Phyllaplysia paulini*, n. sp.; MAZZARELLI (209).

France:—Species of *Ostrea*; LOCARD (185): The *Cypræidæ*; LOCARD (188): Fauna of the Ile de Ré (Charente Inf.); ROUSSEAU (284):—Gulf of Gascogne: *Mollusca* with *Bela limatula*, n. sp.; LOCARD (181): Shell-less *Mollusca*; VAYSSIÈRE (358): *Cephalopoda* with *Cirroteuthis caudani*, n. sp.?; JOUBIN (154).—Fauna of Roussillon (contd.); BUC-

QUOY, DAUTZENBERG, & DOLLFUS (44).—*Hochstetteria munieri*, n. sp., Agde (Hérault); BERNARD (23).—Results of dredgings off the coast of Saint-Raphael (Var); MOLLERAT, xii, Echange, pp. 83–85 & 99–102.

Sardinia :—*Eledone albus*, *grisea*, *Octopus cærulescentes*, n. spp., 1895; ARBANASICH, Bull. Soc. malac. Ital. xix, pp. 265–267.

Mediterranean :—*Cephalopoda* of the Gulf of Naples, with *Calliteuthis nevroptera* and *Sepiola aurantiaca*, n. spp.; JATTA (151).—*Mollusca* from the Eastern Mediterranean, with new species of *Defrancia*, *Taranis*, *Fusus*, *Scalaria*, *Lyonsia*, *Pecchiolia*, *Lucina*, *Myrina*, and *Isorropodon perplexum*, n. g. & sp.; STURANY (335).

Marocco :—*Retrotortina fuscata*, n. g. & sp., and new species of *Cæcum*, *Pherusa*, and *Cyclostrema* from Tangier; CHASTER (51).

### 5. Aralo-Caspian Province.

[None,]

### 6. West African Province.

[None.]

### 7. South African Province.

S. Paul I. :—*Condylocardia*, n. g., with 2 new species; BERNARD (23).

### 8. Indo-Pacific Province.

Aden :—Shells collected at; SHOPLAND (295, 296) : *Pusionella testabilis*, n. sp.; JOUSSEAUME (155).

Persian Gulf :—*Iniotheuthis maculosa*, n. sp.; GOODRICH (120).

Arabian Sea :—*Taonius abyssicola*, n. sp.; GOODRICH (120): off Cutch, *Natica abyssicola*; SMITH (317).

Bombay :—New species of *Bittium*, *Cerithiopsis*, *Solarium*, *Rissoina*, *Adeorbis*, *Aclis*, *Eulima*, *Syrnola*, *Oscilla*, *Myonia*, *Miralda*, *Odostomia*, *Pyrgulina*, *Turbonilla*, *Cingulina*, *Phasianella*, *Tellina*; MELVILL (213).

Indian Ocean :—*Sepia singalensis*, n. sp.; GOODRICH (120): new species of *Pleurotoma*, *Dentalium*, *Cardium*, *Myonera*, and *Scrobicularia*, off India and Ceylon; SMITH (317).

Bay of Bengal :—New species of *Iniotheuthis*, *Sepiotheuthis*, *Loliolus*, *Abralia*, *Cheirotheuthis*, *Histiopsis*, and *Octopus*; GOODRICH (120): new species of *Natica* and *Yoldia*; SMITH (317).—Andaman Is. : new species of *Cuspidaria* and *Lyonsia*; SMITH (317).

China :—Notes on collecting in; HENDERSON (136).

Philippines :—Fauna; CASTO DE ELERA (49): new species of *Syrnola*, *Turbonilla*, and *Eulimella*; BÆTTGER (31).

Amboina :—*Learchis indica*, n. g. & sp., *Myja longicornis*, n. g. & sp., *Ennoia briareus*, n. g. & sp.; BERGH (19): *Mollusca* from, with new species of *Tornatina*, *Pleuroleura*, *Hipponyx*, *Cerithium*, *Columbella*, *Dentalium*; ANDRÉ (8).

Mog-Mog I. (Carolines) :—Is the true locality for *Cypræa aurantium*; HIDALGO (140).

New Britain :—*Astraliium moniliferum*, n. sp.; HEDLEY & WILLEY (134).

New Caledonian Archipelago :—New species of *Drillia*, *Clavus*, *Surcula*, and *Glyphostoma*; HERVIER (137).

Loyalty Is. :—New species of *Murex*, *Nassa*, *Columbella*, *Scalaria*, *Drillia*, *Mangilia*, *Clathurella*, *Daphnella*, *Mitra*, *Bittium*, *Cerithiopsis*,

*Turbonilla*, *Pyrgulina*, *Syrnola*, *Alaba*, *Litiopa*, *Alvania*, *Rissoina*, *Barleeia*, *Rissoia*, *Mathilda*, *Euchelus*, *Leucorhynchia*, *Alcyna*, *Minolia*, *Solariella*, *Cadulus*, and *Tornatina*; MELVILL & STANDEN (216).

New Hebrides:—Shells from, with new species of *Neritina* and *Melampus*; MABILLE (194): *Kenyonia pulcherrima*, n. g. & sp.; BRAZIER (36).

### 9. Australo-Zealandic Province.

Western Australia:—Shark's Bay: *Conus kenyonæ*, n. sp.; BRAZIER (36).

South Australia:—*Pleurotomidae*, with new species of *Drillia*, *Daphnella*, *Clathurella*, *Mangilia*; SOWERBY (321): *Cassis adcocki*, n. sp.; SOWERBY (320): new species of *Voluta*, *Harpa*, *Tritonidea*, *Drillia*, *Mitra*, *Surcula*, *Turricula*, *Imbricaria*, and *Corbula*; VERCO (360).

New South Wales:—*Dolabrifera jacksonensis*, n. sp.; PILSBRY in TRYON (355): *Clathurella* (?) *waterhouseæ*, n. sp., from Botany Bay; BRAZIER (36): Chitons of Port Phillip, with new species; SYKES (338).

Tasmania:—Chitons; BEDNALL (16).

Stewart I.:—*Hochstetteria*, 2 new species, *Condylocardia*, n. g., with 2 new species; BERNARD (23).

### 10. Japonic Province.

Japan:—*Buccinum martensianum*, n. sp.; ROLLE (280): *Siphonalia semiplicata*, n. sp.; PILSBRY (249): *Cardium buelowi*, n. sp.; ROLLE (279).

### 11. Aleutian Province.

Alaska:—*Trachydermon sharpii*, n. sp.; PILSBRY (260).

Canada:—West Coast fauna; TAYLOR (344).

British Columbia:—New and rare shells; NEWCOMBE (228).

### 12. Californian Province.

West Coast United States:—3 new species of *Leda*; DALL (86).

California:—Shells of Mexican boundary; DALL (78): Chitons; PILSBRY (260).

### 13. Panamic Province.

*Ischnochiton aspidaulax*, n. sp.; PILSBRY (249).

Nicaragua:—*Dolabrifera nicaraguana*, n. sp.; PILSBRY in TRYON (355).

### 14. Peruvian Province.

Chili:—List of *Mollusca*; DAUTZENBERG (86).

### 15. Antarctic Province.

Chili:—List of *Mollusca*; DAUTZENBERG (86).

### 16. Patagonian Province.

[None.]

17. *Caribbean Province.*

- Brazil :—Species of *Arca* ; JHERING (153).  
 Gulf of Mexico :—*Liotia centrifuga*, n. sp., off Havana ; DALL (76).  
 Antillean :—Shells of Bahamas Expedition ; DALL (76).  
 West Indies :—*Dolabrifera swiftii*, n. sp. ; PILSBRY in TRYON (355).  
 Bahamas :—*Murex nuttingi*, n. sp. ; DALL (76).  
 Florida :—Notes on some *Mollusca* ; WHITE (376), WILLCOX (377)  
*Marginella veliei*, n. sp. ; PILSBRY (249).  
 Texas :—*Scala mitchelli*, n. sp. ; DALL (79).

18. *Transatlantic Province.*

- Florida :—Notes on *Mollusca* of ; WHITE (376), WILLCOX (377).  
 North Carolina :—*Ervilia maculosa*, n. sp. ; DALL (82).  
 New York :—Dredging in Long I. Sound ; GARDNER, *Nautilus*, ix,  
 p. 119.  
 Bermudas :—*Carditella smithii*, n. sp. ; DALL (76).

## GEOLOGICAL.

N.B.—The same remarks apply here that are given at the beginning of the preceding section.

Java fossils (some new species), *Bulla*, *Terebra*, *Conus*, *Pleurotoma*, *Cancellaria*, *Oliva*, *Ancillaria*, *Harpa* ; MARTIN (203).

## 1. POST-TERTIARY.

British Isles :—*Mollusca* from a rainwash at Darenth ; KENNARD (158).—Fauna of raised beaches in N.-E. Ireland ; LLOYD PRAEGER, *P. Irish Ac.* iv, pp. 30–54.—Non-marine shells from Hitchin ; MONCKTON, *P. Geol. Ass.* xiv, p. 417 [add *Clausilia biplicata*, *fide* C. Reid].—*Mollusca* from tufaceous deposit at Blashenwell ; REID, *P. Dorset Club*, xvii, pp. 67–75.—*Unio littoralis* in Pleistocene times ; KENNARD (160).

France :—Quaternary Fauna of the “Ile de Crémieu,” Isère ; JACQUEMET (149).—Non-marine *Mollusca* from the palæolithic station at Saint-Pierre-les-Elbeuf ; CHÉDEVILLE, *Bull. Soc. Elbeuf*, xiv, pp. 71 & 72.

Germany :—Northern fossils in the diluvium of Westphalia ; MARCK, *Verh. Ver. Rheinland*, li, pp. 71–82.—Pleistocene fossils of the Schwabian lowlands ; FRAAS, *Zeitschr. Deutsch. geol. Ges.* xlvi, pp. 698–701.—Fauna of the lower Pleistocene Travertine of Weimar ; WEISS (373).

Hungary :—Fauna of diluvial beds at Ocsa ; FRANZENAU, *Termes. Fuzetek*, 1896, pp. 122–124.

Russia :—Subfossil *Mollusca* of the Riga district ; DOSS (91).

## 2. TERTIARY.

Marine shells in the Tertiary beds of Spitzbergen and East Greenland ; NATHORST, *Zeitschr. Deutsch. geol. Ges.* xlvi, pp. 983–986.—Notes on Tertiary species in Belgium ; VINCENT (363–370).—Tertiary Fauna of Dauphiné, Savoy, and Western Switzerland, with few new species ; DOUXAMI, *Ann. Univ. Lyon*, xxvii.—Tertiary fossils of Roumania, with many new species and new genera of *Unionida* and *Cardiida* ; STEFANESCU (326).—Tertiary fossils from the Philippines ; MARTIN, *Samml. geol. Mus. Leiden*, v, pp. 52–69, figg.—Tertiary fossils of Chili, with many new species ; MOERICKE, *N. Jahrb. Beilage*, Bd. x, pp. 553–586, figg.—Tertiary fossils from the Antillean region, with many new species ; GUPPY & DALL (127).

Neogene :—Upper Tertiary fossils, new species ; MAYER-EYMAR (206).—Neogene *Mollusca*, list of a collection from Hungary, Croatia, &c., with some new names ; BRUSINA (41).

Pliocene :—List of species from the crags of Holland ; HARMER, Quart. J. Geol. Soc. lii, pp. 748–781.—Correct name for the *Corbula* from the Upper Antwerp Sands ; DAUTZENBERG & DOLLFUS (87).—*Scaphopoda* of Liguria, with *Loxoporus ligusticus*, n. sp. ; RAZZORE (276).—*Mollusca* of the Province of Teramo, Italy ; IRELLI, Boll. Soc. geol. Ital. xv, pp. 9–11.—*Mollusca* from Monte Mario, near Rome ; MELI, Boll. Soc. geol. Ital. xiv, pp. 94–96, 141–148, and xv, pp. 74–84.—*Cyrenoidea caloosaënsis*, n. sp., from Alabama ; DALL (83).

Miocene :—Fossils of the Conglomerate, near Avignon ; DEPÉRET, Bull. Soc. geol. France, xxiv, pp. 516–521.—*Chlamys apollo*, n. sp., from the Faluns of Anjou ; DOLLFUS & DAUTZENBERG (90).—Species of *Natica* from the Faluns of Touraine and Pont-Levoy, in the Museum of Zurich ; MEYER-EYMAR (207).—Non-marine species from Undorf, near Regensburg, with new species ; CLESSIN, Ber. Ver. Regensburg, iv (1894), pp. 25–37, 1 pl.—Land-shells from the *Corbicula*-beds, near Offenbach-a-M., with *Spiraxis* (?) *bickhardti*, n. sp. ; BÖTTGER (30).—*Gastropoda* from the Miocene marl of Rzegocinie ; DYDUCHA, Kosmos polski, 1896, pp. 207 & 208.—*Cavolinia cookei*, n. sp., from Malta ; SIMONELLI (298).—Fossils from Upper Burma, with many new species ; NOETLING, Mem. geol. Surv. India, xxvii, pp. 7–43, figg.—*Scala mazyckii*, n. sp., from S. Carolina ; DALL (79).

Oligocene :—Fauna of Polschitz in Carinthia ; OPPENHEIM, Ber. Senckenberg. Ges. 1896, pp. 259–283.—Middle Oligocene fauna of the Bernois Jura, few new species ; KISSLING, Abh. Schweiz. pal. Ges. xxii, 74 pp.

Eocene :—Palæontology of the Landenian Sands of Entre-Sambre-et-Meuse ; VINCENT, Bull. Soc. malac. Belgique, xxix, pp. li–lv.—Belgian species of *Nerita*, *Astarte*, *Pinna*, *Limopsis* and *Pleurotomaria*, with new species ; VINCENT (363–365 & 369, 370).—*Chlamys flandrica*, n. sp., Paniselian of Belgium ; VINCENT (367).—*Periploma rugosa*, n. sp., from Belgium ; VINCENT (368).—*Arcomya fallax* from the lower Landenian of Belgium ; VINCENT (366).—Fossils of the environs of Paris, with many new species, and *Microstagon*, n. n. for *Goodallia* ; *Pezantia*, n. sect. of *Pseudotaphrus* ; *Pasitheola*, n. n. for *Pasithea* ; *Tenuicerithium*, n. sect. of *Cerithium* ; and *Euryochetus*, n. n. for *Lævibuccinum* ; COSSMANN (60).—*Mollusca* from Loire-Inférieure, with many new species ; COSSMANN (61).—Molluscan Fauna of the Rupelthon at Itzehoe, Holstein, few new species ; REINHARD (277).—Fossils of Venetia, with many new species ; OPPENHEIM (234).—Fauna of Roncà, with some new species, and *Roncania*, n. g. (*Limidæ*) ; GREGORIO (121).—Fossils of Roncà ; VINASSA DE REGNY, Pr.-verb. Soc. Toscana, x, pp. 188–190.—Fossils of the glauconitic tuff of Zovencedo ; VINASSA DE REGNY, Pr.-verb. Soc. Toscana, x, pp. 55 & 56.—Middle Eocene fossils of Monte Postale and S. Giovanni Ilarione ; VINASSA DE REGNY, Pr.-verb. Soc. Toscana, x, pp. 30–35.—Fauna of Mt. Postale, near Bolca, with many new species, and *Postalia postalensis*, n. g. & sp. (*Scutibranchiata*) ; OPPENHEIM (233).—Fossils in some quartzites of Piana dei Greci ; GREGORIO, Natural. Sicil. i, pp. 121–123.—*Mollusca* from the Gulf States, U. S., with new species ; HARRIS (129).—Fauna of the Midway Stage, U. S., many new species ; HARRIS (130).—*Scala ranellina*, n. sp., from Alabama ; DALL (79).—*Voluta*, 2 new species from Patagonia ; JHERING (152).—Fauna of Table Cape beds, Tasmania, with several new species ; PRITCHARD (273).

### 3. SECONDARY.

Fossils from Lombardy, with alleged new, but imperfectly diagnosed, species ; MARIANI, Atti Soc. Ital. xxxvi, pp. 113–137, 2 pls.

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Cretaceous:—*Mollusca* of the Chalk-rock, with new species of *Ptychoceras*, *Trochus*, *Turbo*, *Cerithium*, and *Dentalium*; WOODS (385).—Cenomanian fossils of S.W. England and W. France, with *Ammonites* (*Acanthoceras*) *pentagonus*, n. sp.; JUKES-BROWNE & HILL, Quart. J. Geol. Soc. lii, pp. 149–170, figg.—*Rudistes* and *Caprinidæ* from the Urgonian; PAQUIER (236 & 237).—*Nautilus deslongchampsianus*, D'Orb., in the Upper Cretaceous; TIESSEN (347).—Gigantic *Ammonites* from Seppenrade (*Pachydiscus seppenradensis*, n. sp.), Westphalia; LANDOIS (172).—*Belemnites* of the Pläner, with *Actinocamax paderbornensis*, n. sp.; SCHLUETER (292).—On sulcate forms of *Inoceramus* from the Subhercynian of the lower Senonian; HAENLEIN (128).—Fossils from the lower chalk of the Carnatic Alps, new species of *Hippurites*, *Apricardia*, *Pinna*, and *Bihippurites*, n. gen.; FUTTERER, Pal. Abh. vi, pp. 241–268, figg.—*Calais* [preocc., altered to *Palaeoctopus*] *newboldii*, n. g. & sp. from the Cretaceous of Lebanon; WOODWARD (387).—*Ammonites* of the Upper Cretaceous of Algeria, with *Mammites*? *tevestliensis*, n. sp.; PERON (244).—South Africa: occurrence of *Alectryonia ungulata* and list of Cretaceous *Mollusca*; NEWTON (230).—Fossils collected in British N. America in 1857–60; WHITEAVES, Tr. Soc. Canada (2) i, pp. 101–117, fig.—Fossils from the Nanaimo group of Vancouver, with some new species; WHITEAVES, Tr. Soc. Canada (2) i, pp. 120–132, figg.—Fauna of the Knoxville beds of the Pacific coast of the United States, with many new species and *Cardiniopsis*, n. g. (*Cardiniidæ*); STANTON (323).—*Pleurotomaria crotaloides*, Morton, in New Jersey; PILSBRY (247).—Bivalves and Gastropods of the Hills Conglomerates near Brunswick, with some new species; WOLLEMANN, Zeitschr. Deutsch. geol. Ges. xviii, pp. 830–853, figg.

Jurassic:—Notes on Jurassic *Ammonites*; BUCKMAN (43).—Note on *Cocconeuthis hastiformis*, Rüpp.; CRICK (71).—*Cephalopoda* of the Speeton series; LAMPLUGH, Quart. J. Geol. Soc. lii, table facing p. 184.—British Inferior Oolite *Gastropoda*, with several new species and *Chilodontoidea*, n. gen.; HUDLESTON (146).—Jurassic *Gastropoda* of France, many new species; COSSMANN (62).—*Nerineæ* from the Sequanian of Calvados; BIGOT (24).—Fauna of the Upper Rauracian of the Bernois Jura, some new species; LORIOI, Abh. Schweiz. Pal. Ges. xxii, 49 pp., figg.—*Ammonia* of the Schwabian Jura, with many new species; POMPECKJ (272).—*Cephalopoda* from the zone of *Aspidoceras acanthicum*, of the Central Apennines; CANAVARI, Pr.-verb. Soc. Toscana, x, pp. 117 & 118.

Lias:—Fossils from Rossano Calabro; GRECO, Pr.-verb. Soc. Toscana, x, pp. 67–70.—Fossils of Monte Calvi, with some new species and *Diaphorites* and *Pimelites*, n. genera of *Cephalopoda*; FUCINI (111).—*Gastropoda* of the Lower Lias of Saltrio, Lombardy, with few new species; PARONA (239), 1895.

Trias:—Occurrence of *Myophoria cardissoides*, Schloth., in the upper Muschelkalk of the Eyach Valley, Württemberg; PHILIPPI, N. Jahrb. Min. 1896, ii, Brief. Mitth. pp. 195 & 196.—Muschelkalk fossils of Mt. Grigna, Lake Como, with few new species; PHILIPPI, Zeitschr. Deutsch. geol. Ges. xlvii, pp. 724–734.—Triassic fossils, chiefly *Cephalopoda*, from the Southern Tirol; ARTHABER, Verh. geol. Reichsanst. 1896, pp. 265–274.—Triassic *Gastropoda* of Hallstadt, with many new species and some new genera of *Pleurotomariidæ*, *Murchisoniidæ*, *Trochonematidæ*, *Solariidæ*, and *Scalidæ*; KOKEN (169).—Notes on the fauna of the Reiflinger Limestone: few new species; ARTHABER, Verh. geol. Reichsanst. 1896, pp. 120–126.—Cephalopod fauna of the Reiflinger Limestone: many new species; ARTHABER (9).—Triassic fauna in Croatia, with *Pereiraia gervaisii*; GORJANOVIĆ-KRAMBERGER, Verh. geol. Reichsanst. 1896, pp. 142 & 143.—Fauna of the Muschelkalk near Pregrada, Croatia, with names of new species; GORJANOVIĆ-KRAMBERGER, Verh. geol. Reichsanst. 1896, pp. 201–205.—List of fossils from the Muschelkalk of the south coast of the Sea of



Marmorata; TOULA, Anz. Ak. Wiss. 1896, pp. 3-7.—Muschelkalk fauna of the Gulf of Ismid, Asia Minor; TOULA, N. Jahrb. 1896, ii, pp. 137-139.—Muschelkalk fauna of the Gulf of Ismid, Asia Minor, with many new species, chiefly of *Cephalopoda*, including *Nicomedites*, n. gen.; TOULA (351).—New *Halobia* from the Trias of Balia, Asia Minor; BITTNER, Jahrb. geol. Reichsanst. xlv, p. 254, figg.—Triassic Cephalopod fauna of India; MOJSISOVICS (221).—Four new species of *Unio* from the Staked Plains of Texas; SIMPSON (300).

Palæozoic:—New species from the Palæozoic of the United States, with *Blairiella* (*Cardiidae*) and *Echostoma* (*Conulariidae*), new genera; MILLER & GURLEY (217).—New species of *Platyceras* and of *Cephalopoda* from the Palæozoic of the United States; MILLER & GURLEY (218).—Lower Palæozoic of Bohemia, *Orthoceras kayseri*, n. sp., and two other *Cephalopoda*; KATZER (157).

Permo-Carboniferous:—New species of *Platyceras*, *Euomphalus*, and *Mourlonia*, from New South Wales; ETHERIDGE (96).

Carboniferous:—British species of *Carbonicola*, *Anthracomya*, and *Naiadites*; HIND (141): British *Mytilidae*; HIND (142).—List of species of *Orthoceras* (with 19 new species) and *Acanthonautilus bispinosus*, n. g. & sp., from the Carboniferous Limestone of Ireland; FOORD (108).—Subcarboniferous *Pelecypoda* of the southern Vosges, with some new species; TORNQUIST (350).—Carboniferous of Nova Scotia, *Cardinia angulifera*, n. n. for *C. subangulata*, and *Arca puncticostata*, n. n. for *A. punctifer*; AMI (6).—Fauna of the coal-measures of Arkansas; SMITH, P. Amer. Phil. Soc. xxxv, pp. 243-270, figg.—Carboniferous of West Australia, *Actinoceras hardmani*, n. sp.; ETHERIDGE (95).

Devonian:—Fossils from N. Devon, with new species of *Modiolopsis*, *Pterinea*, and *Avicula*; HICKS, Quart. J. Geol. Soc. lii, p. 269, figg.—Fauna of the Pickwell Down, Baggy, and Pilton beds, with many nom. nuda; WHIDBORNE, P. Geol. Ass. xiv, pp. 371-376.—Devonian fossils of Rhineland, several new species; MAURER, N. Jahrb., Beilage Bd. x, pp. 636-647 & 660-704, figg.—New fossils (*Cephalopoda* and *Gastropoda*) from the Rheinisch Provinces; SCHLUETER (293).

Silurian:—*Cephalopoda* from the *Dalmanites* Sandstone near Giessen, with new species; KAYSER, Schr. Ges. Marburg, xiii, p. 24.—New South Wales, occurrence of a new species of *Chelodes* (which is a Chiton); ETHERIDGE (97).

Fossils from Central Australia, with many new species; TATE, Rep. Horn Scient. Exped. Centr. Austral. iii, pp. 97-110, figg.

Cambrian:—*Mollusca* from *Protolenus* beds of New Brunswick, with *Pelagiella*, n. g.; MATTHEW, Tr. N. York Ac. xiv, pp. 129-132, figg.—Cambrian fauna of Tejiřovic and Skrej, Bohemia [*Stenotheca* and *Hyo-lithes*]; POMPECKJ, Jahrb. geol. Reichsanst. xlv, pp. 517 & 518, figg.

### III.—SYSTEMATIC.†

#### MOLLUSCA IN GENERAL.

Molluscan terminology; FELTGEN (103).

Molluscan morphology, notes on; VERRILL (361, 362).

Visual organs; HORNELL (145.)

### I. CEPHALOPODA.

Notes on their development; FAUSSEK (102).

Eggs and young; HORNELL (144).

Histology of the optic lobes; LENHOSSEK (177).

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† This sign is prefixed to references relating to fossil forms.

- Chemical and histological observations on the structure of the beak ;  
 NERI (226, 227).  
 Use of bromide of ethyle as an anesthetic for operations on *Cephalopoda* ;  
 HEYMANS (138).  
*Conulariaceae*, n. ord. of *Cephalopoda* proposed by VERRILL (361), p. 80,  
 for *Conularia*, hitherto regarded as a Pteropod, but which he thinks  
 was very likely an ancestral form of *Dibranchiata*.

## DIBRANCHIATA.

### OCTOPODA.

- Calais*, n. g. for *C. newboldi*, n. sp., Cretaceous of Lebanon ; WOODWARD,  
 Quart. J. Geol. Soc. lii, p. 229, figg.—*Calais* being preoccupied the  
 name was altered to *Palæoctopus*, *ib.* Geol. Mag. 1896, p. 567.  
*Cirroteuthis caudani*, n. sp. ♀, Gulf of Gascogne ; JOUBIN, Ann. Univ.  
 Lyon, xxvi, p. 247, fig. : n. sp.  
*Eledone* ?, figure on Greek coin ; PELSENER (240).  
*Eledone albus*, p. 265. *grisea*, p. 266, Sardinia ; ARBANASICH, Bull. Soc.  
 malac. Ital. xix, 1895 : n. spp.  
*Octopus digueti*, notes on the animal and its habits ; ROCHEBRUNE, Arch.  
 Mus. Paris, viii, pp. 75–86, figg.  
*O. cærulescentes*, Sardinia ; ARBANASICH, Bull. Soc. malac. Ital. xix, 1895,  
 p. 267 : *O. microphthalmus*, Andaman Is. ; GOODRICH, Tr. Linn.  
 Soc. London, vii, p. 20, figg. : n. spp.  
*Opisthoteuthidæ*, n. fam. ; VERRILL, Amer. J. Sci. ii, p. 79.  
*Palæoctopus*, n. n. for *Calais* [*suprà*], preoccupied ; WOODWARD, Geol.  
 Mag. 1896, p. 567.

### DECAPODA.

- Abralia andamanica*, p. 9, *lineata*, p. 10, Andaman Sea ; GOODRICH, Tr.  
 Linn. Soc. London, vii, figg. : n. spp.  
 † *Aptychi* from the Upper Chalk, notes on, attempting to identify some  
 of them with Belemnites ; BLACKMORE, Geol. Mag. 1896, pp. 529–533,  
 figg.  
 † *Belemnites*, note on the proöstracum of a species from the Lias ; CRICK,  
 P. Malac. Soc. London, ii, pp. 117–119, figg. : † *Belemnites* from the  
 Pläner, with † *Actinocamax paderbornensis*, n. sp. ; SCHLUETER,  
 Verh. Ver. Rheinland, li, pp. 23–30 : † *Belemnites* from Somali-land ;  
 CRICK, Geol. Mag. 1896, p. 296.  
*Calliteuthis nevroptera*, Gulf of Naples ; JATTA, Fauna Stat. Neapel, xxiii,  
 p. 118, figg. : n. sp.  
*Cheiroteuthis macrosoma*, p. 12, *pellucida*, p. 14, Bay of Bengal ; GOOD-  
 RICH, Tr. Linn. Soc. London, vii, figg. : n. spp.  
 † *Coccoteuthis hastiformis* (Rüpp.), note on specimen from Solenhofen ;  
 CRICK, Geol. Mag. 1896, pp. 439–443, fig.  
*Histiopsis hoylei*, Andamans ; GOODRICH, Tr. Linn. Soc. London, vii,  
 p. 15, figg. : n. sp.  
*Inioteuthis maculosa*, Bay of Bengal and Persian Gulf ; GOODRICH, Tr.  
 Linn. Soc. London, vii, p. 2, figg. : n. sp.  
*Loliolus investigatoris*, Bay of Bengal ; GOODRICH, Tr. Linn. Soc.  
 London, vii, p. 8, figg. : n. sp.  
*Mastigoteuthis levimana*, North Atlantic ; LÖNNBERG, Ofv. Ak. Forh.  
 1896, p. 605 : n. sp.  
*Pterygioteuthis*, n. g., for *P. giardi*, n. sp., N. Atlantic (with description  
 of the animal) ; FISCHER, J. Conchyl. p. 210, figg.

- Sepia singalensis*, Ceylon; GOODRICH, Tr. Linn. Soc. London, vii, p. 3, figg: *S. verrucosa*, Tenerife; LÖNNBERG, Ofv. Ak. Forh. 1896, p. 697 : n. spp.
- Sepiola aurantiaca*, Gulf of Naples; JATTA, Fauna Stat. Neapel, xxiii, p. 130, figg. : n. sp.
- Sepioteuthis indica*, Andamans and Singapore; GOODRICH, Tr. Linn. Soc. London, vii, p. 5, figg. : n. sp.
- Spirula reticulata*, Owen, notes on its anatomy and phylogeny; LÖNNBERG (193), who considers it allied to the Sepia-Loligo group, and not to Cegopsids.
- Taonius abyssicola*, Laccadive Sea; GOODRICH, Tr. Linn. Soc. London, vii, p. 17, figg. : n. sp.

### AMMONEA.

- Works of the last three years on the morphology and phylogeny ; TORNQUIST (349).
- Forms in the Schwabian Jura, with many new species ; POMPECKJ (272).
- † *Ammonites* of the Upper Cretaceous of Algeria ; PERON, Mem. Soc. geol. France, Pal. No. 17, with *Mammites ? tevesthensis*, n. sp., p. 23 :
- † *Ammonites*, notes on Jurassic ; BUCKMAN, Geol. Mag. 1896, pp. 420 & 421.
- † *Baculites baculoides*, notes on the aperture ; CRICK, P. Malac. Soc. London, ii, p. 77, figg.
- † *Diaphorites*, n. g., for *D. vetulonius*, n. sp., Middle Lias, Italy ; FUCINI, Pr.-verb. Soc. Toscana, x, p. 124.
- † *Goniatites everus*, v. Buch, and *G. lateseptatus*, Beyrich, notes on ; FLIEGEL, Zeitschr. Deutsch. geol. Ges. xlvi, pp. 414-420, figg.
- † *Nicomedites*, n. g., for *N. mithridatis*, n. sp., Trias of Asia Minor ; TOULA, Beitr. Pal. Oesterr.-Ung. x, p. 180, figg.
- † *Pachydiscus seppenradensis*, Cretaceous, Westphalia ; LANDOIS, Jahresber. Westfal. Ver. xxiii, p. 99, figg. : n. sp.
- † *Pinelites*, n. g., for *P. populonius*, &c., n. spp., Middle Lias, Italy ; FUCINI, Pr.-verb. Soc. Toscana, x, p. 124.

### TETRABRANCHIATA.

- † *Acanthonautilus*, n. g., for *A. bispinosus*, n. sp., Carboniferous Limestone, Ireland ; FOORD (108), p. 42.
- † *Actinoceras hardmani*, Carboniferous, West Australia ; ETHERIDGE, Rec. Austral. Mus. iii, p. 7, figg. : n. sp.
- † *Endoceras* (divided into subgen., 1, *Nanno*, 2, *Suecoceras*, n. subg., p. 402), with six new species ; HOLM, Geol. Foren. Stockholm Forh. xviii, pp. 394-426, figg.
- Nautilus*, for miscellaneous notes and observations of great importance and interest, see WILLEY, Quart. J. Micr. Sci. xxxix, pt. 2 : notes on its organisation ; VAYSSIÈRE, Ann. Sci. nat. ii, p. 137, figg. :
- † *N. deslongchampsianus*, D'Orb., in the Upper Cretaceous ; TIESSEN, Zeitschr. Deutsch. geol. Ges. xlvi, pp. 735-739, figg. : † *N. tetragonus*, Phillips, notes on ; CRICK, Geol. Mag. 1896, pp. 413-419, figg.
- † *Orthoceras*, list of species, with 19 new species from the Carboniferous limestone of Ireland ; FOORD (108).
- † *O. kayseri*, Lower Palæozoic, Bohemia ; KATZER, SB. Böhmisch. Ges. 1895, No. 14, p. 4, figg. : n. sp.
- † *Prolecanites*, notes on its occurrence in Asia, and on its development, with *P. asiaticus*, n. sp. ; KARPINSKIÏ (156).

- †*Succoceras*, n. subg. of †*Endoceras*, type *E. barrandei*; HOLM, Geol. Foren. Stockholm Forh. xviii, p. 402, figg.  
 †*Subclymenia evoluta*, Phillips, notes on; CRICK, Geol. Mag. 1896, pp. 413-419, figg.

## II. GASTROPODA.

- See SIMROTH in BRONN (38).  
 Recent works on the distribution of; SIMROTH (310).  
 Experimental studies in their development: CRAMPTON (65).

### PULMONATA.

- Recent works on; SIMROTH (309).  
*Aulacopoda*, new division of *Pulmonata*, to include the *Zonitidæ*, *Limacidæ*, *Endodontidæ*, *Arionidæ*, and *Philomycidæ*; PILSBRY, Nautilus, ix, p. 109.  
*Holopoda*, new division of *Pulmonata*, to include the *Helicidæ*, *Bulimulidæ*, *Cylindrellidæ*, *Pupidæ*, and *Achatinidæ*; PILSBRY, Nautilus, ix, p. 110.

### STYLOMMATOPHORA.

- The true nature of the so-called Semper's organ; BABOR (11).  
 Armature of Helicoid Land-shells; GUDE (126).

### TESTACELLIDÆ and SELENITIDÆ.

- Circinariidæ*, n. n. for *Selenitidæ*, Fischer (*Circinaria*, Beck, = *Macrocyclus*, Binney, = *Selenites*, Fischer non Hope); PILSBRY, P. Ac. Philad. 1896, p. 488.  
*Ennea impervia*, *queketti*, Natal; MELVILL & PONSONBY, Ann. Nat. Hist. xviii, p. 315, figg.: *E. (Diaphora) cristatella*, p. 1, *strophostoma*, *solenidium*, *telescopium*, p. 2, *samarica*, p. 81, *truncatella*, *canaliculata*, p. 82, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malac. Ges. 1896 : n. spp.  
*Microphyura* belongs to *Endodontidæ* [q.v.]; HEDLEY in TATE (343) p. 221.  
*Streptaxis paulus*, China?; GUDE, P. Malac. Soc. London, ii, p. 23, figg. : n. sp.  
*Streptostyla nebulosa*, Mexico; DALL, P. U. S. Mus. xix, p. 364, figg. : n. sp.  
*Trigonochlamys (?) problema*, North Persia; WESTERLUND, Ann. Mus. St. Petersburg, 1896, p. 182 : n. sp.

### LIMACIDÆ and ZONITIDÆ.

- Agriolimax*, anatomy of American species; PILSBRY & VANATTA, P. Ac. Philad. 1896, p. 339, &c., figg.  
*A. globosus*, *perkinsi*, Sandwich Is.; COLLINGE, P. Malac. Soc. London, ii, p. 47, figures of genitalia: *A. cazioti*, p. 3, Corsica, *cecconii*, p. 6, Tuscany; POLLONERA, Boll. Mus. Torino, xi, No. 264, figg. : n. spp.  
*Bensonia igorrotica*, *holotrachia*, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896, p. 85 : n. spp.  
*Carpathica*, n. sect. of *Daudebardia* [q.v.]; WAGNER, Denk. Ak. Wien, lxii, p. 621.

- Daudebardia*, European and Western Asiatic species ; WAGNER, Denk. Ak. Wien, lxii, pp. 609–626, figg.
- D. (Libania) jetschini*, p. 618, Transcaucasia (*Carpathica*, n. sect.), *kimawkowiczi*, p. 621, Siebenburgen, (*Illyrica*, n. sect.) *stussineri*, p. 624, Croatia ; WAGNER, Denk. Ak. Wien, lxii, figg. : n. spp.
- Dendrolimax continentalis*, West Africa ; SIMROTH, Abh. Senckenb. Ges. xix, p. 300, figg. : n. sp.
- Euplecta canalifera*, p. 83, *subterranea*, (*Coneuplecta*) *boholica*, p. 84, *pacifica*, p. 4, Philippines ; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896 : n. spp.
- Gastrodonta collisella*, Tennessee ; PILSBRY, Nautilus, ix, p. 123 : n. sp.
- Helicarion mollis*, Philippines ; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896, p. 4 : *H. wallacei*, S. Celebes ; SMITH, P. Malac. Soc. London, ii, p. 95, fig. : n. spp.
- Hemiglypta franciscanorum*, Philippines ; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896, p. 6 : n. sp.
- Hemiplecta bonthainensis*, S. Celebes ; SMITH, P. Malac. Soc. London, ii, p. 97, fig. : n. sp.
- Hemitrichia platyzona*, p. 5, *setosula*, p. 6, Philippines ; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896 : n. spp.
- Hyalinia (Arnouldia) eremias*, S. Arabia ; MELVILL & PONSONBY, P. Malac. Soc. London, ii, p. 1, figg. : n. sp.
- Illyrica*, n. sect. of *Daudebardia* [q.v.] ; WAGNER, Denk. Ak. Wien, lxii, p. 624.
- Inozonites stenomphalus*, p. 7, *quadrasi*, p. 85, Philippines ; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896 : n. spp.
- Kaliella opaca*, p. 4, *chondrium*, p. 5, *leucotropis*, p. 84, Philippines ; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896 : *K. celebesiana*, Celebes ; MOELLENDORFF, t. c. p. 135 : n. spp.
- Lamprocystis leucochondrium*, Philippines ; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896, p. 5 : n. sp.
- Leptichnus*, n. gen., for *L. fischeri*, n. sp., German E. Africa ; SIMROTH, Abh. Senckenb. Ges. xix, p. 296, figg.
- Limax*, nerve terminations in ; BISOGNI (25) : carnivorous habits, OLDHAM, Zoologist, 1896, p. 264 ; THEOBALD, t. c. p. 307.
- L. maximus*, L., notes on its development ; MEISENHEIMER (211).
- Macrochlamys*, Bens., notes on the genus and its sections, *Macrochlamys*, *Microcystina*, *Lamprocystis* ; SYKES, P. Malac. Soc. London, ii, pp. 130–132.
- M. (Macroceras) platytania*, Philippines ; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896, p. 83 : *M. indifferens*, South Celebes ; SMITH, P. Malac. Soc. London, ii, p. 95, fig. ; *M. papuana*, New Guinea ; J. Malac. v, p. 18, figg. : *M. perkinsi*, Sandwich Is. ; SYKES, P. Malac. Soc. London, ii, p. 126 : n. spp.
- Microchlamys korshinskii*, Turkestan ; WESTERLUND, Ann. Mus. St. Petersburg, 1896, p. 184 : n. sp.
- Microcyclus*, n. gen., for *M. baumanni*, n. sp., West Africa ; SIMROTH, Abh. Senckenb. Ges. xix, p. 303, figg.
- Microcystina consimilis*, *consors*, S. Celebes ; SMITH, P. Malac. Soc. London, ii, p. 95, figg. : *M. consueta*, Selayar, Jampea, and Kalao Is. ; SMITH, Ann. Nat. Hist. xviii, p. 144, figg. : n. spp.
- Nanina (Hemiplecta) fruhstorferi*, Lombok I. ; MARTENS, SB. Ges. naturf. Berlin, 1896, p. 158 : n. sp.
- Parmacella anthiops*, Turkestan ; WESTERLUND, Ann. Mus. St. Petersburg, 1896, p. 183 : n. sp.
- Sitala diplotropis*, Celebes ; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896, p. 134 : n. sp.
- Trichotoxon robustum*, p. 283, Kilimandjaro, *neumanni*, p. 290, *athrix*,

- p. 292, *volkensi*, p. 293, E. Africa; SIMROTH, Abh. Senckenb. Ges. xix, figg. : n. spp.
- Trochomorpha jampeana*, Jampea I.; SMITH, Ann. Nat. Hist. xviii, p. 146, figg. : *T. subtaeniata* (*Sivella*) *platysma*, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896, p. 86 : n. spp.
- Trochonanina oxycornus*, Lombok I.; MARTENS, SB. Ges. naturf. Berlin, 1896, p. 159 : n. sp.
- Vitriua parryi*, Canaries; GUDE, P. Malac. Soc. London, ii, p. 15, figg. : *V. (Oligolimax) alexandri*, Turkestan; WESTERLUND, Ann. Mus. St. Petersburg, 1896, p. 183 : n. spp.
- Vitrioconus omphalotropis, arctissimus*, p. 3, *infracostatus*, p. 83, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896 : n. spp.
- Xesta succincta*, Celebes; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896, p. 138: *X. balantensis*, p. 1, *banggaiensis*, p. 2, Celebes; KOBELT, Abh. Mus. Dresden, 1896-7, No. 5 : *X. dimidiata*, S. Celebes; SMITH, P. Malac. Soc. London, ii, p. 96, fig. : *X. selayarensis*, p. 145, Selayar Is., *kalaoensis*, p. 146, Kalao I.; SMITH, Ann. Nat. Hist. xviii, figg. : n. spp.

## ARIONIDÆ.

- Aphallarion*, n. gen., for *A. buttoni*, n. sp., California, with notes on its anatomy; PILSBRY & VANATTA, P. Ac. Philad. 1896, p. 348, figg.

## ENDODONTIDÆ.

- Charopa nigrofusca*, New Guinea; SMITH, J. Malac. v, p. 18, figg. : n. sp.
- Endodonta (Charopa) planorbulina*, Central Australia; TATE (343), p. 187, fig. : *E. (Charopa) roseveari*, p. 34, *tilirangiensis*, p. 35, New Zealand; SUTER, P. Malac. Soc. London, ii, figg. : *E. (?) tenuiscripta*, New Hebrides; ANCEY, Nautilus, x, p. 90: *E. (Thaumatodon) ringens*, p. 126, (*Nesophila*) *lanaiensis*, n. spp., (*Pterodiscus*) *wesleyi*, n. n., p. 127, Sandwich Is.; SYKES, P. Malac. Soc. London, ii : n. spp.
- Flammulina (Allodiscus) chion*, New Zealand; SYKES, P. Malac. Soc. London, ii, p. 107, figg. : n. sp.
- Helix* [i.e. *Pyramidula*] *alternata*, influence of environment on its form and colour; ORMSBEE (235).
- Laoma elegans*, p. 35, (*Phriægnathus*) *lucida, spiralis*, p. 36, *moellendorffi, sublucida*, New Zealand, *hamiltoni*, Macquarie I., p. 37; SUTER, P. Malac. Soc. London, ii, figg. : n. spp.
- Microphyura hemiclausa*, Tate, notes on its anatomy and the systematic position of the genus, which should be placed with *Endodontidæ*, between *Laoma* and *Flammulina*, and not with *Rhytididæ*; HEDLEY in TATE (343) p. 221, figg.
- Patula (Macrocycloides) aberrans*, Celebes; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896, p. 142 : n. sp.
- Punctum conspectum*, on a new var.; PILSBRY, Nautilus, x, p. 21.
- Sphyradium edentulum*, under this name, and next to *Punctum*, should be classed the species known as *Vertigo edentula*, Drap.; STERKI, Nautilus, x, p. 75.

## HELICIDÆ.

Group *Protozona*.

- Polygyra latispira*, p. 15, Texas, *matermontana*, p. 16, *ponsonbyi*, p. 17, *euglypta, albicostulata*, p. 18, Mexico; PILSBRY, P. Ac. Philad. 1896, figg. : n. spp.

Group *Teleophallogona*.

*Sagda* (?) *gabbi*, San Domingo ; PILSBRY, P. Ac. Philad. 1896, p. 23 : n. sp.

Group *Epiphallogona*.

- Camana vanbuensis*, Vanbu, Tonkin ; SMITH, Ann. Nat. Hist. xvii, p. 129. *C. (Pseudobba) papilliformis*, Celebes ; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896, p. 145 : n. spp.
- Chloritis (Sulcobasis) strophora* and *rehsei*, notes on their anatomy ; MOSS & WEBB, J. Malac. v, p. 33, figg.
- C. howesii*, S. Celebes ; SMITH, P. Malac. Soc. London, ii, p. 98, fig. : *Helix (Chloritis?) balantensis*, p. 2, *talabensis*, p. 3, Celebes ; KOBELT, Abh. Mus. Dresden, 1896-97, No. 5 : n. spp.
- Planispira (Cristigibba) giloloensis. lacteocincta*, Moluccas ; SMITH, P. Malac. Soc. London, ii, p. 122, figg. : *P. admirabilis*, Jampea I. ; SMITH, Ann. Nat. Hist. xviii, p. 147, fig. : n. spp.
- Satsuma palananica*, apex, p. 7, *stenodesma*, p. 86, Philippines ; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896 : *S. bembicodes*, Celebes ; MOELLENDORFF, t. c. p. 142 : n. spp.
- Thersites setigera*, Tate, notes on its anatomy ; HEDLEY in TATE (343), p. 222, figg.
- T. septentrionalis*, New Guinea ; HEDLEY, Rec. Austral. Mus. iii, p. 11, fig. : n. sp.
- Xanthomelon*, notes on the anatomy of Central Australian species ; HEDLEY in TATE (343), pp. 223-225, figg.

Group *Belogona Euadenia*.

- Aulacospira rhombostoma*, Philippines ; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896, p. 8 : n. sp.
- Chloræa quadrasi*, Philippines ; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896, p. 9 : n. sp.
- Cochlostyla*, notes on some Philippine species ; HIDALGO (139) : *C. sowerbyi*, n. n. for *Helix decipiens*, vars. *e* & *f* of Sowerby ; HIDALGO, J. Conchyl. xlv, p. 12.
- C. (Callicochlias) chionodes*, p. 9, (*Orustia*) *melanorhaphæ*, p. 10, *cleræ*, p. 87, (*Helicostyla*) *gilberti*, p. 10, (*Helicobulimus*) *intermedia*, p. 11, Philippines ; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896 : n. spp.
- Corasia lauræ*, North Luzon ; GUDE, Sci. Gossip, iii, p. 57, figg. : n. sp.
- Dolichostyla*, n. n. for *Prochilus*, Alb., non Illiger ; PILSBRY, Nautilus, ix, p. 108.
- Helicostyla (Corasia) subtenuis*, Selayar I. ; SMITH, Ann. Nat. Hist. xviii, p. 148, fig. : n. sp.
- Helix (Xenothauma) baroni*, Rio Yonan, Peru ; FULTON, Ann. Nat. Hist. xviii, p. 101 : n. sp.
- Opalliostylæ*, n. n. for *Eudoxus*, Alb., non Kirby ; PILSBRY, Nautilus, ix, p. 108.
- Plectotropis quadrasi*, Philippines ; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896, p. 8 : *P. crassiuscula*, Kalao I. ; SMITH, Ann. Nat. Hist. xviii, p. 147, fig. : n. spp.
- Xenothauma*, n. sect. of *Helix*, near *Epiphragmophora*, type *Helix baroni*, n. sp. ; FULTON, Ann. Nat. Hist. xviii, p. 101.

Group *Belogona Siphonadenia*.

- Helix aspersa*, note on the formation of its epiphragm ; ALLMAN, P. Linn. Soc. London, xxv, p. 517, figg. : *H. glabella*, notes on ; LOCARD, Echange, xii, pp. 36-38 : *H. intersecta*, Poiret, notes on it and its allies ; LOCARD, t. c. p. 117 : *H. nemoralis* and *H. hortensis*, notes on distinction between and banding ; MADOUÉ (196-198) : *H. pomatia*, biological notes on ; LANG, Vierteljahrsschr. Ges. Zurich, xli, pp. 488-495 : anatomical and histological researches on the buccal mass ; PARAVICINI, Boll. Mus. Torino, No. 243 : *H. terveri*, Mich., notes on by LOCARD, Echange, xii, pp. 17, 18, & 25-27, who states that *H. apista*, Flor., is a synonym, whilst *H. terveri*, Flor., he renames *H. paulini*, and *H. terveri*, Bourg., becomes *H. gaspardi*.
- H. (Helicella) diaphora*, Turkestan ; WESTERLUND, Ann. Mus. St. Petersburg, 1896, p. 187 : *H. (Jacosta) aspasta*, Turkestan ; WESTERLUND, t. c. p. 187 : *H. (Trichia) rhysota*, Turkestan ; WESTERLUND, t. c. p. 185 : *H. infracta*, Lombok I. ; MARTENS, SB. Ges. naturf. Berlin, 1896, p. 160 : n. spp.
- Pomatia*, geographical distribution of the subgenus ; KOBELT, Nachrbl. Deutsch. malak. Ges. 1896, pp. 25-34.
- P. bituminis*, p. 34, *pericalla*, Cilicia, *issica*, Alexandrietta, p. 35, *antiochiensis*, *epidaphne*, Antioch, p. 36 ; KOBELT & ROLLE, Nachrbl. Deutsch. malak. Ges. 1896 : n. spp.

## BULIMIDÆ, BULIMULIDÆ, ORTHALICIDÆ, and BULIMINIDÆ.

- Amphidromus*, list of species ; FULTON, Ann. Nat. Hist. xvii, pp. 66-94, figg. : *A. chloris*, *interruptus*, notes on their anatomy ; JACOBI, Arch. Naturg. lxi, p. 293, figg.
- A. alticola*, Java, p. 70, *enganoensis*, Engano I., W. Sumatra, p. 71, *robustus*, Java, p. 73, *pæcilochroa*, Sumbawa I., p. 77, *hamatus*, Labuan I., *placidus*, E. Borneo, *angulatus*, Sarawak, p. 84, *pictus*, Kina Balu, N. Borneo, p. 85, *versicolor*, *dubius*, Balabec I., p. 86, *everetti*, Palawan, p. 87, *smithii*, Annam, p. 88, *roseolabiatu*, Siam, p. 89 ; FULTON, Ann. Nat. Hist. xvii, figg. : *A. sumbaensis*, Sumba I., *kalaoensis*, Kalao Is. ; FULTON, op. cit. xviii, p. 102 : n. spp.
- Anctus* (?) *stearnsianus*, Argentina ; PILSBRY, Nautilus, x, p. 41 : n. sp.
- Bulimidae*, monograph completed ; PILSBRY in TRYON (356) x.
- Buliminus selayarensis*, Selayar I. ; SMITH, Ann. Nat. Hist. xviii, p. 149, fig. : *B. (Napæus?) goebeli*, p. 188, Transcaspia, (*Chondrula*) *tardigyrrus*, p. 189, Turkestan, (*Pseudopetraeus*) *diplus*, *biformis*, p. 191, (*Mastoides*) *albo-costatus*, *liostracus*, p. 192, *torquatus*, *errans*, Turkestan, *leptoceras*, p. 193, North Persia, (*Chondrulopsis*) *drymæus*, p. 194, Turkestan ; WESTERLUND, Ann. Mus. St. Petersburg, 1896 : n. spp.
- Bulimuli* are divisible into groups by the sculpturing of the apical whorls ; PILSBRY, Nautilus, ix, p. 112.
- Bulimulidae*, monograph on ; PILSBRY in TRYON (356) x.
- Bulimulus pallidior*, note on the animal ; FISCHER, J. Conchyl. xliii, p. 137.
- B. eremothauma*, n. n. for *Helix reentsii*, Phil., non *Bulimus reentsii*, Phil., p. 129, *B. subcactorum*, n. n. for *Bulimus lichenorum*, Rve., non D'Orb., p. 145, *B. raimondianus*, n. n. for *B. spretus*, Phil., non Rve., p. 167, *B. dendritoides*, n. n. for *Bulimus monticola*, Phil., non Roth, p. 186 ; PILSBRY in TRYON (356) x.
- B. (Drymæus) trinitarius*, p. 242, *mossi*, *broadwayi*, p. 243, Trinidad ; SMITH, J. Conch. viii, figg. : *B. (Næsiotus) nesioticus*, Galapagos ; DALL, P. Ac. Philad. 1896, p. 443, fig. : *B. (Lissoacme) metamorphus*, Chili, p. 157, *ceroplasta*, p. 159, *flagellatus*, p. 166, Peru, *ventanensis*, Buenos Ayres, p. 189, PILSBRY in TRYON (356) x, figg. : n. spp.



- Bulimus ovatus*, Sow., and *B. proximus*, Sow., notes on their anatomy ;  
PLATE, SB. Ges. naturf. Berlin, 1896, pp. 149 & 150.
- Calycia everetti*, S. Celebes ; SMITH, P. Malac. Soc. London, ii, p. 98, fig. :  
n. sp.
- Eudolichotis*, n. n. for *Pelecychilus*, Guilding, non *Plekocheilus*, Guilding ;  
PILSBRY in TRYON (356) x, p. 108.
- Geoceras*, n. sect. of *Bulimulus*, type *B. columellaris*, Rve. ; PILSBRY in  
TRYON (356) x, p. 136.
- Hapalus brevis*, Philippines ; QUADRAS & MOELLENDORFF, Nachrbl.  
Deutsch. malak. Ges. 1896, p. 87 : n. sp.
- Liparus spenceri*, Tate, notes on its anatomy ; HEDLEY in TATE (343)  
p. 226, figg.
- Lissoacme*, n. sect. of *Bulimulus* (subg. *Bostryx*), type *B. erythrostomus* ;  
PILSBRY, Nautilus, ix, p. 114.
- Placostylus leucolenus*, New Caledonia ; CROSSE, J. Conchyl. xliii, p. 80,  
fig. : *P. (Charis) francoisi*, *hebridarum*, New Hebrides ; MABILLE,  
Bull. Soc. Autun, viii, p. 410 : n. spp.
- Platybostryx*, n. sect. of *Bulimulus* ; PILSBRY in TRYON (356) x, p. 129.
- Porphyrobaphe approximata*, Bogota, *vicaria*, Peru ; FULTON, Ann. Nat.  
Hist. xviii, p. 103 : n. sp.
- Sonorina*, n. n. for *Leptobyrsus*, C. & F., non *Leptobyrsa*, Stål ; PILSBRY,  
Nautilus, ix, p. 114.
- Synapterpes*, n. sect. of *Bulimus* (?), type *B. hanleyi* ; PILSBRY, Nautilus,  
x, p. 46.
- Zaplagius*, n. n. for *Otostomus*, Mts., non Beck & Gray, and *Navicula*,  
Spix, non Blainv. ; PILSBRY, Nautilus, ix, p. 115.

## PUPIDÆ.

- Anisospira strebeli*, Mexico ; DALL, P. U. S. Mus. xix, p. 353, figg. : n. sp.
- Cerion*, catalogue of species ; PILSBRY & VANATTA, P. Ac. Philad. 1896,  
pp. 315-338, figg.
- C. (Maynardia) niteloides*, Bahamas ; DALL, Bull. Lab. Iowa, iv, p. 15 :  
*C. regina*, p. 330, *sarcostomum*, p. 331, *abacoense*, p. 332, *cleutheria*,  
p. 333, *blandi*, p. 334, *multistriatum*, Bahamas, *basistriatum*, p. 335,  
*tridentatum*, p. 336, Cuba, *duplodon*, p. 337, Bahamas ; PILSBRY &  
VANATTA, P. Ac. Philad. 1896, figg. : n. spp.
- Clausilia (Albinaria) alajana*, p. 124, Alaja, Asia Minor, *rollei*, p. 126,  
Cyprus ; BETTGER, Nachrbl. Deutsch. malak. Ges. 1896 : *C.*  
(*Euphaedusa*) *celebensis*, Celebes ; BETTGER in KOBELT, Abh. Mus.  
Dresden, 1896-7, No. 5, p. 3 : *C. (Euphaedusa) alternata*, Celebes ;  
MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896, p. 147 : *C.*  
*celebensis*, *simillima*, *subpolita*, p. 99, *usitata*, p. 100, S. Celebes ;  
SMITH, P. Malac. Soc. London, ii, figg. : *C. evae*, South America ;  
SYKES, J. Malac. v, p. 58, figg. : n. spp.
- Cœlocentrum nelsoni*, *pfefferi*, Mexico ; DALL, P. U. S. Mus. xix, p. 352,  
figg. : n. sp.
- Hypselostoma everetti*, Kalao I. ; SMITH, Ann. Nat. Hist. xviii, p. 148,  
figg. : *H. sibuyanicum*, p. 11, *polyodon*, p. 12, *quadrasi*, p. 88, Philip-  
pines ; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges.  
1896 : n. spp.
- Pupa amphodon*, S. Africa ; MELVILL & PONSONBY, Ann. Nat. Hist. xviii,  
p. 317, figg. : *P. larapinta*, Central Australia ; TATE (343) p. 205,  
fig. : n. spp.
- Vertigo edentula*, Drap., is a *Helix* and should go near *Punctum pygmaeum*,  
under Charpentier's name of *Sphyradium*, 1837 [= *Isthmia*, Gray,  
1840] ; STERKI, Nautilus, x, p. 75.

## STENOGYRIDÆ and ACHATINELLIDÆ.

- Amastra longa*, p. 128, *fraterna*, *villosa*, *citrea*, p. 129, Sandwich Is. ; SYKES, P. Malac. Soc. London, ii ; *A. aurostoma*, Hawaiian Is. ; BALDWIN, Nautilus, x, p. 31 : n. spp.
- Leptachatina impressa*, p. 127, *semipicta*, *perkinsi*, *smithi*, p. 128, Sandwich Is. ; SYKES, P. Malac. Soc. London, ii : n. spp.
- Neobeliscus*, n. n. for *Obeliscus* ; PILSBRY, Nautilus, x, p. 46 (concealed in text).
- Newcombia perkinsi*, Sandwich Is. ; SYKES, P. Malac. Soc. London, ii, p. 130 : n. sp.
- Partulina hayseldeni*, Hawaiian Is. ; BALDWIN, Nautilus, x, p. 31 : n. sp.
- Prosopeas romblonicum*, Philippines ; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896, p. 12 : n. sp.
- Stenogyra bentiv*, S. Arabia ; MELVILL & PONSONBY, P. Malac. Soc. London, ii, p. 1, fig. : *S. discernibilis*, Lombok I. ; MARTENS, SB. Ges. naturf. Berlin, 1896, p. 162 : n. spp.
- Subulina leocochlis*, *crystallina*, p. 316, *glaucoocyanea*, p. 317, South Africa ; MELVILL & PONSONBY, Ann. Nat. Hist. xviii, figg. : *S. (Nothus) urichi*, Trinidad ; SMITH, J. Conch. viii, p. 235, fig. : n. spp.

## SUCCINEIDÆ, ATHORACOPHORIDÆ, and ONCIDIIDÆ.

- Athoracophorus (Pseudaneitea) simrothi*, New Zealand ; SUTER, P. Malac. Soc. London, ii, p. 34, figg. : n. sp.
- Neohyalimax*, n. gen., for *N. brasiliensis*, n. sp., Brazil, with description of its anatomy ; SIMROTH, P. Malac. Soc. London, ii, p. 39, figg.
- Oncidium verruculatum*, Cur., notes [in Japanese] on respiration and circulation ; FUJITA (113).

## BASOMMATOPHORA.

## AURICULIDÆ, LIMNÆIDÆ, PHYSIDÆ, and CHILINIDÆ.

- Ancylus peninsulae*, Florida, p. 138, *eugraptus*, Illinois, p. 139 ; PILSBRY, Nautilus, ix : n. spp.
- Chilina rushii*, Uruguay Riv. ; PILSBRY, P. Ac. Philad. 1896, p. 561, fig. : n. sp.
- Isidorella*, n. gen., for *Physa newcombi*, A. Ad. & Angas, and allied forms ; TATE, Rept. Horn Scient. Exped. Centr. Austral. ii, p. 212.
- Limnea stagnalis*, variations in, at Plön ; BROCKMEIER, Forschber. Plon, iv, p. 259, figg. : popular paper on ; CROWTHER (73) : *L. peregra* and its variations ; NELSON (225) : *L. desidiosa*, var. ; STRENG, Nautilus, ix, p. 123, fig.
- Limnaea*, observations on their cutaneous respiration ; WILLEM (378).
- Melampus arctius*, *enhalius*, p. 407, *dignus*, p. 408, New Hebrides ; MABILLE, Bull. Soc. Autun, viii : n. spp.
- Physa fontinalis*, on the so-called achromatin substances in the fertilized egg ; KOSTANECKI & WIERZEJSKI (170) : *P. acuta*, in the aquarium ; BUCK, Zool. Garten, xxxvii, pp. 248-250 : *P. scalaris* (Jay) is a *Planorbis* ; MARTENS, SB. Ges. naturf. Berlin, 1896, p. 16.
- Planorbis umbilicatellus*, note on distribution ; VANATTA, Nautilus, ix, p. 117 : *P. scalaris* (Jay), notes on, hitherto this form has been placed with *Physa* ; MARTENS, SB. Ges. naturf. Berlin, 1896, p. 16.
- P. arabicus*, S. Arabia ; MELVILL & PONSONBY, P. Malac. Soc. London, ii, p. 3, figg. : *P. castaneonitens*, p. 561, Uruguay, *heteropleurus*, p. 562, Lake Titicaca ; PILSBRY & VANATTA, P. Ac. Philad. 1896, fig. : n. spp.
- Pulmobranchia*, n. gen., for *Physa lamellata*, Smith, which is a gilled Pulmonate ; PELSENER, Bull. Soc. Malac. Belgique, xxix, p. lxvi.

## OPISTHOBRANCHIATA.

Monograph (continued); PILSBRY in TRYON (355).  
Secondary kidney in larval forms; MAZZARELLI (210).

## NUDIBRANCHIATA.

Summary of what is known concerning their structure and habits;  
HECHT (132).

*Æolidiella*, n. sp., Heligoland; HEINCKE, *Wiss. Meeresuntersuch.* ii,  
p. 247, figg.

*Amphorina cerulea*, its protovum and polar globules; TRINCHESE, *Mem.*  
*Ac. Bologna*, iv, p. 199, fig.

*Corambe*, notes on the distribution of the genus; FISCHER, *J. Conchyl.*  
xliii, p. 235.

*Cratena longicauda*, Heligoland; HEINCKE, *Wiss. Meeresuntersuch.* ii,  
p. 249, fig. : n. sp.

*Doriopsilla*, notes on the genus; BERGH, *Zool. Jahrb. Syst.* ix,  
pp. 454-458.

*Ennoia*, n. gen., p. 392, for *E. briareus*, n. sp., Amboina, p. 393; BERGH,  
*Rev. Suisse Zool.* iv, figg.

*Learchis*, n. gen., p. 385, for *L. indica*, n. sp., Amboina, p. 386, figg.;  
BERGH, *Rev. Suisse Zool.* iv.

*Myja*, n. gen., for *M. longicornis*, n. sp., Amboina; BERGH, *Rev. Suisse*  
*Zool.* iv, p. 389, figg.

*Pleuroleura picteti*, Amboina; ANDRÉ, *Rev. Suisse Zool.* iv, p. 402, figg. :  
n. sp.

## TECTIBRANCHIATA.

*Actaeon grimaldii*, Azores; DAUTZENBERG & FISCHER, *Mem. Soc. zool.*  
*France*, ix, p. 397, figg. : n. sp.

*Bullacea*, monograph completed by KOBELT in MARTINI & CHEMNITZ  
(204).

†*Carolinia cookei*, Miocene of Malta; SIMONELLI, *Boll. Soc. geol. Ital.*  
xiv, p. 19, figg. : n. sp.

*Conularia*, notes on the discovery of a sessile form; RUEDEMANN (285) :  
Considered to be very likely an ancestral form of Dibranchiate  
Cephalopod by VERRILL (361), p. 80, who proposes a new order,  
*Conulariacea*, for its reception.

*Cylichna piettei*, Azores; DAUTZENBERG & FISCHER, *Mem. Soc. zool.*  
*France*, ix, p. 402, fig. : n. sp.

*Dolabellinae*, n. subfam.; PILSBRY in TRYON (355) xvi, p. 150.

*Dolabrifera jacksoniensis*, Port Jackson, N. S. Wales, p. 120, *nicaraguana*,  
Nicaragua, p. 124, *swiftii*, West Indies, p. 125; PILSBRY in TRYON  
(355) xvi, figg. : n. spp.

*Dolabriferinae*, n. subfam. of *Aplysiidae*; PILSBRY in TRYON (355) xvi,  
p. 116.

*Enchostoma*, n. g., type *Hyalithes lanceolatus*, S. A. Miller; MILLER &  
GURLEY, *Bull. Illinois Mus.* No. 11, p. 29.

*Euselenops*, n. n. for *Neda*, H. & A. Adams non Mulsant, subg. of  
*Pleurobranchaea*; PILSBRY in TRYON (355) xvi, p. 228.

*Gymnotoplaæ*, n. g., for *Pleurobranchus americanus*, Verrill, and *G. mar-*  
*tensi*, n. n. (for *P. scutatus*, Mts., non Forbes); PILSBRY in TRYON  
(355) xvi, p. 210.

*Lobiger nevilli*, n. n. for *L. viridis*, G. & H. Nevill, non Pease; PILSBRY  
in TRYON (355) xvi, p. 168.

- Notarchus stimpsoni*, n. n. for *N. lineolatus*, Stimp., non Gould ; PILSBRY in TRYON (355) xvi, p. 142, fig.  
*Paraplysia*, n. g., type *Aplysia piperata*, Smith ; PILSBRY in TRYON (355) xvi, p. 115 [with misreference back to preceding vol. instead of page in same vol.].  
*Philine rugosula, approximans*, Azores ; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, p. 406, figg. : n. spp.  
*Phyllaplysia paulini*, Faro, Portugal ; MAZZARELLI, Boll. Soc. Napoli, ix, p. 81, figg. : n. sp.  
*Phyllobranchus borgninii*, notes on its nervous system ; TRINCHESE, Rend. Acc. Napoli, 1896, p. 37.  
*Pseudaplysia*, n. sect. of *Petalifera*, Gray ; PILSBRY in TRYON (355) xvi, p. 131.  
*Ringicula blanchardi*, Azores ; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, p. 405, fig. : n. sp.  
*Roxania monterosatoi*, Azores ; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, p. 404, figg. : n. sp.  
*Tornatina hadfieldi*, Loyalty Is. ; MELVILL & STANDEN, J. Conch. viii, p. 314, fig. : *T. (Uriculus [sic]) subfusca*, Amboina ; ANDRÉ, Rev. Suisse Zool. iv, p. 404, fig. : n. spp.

#### †ENTOMOTÆNIATA.

- New suborder for *Tubiferidæ*, Cossmann, 1895, *Itieriidæ*, and *Nerineidæ*, which the author supposes intermediate between Tectibranchs and Prosobranchs ; COSSMANN (63) p. 5.

#### PROSOBRANCHIATA.

- Buccal and oesophageal sacs ; AMAUDRUT (4).

#### PECTINIBRANCHIATA.

##### NUCLEOBRANCHIATA.

- Pelagiella*, n. g. for †*Cyrtolithes atlantoides*, Matth. ; MATTHEW, Tr. N. York Ac. xiv, p. 131, figg.

#### TOXOGLOSSA.

##### TEREBRIDÆ, CONIDÆ, PLEUROTOMIDÆ, and CANCELLARIIDÆ.

- Buccal apparatus in the higher *Stenoglossa* (*Cancellaria*, *Conus*, and *Terebra*) ; AMAUDRUT (5).  
 †*Asthenotoma tatei*, Eocene, South Australia ; COSSMANN (63) p. 173 : n. sp.  
*Bela limatula*, Gulf of Gascogne ; LOCARD, Ann. Univ. Lyon, xxvi, p. 141, fig. : n. sp.  
*Clathurella lamellosa*, South Australia ; SOWERBY, P. Malac. Soc. London, ii, p. 28, fig. : *C. (?) waterhouseæ*, Botany Bay, N. S. Wales ; BRAZIER, P. Linn. Soc. N. S. Wales, xxi, p. 345 : *C. caletria, cnephæa*, p. 293, *episema, lita*, p. 294, *longa, rogersi*, p. 295, *spyridula*, p. 296, Loyalty Is. ; MELVILL & STANDEN, J. Conch. viii, figg. : n. spp.  
*Clavus rugizonatus, protentus*, p. 142, *gibberulus, leforestieri*, p. 143, New Caledonia ; HERVIER, J. Conchyl. xliii & xliv, pl. i : n. spp.  
*Conidæ*, contribution to a knowledge of the ; BERGH, Acta Ac. German. lxxv, pp. 67-214, 13 pls.  
*Conus kenyonæ*, Shark's Bay, W. Australia ; BRAZIER, P. Linn. Soc. N. S. Wales, xxi, p. 346 : n. sp.

- Daphnella dulcis*, *diluta*, (?) *fullaciosa*, p. 26, *bitorquata*, (*Teres*) *mimica*, *D. vercoi*, p. 27, South Australia; SOWERBY, P. Malac. Soc. London, ii, figg. : *D. terina*, p. 296, *thespesia*, p. 297, Loyalty Is.; MELVILL & STANDEN, J. Conch. viii, figg. : †*D. ponteleviensis*, Helvetian of Pontlevoy; COSSMANN (63) p. 174 : n. spp.
- Daphnobela*, n. sect. of *Bela*, type †*Buccinum junceum*, Sby.; COSSMANN (63) p. 93.
- Defrancia implicisculpta*, off Alexandria; STURANY (335) p. 12, figg. : n. sp.
- Drillia dimidiata*, p. 24, *bednalli*, *gratiosa*, *saxea*, p. 25, South Australia; SOWERBY, P. Malac. Soc. London, ii, figg. : *D. telescopalis*, *pentagonalis*, South Australia; VERCO, Tr. R. Soc. S. Austral. viii, p. 222, figg. : *D. curvicolor*, *suavis*, New Caledonia; HERVIER, J. Conchyl. xliii, p. 141; xliv, pl. i : *D. ione*, p. 277, *themeropis*, *xanthoporphyrina*, p. 278, Loyalty Is.; MELVILL & STANDEN, J. Conch. viii, figg. : n. spp.
- Endiatoma*, n. sect. of *Asthenotoma*, type †*Oligotoma quadricincta*, COSSM.; COSSMANN (63) p. 106.
- Glyphostoma lamproideum*, p. 144, *jousseaumei*, *leucostigmatum*, p. 145, *aubryanum*, p. 146, *globulosum*, p. 147, *disconicum*, *subspurcum*, p. 148, *goubini*, *crosseanum*, p. 149, *melanoxytum*, *tigroidellum*, p. 150, *fustigiatum*, *strombillum*, p. 151, *alphonsianum*, *callistum*, p. 237, *parthenicum*, p. 238, *gaidei*, *trigonostomum*, p. 239, New Caledonia; HERVIER, J. Conchyl. xliii & xliv, pl. i : n. spp.
- Kenyonia*, n. g., p. 346, for *K. pulcherrima*, p. 347, New Hebrides; BRAZIER, P. Linn. Soc. N. S. Wales, xxi.
- Mangilia adcocki*, *alucinans*, p. 29, *connectens*, *inornata*, p. 30, *alticostata*, *cuspis*, p. 31, South Australia; SOWERBY, P. Malac. Soc. London, ii, figg. : *M. uagna*, *bascauda*, p. 279, *calathiscus*, *eumerista*, p. 280, *himerodes*, *himerta*, p. 281, *orophoma*, p. 282, *stibarochila*, *thalycra*, p. 283, *thiasotes*, (*Cythara*) *euselma*, p. 284, *psalterium*, p. 285, *signum*, (*Glyphostoma*) *chrysolitha*, p. 286, *dialitha*, *latirella*, p. 287, *notopyrrha*, *rhodacme*, p. 288, *thaleria*, *theoteles*, p. 289, *thepalea*, p. 290, *thereganum*, *thesaurista*, p. 291, *thyridota*, p. 292, Loyalty Is.; MELVILL & STANDEN, J. Conch. viii, figg. : n. spp.
- Mitromorpha dalli*, p. 431, *smithi*, p. 432, Azores; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, figg. : †*M. subulata*, Pliocene of Gourbesville; COSSMANN (63) p. 175 : n. spp.
- Noditerebra*, n. sect. of *Terebra*, type †*T. geniculata*, Tate; COSSMANN (63) p. 51.
- Pleurotoma hirondelei*, p. 408, *compsospira*, p. 409, *fulvotincta*, p. 410, *gisota*, p. 412, *mirmidina*, p. 413, *adelpa*, p. 414, *pyrrhogramma*, p. 415, *leptoglypta*, p. 416, *pycnoides*, p. 418, *megalembryon*, p. 420, *polysarca*, *subaraneosa*, p. 422, *monotropis*, p. 423, *thaumastopsis*, p. 424, *cælorhaphe*, p. 425, *diastrophia*, p. 426, *eurybrocha*, p. 427, *callembrion*, p. 428, *demosia*, p. 429, *blanchardi*, p. 430, Azores; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, figg. : *P. (Aucistrosyrix) travancorica*, off Travancore, p. 368, (*Surcula*) *profundorum*, N.E. of Maldives, *thurstoni*, off Ceylon, p. 369; SMITH, Ann. Nat. Hist. xviii : n. spp.
- Pleurotomella kœhleri*, Gulf of Gascogne; LOCARD, Ann. Soc. Agric. Lyon, iv, p. 208 : n. sp.
- Pleurotomidæ*, South Australian species; SOWERBY, P. Malac. Soc. London, ii, pp. 24-32, figg.
- Pusionella testabilis*, Aden; JOUSSEAUME, Naturaliste, 1896, p. 43.
- Surcula perksi*, South Australia; VERCO, Tr. R. Soc. S. Austral. xx, p. 224, figg. : *S. gatchensis*, New Caledonia; HERVIER, J. Conchyl. xliii, p. 144, and xliv, pl. 1 : n. spp.
- Taranis alexandrina*, off Alexandria; STURANY (335) p. 11, figg. : n. sp.

*RHACHIGLOSSA.*

OLIVIDÆ, HARPIDÆ, MARGINELLIDÆ, VOLUTIDÆ, and MITRIDÆ.

- Ancillaria cinnamoma*, note on the salivary glands ; AMAUDRUT, Bull. Soc. zool. France, xxi, pp. 123 & 124, fig.  
*Harpa punctata*, South Australia ; VERCO, Tr. R. Soc. S. Austral. xx, p. 218, figg. : n. sp.  
*Imbricaria porphyria*, South Australia ; VERCO, Tr. R. Soc. S. Austral. xx, p. 227, figg. : n. sp.  
*Marginella vignalii*, Azores ; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, p. 433, fig. : *M. veliei*, Florida ; PILSBRY, P. Ac. Philad. 1896, p. 21, fig. : n. spp.  
*Mitra vincentiana*, South Australia ; VERCO, Tr. R. Soc. S. Austral. xx, p. 223, fig. : *M. (Costellaria) dorotheæ*, Loyalty Is. ; MELVILL & STANDEN, J. Conch. viii, p. 297, fig. : n. spp.  
*Oliva*, notes on the genus ; FORD, Nautilus, x, pp. 3-5, figg.  
*Turricula apicincta*, South Australia ; VERCO, Tr. R. Soc. S. Austral. xx, p. 225, figg. : n. sp.  
*Voluta translucida*, South Australia ; VERCO, Tr. R. Soc. S. Austral. xx, p. 217, figg. : †*V. quemadensis*, *ameghinoi*, Eocene, Patagonia ; JHERING, Nachrbl. Deutsch. malak. Ges. 1896, p. 97 : n. spp.

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

- Buccinum martensianum*, Japan ; ROLLE, Nachrbl. Deutsch. malak. Ges. 1896, p. 128 : n. sp.  
*Columbella*, monograph continued by KOBELT in MARTINI & CHEMNITZ (204).  
*C. (Strombina) corrugata*, Amboina ; ANDRÉ, Rev. Suisse Zool. iv, p. 397, fig. : *C. (Seminella) pacei*, p. 275, (*Mitrella*) *sigaloessa*, p. 276, Loyalty Is. ; MELVILL & STANDEN, J. Conch. viii, figg. : n. spp.  
*Euryochetus*, n. n. for *Laevibuccinum*, Cossm., non Conrad ; COSSMANN, Mem. Soc. malac. Belgique, xxxi, p. 35.  
*Fulgur carica*, notes on its yolk-lobe and centrosome ; MCMURRICH (195).  
*Fusus grimaldii*, Azores ; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, p. 434, figg. : *F. bengasiensis*, Eastern Mediterranean ; STURANY (335) p. 8, figg. : n. spp.  
*Kryptos*, n. g., for *K. elegans*, n. sp., North Atlantic ; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, p. 435, fig.  
*Murex (Ocinebra) brachys*, Loyalty Is. ; MELVILL & STANDEN, J. Conch. viii, p. 273, fig. : *M. nuttingi*, Bahamas ; DALL, Bull. Lab. Iowa, iv, p. 13 : n. spp.  
*Muricida*, preliminary outline of a new classification ; BAKER (12).  
*Nassa (Niotha) rotunda*, p. 273, (*Telasco*) *shackelfordi*, *ecstilba*, p. 274, Loyalty Is. ; MELVILL & STANDEN, J. Conch. viii, figg. : n. spp.  
*Neptunea sinistrorsa*, notes on a specimen dredged off the coast of Algeria ; MELI, Boll. Soc. geol. Ital. xiv, pp. 302-306.  
*Pseudomurex basileus*, Azores ; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, p. 440, fig. : n. sp.  
*Purpura lapillus*, note on an imbricate var. ; STEARNS, Nautilus, x, p. 85.  
*Siphonalia semiplicata*, Japan ; PILSBRY, P. Ac. Philad. 1896, p. 22 : n. sp.  
*Tritonidea fusiformis*, South Australia ; VERCO, Tr. R. Soc. S. Austral. xx, p. 219, figg. : n. sp.  
*Trophon richardi*, p. 438, Azores, *grimaldii*, p. 439, Mediterranean ; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, figg. : n. spp.

## TRITONIDÆ, CASSIDIDÆ, CYPRÆIDÆ, and STROMBIDÆ.

- Cassis adcocki*, South Australia ; SOWERBY, P. Malac. Soc. London, ii, p. 14, fig. : n. sp.  
*Cypræa*, occurrence of callosities in certain species ; KENYON (162) : *C. angustata*, Gray, note on a new var. ; BEDDOME, P. Linn. Soc. N. S. Wales, xxi, p. 467 : *C. aurantium*, comes from Mog-Mog I., Western Carolines ; HIDALGO (140).  
*Pterocera lambis*, Linn., rare variation in the shell ; WILLEY (379).  
*Ranella gigantea*, Lam., note on ; LOCARD, Echange, xii, p. 130.  
*Trivia*, occurrence of a sulcus in ; KENYON (162).

## CERITHIIDÆ, NERINEIDÆ, TURRITELLIDÆ, and CÆCIDÆ.

- † *Acrostylus*, n. sect. of *Nerinea*, type † *N. trinodosa*, Voltz. ; COSSMANN (63) p. 29.  
 † *Aphanoptyxis*, n. subg. of *Nerinea*, type † *Cerithium defrancei*, Desl. ; COSSMANN (63) p. 34.  
 † *Bachtroptyxis*, n. subg. of *Nerinella*, type † *N. implicata*, D'Orb. ; COSSMANN (63) p. 39.  
*Bittium tenthrenoïs*, Bombay ; MELVILL, P. Malac. Soc. London, ii, p. 109, fig. : *B. wolomitres*, p. 298, *albocinctum*, *marileutes*, *uveanum*, p. 299, Loyalty Is. ; MELVILL & STANDEN, J. Conch. viii, figg. : n. spp.  
*Cæcum auriculatum*, De Fol., its habits and mode of crawling ; PLATE, SB. Ges. naturf. Berlin, 1896, pp. 130-133, figg.  
*C. cuspidatum*, Tangier ; CHASTER, J. Malac. v, p. 2, fig. : n. sp.  
*Cerithiella cossmanni*, p. 445, *alicei*, *bouvieri*, p. 446, *guernei*, p. 447, Azores ; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, figg. : n. spp.  
*Cerithiopsis* (?) *turbonilloides*, Azores ; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, p. 443, fig. : *C. rubricincta*, *sykesi*, p. 109, *pulcherrima*, p. 110, Bombay ; MELVILL, P. Malac. Soc. London, ii, figg. : *C. aurantiaca*, *catenaria*, p. 300, *eutrapela*, *fosteræ*, p. 301, *hedista*, *adelpa*, p. 302, Loyalty Is. ; MELVILL & STANDEN, J. Conch. viii, figg. : n. spp.  
*Cerithium pulchellum*, Amboina ; ANDRÉ, Rev. Suisse Zool. iv, p. 399, fig. : n. sp.  
 † *Diozoptyxis*, n. subg. of *Nerinea*, type † *N. monilifera*, D'Orb. ; COSSMANN (63) p. 31.  
 † *Endiaplocus*, n. subg. of *Trochalia*, type † *Turritella roissyi*, D'Arch. ; COSSMANN (63) p. 45.  
 † *Entomotaniata*, n. subord. for *Tubiferidæ*, Cossm., 1895, *Itieriidæ* and *Nerineidæ*, which the author supposes intermediate between Tectibranchs and Prosobranchs ; COSSMANN (63) p. 5.  
 † *Itieriidæ*, n. fam. for *Itieria*, *Itruvia*, and *Phaneroptyxis*, n. g. ; COSSMANN (63) p. 17.  
*Mathilda eurytima*, Loyalty Is. ; MELVILL & STANDEN, J. Conch. viii, p. 312, fig. : n. sp.  
 † *Melanioptyxis*, n. sect. of *Nerinea*, type † *N. altararis*, Cossm. ; COSSMANN (63) p. 30.  
 † *Nerineæ*, from the Sequanian of Cordebugle (Calvados) ; BIGOT, Bull. Soc. geol. France, xxiv, p. 29, figg.  
 † *Phaneroptyxis*, n. g. (= *Itieria* in pt.), type † *Nerinea moreana*, D'Orb. ; COSSMANN (63) p. 21.  
 † *Ptygmatis carentonensis*, Turanian of Charente ; COSSMANN (63) p. 172 : n. sp.  
*Tenuicerithium*, n. sect. of *Cerithium*, type † *C. fragile*, Desh. ; COSSMANN (63) p. 28.

MELANIIDÆ, LITTORINIDÆ, FOSSARIDÆ, SOLARIIDÆ, and  
HOMALOGYRIDÆ.

- Cithua abyssorum*, Gulf of Gascogne ; LOCARD, Ann. Soc. Agric. Lyon, iv, p. 211 : n. sp.  
*Iphitus cancellatus, tenerrimus*, Azores ; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, p. 450, figg. : n. spp.  
*Melania junghuhni*, p. 135, *glandiformis*, p. 136, Java, *schwanneri, borneensis*, p. 137, *muelleri, subpunctata*, p. 138, Borneo ; SCHEPMAN, Notes Leyden Mus. xviii, figg. : *M. vatensis*, New Hebrides ; ANCEY, Nautilus, x, p. 90 : n. sp.  
*Pachycheilus dalli*, Central America ; PILSBRY, P. Ac. Philad. 1896, p. 260, figg. : n. sp.  
*Retrotortina*, n. g., for *R. fuscata*, n. sp., Tangier ; CHASTER, J. Malac. v, p. 2, figg.  
*Solarium certesi*, p. 452, *dollfusi*, p. 453, Azores ; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, figg. : *S. (Torinia) homalaxis*, Bombay ; MELVILL, P. Malac. Soc. London, ii, p. 110, fig. : n. sp.  
*Viviana*, n. g., for †*V. ornata*, Koken ; KOKEN, Jahrb. geol. Reichsanst. xlvi, p. 97, figg.

LITIOPIDÆ, RISSOIDÆ, HYDROBIIDÆ, and PALUDINIDÆ.

- Alaba zadela*, Loyalty Is. : MELVILL & STANDEN, J. Conch. viii, p. 305, figg. : n. sp.  
*Alvania laxa*, p. 456, *platycephala*, p. 457, Azores ; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, figg. : *A. pisinna*, Loyalty Is. ; MELVILL & STANDEN, J. Conch. viii, p. 305, fig. : n. spp.  
*Barleeia*, notes on the genus ; MONTEROSATO, J. Conchyl. xliii, pp. 77-79.  
*B. chrysomela*, Loyalty Is. ; MELVILL & STANDEN, J. Conch. viii, p. 309, fig. : n. sp.  
*Bithinia australis*, Tryon, notes on its animal and anatomy ; HEDLEY in TATE (343), p. 220, figg.  
*B. (Elona) carulans*, Lake Balkash, Turkestan ; WESTERLUND, Ann. Mus. St. Petersburg, 1896, p. 197 : *B. quadrasi*, Philippines ; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896, p. 92 : n. spp.  
*Chilopyrgula*, n. subg., for *C. sturanyi* (= *Pyrgula annulata*, Stur., non Linn.) ; BRUSINA, Congr. Zool. iii, p. 369.  
*Ginaia*, n. g., for *Emmericia munda*, Stur. ; BRUSINA, Congr. Zool. iii, p. 366.  
*Hydrorissoia*, n. g., p. 90, for *H. elegans*, p. 91, *levayi*, p. 92, n. spp., Mekong R., Siam ; BAVAY, J. Conchyl. xliii, figg.  
*Lacunopsis spherica*, p. 82, *coronata*, p. 83, *levayi*, p. 84, *massiei*, p. 86, Mekong R., Siam ; BAVAY, J. Conchyl. xliii, figg. : n. spp.  
*Litiopa limnophysa*, Loyalty Is. ; MELVILL & STANDEN, J. Conch. viii, p. 305, fig. : n. sp.  
*Pachydrobia brevis*, p. 87, *pellucida*, p. 88, *elongata, sulcata*, p. 89, Mekong R., Siam ; BAVAY, J. Conchyl. xliii, figg. : n. spp.  
*Paludestrina glaucovirens*, S. Arabia ; MELVILL & PONSONBY, P. Malac. Soc. London, ii, p. 3, fig. : n. sp.  
*Paludina vivipara*, structure of the mesoderm ; TOENNIGES (348) : embryonic development of the radula ; BLOCH, Jena. Zeitschr. xxx, pp. 350-392, figg. : spermatogenesis ; AUERBACH, t. c. pp. 405-554, figg. : on the replacement of the amœbocytes, and on the phagocytic organ ; CUÉNOT, C.R. Acad. Paris, cxxiii, p. 1078.



- Petterdiana*, n. n. for *Brazieria*, Petterd., non Ancey, type *Ampullaria tasmanica*, TENISON-WOODS; BRAZIER, P. Soc. Tasmania, 1894-5 (1896), p. 105.
- Pezantia*, n. sect. of *Pseudotaphrus*, type *Rissoina dactyliosa*, Desh.; COSSMANN, Mem. Soc. malac. Belgique, xxxi, p. 22.
- Pomatiopsis hinkleyi*, Alabama; PILSBRY, Nautilus, x, p. 37.
- Potamolithus*, n. g., p. 86, for *P. rushii*, *iheringi*, *microthauma*, *hidalgoi*, *dimochilus*, p. 87, *orbigny*, *sykesii*, *bisinuatus*, *gracilis*, p. 88, Uruguay; PILSBRY, Nautilus, x : n. spp.
- Rissoia jousseaumei*, Azores; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, p. 454, fig. : *R. joviana*, p. 309, *pyrrhacme*, p. 310, Loyalty Is.; MELVILL & PONSONBY, J. Conch. viii, figg. : n. spp.
- Rissoina epentroma*, *pachystoma*, Bombay; MELVILL, P. Malac. Soc. London, ii, p. 110, figg. : *R. baculum-pastoris*, *catholica*, p. 306, *enteles*, *nesiotes*, p. 307, *quasillus*, *sincera*, *zonula*, p. 308, Loyalty Is.; MELVILL & STANDEN, J. Conch. viii, figg. : n. spp.
- Stenothyra hybocystoides*, Mekong R., Siam; BAVAY, J. Conchyl. xliii, p. 93, fig. : n. sp.
- Tricula expansilabris*, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896, p. 92 : n. sp.

## CYCLOPHORIDÆ and CYCLOSTOMATIDÆ.

- Arinia ovulum*, p. 13, *pallida*, p. 90, *manopleuris*, p. 91, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896 : n. spp.
- Cyclophorus ectopoma*, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896, p. 88 : n. sp.
- Cyclostoma ochraceum*, South Africa; MELVILL & PONSONBY, Ann. Nat. Hist. xviii, p. 318, fig. : n. sp.
- Cyclotus (Platyraphe) lateplicatus*, p. 13, (*Eucyclotus*) *mindoricus*, p. 88, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896 : *C. (Pseudocyclophorus) dimidiatus*, Celebes; KOBELT, Abh. Mus. Dresden, 1896-97, No. 5, p. 3 : *C. (Eucyclotus) semiliratus*, Celebes; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896, p. 151 : *C. pyrostoma*, p. 100, *celebensis*, p. 101, S. Celebes; SMITH, P. Malac. Soc. London, ii, figg. : *C. vicinus*, Jampea I.; SMITH, Ann. Nat. Hist. xviii, p. 150, fig. : n. spp.
- Diplommatina (Sinica) balerica*, p. 14, *boholensis*, p. 91, *crystalloides*, p. 92, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896 : n. spp.
- Ditropis gradata*, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896, p. 89 : n. sp.
- Helicomorpha pilula*, *linguifera*, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896, p. 90 : n. spp.
- Lagochilus pachytropis*, *euconus*, Celebes; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896, p. 149 : *L. chiltoni*, (?) *studer*, New Zealand; SUTER, P. Malac. Soc. London, ii, p. 133, figg. : n. spp.
- Leptopoma aureum*, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896, p. 89 : *L. celebesianum*, Celebes; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896, p. 149 : n. spp.
- Omphalotropis filocincta*, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896, p. 14 : *O. papuensis*, New Guinea; SMITH, J. Malac. v, p. 19, fig. : n. spp.
- Opisthostoma linteræ*, Sarawak; SOWERBY, Ann. Nat. Hist. xvii, p. 94 : n. sp.
- Otopoma dhofarensis*, *consimile*, *hadramauticum*, S. Arabia; MELVILL & PONSONBY, P. Malac. Soc. London, ii, p. 2, figg. : n. spp.

- Palaina chalarostoma, hidalgoi*, p. 91, Philippines; QUADRAS & MOELLEN-DORFF, Nachrbl. Deutsch. malak. Ges. 1896 : n. spp.  
*Pterocyclus vanbuensis*, Vanbu, Tonkin; SMITH, Ann. Nat. Hist. xvii, p. 130 : n. sp.  
*Pupinella strubelli*, New Guinea; SMITH, J. Malac. v, p. 21, fig. : n. sp.

HIPPONYCIDÆ, XENOPHORIDÆ, NARICIDÆ, NATICIDÆ, and  
 ADEORBIDÆ.

- Adeorbis vanikoroides*, Bombay; MELVILL, P. Malac. Soc. London, ii, p. 111, fig. : n. sp.  
*Hipponyx minutus*, Amboina; ANDRÉ, Rev. Suisse Zool. iv, p. 399, fig.  
*Narica*, notes (chiefly anatomical) on the genus; BERGH, Verh. Ges. Wien, xlvi, pp. 200-207, figg.  
*Natica phaeocephala*, p. 458, *pyrrhosticta*, p. 459, Azores; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, figg. : *N. (Lunatia) abyssicola*, off Cutch, *levis*, Bay of Bengal; SMITH, Ann. Nat. Hist. xviii, p. 370 : n. spp.  
*Onustus* (Humphrey, 1797 = *Xenophora*, Fischer), notes, chiefly anatomical, on the genus; BERGH, Verh. Ges. Wien, xlvi, pp. 207-211, figg.  
 ? *Postalia*, n. g. for †*P. postalensis*, n. sp., Eocene of Mt. Postale, near Bolca; OPPENHEIM, Palæontogr. xliii, p. 165, figg. May belong to *Cyclostrematidæ*.

PTENOGLLOSSA.

SCALARIIDÆ.

- Acilia*, n. g., type †*A. regularis*, Koken; KOKEN, Jahrb. geol. Reichsanst. xlvi, p. 110.  
*Aclis atemeles, eoa*, Bombay; MELVILL, P. Malac. Soc. London, ii, p. 111, figg. : n. spp.  
*Pherusa carinata*, Tangier; CHASTER, J. Malac. v, p. 3, fig. : n. sp.  
*Scala mitchelli*, Matagorda I., Texas; DALL, Nautilus, ix, p. 112 : †*S. ranellina*, Eocene, Alabama, p. 112, *S. (Sthenorhytis) mazycki*, Miocene, S. Carolina, p. 111; DALL, Nautilus, ix : n. spp.  
*Scalaria cerigottana*, off Cerigotto; STURANY (335) p. 9, figg. : *S. eranna*, p. 276, *exomila*, p. 277, Loyalty Is.; MELVILL & STANDEN, J. Conch. viii, figg. : n. spp.  
*Scalariidæ*, monograph begun by CLESSIN in MARTINI & CHEMNITZ (204).

GYMNOGLOSSA.

EULIMIDÆ and PYRAMIDELLIDÆ.

- Cingulina archimedeae*, Bombay; MELVILL, P. Malac. Soc. London, ii, p. 115, fig. : n. sp.  
*Eulima dysnoeta*, p. 460, *baptocephala*, *machæroopsis*, p. 461, *halorhappe*, *talana*, p. 462, *richardi*, p. 463, *xiphidiopsis*, *spiridioni*, p. 464, *leptozona*, *insignis*, p. 465, *pachya*, p. 466, Azores; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, figg. : *E. dens-colubri*, Bombay; MELVILL, P. Malac. Soc. London, ii, p. 111, fig. : n. spp.  
*Eulimella quadrasi*, Philippines; BËTTGER, Nachrbl. Deutsch. malak. Ges. 1896, p. 56 : n. sp.  
*Miralda idalima*, Bombay; MELVILL, P. Malac. Soc. London, ii, p. 112, fig. : n. sp.

- Myonia gavisia*, Bombay; MELVILL, P. Malac. Soc. London, ii, p. 112, fig. : n. sp.
- Odostomia antelia*, *syruoloides*, Bombay; MELVILL, P. Malac. Soc. London, ii, p. 113, figg. : n. spp.
- Oscilla indica*, Bombay; MELVILL, P. Malac. Soc. London, ii, p. 112, fig. : n. sp.
- Pasitheola*, n. n. for *Pasithea*, Lea, non Lamk. ; COSSMANN (63) p. 26.
- Pyrgulina pyrgomella*, p. 113, *edgarii*, p. 114, Bombay; MELVILL, P. Malac. Soc. London, ii, figg. : *P. gliriella*, Loyalty Is. ; MELVILL & STANDEN, J. Conch. viii, p. 303, fig. : n. spp.
- Syrnola metria*, Bombay; MELVILL, P. Malac. Soc. London, ii, p. 112, fig. : *S. heptagyra*, p. 46, *manilensis*, *quadrasi*, p. 47, *incerta*, p. 48, *subcristata*, p. 49, Philippines; BÆTTGER, Nachrbl. Deutsch. malak. Ges. 1896 : *S. jaculum*, *violacea*, Loyalty Is. ; MELVILL & STANDEN, J. Conch. viii, p. 304, figg. : n. spp.
- Turbonilla phaula*, p. 469, *digenes*, *hoeki*, p. 470, *vallanti*, *hamonvillei*, p. 471, *schlumbergeri*, p. 472, Azores; DAUTZENBERG & FISCHER Mem. Soc. zool. France, ix, figg. : *T. abercrombiei*, *sororia*, p. 114, *terebrina*, (*Pyrgostelis*) *emilie*, p. 115, Bombay; MELVILL, P. Malac. Soc. London, ii, figg. : *T. quadrasi*, p. 53, *dactylus*, p. 54, *truncatula*, p. 55, Philippines; BÆTTGER, Nachrbl. Deutsch. malak. Ges. 1896 : *T. belonis*, Loyalty Is. ; MELVILL & STANDEN, J. Conch. viii, p. 303, fig. : n. spp.

## SCUTIBRANCHIATA.

## HELICINIDÆ and HYDROCENIDÆ.

- Georissa carcinulata*, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896, p. 15 : n. sp.
- Helicina* (*Ceratopoma*) *quadrasi*, (*Pleuropoma*) *sphaeridium*, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. 1896, p. 15 : *H. kalaoensis*, Kalao I. ; SMITH, Ann. Nat. Hist. xviii, p. 151, figg. : *H. pachystoma*, New Britain; SMITH, J. Malac. v, p. 21, fig. : *H. novella*, New Hebrides; MABILLE, Bull. Soc. Autun, viii, p. 400 : n. spp.

NERITIDÆ, TURBINIDÆ, TROCHIDÆ, DELPHINULIDÆ and  
CYCLOSTREMATIDÆ.

- Alcyona lifuensis*, Loyalty Is. ; MELVILL & STANDEN, J. Conch. viii, p. 312, fig. : n. sp.
- Astraliium moniliferum*, New Britain; HEDLEY & WILLEY, P. Linn. Soc. N. S. Wales, xxi, p. 107, figg. : n. sp.
- Calliostoma grimaldii*, p. 480, *hirondellei*, p. 481, *leptophyma*, p. 482, Azores; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, figg. : n. spp.
- Chilodontoidea*, n. g. for †*C. oolitica*, n. sp., Inferior Oolite, S.-W. England; HUDLESTON (146) p. 491, figg.
- Cyclostrema dollfusi*, *richardi*, Azores; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, p. 484, figg. : *C. pruinatum*, p. 3, *fenestratum*, p. 4, Tangier; CHASTER, J. Malac. v, figg. : n. spp.
- Danilia affinis*, Azores; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, p. 475, figg. : n. sp.
- Euchelus favosus*, Loyalty Is. ; MELVILL & STANDEN, J. Conch. viii, p. 311, fig. : n. sp.
- Hyperacanthus*, n. g. for *Cirrus superbus*, Hörnes; KOKEN, Jahrb. geol. Reichsanst. xlvi, p. 94.

- Leptothyra globuloides*, Azores ; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, p. 474, fig. : n. sp.
- Lepyrium*, n. g., type *Neritina showalteri*, Lea ; DALL, Nautilus, x, p. 15.
- Leucorhynchia tricarinata*, Loyalty Is. ; MELVILL & STANDEN, J. Conch. viii, p. 311, fig. : n. sp.
- Liotia centrifuga*, off Havana ; DALL, Bull. Lab. Iowa, iv, p. 16 : n. sp.
- Minolia agapeta*, Loyalty Is. ; MELVILL & STANDEN, J. Conch. viii, p. 312, fig. : n. sp.
- Navicella splendens*, p. 399, *francoisi*, *concentrica*, p. 400, New Hebrides ; MABILLE, Bull. Soc. Autun, viii : n. spp.
- † *Nerita*, species from the Belgian Eocene, some new ; VINCENT (363).
- Neritina fluviatilis*, notes on the female organs ; GILSON, P. Malac. Soc. London, ii, p. 81, figg.
- N. (Clithon) perfecta*, *exclamationis*, *francoisi*, p. 397, *elephas*, *subgranosa*, p. 398, *horrida*, p. 399, New Hebrides ; MABILLE, Bull. Soc. Autun, viii : *N. coccinea*, New Hebrides ; ANCEY, Nautilus, x, p. 91 : n. spp.
- Phasianella minima*, Bombay ; MELVILL, P. Malac. Soc. London, ii, p. 115, fig. : n. sp.
- ? *Postalia*, n. g., may belong here. For full entry *vide ante* (p. 52), ADEORBIDÆ.
- Solariella ambigua*, p. 476, *micans*, p. 479, Azores ; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, figg. : *S. (Conotrochus) tragema*, Loyalty Is. ; MELVILL & STANDEN, J. Conch. viii, p. 313, fig. : n. spp.
- Tharsis* (?) *gaudryi*, *ateles*, Azores ; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, p. 486, figg. : n. spp.
- Tinostoma azorica*, Azores ; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, p. 485, figg. : n. sp.
- Turcicula alicei*, Azores ; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, p. 483, figg. : n. sp.

#### PLEUROTOMARIIDÆ and FISSURELLIDÆ.

- Echetus*, n. g., type † *Pleurotomaria subscalariformis*, Hörnes ; KOKEN, Jahrb. geol. Reichsanst. xlvi, p. 72.
- Emarginula guernei*, Azores ; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, p. 490, figg. : n. spp.
- Euzone*, n. g., type † *E. alawna* (Koken) ; KOKEN, Jahrb. geol. Reichsanst. xlvi, p. 77, figg.
- Fissurisepta crossei*, *microphyma*, Azores ; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, p. 492, figg. : n. spp.
- Glyphis edwardsi*, Azores ; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, p. 489, figg. : n. sp.
- † *Pleurotomaria*, notes on the species from the Belgian Eocene, with *P. whitfieldi*, n. n. for *gigantea*, Whitf., non Sby., and *P. landinensis*, n. sp. ; VINCENT, Pr.-verb. Soc. malac. Belgique, xxv, p. lxxvii, figg.
- Propilidium crossei*, p. 493, *bavayi*, p. 494, Azores ; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, figg. : n. spp.
- Pseudomurchisonia*, n. g., type † *P. insueta*, Koken ; KOKEN, Jahrb. geol. Reichsanst. xlvi, p. 86, figg.
- Rufilla*, n. g., type † *R. densecincta* (Koken) ; KOKEN, Jahrb. geol. Reichsanst. xlvi, p. 75, fig.
- Sagana*, n. g., type † *Pleurotomaria juvavica*, Koken ; KOKEN, Jahrb. geol. Reichsanst. xlvi, p. 75, figg.
- Scissurella (Schizotrochus) richardi*, Azores ; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, p. 487, fig : n. sp.
- Sisenna*, n. g., type † *S. turbinata* (Hörn.) ; KOKEN, Jahrb. geol. Reichsanst. xlvi, p. 72, figg.

*Verania*, n. g., for †*V. cerithioides*, Koken ; KOKEN, Jahrb. geol. Reichsanst. xlv, p. 85, figg.

*Vistilia*, n. g., type †*V. klipsteini*, Koken ; KOKEN, Jahrb. geol. Reichsanst. xlv, p. 85, figg.

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*Acmaea zografi*, Azores ; DAUTZENBERG & FISCHER, Mem. Soc. zool. France, ix, p. 495, figg. : n. sp.

*Patella*, cases of hermaphroditism in Limpets ; GEMMILL, Anat. Anz. xii, p. 392 : tidal migrations of Limpets ; WILLEY, Nature, 1896, p. 125.

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*Cadulus vipericidens*, Loyalty Is. ; MELVILL & STANDEN, J. Conch. viii, p. 314, fig. : n. sp.

*Dentaliidae*, monograph by CLESSIN in MARTINI & CHEMNITZ (204).

*Dentalium bisinuatum*, Amboina ; ANDRÉ, Rev. Suisse Zool. iv, p. 397, fig. : *D. caudani*, Gulf of Gascogne ; LOCARD, Ann. Soc. Agric. Lyon, iv, p. 213 : *D. magnificum*, off Trincomalee ; SMITH, Ann. Nat. Hist. xviii, p. 371 : n. spp.

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*Cuspidaria approximata*, off Andaman Is. ; SMITH, Ann. Nat. Hist. xviii, p. 373 : n. sp.

*Myonera bicarinata*, off Malabar Coast ; SMITH, Ann. Nat. Hist. xviii, p. 374 : n. sp.

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#### ANATINACEA.

†*Arcomya* (*Argyromya*) *fallax*, Lower Landenian, Belgium ; VINCENT, Bull. Soc. malac. Belgique, xxix, p. xxiii, fig. : n. sp.

*Lyonsia aegensis*, off Candia ; STURANY (335) p. 15, figg. : *L. jucunda*, N. Sentinel, Andaman Is. ; SMITH, Ann. Nat. Hist. xviii, p. 374 : n. spp.

*Pecchiolia berenicensis*, Eastern Mediterranean ; STURANY (335) p. 15, figg. : n. sp.

†*Periploma rugosa*, Eocene, Belgium ; VINCENT, Bull. Soc. malac. Belgique, xxix, p. lxvii, fig. : n. sp.

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- Pholadidea penita*, and its method of boring; LLOYD, *Science*, iv, pp. 188-190, figg.  
*Xylotrya fimbriata*, organisation of the larva and post-larval development; SIGERFOOS, *Johns Hopkins Univ. Circ.* xv, pp. 87-89, figg.

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- Corbula gibba*, Olivi, var., is the correct name for the species in the Upper Antwerp Sands; DAUTZENBERG & DOLLFUS, *Pr.-verb. Soc. malac. Belgique*, xxv, p. xviii.  
*C. compressa*, South Australia; VERCO, *Tr. R. Soc. S. Austral.* xx, p. 230, figg. : n. spp.  
 †*Bhippurites*, n. g., for †*B. plicatus*, n. sp., Cretaceous of the Carnatic Alps; FUTTERER, *Pal. Abh.* vi, p. 263, figg. : notes on; BOEHM, *Zeitschr. Deutsch. geol. Ges.* xlvi, p. 686, figg.  
 ? *Blairiella*, n. g., p. 6, for †*B. sedaliensis*, n. sp., p. 7, Chouteau Limestone, Missouri; MILLER & GURLEY, *Bull. Illinois Mus.*, No. 11, figg.  
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*Horiodacna*, n. g., for †*H. rumana*, n. sp., Miocene, Roumania; STEFANESCU (326), p. 66, figg.  
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- Anodonta sogdiana*, Turkestan; KOBELT, *Nachrbl. Deutsch. malak. Ges.* 1896, p. 102 : *A.*, 3 alleged new species from Sweden; DROUET, *J. Conchyl.* xliii, pp. 220-222 : n. spp.  
 †*Anthracomya*, monograph on British species concluded; HIND (141).  
 †*Astarte*, species from the Belgian Eocene, some new; VINCENT (364).  
 †*Carbonicola*, monograph on British species concluded; HIND (141).  
*Cardiniopsis*, n. g., p. 53, for *C. unioides*, n. sp., Cretaceous, California; STANTON, *Bull. U. S. Geol. Surv.*, No. 133, figg.

- Carditella smithii*, Bermuda ; DALL, Bull. Lab. Iowa, iv, p. 16 : n. sp.  
*Condylocardia*, n. g., for *C. sancti-pauli*, St. Paul I., *crassicosta*, *concentrica*, Stewart I., p. 196, *australis*, St. Paul I., p. 197 ; BERNARD, Bull. Mus. Paris, ii.  
*Corbicula coloniensis*, Uruguay ; PILSBRY, P. Ac. Philad. 1896, p. 562, fig. : n. sp.  
*Cyrenoidea floridana*, Florida, † *caloosaënsis*, Pliocene, Florida ; DALL, Nautilus, x, p. 52 : n. spp.  
*Glabaris simpsonianus*, Rio de la Plata ; PILSBRY, P. Ac. Philad. 1896, p. 565, fig. : n. sp.  
*Isorropopon*, n. g., for *I. perplexum*, n. sp., off Alexandria ; STURANY (335) p. 17, figg.  
*Lepidodesma*, n. g., for *Unio languilati*, Heude ; SIMPSON, P. U. S. Mus. xviii, p. 311.  
*Lucina amorpha*, off Alexandria ; STURANY (335) p. 16, figg. : n. sp.  
*Microstagon*, n. n. for *Goodallia*, Desh., non Turton ; COSSMANN (63) p. 11.  
† *Naiadites*, monograph on British species concluded ; HIND (141).  
*Pisidium*, notes on ; STERKI (329) : *P. ovatum*, Cless., a survival from glacial times in the Black Forest ; SANDBERGER, Verh. Ver. Karlsruhe, xi, pp. 344 & 345.  
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*Psilunio*, n. g., for † *Unio craiovensis*, Tourn. ; STEFANESCU (326) p. 44.  
*Remondia*, Gabb., belongs to the *Crassitellitidae*, not to *Trigoniidae* ; STANTON, P. U. S. Mus. xix, p. 299, figg.  
*Sciobertia australis*, its anatomy, development, &c. ; BERNARD, Bull. Sci. France Belgique, xxvii, pp. 364–395, figg.  
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†*Limopsis*, species from the Belgian Eocene, including †*L. lucida*, n. sp. ; VINCENT, Pr.-verb. Soc. malac. Belgique, xxv, p. xxxiv, figg.  
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- Leda cellulita*, p. 1, Puget Sound, *leonina*, off coast Washington Territory, *conceptionis*, West Coast, North America, p. 2 ; DALL, Nautilus, x : n. spp.  
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- Planktomya*, n. g. for *P. henseni*, n. sp., Atlantic Ocean ; SIMROTH (305) p. 28.

## V. AMPHINEURA.

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## VIII. BRACHIOPODA.

BY

B. B. WOODWARD, F.L.S., F.G.S., &c.

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 Miocene :—Species from near Avignon ; DEPÉRET, Bull. Soc. geol. France, xxiv, pp. 521 & 522.  
 Eocene :—*Brachiopoda* from Paris ; COSSMANN, Mem. Soc. malac. Belgique, xxxi, p. 47, with *Cistella houdasi*, n. sp.  
 Cretaceous :—Cenomanian fossils of S.-W. England and W. France ; JUKES-BROWN & HILL, Quart. J. Geol. Soc. lii, pp. 99-178.—Neocomian *Brachiopoda* from the Crimea (no new species) ; LORIOU (13).—Cretaceous *Brachiopoda* from the Caucasus, few new species ; LORIOU (13).—*Brachiopoda* of the Knoxville beds of the Pacific coast, 2 new species ; STANTON, Bull. U. S. Geol. Surv. No. 133, pp. 31-34, 1 pl.—Cretaceous *Brachiopoda* of Vancouver, with *Rhynchonella suciensis*, n. sp. ; WHITEAVES, Tr. Soc. Canada (2) i, p. 119, fig.  
 Jurassic :—Notes on British species ; MARSHALL (14).  
 Liassic :—Middle Lias species from Monte Calvi ; FUCINI, Pr. verb. Soc. Toscana, x, p. 123.  
 Triassic :—*Juvavellina*, n. g. ; BITTNER (4).—Muschelkalk fauna at Mt. Grigua, near Lake Como, with several new species ; PHILIPPI, Zeitschr. Deutsch. geol. Ges. xlvii, pp. 717-724, figg.—New species of *Waldheimia*, *Rhynchonella*, *Spirifer*, *Koninckina*, *Amphiclinodonta*, *Retzia*, *Spiriferina*, and *Lingula*, from Balia, Asia Minor ; BITTNER (5).—Muschelkalk fauna of the Gulf of Ismîd, Asia Minor, with new species ; TOULA, Beitr. Pal. Oesterr.-Ung. x, pp. 158-160, figg.  
 Palæozoic :—New species of *Crania* and *Pholidops* from the Palæozoic of the United States ; MILLER & GURLEY, Bull. Illinois Mus. No. 12, pp. 47 & 48.  
 Carboniferous :—Species from the Coal Measures of Arkansas ; SMITH, P. Amer. Phil. Soc. xxxv, pp. 237-243, figg.  
 Devonian :—Fossils from N. Devon, with new species of *Lingula* and *Spirifer* ; HICKS, Quart. J. Geol. Soc. lii, pp. 266-268, figg.—Fauna of the Pickwell Down, Baggy, and Pilton beds, with many nom. nuda ; WHIDBORNE, P. Geol. Ass. xiv, pp. 372, 375, & 376.—Devonian fossils of Rhineland, few new species ; MAURER, N. Jahrb., Beilage Bd. x, pp. 652-659, figg.—List of Lower Devonian species of *Spirifer* ; BÉCLARD (1).  
 Silurian :—Fauna of the *Dalmanites* Sandstone, near Giessen ; KAYSER, Schr. Ges. Marburg, xiii, pp. 25-31.  
 Ordovician :—Canada : several new species and *Lingulobolus*, n. g. ; MATTHEW (15).—Central Australia : *Orthis*, 2 species, 1 new ; Rep. Horn Scient. Exped. Central Australia, iii, p. 110, figg.  
 Cambrian :—Fauna of Tejšovic and Skrej in Böhmen, with new species of *Lingulella*, *Acrothele*, *Acrotreta*, and *Orthis* ; POMPECKJ, Jahrb. geol. Reichsanst. xlv, pp. 509-516, figg.—*Brachiopoda* of the *Agnostus levigatus* zone in West Gothland, with new species of *Lingula* and *Obolella* ; WALLERIUS, Geol. Foren. Stockholm Forh. xviii, p. 169.—*Brachiopoda* from *Protollemus* beds in New Brunswick ; MATTHEW, Tr. N. York Ac. xiv, pp. 113-128, figg.

## III. SYSTEMATIC.

- † *Aucella*: notes on the English and German species; PAVLOW, Quart J. Geol. Soc. lii, pp. 549 & 550, figg.
- † *Euobolus*, n. subg. of *Obolus*, type *O. apollinis*, Eichw.; MICKWITZ, Mem. Ac. St. Petersb. iv, No. 2, p. 133.
- Juvavellina*, n. g. for † *J. kittlii*, n. sp., Trias, Alps; BITTNER, Verh. geol. Reichsanst. 1896, p. 132.
- † *Koninckella*, Munier-Chalmas } relationship between; BOESE, Zeitschr.  
 † *Koninckina*, Suess . . . } Deutsch. geol. Ges. xlvi, pp. 925-931,  
 figg.
- † *Leptembolon*, n. subg. of *Obolus*, type *O. linguleformis*, n. sp.; MICKWITZ, Mem. Ac. St. Petersb. iv, No. 2, p. 199.
- Lingulobolus*, n. g., type † *Lingulella* (?) *affinis*, Billings, Ordovician; MATTHEWS, Tr. Soc. Canada (2) i, p. 260.
- Lissopleura*, n. g., for † *Rhynchonella aequivalvis*, Hall; WHITFIELD, Bull. Amer. Mus. viii, p. 232, figg.
- Obolus*, Eichw., monograph of the genus with *Euobolus*, *Thysanotos*, and *Leptembolon*, new subgenera and many new species; MICKWITZ, Mem. Ac. St. Petersb. iv, No. 2.
- † *Spirifer*: attempt at a classification of the genus; SCUPIN (17): list of Lower Devonian species; BÉCLARD (1). † *S. exsuperans*, De Kon., and its genetic relations; ETHERIDGE, Rec. Geol. Surv. N. S. Wales, v, p. 43, figg.
- † *Terebratula perforata*, DeFrance, not *T. grandis*, Blum., is the correct name for the large Lower Pliocene species; DAUTZENBERG & DOLLFUSS, Pr.-verb. Soc. malac. Belgique, xxv, p. xxi.
- † *Thysanotos*, n. subg. of *Obolus*, type *O. siluricus*, Eichw.; MICKWITZ, Mem. Ac. St. Petersb. iv, No. 2, p. 194.

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N.B.—Attention was called in the 1893 Record (Vol. xxx), *Brach.* pp. 2 & 3, to certain new suborders and families, which, however, were not repeated in Systematic part, so that it may be well to mention them here. They were:—*Paterinidæ*, *Lingulellidæ*, *Lingulasmaticæ*, *Trematidæ*, *Acrotretidæ*, *Trullaceæ*, *Kutorginidæ*, *Clitambonitidæ*, *Thecaceæ*, *Billingsellidæ*, *Rafinesquinæ*, *Rostraceæ*, ? *Eichwaldiidæ*, *Trigonotretinæ*, *Dalliniæ*, and *Magellaninæ*.

## IX. BRYOZOA.

BY

FLORENCE BUCHANAN, B.Sc.

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## I. TITLES.

1. CALVET, L. Résultats scientifiques de la Campagne du "Caudan" dans le Golfe de Gascogne. Bryozoaires. Ann. Univ. Lyon, xxvi, pp. 251-269, pl. vii.
2. DOUXAMI, H. Études sur les Terrains Tertiaires du Dauphiné, de la Savoie, et de la Suisse occidentale. Description de quelques fossiles nouveaux ou peu connus des Terrains Tertiaires de la Savoie et du Dauphiné septentrional. Ann. Univ. Lyon, xxvii, *Bryozoa*, p. 299.
3. GREGORY, J. W. (1) A revision of the British Jurassic *Bryozoa*.  
Pt. III: The genus *Berenicia*. Ann. Nat. Hist. xvii, pp. 41-48.  
Pt. IV: The genera *Reptomultisparsa* and *Diastopora*. *T. c.* pp. 151-155.  
Pt. V: The families *Idmoniidae* and *Entalophoridae*. *T. c.* pp. 194-201.  
Pt. VI: The *Fascigeridae*, *Thenoidae*, *Dactylethrata*, and *Trepotomata*. *T. c.* pp. 287-295.
4. ——. (2) Catalogue of the fossil *Bryozoa* in the British Museum (Natural History). The Jurassic *Bryozoa*. London: 1896, 239 pp., 11 pls. [Reviewed in Nat. Sci. ix, pp. 334 & 335, by Waters. See also HARMER (2).]
5. HARMER, S. F. (1) On the development of *Lichenopora verrucaria*, Fabr. P. R. Soc. London, lix, pp. 73 & 74; Quart. J. Micr. Soc. xxix, pp. 71-144, pls. vii-ix, 2 figg. in text.

6. [HARMER, S. F.] (2) Notes on Cyclostomatous *Polyzoa*. P. Cambridge Soc. ix, pp. 208-214.
7. ——. (3) *Polyzoa*. Cambridge Natural History. Vol. II, chaps. xvii-xix, pp. 465-533, 25 figg.
8. HENNIG, A. (1) Bryozoer från Vestgrönland, samlade af Dr. Ohlin under "the Peary auxiliary expedition" år 1894. Ofv. Ak. Forh. liii, pp. 351-367.
9. ——. (2) Studier öfver Bryozoerna i Sveriges Kritsystem. II. *Cyclostomata*. Acta Univ. Lund. xxx (1893-94) No. viii, 46 pp., 2 pls., 25 figg. in text.
10. KAYSER, E. Die Fauna des Dalmanitensandsteins von Kleinlinden bei Giessen. Schr. Ges. Marburg, xiii, pp. 1-42, pls. i-v, *Bryozoa*, p. 31.
11. KRAEPELIN, K. Phagocyten bei Bryozoën. Zool. Anz. xix, pp. 507 & 508.
12. LAMBE, L. M. Description of a supposed new genus of *Polyzoa* from the Trenton Limestone at Ottawa. Canad. Rec. vii, pp. 1-3, pl. i.
13. MAITLAND, R. T. Zonderling dierlijkproduct zoarium in de binnenwateren van Zeeland; *Eschara lapidescens* van Baster. Tijdschr. Nederland. Dierk. Ver. v, pp. 10-14.
14. NAMIAS, I. Sie alcune forme briozoarie del Mar Rosso. Atti. Soc. Modena, xiii, pp. 93-96.
15. NEVIANI, A. (1) Appunti bibliografici per servire alla storia degli studi sui Bryozoi. Prima serie. (Continuation and end.) Riv. ital. Sci. Nat. xvi, pp. 35-38.
16. ——. (2) Briozoi neozoici di alcune località d'Italia. Pt. III. Nos. ix-xi. Boll. Soc. Rom. Zool. v, pp. 102-125, 10 figg.
17. ——. (3) Briozoi postpliocenici di Spilinga (Calabria). Atti Acc. Gioen. (4) ix, Mem. ix, 67 pp., 32 figg.
18. NORDGAARD, O. Systematisk fortegnelse over de i Norge hidtil observerede arter af marine *Polyzoa*. II. *Cyclostomata*. Bergens Mus. Aarbog. 1896, No. 2, 6 pp.
19. OSTROUMOFF, A. Otchet o draghïrovkakh i planktonn'ikh ulovakh ékspeditzii "Selyanika." [Report on dredgings and plankton to "Silânik" Expedition.] In Russian. Bull. Ac. St. Petersb. v, pp. 33-93.  
Include list of *Bryozoa* from various stations.
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21. SEELIGER, O. Ueber Natur und allgemeine Auffassung der Knospenfortpflanzung der Metazoen. Verh. deutsch. Zool. Ges. vi, pp. 25-58.  
*Bryozoa*, pp. 35-40, 6 figg.

## II. BIOLOGY.

An excellent account of living *Polyzoa*, with special reference to the British forms, with tables for determining the genera, is given by HARMER (7). He also (5) gives a detailed account of the development of *Lichenopora*, and (6) describes embryonic fission in *Idmonea serpulens*,



L. He insists upon the importance of the ovicell in classification, and criticises GREGORY'S classification, see (4), showing that some of the so-called "gonocysts" are really modified zoecia or ovicells. He further describes the growth of colonies in the Cyclostomous *Polyzoa*. SEELIGER (21) discusses their reproduction by budding.

KRAEPELIN (11) describes the eating up of the spare eggs by phagocytes in freshwater *Polyzoa*. These phagocytes he had previously described as spermatozoa.

PERGENS has a note on species-making in fossil *Bryozoa*.

GREGORY'S catalogue of fossil Jurassic *Bryozoa* (4) combines the results of previous papers, and will prove a very useful work.

### III. DISTRIBUTION.

#### GEOGRAPHICAL.

##### *Marine Forms.*

Inglefield Gulf, Murchison's Sound, and Northumberland Island, W. Greenland :—21 species *Cheilostoma*, 6 species *Cyclostoma*; HENNIG (9).

Coasts of Norway :—Cyclostomous *Polyzoa*, 24 species; NORDGAARD.

W. Coast of Scotland :—*Polyzoa*, SCOTT, P. Phys. Soc. Edinb. cxxv, p. 181.

Irish Sea :—List of *Polyzoa* hitherto recorded; Rep. Brit. Ass. 1896, pp. 435-437.

Bay of Gascony :—Deep-water *Bryozoa*, free-living, and from oyster shells, corals, and dentalium shells, 27 species *Cheilostoma*, 12 species *Cyclostoma*; CALVET.

Sea of Marmora :—Several species; OSTROUMOFF.

Red Sea :—7 species, at depth of 320 m., in Gulf of Suez; NAMIAS.

S. of Tropic of Capricorn, and Kerguelen Region especially, in both deep and shallow water; MURRAY, Tr. R. Soc. Edinb. xxxviii, pp. 366, 389, 406, 429, & 448.

##### *Fresh-water Forms.*

Zeeland :—Brackish and freshwater *Eschara*; MAITLAND.

Azores :—*Plumatella repens* in five of the islands; RICHARD (2) p. 176.

Algeria :—(swamp of Kharezas): *Plumatella repens*, L.; SARS, Arch. Naturv. Christian. xviii, No. 7, p. 25.

#### GEOLOGICAL.

Postpliocene :—At Spilinga (C. Vaticano, near Mt. Poro), at height of 450 m., 72 species, of which 4 had not been found fossil before; NEVIANI (17), and (16, No. x). At Livorno, 41 species, NEVIANI (16, No. xi).

Tertiaries :—Of Dauphiny; DOUXAMI. Pliocene :—Of Monte Leone, Calabro Limestone, 43 species, of which one, *Membranipora hexagona*, had not been found fossil before, but only living in the Atlantic Ocean; NEVIANI (16, No. ix).

Swedish Cretaceous formations :—Cyclostomous *Polyzoa*, 61 species, 15 new and 2 new genera, with table of the distribution of the species in time; HENNIG (9). Jurassic *Bryozoa* :—S. England: 14 species of *Berenicea*, 1 of *Reptomultisparsa*, 6 of *Diastopora*, 1 of *Idmonea*, 3 of *Entatophora*, 5 of *Spiropora*, 2 of *Haplooeecia*, 2 of *Ceriocara*, 1 of *Fasciculopora*, 1 of *Apseudesia*, 3 of *Theonoea*, 2 of *Actinopora*, 1 of *Kololophus*

2 of *Multiclausa*, 1 of *Terebellaria*, 2 of *Ceriopora*, 3 of *Heteropora*; GREGORY (3). Dolomite sandstone near Giessen: *Bryozoa*; KAYSER.

Coal Measures:—Arkansas: 3 *Bryozoa*; SMITH, P. Amer. Phil. Soc. xxxv, p. 237.

Trenton Limestone:—Ottawa: a new genus of *Fenestellidæ* (?); LAMBE (12).

#### IV. SYSTEMATIC.†

##### ENTOPROCTA.

[None.]

##### ECTOPROCTA.

###### GYMNOLÆMA.

###### CYCLOSTOMA.

- † *Actinopora*, d'Orb., diagnosis of genus and its 2 British Jurassic species; GREGORY, Ann. Nat. Hist. xvii, p. 288.
- † *Amplexoporidæ*, diagnosis of fam. and its 1 British Jurassic genus; GREGORY, t. c. p. 293.
- † *Apsendesia*, Lamour., diagnosis of genus and its 1 British Jurassic species; GREGORY, t. c. p. 287.
- † *Astroporites*, n. g.,? belonging to the *Fenestellidæ*, with *A. ottawaensis*, n. sp., Trenton Limestone, Ottawa; LAMBE, Canad. Rec. vii, p. 1.
- † *Berenicea sauvagei*, n. sp., Bradford Clay, Wilts, *B. portlandica*, n. sp., Portland Oolite, Wilts (p. 43), *B. parvitubulata*, n. sp., Cornbrash, Bradford Clay, and Gt. Oolite (p. 45), *B. coartata*, n. sp., Inf. and Gt. Oolite (p. 47), and 10 other British Jurassic species; GREGORY, Ann. Nat. Hist. xvii.
- † *Ceriocava*, Lamour., diagnosis of genus, and of *C. laxata*, n. sp., Inf. Oolite, Leckhampton, and 1 other British Jurassic species, GREGORY, t. c. p. 200.
- † *Ceriopora uva*, n. sp., Cretaceous, Sweden; HENNIG, Acta Univ. Lund. xxx, No. viii, p. 37.
- † *Clausidæ*, d'Orb., emended diagnosis of fam.; GREGORY, Ann. Nat. Hist. xvii, p. 291.
- † *Ceriopora*, Blainv., diagnosis of genus and its 2 British Jurassic species; GREGORY, t. c. p. 293.
- † *Diastopora*, Lamoureux, emended diagnosis of genus and of its 6 British Jurassic species; GREGORY, t. c. p. 152.
- Suborder *Dactylethrata*, with the British Jurassic fam. *Clausidæ*; GREGORY, t. c. p. 291.
- † *Entalophoridæ*, diagnosis of fam. and of its 4 British Jurassic genera (1 new), including *Entalophora*, with 3 species; GREGORY, t. c. p. 195. Another new genus; HENNIG (9).
- † *Fasciculipora fungosa*, n. sp., Cretaceous, Balsberg, Sweden; HENNIG, Acta Univ. Lund. xxx, No. viii, p. 29.
- † *Fascigeridæ*, d'Orb., diagnosis of fam. and its 2 British Jurassic genera; GREGORY, Ann. Nat. Hist. xvii, p. 287.

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A † is prefixed to the fossil forms.

- † *Fasciculipora*, d'Orb., diagnosis of genus and 1 British Jurassic species ; GREGORY, *t. c.* p. 287.
- † *Filifascigera irregularis*, n. sp., Cretaceous, Balsberg, Sweden ; HENNIG, Acta Univ. Lund. xxx, No. viii, p. 28.
- † *Haploecia*, n. g., of *Entalophoridae*, with *H. irregularis*, n. sp., Great Oolite, and with *H. (Pustulopora) straminea*, Phillips, as type sp. ; GREGORY, Ann. Nat. Hist. xvii, p. 199.
- † *Heteroporella variabilis*, n. sp., Cretaceous, Sweden, on oyster shells, HENNIG, Acta Univ. Lund. xxx, No. viii, p. 25.
- † *Heterotrypidæ*, Ulr., diagnosis of fam. ; GREGORY, Ann. Nat. Hist. xvii, p. 294.
- † *Heteropora*, Blainv., diagnosis of genus ; *H. laminata*, n. sp., Inf. Oolite and Bradford Clay, and *H. oviformis*, n. sp., Bradford Clay, and 1 other species ; GREGORY, *t. c.* p. 295.
- † *Hornera sparsipora*, n. sp., Cretaceous, Balsberg, Sweden ; HENNIG, Acta Univ. Lund. xxx, No. viii, p. 13.
- † *Idmoniida*, diagnosis of fam., of the genus *Idmonea*, and of the 1 British Jurassic species ; GREGORY, Ann. Nat. Hist. xvii, p. 294. *I. (turgionii)*, Nev. = *I. milneana*, d'Orb. ; NEVIANI, Boll. Soc. Rom. Zool. v, p. 124.
- I. irregularis* (Menegl.), distinguished from *Tervia folini* (Jullien) ; CALVET, Ann. Univ. Lyon, xxvi, p. 266. *I. serpens*, L., ovicells ; HARMER (2).
- † *Kololophus*, n. g., of *Theonoidæ*, for *K. (Radiopora) terquemi*, Haime ; GREGORY, Ann. Nat. Hist. xvii, p. 289.
- † *Lichenopora infundibuliformis*, and *L. suecica*, n. spp., Cretaceous, Balsberg, Sweden ; HENNIG, Acta Univ. Lund. xxx, No. viii, p. 35.
- † *Mesenteripora composita*, n. sp., Cretaceous, Balsberg, Sweden ; HENNIG, *l. c.* p. 5.
- † *Multiclausa jellyæ*, n. sp., Inf. Oolite, Cornbrash, and *M. haimeii*, n. sp., for (*Berenicea lucensis*, Haime) ; GREGORY, Ann. Nat. Hist. xvii, p. 291.
- † *Neuroporella*, n. g. of fam. *Entalophoridae*, with *N. ignabergensis*, n. sp., Cretaceous, Ignaberga, Sweden ; HENNIG, Acta Univ. Lund. xxx, No. viii, p. 26.
- † *Plethopora malmi*, n. sp., Cretaceous, Balsberg and Oppmanna, Sweden ; HENNIG, *l. c.* p. 31.
- † *Reptoclusa triangularis*, n. sp., Cretaceous, Sweden ; HENNIG, *l. c.* p. 8.
- † *Reptomultisparsa*, d'Orb., diagnosis of genus and of its 1 British Jurassic species ; GREGORY, Ann. Nat. Hist. xvii, p. 151.
- † *Retelia ? megalostoma*, n. sp., Cretaceous, Balsberg and Karlshamn, Sweden ; HENNIG, Acta Univ. Lund. xxx, No. viii, p. 39.
- † *Reticulipora recta*, n. sp., Cretaceous, Balsberg, Sweden ; HENNIG, Acta Univ. Lund. xxx, No. viii, p. 15.
- † *Semiclausa radiata*, n. sp., Cretaceous, Sweden, on oyster-shells ; HENNIG, *l. c.* p. 8.
- † *Spiridmonea*, n. g. of fam. *Idmoniida*, with *S. lundgreni*, n. sp., Cretaceous, Balsberg, Sweden ; HENNIG, *t. c.* p. 12.
- † *Spiropora*, Lamour., diagnosis of genus and of its 5 British Jurassic species ; GREGORY, Ann. Nat. Hist. xvii, p. 197.
- Tervia folini*, Jul. ; CALVET, Ann. Univ. Lyon, xxvi, p. 265.
- † *Theonoidæ*, Burk., diagnosis of family and its 3 British Jurassic genera (1 new) ; GREGORY, Ann. Nat. Hist. xvii, p. 288. *Theonea*, Lamour., diagnosis of genera and 3 species ; GREGORY, *t. c.* p. 290.
- † Order *Trepostomata*, diagnosis, with that of its 2 British Jurassic families ; GREGORY, *t. c.* p. 293.
- † *Terebellaria*, diagnosis of genus and its 1 British Jurassic species ; GREGORY, *t. c.* p. 292.

## CHEILOSTOMA.

- † *Bactridium calabrum*, n. sp., Postpliocene, Spilinga; NEVIANI, Boll. Soc. Rom. Zool. v, p. 117.  
 (*Eschara lapidescens*, v. Baster), from brackish water, Zeeland, = *Membranipora fossaria*, Hinckes, calcareous zoarium described; MAITLAND.
- † *Hippoporina circumcincta* and *spilingæ*, n. spp., Postpliocene, Spilinga, NEVIANI, Boll. Soc. Rom. Zool. v, p. 118.
- † *Porina impervia*, n. sp., Postpliocene, Spilinga, NEVIANI, *l. c.* p. 119.
- † *Retepora pignatarii*, n. sp., Postpliocene, Spilinga; NEVIANI, Boll. Soc. Rom. Zool. v, p. 119. *R. cellulosa*, L., in Tertiaries, Bas-Leyssin; DOUXAMI.
- Smittia koehleri*, n. sp., Bay of Gascony, CALVET, Ann. Univ. Lyon, xxvi, p. 259.
- Membranipora*, discussion of Dutch species; MAITLAND.
- † *Microporella manzonii*, n. sp., Postpliocene, Spilinga, NEVIANI, Boll. Soc. Rom. Zool. v, p. 118.
- Palmicellaria skenei*, Ell. & Sol., varr. *tridens*, *bicornis*, and *unicornis* shown to be different stages of development of the same zoecia; CALVET, Ann. Univ. Lyon, xxvi, p. 261.

## PHYLACTOLÆMA.

[None.]

# X. CRUSTACEA.

(Including GIGANTOSTRACA AND PANTOPODA.)

BY

FLORENCE BUCHANAN, B.Sc.

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## INTRODUCTION.

ORTMANN, whose views with regard to the classification of the Decapod *Crustacea* have been appearing in papers dealing with the separate families or groups for some years, has now published (126) his classification in a collected form, giving a genealogical tree to show the relationships of the different groups of *Decapoda* to one another, defining all the groups and the families they contain. DYBOWSKI (63) has published a

series of papers on the homology of the appendages in the different groups of *Crustacea*, comparing them with those of other Arthropods, but, as he has written in Polish, it is not very easy to follow him.

SOWINSKI (170) & (171) deals (in Russian) with the Malacostracous *Crustacea* of the Black Sea and Sea of Azof.

Good descriptions of marine Decapod *Crustacea* of the Indian Ocean are given by ALCOCK (1), ANDERSON (8), and HENDERSON (82); of the Malay Archipelago by DE MAN (104); of Europe by CAULLERY (37); while RATHBUN (135) publishes a well illustrated monograph of the genus *Callinectes*. The Systematic of the group *Lithodinea* is dealt with in detail by BOUVIER (26), that of the *Sergestidae* by HANSEN (80), who shows that very many of the so-called species of *Sergestes* are really larval forms.

An excellent account of Pelagic deep-sea Schizopods is published by CHUN (46, v), and SARS (157) has an important and well illustrated monograph on the *Mysidae* of the Caspian Sea.

BONNIER (23) describes in detail and gives good figures of many new *Cumacea* from the Gulf of Gascony, nearly doubling the number of species previously known in that group. The internal anatomy of the *Isopoda* is dealt with by NEMEC (118) and MARTYNOV (108), and a good many Terrestrial *Isopoda* are described in several papers by DOLLFUS; while SARS (155) continues his descriptions and figures of the Norwegian *Isopoda*, and concludes (156) his important monograph on the *Amphipoda* of the Caspian Sea.

The relationships of certain groups of the *Amphipoda* to one another is dealt with, but in Polish, by GARBOWSKI (65), his views being illustrated by a genealogical tree.

With regard to the *Entomostraca*, the most important works are those of SCHMEIL (160) on German freshwater Copepods, of SCOTT (T. & A.) on the British Copepods, of KARAWIEW (91) on those of the Black Sea, unfortunately in Russian, and of GIESBRECHT (71) on the Pelagic Copepods of the Red Sea, while those of the Gulf of Gascony are dealt with by CANU (35). SARS has a series of excellent papers on freshwater *Entomostraca* from different localities, raised from dried mud (149)-(154). The monograph of the marine and freshwater *Ostracoda* of the N. Atlantic and N. W. Europe by BRADY & NORMAN (28) is continued, and the *Cytheridae* of Switzerland are monographed by KAUFMANN (92). RICHARD (140) furnishes a monograph of the *Cladocera*, which, with its good bibliography, will probably be very useful.

In addition to these monographs and other works dealing with the anatomy of the different groups concerned, some more special papers may be here referred to. The most important are those of CHUN (46, vi), GIESBRECHT (72), and ROSENSTADT (144) on phosphorescent organs and eyes, and on the development of the eyes by ROULE (148); those of ALLEN (4), RATH (134), and BETHE (20) on the central and peripheral nervous system of Decapods; and the sense-organs of *Crustacea*, especially those of taste and smell, are made the starting-point for a discussion of those organs and their functions in general by NAGEL (114).

Several important memoirs on the development of *Crustacea* have appeared. Amongst these may be mentioned that on the embryonic development of *Palaeomon serratus* by ROULE (147, ii); of *Gebia littoralis* and of the *Cumacea* by BOUTSCHINSKY (in Russian, however); and of *Asellus aquaticus* by ROULE (147, i). The embryonic development of Amphipods is dealt with, and the formation of organs in the marine and the freshwater species of *Gammarus* compared, by ROSSYKAIA-KOJEVNIKOWA (146). SCHIMKEWITSCH (159) discusses that of parasitic Copepods, giving instances of gastrula formation both by emboly and epipoly, and BIGELOW (21) describes the early development of a Cirripede, showing the formation of a true gastrula stage there. The anatomy of the *Nauplius*

of Cirripedes is given by CHUN (46, v), and development of *Estheria* has been studied by SARS (149). The anatomy of the post-embryonic stage of *Leucifer* is given in detail by ROSENSTADT (146); the relations of late larval stages to the adult in *Sergestes* by HANSEN (80).

HERBST (83) has made interesting observations on the regeneration of organs in the place of eyes after artificial amputation in Decapods, and PRZIBRAM (133) has made similar experiments with the appendages of the *Entomostraca*.

Abnormalities in the development of *Homarus* are recorded by HER- RICH (84), and in that of *Limulus* by PATTEN (see p. 41).

HOLM publishes a preliminary account of the structure of Eury- pterids as made out by a new method, which promises to be the means of throwing a good deal of light on the relations of the group to the *Xiphosura* (see p. 40).

### I. TITLES OF CRUSTACEA PAPERS.\*

[For GIGANTOSTRACA, see p. 39; for PANTOPODA, see p. 42.]

1. ALCOCK, A. (1) Materials for a Carcinological Fauna of India. No. 2: The *Brachyura Oxystoma*. J. Asiat. Soc. Bengal, lxx, pp. 134-296, pls. vi-viii.
2. ———. (2) Description of a new species of *Branchipus* from Calcutta. T. c. pp. 538 & 539, pl. x.
3. ALCOCK, A., & ANDERSON, A. R. S. Illustrations of the zoology of the R. I. M. S. steamer "Investigator." *Crustacea*:—  
Pt. iii, 1895, pls. ix-xv.  
Pt. iv, 1896, pls. xvi-xxvii.  
Contains figures of species described by Alcock, and Alcock & Anderson, in papers in J. Asiat. Soc. Bengal, lxxiii & lxxiv, and in Ann. Nat. Hist. xiii, recorded last year.
4. ALLEN, E. J. (1) Studies on the nervous system of *Crustacea*. Quart. J. Micr. Soc. xxxix, pp. 33-50, pl. iv.
5. ———. (2) The protection of Crabs and Lobsters. J. Mar. Biol. Soc. iv, pp. 182-187.
6. APPELÖF, A. (1) Faunistiska undersøgelser i Herløfjorden. Bergens Mus. Aarbog, 1894-95, No. xi, 11 pp.
7. ———. (2) Faunistiska undersøgelser in Osterfjorden. *Op. cit.* 1896, No. xiii, 15 pp.
8. ANDERSON, A. R. S. An account of the deep-sea *Crustacea* collected during the season 1894-95. Natural history notes from the R. I. M. S. steamer "Investigator," Commander C. F. Oldham, R.N., commanding. Ser. II, No. 21. J. Asiat. Soc. Bengal, lxxv, pp. 88-106. Ill. Zool. R. I. M. S. steamer "Investigator": *Crustacea*, pt. iv, 1896, pl. xxv.  
———. [See also ALCOCK & ANDERSON (3).]
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11. AURIVILLIUS, C. Das Plankton des Baltischen Meeres. Bih. Svenska Ak. xxi, Afd. iv, No. 8, pp. 1-83, 1 pl., 1 map.

\* An asterisk prefixed to a quotation indicates that the Recorder has not seen the Journal or Work referred to.

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13. ——. (2) Notes on the parasitic *Copepoda* of fish obtained at Plymouth, with descriptions of new species. *Ann. Nat. Hist.* xviii, pp. 8-17, pls. iii-vi.
14. BELL, F. J. "The Claims of Priority," and what they are sometimes worth. *Ann. Nat. Hist.* xviii, pp. 476 & 477.
15. BENEDICT, J. E. (1) Preliminary descriptions of a new genus and three new species of Crustaceans from an artesian well at San Marcos, Texas. *P. U. S. Mus.* xviii, 1895, pp. 615-617.
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As to whether *P. pubescens* really occurs in European waters.
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18. BERNARD, H. M. Hermaphroditism among the *Apodidae*. *Ann. Nat. Hist.* xvii, pp. 296-309, pls. xi & xii.
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In Russian. Isopod *Crustacea*.
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## II.—BIOLOGY.

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Comparison of appendages of the different groups of *Crustacea* with one another and with those of Annelids, of Arachnids, and of Myriapod and Hexapod insects; DYBOWSKI.—Homology of joints of antennæ in the *Amphipoda*, comparison with other *Malacostraca*; GARBOWSKI (1).

Anatomy of *Leucifer*; ROSENSTADT (2): of *Sergestes*; HANSEN: of

*Callinectes*; RATHBUN (1): of pelagic deep-sea Schizopods; CHUN (3, v): of Amphipods; SARS (8): of Isopods; DOLLFUS: of Copepods (freshwater, Germany); SCHMEIL.

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"Branchiæ" of Cirripedes; GRUVEL (1).

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### EXCRETORY SYSTEM.

Reduction of antennary glands and shell glands, and development of peculiar organs in last three thoracic and certain abdominal segments in Isopods; NĚMEC (1).—Comparison of antennary and shell glands in different genera of the *Oniscidæ*; development of the shell gland in *Asetlus*; Zenker's gland; NĚMEC (4).—Antennary glands (symmetrical), and shell glands, in *Acanthostoma*-stage of *Leucifer*; ROSENSTADT (2).—Antennary gland in *Crangonyx*; VEJDOWSKY.

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Processes of nerve cells in some of the sense hairs of appendages of *Astacus*, although not in others; structure of the two kinds of hairs and their respective distribution; BETHE (2).—Nerves to sense hairs of appendages of *Palæmon* and to those of telson of *Mysis*; HOLMGREN.—Sensory nerves and their terminations in *Astacus*, *Niphargus*, and in *Palæmon* and other marine Decapods; RATH.

Facet eyes and phosphorescent organs in deep-sea Schizopods and *Sergestida*, their structure and morphology; CHUN (3, vi) and (2).—The source of light in the phosphorescent organs; GIESBRECHT (2).

Structure of compound eyes of Decapods; ROSENSTADT (1).—Movement of pigment in eyes of *Palæmonetes*; PARKER: in other Decapods; ROSENSTADT (1).—Embryonic development of compound eyes of Arthropods; ROULE (2).—Atrophy of eyes, or their replacements by antennæ, in cave-dwelling Amphipods and Isopods; VIRÉ (4).—Notes on eye of *Cyclops*, or rather the cluster of ocelli representing it; Int. J. Micr. vi, pp. 304–306.

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Hermaphroditism in *Crustacea*, with special reference to its occurrence in the *Apodida*; BERNARD.—Failure to find traces of it in Australian *Apodida*; SPENCER & HALL (2).—External signs of hermaphroditism in *Cladocera*; GROCHOWSKIEGO.—A specimen of *Leucifer reynaudi*, ♂ on the one side, ♀ on the other; ROSENSTADT (2).—Signs of hermaphroditism being a primitive condition in Isopods; NĚMEC (1).

## DEVELOPMENT.

Of *Palæmon serratus*; ROULE (1, ii): of *Leucifer reynaudi*; ROSENSTADT (2): of *Gebia littoralis*; BOUTSCHINSKY (24, p. 113): of *Sergestes*; HANSEN: of the *Cumacea*; BOUTSCHINSKY (24, pp. 1–112): of *Asellus aquaticus*; ROULE (1, i): of *Gammarus pulex*, and comparison with that

of other Amphipods ; RUSSYSKAIA-KOJEONIKOVA : of Cirripedes (*Nauplius*-stage and its development to *Cypris*-stage, absence of true *Archizoöa*-stage) ; CHUN (3, iii).—Segmentation in Cirripedes shown to be more regular than was previously supposed ; BIGELOW.—Notes on recent researches on the development of Isopods ; Nat. Sci. viii, p. 84, and KNOWER : on recent researches on the development of Cirripedes ; Nat. Sci. viii, pp. 84 & 287.

Development of parasitic Copepods ; SCHIMKEWITCH (1) & (2).—Parasitic *Nauplius*-stage of 2 *Monstrillidæ*, which free-swimming when adult ; MALAQUIN : of another species ; GIARD.

Abnormalities in development of lobster ; HERRICK.

#### VARIATIONS AND REGENERATION OF PARTS.

Changes in dimension of parts of carapace of *Carcinus mænas* ; H. THOMPSON (179).—Variation in *Portunus depurator* ; WARREN.—Variations in *Apus* ; SPENCER & HALL (2).

A *Carcinus* with a right-handed walking leg on the left side ; BETHE (1).—Deformed claws and bifurcated rostrum in *Homarus* ; a bilobed ovary, abnormal segmentation, invagination, and *Nauplius*- and *Mysis*-stages (including two double monsters) in *Homarus* ; HERRICK (84).—Deformed claws and abdomens in *Callinectes* ; RATHBUN (1, p. 366).

Regeneration in lobster ; HERRICK, p. 100 : of antenna-like organs in the place of eyes in *Palæmon serratus* and *Sicyonia sculpta* ; HERBST (1) & (2).—Atrophy of eyes, or their replacement by antennæ, in cave-dwelling Amphipods ; VIRÉ (4).—Regenerated abnormal antennæ replaced, after several ecdyses, by normal ones, in *Daphnia* ; PRZIBRAM.

#### HABITS, ECONOMIC NOTES, &c.

Habits of American lobster, and relation of the number of eggs to the size of female therein and in *Cambarus* ; HERRICK (pp. 14-99, 160, & 217), LATASTE.—The protection of crabs and lobsters ; ALLEN (2), WOZELKA-IGLAU.—Relation between number of eggs and quantity of water in Copepods ; SCHMEIL.

Methods of balancing in pelagic Amphipods, Copepods, and larval Decapods ; CHUN (3, iii).

Resistance of Phyllopods to desiccation ; PRINCE, SARS (1) & (4), SPENCER & HALL (2) : of other *Entomostraca* ; SARS (2) & (3), (5) & (6).

Cave-dwelling *Crustacea* ; VIRÉ, v. LENDENFELD : subterranean ; VEJDOWSKY.

Freshwater Plankton ; APSTEIN, WESENBERG-LUND.

*Crustacea* which have been assigned to Molluscan genera ; LOCARD.

Copepods parasitic in Polychætes : in special cavities communicating with the exterior in *Polydora* ; GIARD : inside the vascular system of certain Serpulids ; MALAQUIN.—Crustacean parasites on fish ; ZSCHOKKE, Centrbl. Bakter. xix, p. 774, BASSETT SMITH : on *Chimæra monstrosa* (1 Isopod and 3 Copepods) ; OLSSON : in vas deferens of *Nephrops* ; J. S. THOMPSON (181) : in branchial cavity of Cumacea ; BONNIER.

#### PARASITES.

Of *Brachyurus* and Anomurous Decapods ; VAULLEGEARD.

Cysticeroids of freshwater *Crustacea* ; MRÁZEK.

2 species of *Distomum* in *Astacus* ; ZSCHOKKE, Centrbl. Bakter. xix, p. 774.

A Copepod parasitic in vas deferens of *Nephrops norvegicus* ; J. S. THOMPSON : in the branchial cavity of Cumacea ; BONNIER.

## CLASSIFICATION.

Of Decapods; ORTMANN (2): of the *Lithodinea*; BOUVIER.—Of Schizopods; CHUN (3, v).—Of Amphipods; GARBOWSKI.

## III.—DISTRIBUTION.

## 1.—GEOGRAPHICAL.

## (a) LAND AND FRESHWATER FORMS.

Adaptations of marine forms to freshwater conditions; WESENBERG-LUND.—Marine forms in an inland lake in I. of Kildin; KNIPOWITSCH: in the Kaiser Wilhelm canal; BRANDT.—Representation of marine genera of Amphipods in the Caspian Sea; SARS (8) & (9).

*Palæarctic Region.*

Geographical distribution of *Armadillidæ* in Europe; DOLLFUS (7).—Freshwater Ostracods of N. W. Europe; BRADY & NORMAN.

Shetland Is.: Freshwater *Entomostraca*, 8 species; SCOTT & DUTHIE.—Perthshire Lochs: 45 species of *Entomostraca*; T. SCOTT (1).

Sweden: Land Isopods, 16 species enumerated; some Danish species not yet found in Sweden mentioned; BUDDE-LUND (1).

Murmanian Coast:—A lake in I. of Kildin: marine and freshwater zones; KNIPOWITSCH.

Siberia: 3 Isopods; BIRULA.

Channel Is.:—Jersey: Presence of *Gammarus berillioni*, which hitherto only known from Pyrenees; CHEVREUX (3).

Bois du Boulogne: Freshwater Ostracod; RICHARD (1).—Catacombs of Paris: 1 Amphipod and 2 Isopods; VIRÉ (3).—Jura Caves: New Amphipod; CHEVREUX; 3 Isopods; DOLLFUS, VIRÉ.

Denmark: Freshwater *Crustacea*; WESENBERG-LUND.

Germany: Land Isopods (including 3 new species); VORHOEFF: Free living freshwater Copepods of the families *Harpacticidæ* and *Centropagididæ*; SCHMEIL.—Brandenburg: Freshwater *Entomostraca*; HARTWIG.—Riesengebirge (moorland waters): 2 *Cladoc.* and *Cop.*; ZACHARIAS.—Württemberg (wells): Blind Crustaceans; LAMPERT (1).—Tegernsee: 3 *Cladoc.* and 2 *Copep.*; RICHARD, Zool. Anz. xix, p. 29.

Alpine Lakes: Ostracods (*Cytheridæ*); KAUFMANN: *Cladocera*, *Copepoda*, and *Ostracoda* of 18 lakes in Tessin; FUHRMANN.—Aachensee and Bodensee: preliminary account of Hofer's observations on distribution of pelagic Crustaceans; CHUN (1).—Lake Mezzola: *Entomostraca*, 4 species *Clad.*, 1 *Ostr.*, 3 *Copep.*; RIZZARDI (2).

Hungary:—L. Tatri: 12 species *Copep.*, 23 *Cladoc.* (1 new), and 4 *Ostrac.*; DADAY.—Balkan Region:—Land Isopods: 15 species, *Porcellio* very common; DOLLFUS (5).—Transylvania: New Land-Isopod; BUDDE-LUND (2).

Italy: Freshwater pelagic species, absence of *Daphnia*, presence of 2 species of Ostracods which are rare in Italy; RIZZARDI (2).—Sicily: Terrestrial Isopods; DOLLFUS (8).

Islands of Greece: Land Isopods, 30 species (6 new); BUDDE-LUND (2). Candia: 28 species of Crustaceans; CECCONI.

Portugal: Freshwater *Copepoda* and *Cladocera*, 25 species enumerated, most of them common ones; GUERNE & RICHARD.

Azores: Freshwater *Ostrac.* (7 sp.), *Copep.* (5 sp.), *Cladoc.* (11 sp.); RICHARD (2) pp. 172–176.

N. Africa : Terrestrial Isopods, 72 species, of which 69 occur in the desert (of these 27 also in Spain, 19 in Sicily, and 27 peculiar to desert); DOLLFUS (9) : of Tunis (I. of Djerba), 3 species; ESCHERICH, Verh. Ges. Wien, xlvi, p. 273 : of Tripolitana, 2 species; RIZZARDI (1).—Algeria : 7 species *Cladoc.*, 4 *Ostrac.*, 1 *Copep.*; SARS (3).

Caspian Sea : *Amphipoda* (list of 53 species), and *Mysidæ*; SARS, Bull. Ac. St. Petersb. iii & iv.

Turkestan : Pond near Boukhara, new species of Copepod; GUERNE & RICHARD (1).

### *Oriental Region.*

Calcutta : A new species of *Branchipus*; ALCOCK (2).

### *Australian Region.*

N. Australia : 2 new Phyllopods; SARS (4).

New South Wales : 2 new species of *Pontella*; KRÄMER.—Sydney : 20 species freshwater *Cladocera*, 13 *Ostracoda*, 9 *Copepoda*; SARS (2).

Central Australia : Phyllopods, 8 species (of *Apus*, *Estheria*, *Eulimnadia*, and *Limnadia*), and Decapods (*Astacopsis bicarinatus* and *Telephusa transversa*); SPENCER & HALL (2).

W. Australia : 2 *Phyll.*, 1 *Clad.*, 2 *Ostrac.*; SARS (5).

### *Ethiopian Region.*

S. Africa : Land-Crab from Kazungula; NOBILI (3).—Freshwater *Entomostraca* from swamp near Knysna (9 species *Cladoc.*, 10 *Ostrac.*, 1 *Copep.*; SARS (6).

Erithrya : a new *Apus*; PRATO.

Gaboon : a new Grapsid; DE MAN (2).

### *Neotropical Region.*

Argentine Republic, Uruguay, and Paraguay : 7 species freshwater Decapods (5 *Brachyura*, 2 "*Macrura*"); NOBILI (1).

West Indies :—Costa Rica : 2 new freshwater crabs; RATHBUN (2).—Jamaica : 1 freshwater and 1 land crab (new); RATHBUN (3).—St. Vincent, Grenada, and Mustique Is. : Terrestrial Isopods; DOLLFUS (1).

Panama : New genus of Decapod; NOBILI (2) : Terrestrial Isopods; DOLLFUS (6).

Mexico : Terrestrial Isopods; DOLLFUS (4).—Texas : A new genus of Isopod, a new species of Amphipod, and one of Decapod from an Artesian well at San Marcos; BENEDICT (1).

## (b) MARINE FORMS.

Geographical distribution of *Hippidea*; ORTMANN (1) : of *Lithodidea*; BOUVIER : of *Sergestes*; HANSEN.

Extra-tropical corresponding species in N. and S. hemispheres (1 *Dec.*, 8 *Amphip.*, 3 *Isop.*, 3 *Cum.*, 1 *Cirrip.*, and 5 *Ostrac.*); MURRAY, p. 456. This Bipolarity not supported by Decapod *Crustacea*; ORTMANN (2).

Arctic species in Caspian Sea; SARS (8).

### *Arctic Ocean.*

Baffin's Bay and Smith Sound: 12 *Decap.*, 1 *Schizop.*, 5 *Cumacea*, 8 *Isop.*, 50 *Amphip.*, 1 *Nebalia*, 2 *Phyllop.* (*Branchipoda*); OHLIN.

Coast of Norway : Crustaceans of different fjords at different seasons ; HJORT :—Isopods : *Apseudidae* and *Tanaidae*, 25 species ; SARS (7).—Herløfjord : 10 species Decapods ; APPELÖF (1).—Osterfjord : 14 species Decapods ; APPELÖF (2).

*Atlantic Ocean (North).*

Schizopods and Decapods : several genera new to the Atlantic ; CAULLERY.—Distribution of *Corophium* in European seas ; SOWINSKY (3).—52 species of marine Ostracods, N. of 35° N., or in deep water further S. ; BRADY & NORMAN.

S.W. of Ireland : Deep-sea stalk-eyed Crustaceans, enumeration of species, including 9 hitherto not known to be British (with 2 new genera) ; CALMAN (2).—W. coast of Ireland, off Valencia : Copepods ; THOMPSON, I. C.—W. coast of Scotland : 148 species Crustaceans ; T. SCOTT (2) pp. 172–175.—Firth of Clyde : Copepods ; T. & A. SCOTT (1).—Solway Firth (Salt marsh pools at Seaton Sluice) : Crustaceans, chiefly Entomostraca (Copepods and Ostracods) ; BRADY, pp. 19–33.

Irish Sea : List of Crustaceans hitherto recorded ; Rep. Brit. Ass. 1896, pp. 437–442.—Amphipods, compared with Norwegian ones ; WALKER (3).—Ostracods and Copepods from mussel-beds of Morecambe Bay ; SCOTT, A., P. Liverp. biol. Soc. x, pp. 127, 129, & 131 : new or rare Copepods ; *id.*, *t. c.* pp. 134–158.—Liverpool Bay (Hilbre I.) : a new species of *Bradya* ; near Port Erin : 3 new species of *Ectinosoma* ; Barrow Channel : a new species of *Ectinosoma* ; SCOTT, T. & A. (2).—Crustacea of Isle of Man : *Schiz.* 2, *Cum.* 3, *Amphip.* 5 ; WALKER (3).

Plymouth : Parasitic Copepods of fish ; BASSETT-SMITH.

Channel Islands : List of *Schizopoda*, *Cumacea*, *Isopoda*, and *Amphipoda* ; WALKER & HORNELL.—St. Vaast La Hogue : 17 spp. *Dec.*, 1 *Cirrip.*, FAUVEL, Bull. Soc. Normand. ix, pp. lxxv & lxxvi.

North Sea.—Firth of Forth : Largo Bay (4 new species *Bradya*), off St. Ronan's (1 new species *Bradya*), off Musselburgh (6 new species of *Ectinosoma*), West of May I. and off Burnt-Island (1 new species of *Ectinosoma*) ; SCOTT, T. & A. (2).—Moray Firth : *Xantho florida* ; T. SCOTT (2) p. 172.

Baltic Sea, compared with extra Baltic : Brackish water, salt water, euryhaline, and a relict species (*Limnocalanus macrurus*, G. O. Sars) from glacial period ; AURIVILLIUS.

Bay of Biscay : I. of Yen, new Amphipod ; WALKER (1).—Bay of Gascony : deep-water Schizopods and Decapods, 48 species, of which 5 new and 2 more not known to occur before in Atlantic ; CAULLERY.—Copepods, 12 species ; CANU.—Edriophthalma, 52 species, including 12 *Cumacea*, of which 10 (all blind) are new, 15 *Isopoda* (14 new), 25 *Amphip.* (21 new) ; BONNIER.

Mediterranean.—Gulf of Genoa : Swarm of *Euphausia mülleri*, BRIAN.—Gulf of Naples : Schizopods ; CHUN (3).—Sicily : Macrurous Crustaceans ; RIGGIO.—Adriatic Sea : Copepod Plankton, 48 species ; CAR.

Sea of Marmora : Several species (2 new *Dec.*) ; OSTROUMOFF.

Black Sea : 11 spp. *Amphip.*, 5 *Isop.*, 3 *Schiz.*, 6 *Dec.* ; SOWINSKI (2) : Pelagic Crustaceans ; KARAWIEW (1) : Copepods at different depths and localities ; KARAWIEW (2) : Isopods ; SOWINSKI (1).—Sea of Azof : 10 spp. *Amph.*, 2 *Isop.*, 3 *Schiz.*, 3 *Dec.*, 3 *Cumacea* ; SOWINSKI (1).

Caspian Sea : Amphipods, presence of species belonging to marine genera ; SARS (8).—*Mysidae* ; SARS (9).

Madeira : Deep-sea Schizopods ; CHUN (3, v).

W. Indies.—Antigua : A Tanaid (*Leptochelia minuta*, Dana) only known before from the Fiji Is. ; STEBBING (1) & (2).—Near Jamaica and in Gulf of Mexico respectively : 2 new Brachyurous Decapods ; RATIBUN (3).

Newport, Rhode I. : Marine Amphipods, 3 species ; JUDD.



*Indian Ocean.*

Deep-sea :—5 species Schizopods, 50 Decapods, 1 Isopod ; ANDERSON (1) : *Brachyura* and *Pagurida*, 17 species, chiefly deep-sea ; HENDERSON.—Shallow water (chiefly) : *Brachyura Oxystoma*, 112 species ; ALCOCK (1).

Seychelles Is. : New Amphipod ; CHEVREUX.

Red Sea : 15 species *Dec.*, 1 *Stomatop.*, 2 *Cirrip.* ; PRATO. Pelagic Copepods, 26 species ; GIESBRECHT.

Arabian Sea : Scarcity of Crustaceans in depth of 100–200 fathoms, several species at depth of 900 fathoms ; ANDERSON (1).

Malay Archipelago.—Java Sea : New Penæid ; DE MAN (2).—Atjeh : 7 species *Grapsida*, 11 *Oxystoma*, 18 *Anomura*, and 9 “*Macrura*” ; DE MAN.

Barnacles from Hong Kong(?) ; PILSBRY.

*Antarctic Ocean (with South Atlantic and South Pacific).*

S. of Tropic of Capricorn, excluding Kerguelen region, deep water, below 1000 fathoms : 19 species *Ostrac.*, 8 *Cirrip.*, 11 *Amphip.*, 7 *Isop.*, 25 *Decap.* ; MURRAY (pp. 385–388).

Kerguelen region, 150–1000 fathoms : 1 species *Amphip.*, 2 *Isop.*, 5 Decapods ; MURRAY, *t. c.* pp. 405 & 406.—Above 150 fathoms : 40 species *Ostrac.*, 2 *Cirrip.*, 48 *Amphip.*, 39 *Isop.*, 5 *Cum.*, 2 *Schizop.*, 4 Decapods ; MURRAY, *t. c.* pp. 420–424.—Deep-sea : 9 species *Ostrac.*, 6 *Cirrip.*, 5 *Amphip.*, 14 *Isop.*, 1 *Phylloc.*, 7 *Schizop.*, 9 Decapods ; MURRAY, *l. c.* pp. 362–365.—Near Kerguelen, specimen of *Ourozeuktés owenii* ; JENNINGS.

## 2.—GEOLOGICAL.

Tertiaries :—Of Savoy and West Switzerland ; DOUXAMI.—Pleistocene : Fulham—*Ostracoda* ; CHAPMAN (1).—Pliocene : California—*Ostracoda* ; CHAPMAN (2).—Miocene : Bavaria—*Ostracoda* ; LIENENKLAUS.

Mezozoic :—Cretaceous of Mecklenberg—*Ostracoda* ; GEINITZ & SCHACKO : of British N. America—*Decapoda* ; WHITEAVES : of Vancouver and Queen Charlotte I.—*Podophthalma* ; WOODWARD (1).

Palæozoic : — Barnacles ; CLARKE. — Carboniferous Limestone : Belgium—*Ostracoda* ; JONES : freshwater strata, Campsie ; YOUNG.—Lower Coal Measures : Illinois—*Apodida* ; SCHUCHERT.—Silurian : Holland—*Ostracoda* ; KRAUSE. — Ordovician : Minnesota—*Ostracoda* ; ULRICH.

## IV.—SYSTEMATIC.

## MALACOSTRACA.

## PODOPHTHALMA.

## DECAPODA.

Classification of *Decapoda*, dividing them into two main groups : (a) the NATANTIA, including the tribes *Penæidea*, *Eucyphidea*, and *Stenopidea*, and (b) the REPTANTIA, including all the other tribes, of which he makes 10 in all, the *Brachyura* being one ; ORTMANN (2). *Acanthophyra cristata*, Faxon, in Indian Ocean ; ANDERSON (1) p. 94, Ill. Zool. R.I.M.S. Invest., Crust. iv, pl. xxv, fig. 2.

- Actaeomorpha lapillus*, n. sp., off Ceylon, *A. morum*, n. sp., off Ganjam ; ALCOCK, J. Asiat. Soc. Bengal, lxxv, p. 172.
- Alpheus edwardsi*, Aud. : sexual differences, branchial formula, ambulatory appendages, telson and nervous system ; COUTIÈRE, Bull. Mus. Paris, p. 190. (Referred to as a *Betaeus*, p. 236.)
- Astacus* : plea for the retention of name, as opposed to Stebbing ; BELL.
- Betaeus jousseauimei*, n. sp., Red Sea, COUTIÈRE, Bull. Soc. ent. France, 1896, p. 313.
- Bresiliidae*, n. fam. of *Caridea* ; CALMAN, Tr. Irish Ac. xxxi, p. 7.
- Bresilia*, n. g. thereof, with *B. atlantica*, n. sp., W. Coast of Ireland, 750 faths. ; CALMAN, l. c. p. 7.
- Calappidae* : key to Indian genera and their species ; ALCOCK, J. Asiat. Soc. Bengal, lxxv, p. 139.
- Calappa pustulosa*, n. sp., off Ganjam and Orissa coasts, 25 faths., and *C. wood-masoni*, n. sp., S. Coast of Ceylon, ALCOCK, l. c. p. 147.
- Calastacus investigatoris*, n. sp., ♀ only, Indian Ocean (22° 14' N., 67° 09' E., 947 faths.) ; ANDERSON, J. Asiat. Soc. Bengal, xlv, p. 97, pl. xxv, fig. 1.
- † *Callianassa whiteavesii*, n. sp., Cretaceous, Vancouver ; WOODWARD, Quart. J. Geol. Soc. lii, p. 223.
- Callinectes* : revision of genus and key to species ; *C. sapidus*, n. sp. for the common *C. hastatus*, auct. (*non* L.), p. 352, *C. s. acutidens*, n. subsp., p. 354, and description of the 10 other N. American species ; RATHBUN, P. U. S. Mus. xviii, pp. 349-375.
- Caradina pasadenæ*, n. sp., streams about Pasadena (California). (*C. tenuirostris*) referred to genus *Virbius* ; KINGSLEY, Bull. Essex Inst. xxvii, p. 98.
- Catapagurus muricatus*, n. sp., E. Coast of Ceylon, 28 faths., HENDERSON, J. Asiat. Soc. Bengal, lxxv, p. 524.
- Clibanarius*, young of some species?, Gt. Sober I., Trincomali Harb. ; HENDERSON, l. c. p. 534.
- Corystes cassivelaunus*, habits and respiratory mechanism ; GARSTANG (3).
- Crangon vulgaris*, Seba, var. *maculosus*, Rthk., in Black Sea ; SOWINSKI (2) p. 276.
- Cyclograpsus parvulus*, n. sp., Atjeh, DE MAN, Zool. Jahrb. Syst. ix, p. 350.
- Dantecia*, n. g. of fam. *Pasiphaeidea*, with *D. caudani*, n. sp., Bay of Gascony ; CAULLERY, Ann. Univ. Lyon, xxvi, p. 372.
- Dichelopandalus*, n. subg. of *Pandalus*, with *D. bonnieri*, n. sp., Bay of Gascony ; CAULLERY, l. c. p. 379.
- Dorippidae* : key to Indian genera and their species ; ALCOCK, J. Asiat. Soc. Bengal, lxxv, p. 273.
- Ebalia diadumena*, n. sp., Palk Strts., *E. sagittifera*, n. sp., Karachi, and *E. wood-masoni*, n. sp., Andaman Is., ALCOCK, l. c. p. 187.
- Ethusa (Ethusina) desciscens*, n. sp., Andaman Sea, p. 286, and *E. (E.) investigatoris*, n. sp., Lacadive Sea, 930 faths., and Bay of Bengal, 1300 faths., p. 285, ALCOCK, l. c.
- Eucinetops blakiana*, n. sp., Port Royal, Jamaica, RATHBUN, P. U. S. Mus. xix, p. 141.
- Eupagurus chevreuxi*, n. sp., in a *Trochus* shell, Rousse I., Corsica ; BOUVIER, Bull. Mus. Paris, 1896, p. 96. *E. pergranulatus*, n. sp., ♀, E. Coast of Ceylon, 28 faths., p. 520, and another ? n. sp., p. 534 ; HENDERSON, J. Asiat. Soc. Bengal, lxxv. A n. sp. (? for *E. lavis*, Thomps.), from Sea of Marmora, described in Russian ; OSTROUMOFF, Bull. Ac. St. Petersb. v, pp. 38, 69, 79, & 92.
- Galacantha trachynotus*, n. sp., Indian Ocean, deep water, ANDERSON, J. Asiat. Soc. Bengal, lxxv, p. 100, pl. xxv, fig. 3.

- Gastroptychus*, n. g. for (*Ptychogaster*, M.-Edw.) ; CAULLERY, Ann. Univ. Lyon, xxvi, p. 390.
- Gebia littoralis*, Risso, in Black Sea ; SOWINSKI. Its development ; BOUTCHINSKY.
- Glaucotohö*, n. sp. ?, N. Maldive Atoll, 719 faths., HENDERSON, J. Asiat. Soc. Bengal, lxxv, p. 535.
- Hapalogastrica*, n. nom. for group of *Lithodidae*, including the 3 genera *Hapalogaster*, *Dermaturus*, and *Placetrön* ; BOUVIER (2).
- Heterograpsus lucasii*, M.-Edw., in Sea of Azof ; SOWINSKI (1) p. 371.
- Heteronucia*, n. g. of *Leucosiidae*, with *H. vesiculosa*, n. sp., off Ceylon, 34 faths. ; ALCOCK, J. Asiat. Soc. Bengal, lxxv, p. 177.
- Heteropencus*, n. g., of *Penaeidae*, with 1st ambulatory appendage much elongated in the ♂, for *H. longimanus*, n. sp., Java Sea ; DE MAN, Zool. Anz. xix, p. 111.
- Hippidea* : revision of tribe, with its two families and tables of their genera and species ; geographical distribution ; antiquity of group ; ORTMANN (1).
- †*Homolopsis richardsoni*, n. sp., Limestone, Queen Charlotte I. ; WOODWARD, Quart. J. Geol. Soc. lii, p. 224.
- Leander rectirostris*, Zadd., and *L. squilla*, L., in Sea of Azof ; SOWINSKI (1), p. 371.
- (*Lepeopus*, Benedict), = *Placetrön*, Schalfeew ; BOUVIER (2) p. 6.
- Leptognathia propontiaca*, n. sp., ♀, Sea of Marmora (diagnosis, Latin) ; OSTROUMOUFF, Bull. Ac. St. Petersb. v, p. 69.
- (*Leptolithodes*, Ben.), = *Paralomis*, White ; BOUVIER (2) p. 25.
- Leucifer reynaudi*, M.-Edw., anatomy and post-embryonic development ; ROSENSTADT (2).
- Leucosiidae* : key to Indian genera and their species ; ALCOCK, J. Asiat. Soc. Bengal, lxxv, p. 166.
- Leucosia corallicola*, n. sp., off Malabar Coast, p. 224, *L. sima*, n. sp., ♀, Bombay, p. 227, *L. truncata*, n. sp., Orissa Coast, p. 234 ; ALCOCK, l. c.
- Lithodidae* : classification of the subfam. and distribution of spp. in space and in time ; BOUVIER (2).
- Lithodes agasizii*, S. I. Smith, in Indian Ocean ; ANDERSON (1) p. 99. (*L. goodei*, Ben.) = *Neolithodes grimaldii*, M.-Edw., (*L. diomedea*, Ben.) = *N. diomedea*, (*L. couesii*, Ben.) = a var. of *L. maia* ; and two other of Benedict's species shown probably to belong to the genus *Paralithodes* ; BOUVIER (2) p. 8.
- Metapaulias*, n. g. of Grapsoid Crab, with *M. depressus*, n. sp., Jamaica ; RATHBUN, P. U. S. Mus. xix, p. 144.
- Mundinopsis wardeni*, n. sp., Indian Ocean (9° 35' N., 70° 36' E., 406 faths.), and another species, ♀ new, (8° N., 81° E., 320-296 faths.) ; ANDERSON, J. Asiat. Soc. Bengal, lxxv, p. 99.
- Myra brevimana*, n. sp., Indian Ocean, 30 faths., p. 206, *M. pentacantha*, n. sp. ?, or the young of *M. fugax*, Coasts of India, 25 faths., p. 204 ; ALCOCK, J. Asiat. Soc. Bengal, lxxv.
- Naushonia*, n. g. of "*Macrura*" (? the type of a new fam.) with *N. cran-gonoides*, n. sp., I. of Naushon, Elizabeth Is. (Musach) ; KINGSLEY, Bull. Essex Inst. xxvii, p. 95.
- Nephropsidea*, n. nom. for the group of Decapods to which he had previously given the name of *Homaridea*, comprising the families *Nephropsidae*, *Parastidae*, and *Potamobiidae* ; ORTMANN (2) p. 429.
- Nephropsis suhmi*, Sp. B., in Indian Ocean ; ANDERSON (1) p. 96.
- Nursia blanfordi* and *persica*, n. spp., Persian Gulf, and *N. nasuta*, n. sp., Malabar Coast ; ALCOCK, J. Asiat. Soc. Bengal, lxxv, p. 182.
- Nursilia tonsor*, n. sp., Andaman Sea ; ALCOCK, l. c. p. 261.
- (*Edognathus gilli*, Benedict), referred to genus *Dermaturus* ; BOUVIER (2) p. 2.

- Oreophorus reticulatus*, A. & W., var. *alcicornis*, n. var., off Ganjam ; ALCOCK, J. Asiat. Soc. Bengal, lxxv, p. 175.
- Ostracogastrica*, n. nom. for group of *Litholidea*, including 9 genera, all of which defined ; BOUVIER (2).
- Oxystoma* : tribe defined, and its 4 families ; ALCOCK (1).
- Paguristes punicus*, n. sp., off Madras Coast (133-250 faths.) and *P. pusillus*, n. sp., E. Coast of Ceylon (28 faths.), HENDERSON, J. Asiat. Soc. Bengal, lxxv, p. 526.
- Pagurus kröyeri*, Stimps., distinguished from *P. pubescens*, Kr., which probably does not occur in Europe. (*P. pubescens*, European auct.) = ? *P. kröyeri*, Stimps., and *P. thompsoni* ; BENEDICT (2).
- Palæmon borellii*, n. sp., San Lorenzo (Jujuy) and San Luis ; NOBILI, Boll. Mus. Torino, xi, No. 265, p. 2. (*P. ensiculus*, Smith) = *P. amazonicus*, Heller, and *P. brasiliensis*?, Hell., in Colonia Risso ; NOBILI, l. c.
- Palæmonetes antrorum*, n. sp., well at San Marcos, Texas (blind) ; BENEDICT, P. U. S. Mus. xviii, p. 615.
- † *Palæocarpilius macrocheilus*, specimen described ; VINASSA DI REGNY.
- † *Palæocorystes harveyi*, n. sp., Cretaceous, Hornby I. and Vancouver I., WOODWARD, Quart. J. Geol. Soc. lii, p. 225.
- Pandalus alcocki*, n. sp., Indian Ocean (9° 35' N., 75° 36½' E., 406 faths.) ; ANDERSON, J. Asiat. Soc. Bengal, lxxv, p. 92. *P. heterocarpus*, Costa ; additions to Costa's description (teeth of rostrum, colour, and eyes) ; RIGGIO.
- Paralomis (granulosa)*, Jacq., = *P. verrucosa*, Dana ; BOUVIER (2) p. 15.
- Parapagurus andersoni*, n. sp., & *P. minutus*, n. sp., N. of Maldivé Atoll (719 faths.) ; HENDERSON, J. Asiat. Soc. Bengal, lxxv, p. 529.
- Pariphiculus*, n. g. of *Leucosiidae*, for *P. (Randallia) coronata*, Alc. & And., and for *P. rostratus*, n. sp. ; ALCOCK, J. Asiat. Soc. Bengal, lxxv, p. 257.
- Pasiphaë (Phye) sicula*, n. sp., Sicily, RIGGIO, Natural. Sicil. (n.s.) i, p. 41.
- Petalidium* [see under *Sergestes*].
- Philyra corallicola*, n. sp., Malabar Coast, p. 247, *P. sexangula*, n. sp., Persian Gulf and Godavari Coast, p. 241 ; ALCOCK, l. c.
- Pilumnus pannosus*, n. sp. for (*P. gemmatus*, M.-Edw.) non Stimps., Gulf of Mexico and Florida Keys to Jamaica ; RATHBUN, P. U. S. Mus. xix, p. 142.
- Placetron*, Schalfeew, for (*Lepeopus*), Benedict ; BOUVIER (2) p. 6.
- † *Plagiolophus vancouverensis*, n. sp., Hornby I. and Vancouver I. ; WOODWARD, l. c. p. 226.
- † *Platycarcinus sismondai*, specimen described ; VINASSA DE REGNY.
- Platychiropsus*, n. g. of *Grapsidae*, with peculiar large claw in ♂, for *P. spectabilis*, n. sp., Gaboon ; DE MAN, Zool. Anz. xix, p. 292.
- † *Podocrates vancouverensis*, n. sp., Cretaceous, Vancouver I. and Hornby I., WHITEAVES, Tr. R. Soc. Canada (2) i, pt. iv, p. 132.
- Polyonyx acutifrons*, n. sp., for (*P. bilinguiculutus*, Miers) non Dana, DE MAN, Zool. Jahrb. Syst. ix, p. 385.
- (*Pristopus*), Ben. = *Paralomis*, White ; BOUVIER (2) p. 26.
- Psathyrocaris fragilis*, Wood-Mason, var. *atlantica*, n. var., Bay of Gascony ; CAULLERY, Ann. Univ. Lyon, xxvi, p. 374.
- Pseudophilyra blanfordi*, n. sp., Mékran Coast, p. 252, and *P. woodmasoni*, n. sp., Andaman Is. and C. Comorin, p. 250, ALCOCK, J. Asiat. Soc. Bengal, lxxv.
- Pseudothelphusa magna*, n. sp., and *P. tristani*, n. sp., Costa Rica, 800 (or more) feet above sea-level, RATHBUN, P. U. S. Mus. xviii, p. 377. (*Ptychogaster*, A. M.-Edw.) = *Gastroptychus* ; CAULLERY, Ann. Univ. Lyon, xxvi, p. 390.
- Pylopagurus magnimanus*, n. sp., ♀, without the lid-like right chela, Madras Coast, 133 faths., HENDERSON, J. Asiat. Soc. Bengal, lxxv, p. 522.

- Randallia eburnea*, n. sp., Lacadive Is., p. 197, *R. glans*, n. sp., p. 195, *R. lanata*, n. sp., p. 193, and *R. pustulilabris*, n. sp., p. 193, Andaman Sea; (*R. coronata*, A. & A.) referred to n. g. *Pariphiculus*, n. g., p. 258, ALCOCK, J. Asiat. Soc. Bengal, lxxv.
- Raninidae*: key to Indian genera and their species; ALCOCK, l. c. p. 288.
- Rathbunia*, n. g., with *R. festæ*, n. sp., L. Pita, Darien; NOBILI, Boll. Mus. Torino, xi, No. 238.
- Remipes*: revision of genus, p. 460, 7 species described, including *R. celæno*, n. sp. for (*R. testudinaria*, de Man) non Latr. p. 483; DE MAN, Zool. Jahrb. Syst. ix.
- (*Sciacaris*): the genus, with its species (*S. telsonis*), shown to be the *Mastigopus* stage of a *Sergestes*; HANSEN, P. Zool. Soc. London, p. 967.
- Sergestes*: revision of genus, its confinement (with the exception of one deep sea species) to tropical and subtropical seas; recognition of only 14 species, many of the other described species being shown to be but larvæ; HANSEN, l. c.
- S. incertus*, n. sp., adult ♀ (34° 50' S. and 4° 30' W.), and larva (40° 4' S. and 53° 20' E.), p. 962. *S. mediterraneus*, n. sp. Mediterranean, *Mastigopus*-stage and larvæ, and its distinction from *S. arcticus*, p. 954, HANSEN, l. c.
- (*S. obesus*, Kr.) [= (*S. sanguineus*, Chun)], shown to be a *Mastigopus*-stage and provisionally referred to genus *Petalidium*, p. 967. (*S. serratulus*) and (*S. caudatus*) shown not to belong to genus *Sergestes*, p. 951; HANSEN, l. c. Specimen of an undetermined species of *Sergestes*, from 1020 faths., S. W. of Ireland; CALMAN (2) p. 14 [probably *S. arctica*].
- Sesarma bromeliarum*, n. sp., Haiti and Jamaica (freshwater), RATHBUN, P. U. S. Mus. xix, p. 143.
- Spongicola koehleri*, n. sp., Bay of Gascony, CAULLERY, Ann. Univ. Lyon, xxvi, p. 382. (First recorded occurrence of genus in the Atlantic.)
- (*Stochasmus exilis*, Sp-B.) = *Nematocarcinus*, Sp-B.; CALMAN (2).
- Sylviocarcinus camerani*, n. sp., Colonia Risso (Uruguay), NOBILI, Boll. Mus. Torino, xi, No. 222, p. 2.
- Sympagurus monstrosus*, Alcock, in Indian Seas, HENDERSON, p. 533.
- Thelphusa dubia*, Cap., var. *jallae*, n. var., Kazungula; NOBILI, Boll. Mus. Torino, xi, No. 262. *T. fluviatilis*, Latr., spermatozoa formation; MARI.
- Tlos patella*, n. sp., ♀, Andaman Is., ALCOCK, J. Asiat. Soc. Bengal, lxxv, p. 176.
- Trichodactylus borellianus*, n. sp., Argentina and Paraguay, NOBILI, Boll. Mus. Torino, xi, No. 222, p. 2.
- Trichopeltarion ovale*, n. sp., ♀ only, Indian Ocean (6° 50' N., 79° 36' E., 217-180 faths.), ANDERSON, J. Asiat. Soc. Bengal, lxxv, p. 103, pl. xxv, fig. 4.
- Uroptychus bouvieri*, n. sp., Bay of Gascony, CAULLERY, Ann. Univ. Lyon, xxvi, p. 394.

## SCHIZOPODA.

- Arachnomysis*, internal anatomy of genus, p. 175. *A. leuckarti*, n. sp., Gulf of Naples, deep water, p. 169; CHUN, Bibl. Zool. Heft xix.
- Austromysis lowolepis*, n. sp., Caspian Sea, SARS, Bull. Ac. St. Petersb. iii, p. 448. *A. helleri*, G. O. Sars., in Sea of Azof, described and figured; SOWINSKI (1) p. 353: and Black Sea; SOWINSKI (2) p. 275.
- Bentheuphausia amblyops*, Sars, in Indian Ocean; ANDERSON (1) p. 90.
- Brutomysis*, n. g., intermediate between *Euchaetomera*, Sars, and *Caesaromysis*, Ortm., with *B. vogtii*, n. sp., ♂, off Fuuchal (500 m.); CHUN, Bibl. Zool. vii, Heft xix, p. 179.

- Eucopia sculpicauda*, Faxon, in Indian Ocean ; ANDERSON (1) p. 90.  
*Euphausia mülleri*, a shoal in Gulf of Genoa ; BRIAN.  
*Gastrosaccus sanctus*, Norm., in Sea of Azof, redescribed ; SOWINSKI (1) p. 341 : in Black Sea ; SOWINSKI (2) p. 274.  
*Mesomysis incerta*, n. sp., S. Caspian Sea, p. 447 ; *M. kowalevskyi* "forma typica," Czern., requiring to be made into a new species, p. 444 ; SARS, Bull. Ac. St. Petersb. iii. *M. kroyeri*, Czern. "forma berezanica," n. f., (♀) Sea of Azof, its distinction from the typical form ; SOWINSKI (1) p. 351.  
*Metamysis*, n. g. of *Mysidæ*, with *M. grimmi*, n. sp., Caspian Sea ; SARS, Bull. Ac. St. Petersb. iii, p. 440.  
*Mysis caspia*, n. sp., p. 451, and *M. microphthalmica*, n. sp., p. 453, Caspian Sea ; the distribution of the genus (s. str.), which hitherto only known to occur in Arctic regions ; SARS, l. c. (*M. helleri*, Sars), referred to genus *Austromysis*, Czern. ; SOWINSKI (1) p. 353.  
*Nematodactylus*, n. g. of *Euphausiidae*, for *N. (Stylocheiron) flexipes*, Ortm., and *N. boöpis*, n. sp., off S.W. Ireland, 1020 faths. ; CALMAN, Tr. Irish Ac. xxxi, p. 16.  
*Nematoscelis mantis*, n. sp., ♂, off Funchal (Madeira), 500 m. ; CHUN, Bibl. Zool. vii, Heft xix, p. 165.  
*Paramysis bakuensis*, n. sp. (p. 437), *P. kessleri*, n. sp. (Grimm), p. 434, Caspian Sea ; SARS, Bull. Ac. St. Petersb. iii.  
*Paropodopsis cornuta*, Czern., form from Sea of Azof compared with *P. c.* var. *major* and *P. goesii* ; SOWINSKI, Zapiski Kiev. Obshch. xiii, p. 347.  
*Pseudanchialus*, n. g. of *MYSIDÆ*, with *P. megalolepis*, n. sp., Bay of Gascony ; CAULLERY, Ann. Univ. Lyon, xxvi, p. 468.  
*Stylocheiron*, internal anatomy of genus, pp. 152-160, external anatomy and secondary sexual characters of *S. mastigophorum*, Chun, pp. 144-152 ; *S. chelifera*, n. sp., Funchal and Mediterranean (500-1000 faths.), p. 161 ; CHUN, Bibl. Zool. vii, Heft xix. *S. (flexipes)*, Ortm., referred to *Nematodactylus*, n. g. ; CALMAN (2) p. 76.

## STOMATOPODA.

- † *Amphipeltis paradoxus*, Salter, referred to the *Isopoda* ; MATHEW (3).

## EDRIOPHTHALMA.

## CUMACEA.

- Campyluspis nitens*, n. sp., Bay of Gascony ; BONNIER, Ann. Univ. Lyon, xxvi, p. 538. *C. glabra*, Sars, in British Seas (I. of Man) ; WALKER (4).  
*Cyclaspis longicaudata*, Sars, in Bay of Gascony: description of animal, and of a Copepod parasitic on it ; BONNIER, Ann. Univ. Lyon, xxvi, pp. 534 & 668.  
*Cyclaspoides*, n. g. of fam. *Cumidae*, with *C. sarsi*, n. sp., Bay of Gascony ; BONNIER, l. c. p. 530.  
*Diastylis costata*, *D. anomala*, n. spp., and *D. longipes*, Sars, in Bay of Gascony, description ; BONNIER, l. c. pp. 550, 553, & 555.  
*Diastylopsis* (?) *dubia*, n. sp., Bay of Gascony, BONNIER, l. c. p. 559.  
*Hemilamprops normani*, n. sp., Bay of Gascony, BONNIER, l. c. p. 546.  
*Iphinoë gracilis*, Sp-B., var. *maeotica*, n. var., Sea of Azof, described and figured ; SOWINSKI, Zapiski Kiev. Obshch. xiii, p. 357 : development ; BOUTCHINSKY.  
*Leptostylis longicaudata*, n. sp., Bay of Gascony, BONNIER, Ann. Univ. Lyon, xxvi, p. 557.

- Leuconopsis*, n. g. of fam. *Leuconidae*, with *L. ensifer*, n. sp., S.W. of Chicken Rock, I. of Man; WALKER, Rep. Brit. Ass. 1896, p. 419.
- Procampylaspis*, n. g. of fam. *Campylaspidæ*, with *P. armata* and *P. echinata*, n. spp., Bay of Gascony; BONNIER, Ann. Univ. Lyon, xxvi, pp. 541 & 544.
- Pseudocuma pectinata*, n. sp., Sea of Azof, SOWINSKI, Zapiski Kiev. Obshch. xiii, p. 363.
- Vaunthompsonia cæca*, n. sp., Bay of Gascony, BONNIER, Ann. Univ. Lyon, xxvi, p. 536.

## ISOPODA AND ANISOPODA.

- Aega*, n. sp. ? Indian Ocean, 947 faths., ANDERSON (1) pp. 88 & 106.
- Apeudes koehleri*, n. sp., Bay of Gascony, BONNIER, Ann. Univ. Lyon, xxvi, p. 562. *A. latreillii*, Edw., var. *cæcus*, Ostroumow, described and figured; SOWINSKY (2) p. 261.
- Armadillidium appfelbecki*, n. sp., Herzegovina, DOLLFUS (5) p. 584; *A. chazaliei*, n. sp., ♀, Cap Blanc, and *A. pilosellum*, n. sp., Algeria; DOLLFUS, Mem. Soc. zool. France, ix, p. 530; *A. hybridum*, n. sp., Symi, and *A. oertzenii*, n. sp., Rhodos, Karos, and Karien, BUDDE-LUND, Arch. Naturg. lxii, pp. 43 & 44.
- Armadillo cinctus*, n. sp., Kasos, Armathia, and Karpathos, *A. piger*, n. sp., Crete, BUDDE-LUND, l. c. p. 41; *A. dugesii*, n. sp., Corritos and Morelia (Mexico), DOLLFUS, Bull. Soc. zool. France, xxi, p. 47; *A. flavobrunneus*, n. sp., DOLLFUS, Boll. Mus. Torino, xi, No. 228; *A. tenuipunctatus*, n. sp., p. 389, and *A. dumorum*, n. sp., p. 391, Mustique I., *A. depressus*, p. 390, *A. silvarum*, p. 393, *A. zigzag*, p. 394, *A. perlatus*, p. 395, n. spp., St. Vincent, *A. cinctus*, n. sp., p. 392, near Layon, *A. viticola*, n. sp., Grenada, p. 396, DOLLFUS, P. Zool. Soc. London.
- Astacella giardi*, n. sp., Bay of Gascony, BONNIER, Ann. Univ. Lyon, xxvi, p. 581.
- Bathytropa thermophila*, n. sp. (found in greenhouse near Paris), DOLLFUS, Bull. Mus. Paris, p. 28.
- Cæcosphæroma*, n. g. of fam. *Sphæromenidæ*, with *C. virei*, n. sp., Cave Baume-les-Messieurs, Jura, DOLLFUS, Bull. Mus. Paris, 1896, p. 138; and VIRÉ (1) & (2).
- Calathura affinis*, n. sp., Bay of Gascony, BONNIER, Ann. Univ. Lyon, xxvi, p. 568.
- Cirolana hansenii*, n. sp., Bay of Gascony, BONNIER, l. c. p. 574.
- Cirolanides*, n. g. of *Cirolanidæ*, with *C. texanus*, n. sp., well at San Marcos, Texas (blind); BENEDICT, P. U. S. Mus. xviii, p. 615.
- Desmosoma elongatum*, n. sp., Bay of Gascony, BONNIER, Ann. Univ. Lyon, xxvi, p. 605.
- (*Dolichocheilia*) n. g. of *Tanaidæ*, with (*D. forrestii*), n. sp., Antigua, W. Indies; STEBBING, Ann. Nat. Hist. xvii, p. 49, = *Leptochelia minuta*, Dana, of the Fiji Is.; STEBBING, l. c. p. 156.
- Dynamene montagui*, Leach, and *D. rubra*, Leach, in Black Sea; SOWINSKI (4).
- Eurycope atlantica*, p. 604, *E. beddardi*, p. 596, *E. complanata*, p. 601, *E. parva* p. 600, n. spp., Bay of Gascony, BONNIER, Ann. Univ. Lyon, xxvi.
- Glyptonotus sibiricus*, n. sp., Siberia, with *G. entomon*, L., and *G. sabinei*, Kr.; BIRULA, Annuaire Mus. St. Petersb. 1896, p. viii.
- Gnathia propinqua*, n. sp., Bay of Gascony, BONNIER, Ann. Univ. Lyon, xxvi, p. 571.

- Haplarmadillo*, n. g., with *H. monocellatus*, n. sp., St. Vincent; DOLLFUS, P. Zool. Soc. London, p. 399.
- Idotea ostroumowi*, n. sp., Black Sea, p. 272, and *I. algirica*, Lucas, in Black Sea, described and figured, p. 268; SOWINSKI, Zapiski Kiev. Obsch. xiv. Another n. sp.?, from Black Sea, SOWINSKI, *op. cit.* xv, p. liii. *I. tricuspidata*, Desm., in Sea of Azof; SOWINSKI (1) p. 341.
- Ilyarachna polita*, n. sp., Bay of Gascony, BONNIER, Ann. Univ. Lyon, xxvi, p. 608.
- Jaera albifrons*, Leach, in Black Sea, SOWINSKI (4) p. li.
- Janirella*, n. g. of fam. *Asellidae*, with *J. nanseni*, n. sp., Bay of Gascony; BONNIER, Ann. Univ. Lyon, xxvi, p. 587.
- Leptochelia*, Dana: revision of genus, 6 species definitely recognised, and (*Dolichocheilia forresti*, "n. g., n. sp.," Stebbing) referred to *L. minuta*; STEBBING, Ann. Nat. Hist. xvii, p. 156.
- Leptognathia dentifera*, n. sp., Christiania Fjord, SARS, Crust. of Norway, ii, p. 30. [See also *Tanaopsis*.]
- Lucasias*, figures of 1st pleopod of ♂ in 3 species; DOLLFUS (9) p. 541.
- Mesarmadillo americanus*, *M. modestus*, and *M. reflexus*, n. spp., St. Vincent, DOLLFUS, P. Zool. Soc. London, pp. 397 & 398.
- Metoponorthus nigrobrunneus*, n. sp., Kappari; BUDDE-LUND, Arch. Naturg. lxii, p. 47. *M. saussurei*, n. sp., Cordova (Mexico), DOLLFUS, Bull. Soc. zool. France, xxi, p. 48.
- Munella*, n. g. of fam. *Asellidae*, with *M. danteci*, n. sp., Bay of Gascony; BONNIER, Ann. Univ. Lyon, xxvi, p. 593.
- Oniscus helveticus*, n. sp., near Zermatt, VORHOEFF, Zool. Anz. xix, p. 22.
- Ourozeuktes oweni*, M.-Edw., description, and figures of adult and larva, from well-preserved specimens taken near Kerguelen; JENNINGS, J. Linn. Soc. xxv, p. 329.
- Philoscia germanica*, n. sp., Siebengebirge, VORHOEFF, Zool. Anz. xix, p. 19. *P. muscorum*, Scop., var. *algirica*, n. var., Algeria; DOLLFUS (9) p. 547.
- Phreatoicopsis*, n. g., with *P. terricola*, n. sp., banks of Upper Gillibrand River, Victoria; SPENCER & HALL, P. Soc. Victoria, ix, p. 12.
- Porcellio*: table to distinguish the 19 species, including *P. cibdelis*, n. sp., Samos, *P. ater*, n. sp., Transylvania, *P. sarculatus*, n. sp., Chersonesus Taurica, and *P. vespertilio*, n. sp., Dalmatia; BUDDE-LUND, Arch. Naturg. lxii, pp. 45 & 46. *P. eximius*, n. sp., Algeria, p. 536, and *P. olivieri*, Aud. & Sav., var. *confluens*, n. var., Algeria and Tunis, p. 538: figures of 1st pleopod of ♂ in 23 different species, p. 541; DOLLFUS, Mem. Soc. zool. France, ix. *P. piceus* ♀, *P. marmoratus* ♀, *P. puberulus* ♂, n. spp., Herzegovina, DOLLFUS (5) pp. 585 & 586. *P. germanicus*, n. sp., near Bonn, VORHOEFF, Zool. Anz. xix, p. 21.
- Rocinela typhlops*, n. sp., Bay of Gascony, BONNIER, Ann. Univ. Lyon, xxvi, p. 578.
- Slabberina agata*, v. Ben., in Black Sea, SOWINSKI (4).
- Sphaeroma tridentatum*, Gr., in Black Sea, SOWINSKI (4). *S. serratum*, Fabr., in Sea of Azov, SOWINSKI (1) p. 340, and in Black Sea, SOWINSKI (2) p. 274.
- Sphyrapus malleolus*, Norm. & Stebb., in Bay of Gascony, description; BONNIER, Ann. Univ. Lyon, xxvi, p. 566.
- Tanaopsis*, n. g., for *T. (Leptognathia) laticaudata*, Sars; SARS, Crust. of Norway, ii, p. 31.
- Tylos latreillii*, Aud., in Black Sea; SOWINSKI (4).



## AMPHIPODA.

- Relationships of genera of *Xiphicephalidæ* and *Oxycephalidæ*; GARBOWSKI (1).
- Amaryllis pulchellus*, n. sp., Bay of Gascony, BONNIER, Ann. Univ. Lyon, xxvi, p. 624.
- Amathillina maximowiczi*, n. sp., p. 444, *A. pusilla*, n. sp., p. 446, *A. spinosa*, n. sp., p. 442, SARS, Bull. Ac. St. Petersb. iv.
- Ampelisca tenuicornis*, Lillj. (*non* Bruzelius), in Sea of Azov, described, figured and distinguished from *A. gaimardii*, Sp-B.; SOWINSKI (1) p. 319. *A. diadema*, Costa, distinguished from it, and synonymy given; SOWINSKI (2) p. 241.
- Anonyx affinis*, n. sp., Cape Dudley, N. Greenland, N. E. of Baffin Bay; OHLIN, Acta Univ. Lund. xxxi, No. vi, p. 24. *A. humilis*, Costa, in Black Sea, described and figured; SOWINSKI (2) p. 250.
- Apherusa borealis*, Brock, description; CALMAN, Tr. Irish Ac. xxx, p. 751.
- Argissa stebbingi*, n. sp., Bay of Gascony, BONNIER, Ann. Univ. Lyon, xxvi, p. 626.
- Aristias commensalis*, n. sp., Bay of Gascony, BONNIER, l. c. p. 614.
- Atylus andrusowi*, n. sp., Black Sea, SOWINSKI, Zapiski Kiev. Obshch. xiv, p. 244.
- Autonoë longidigitans*, n. sp., Bay of Gascony, BONNIER, Ann. Univ. Lyon, xxvi, p. 659.
- Bathymedon acutifrons*, n. sp., Bay of Gascony, BONNIER, l. c. p. 643. (*Boruta*, Wrz.), referred to genus *Crangonyx*; VEJDovsky.
- Byblis agassizi*, n. sp., and *B. serrata*, Smith, off Newport, Rhode I.; JUDD, P. U. S. Mus. xviii, p. 599.
- Caprella acanthifera*, Leach, in Black Sea, 3 forms recognised and described; SOWINSKI (2) p. 256.
- Cardiophilus*, n. g. of fam. *Gammaridæ*, with *C. baeri*, n. sp., Caspian Sea (sometimes parasitic in mantle of *Cardium*); SARS, Bull. Ac. St. Petersb. iv, p. 474.
- Chevreuxius*, n. g. of fam. *Corophiidæ*, with *C. grandimanus*, n. sp., Bay of Gascony; BONNIER, Ann. Univ. Lyon, xxvi, p. 663.
- Corophium*: geographical distribution of the 5 species as indicating the former distribution of sea right over S. Russia, from the Caspian and Black Seas to the Baltic (the Caucasus being left as an island); SOWINSKI (3).
- C. chelicorne*, n. sp., p. 299, *C. curvispinum*, n. sp., p. 302, *C. monodon*, n. sp., p. 309, *C. mucronatum*, n. sp., p. 307, *C. nobile*, n. sp., p. 292, *C. robustum*, n. sp., p. 304, Caspian Sea; (*C. longicorne*, var. *lavicorne*, Sowinski), referred to gen. *Siphonocoetes*, p. 291, SARS, Bull. Ac. St. Petersb. iii. *C. spinulosum*, n. sp., Caspian Sea; SARS, op. cit. iv, p. 481. *C. longicorne*, Latr. (= *C. grossipes*, L.), in Sea of Azof, compared with *C. bonellii*, M.-Edw., and with *C. crassicorne*, Bruz.; SOWINSKI (1), p. 338.
- Crangonyx flagellatus*, n. sp., well at San Marcos, Texas (blind); BENEDICT, Bull. U. S. Mus. xviii, p. 616. *C. subterraneus*, Sp-B.?, Radotinerthal, near Prag, anatomy, VEJDovsky.
- Eusirus biscayensis*, n. sp., Bay of Gascony, BONNIER, Ann. Univ. Lyon, xxvi, p. 651.
- Gammaracanthus caspius*, n. sp. (Grimm), Caspian Sea, SARS, Bull. Ac. St. Petersb. iv, p. 439.
- Gammaropsis abyssorum*, n. sp., Bay of Gascony, BONNIER, Ann. Univ. Lyon, xxvi, p. 661.
- Gammarus andrussowi*, n. sp., p. 469, *G. grimmi*, n. sp., p. 448 [for (*G. robustus*, Grimm), *non* Smith], *G. paucillus*, n. sp. (Grimm), p. 467, *G. placidus*, n. sp. (Grimm), p. 457, *G. platycheir*, n. sp., p. 460,

- G. subnudus*, n. sp., p. 451, *G. tenellus*, n. sp., p. 455, *G. weidemannii*, n. sp., p. 462, all from Caspian Sea, SARS, Bull. Ac. St. Petersb. iv. *G. maecoticus*, n. sp., Sea of Azof, SOWINSKI, Zapiski Kiev. Obshch. xiii, pp. 294 & 374, and in Caspian Sea, SARS, Bull. Ac. St. Petersb. iv, p. 465. *G. kusnezovi*, n. sp., Maeotic Sea to Taganrog and Eisk, SOWINSKI, *l. c.* p. 383.
- G. locusta*, L., in Sea of Azof, a typical, an intermediate, and a sublittoral form distinguished; SOWINSKI (1): in Black Sea; SOWINSKI (2) p. 249: in a Lake on the I. of Kildin; KNIPOWITSCH. *G. marinus*, Leach, in Sea of Azof, compared with *G. locusta*, L.; SOWINSKI (1) pp. 316 & 380. *G. berillioni*, Catta, in the Channel Islands; CHEVREUX (3).
- Gmelina laeviuscula*, n. sp. (p. 430), and *G. pusilla*, n. sp., p. 432, Caspian Sea, SARS, Bull. Ac. St. Petersb. iv.
- Gmelinopsis*, n. g. of fam. *Gammaridae*, for *G. aurita*, n. sp., p. 437, and *G. tuberculata*, n. sp., p. 435, SARS, *l. c.*
- Goplana*, shown to be subg. of *Crangonyx*; VEJDOWSKY.
- Halicoides*, n. g. of *Pardaliscidae*, with *H. anomola*, n. sp. (♂ only), I. of Yen, Bay of Biscay; WALKER, Ann. Nat. Hist. xvii, p. 345.
- Halirages nilssoni*, n. sp., W. side of Baffin's Bay and Davis' Straits, OHLIN, Acta Univ. Lund, xxxi, No. vi, p. 46.
- Harpinia nana*, n. sp., Bay of Gascony, BONNIER, Ann. Univ. Lyon, xxvi, p. 633.
- Iphigenella*, n. g. of *Gammaridae*, with *I. acanthopoda*, n. sp. (Grimm), ? semiparasitic; SARS, Bull. Ac. St. Petersb. iv, p. 480.
- Lepidocrepeum typhlops*, n. sp., Bay of Gascony, BONNIER, Ann. Univ. Lyon, xxvi, p. 621.
- Maera brooki*, n. sp., off Ardnamurchan, W. coast of Scotland, SCOTT, P. Phys. Soc. Edinb. cxxv, p. 173.
- Melita palmata*, Leach, (Mont.), in Sea of Azof; SOWINSKI (1) p. 318, and in Black Sea, *ib.* (2) p. 249.
- Metaphoxus*, n. g. of fam. *Phoxocephalidae*, with *M. typicus*, n. sp., Bay of Gascony; BONNIER, Ann. Univ. Lyon, xxvi, p. 630.
- Microdeutopus gryllotalpa*, Costa, semiparasitic in *Cardium*, Sea of Azof; SOWINSKI, *l. c.* xiii, p. 327. *M. stationis*, del Val., described and figured, and compared with *M. gryllotalpa*; SOWINSKI, *l. c.* xiv, p. 236.
- Microprotopus minutus*, n. sp., Sea of Azof; SOWINSKI, Zapiski Kiev. Obshch. xiii, p. 329.
- Niphargoides aequimanus*, p. 285, *N. corpulentus*, p. 275, *N. compactus*, p. 278, *N. quadrimanus*, p. 281, n. spp., Caspian Sea, SARS, Bull. Ac. St. Petersb. iii. *N. grimmi*, n. sp., Caspian Sea, SARS, *op. cit.* iv, p. 471.
- Niphargus virei*, n. sp., caves in the Jura, CHEVREUX, Bull. Mus. Paris, 1896, p. 136. Another n. sp. (not named), VIRÉ, *t. c.* p. 229. *N. putaneus*, note on; LAMPERT.
- Oediceroideis proxima*, n. sp., Bay of Gascony, BONNIER, Ann. Univ. Lyon, xxvi, p. 640.
- Orchomenella laevis*, n. sp., Bay of Gascony, BONNIER, *l. c.* p. 617.
- Paulorites*, n. g. of fam. *Gammaridae*, with *P. podoceroideis*, n. sp. (Grimm), Caspian Sea; SARS, Bull. Ac. St. Petersb. iii, p. 287.
- Parapleustes latipes*, Sars, in Bay of Gascony, BONNIER; *l. c.* p. 646.
- Parathemisto oblivia*, Kr., in Bay of Gascony; BONNIER, *l. c.* p. 611.
- Phoxocephalus pectinatus*, n. sp., Guernsey, WALKER, Ann. Nat. Hist. xvii, p. 343. Distinguished from *P. simplex*, Sp-Bate; WALKER, *op. cit.* xviii, p. 157. *P. fultoni*, Scott, from near Galway, and *P. simplex*, Sp-Bate, ♂, descriptions; CALMAN, Tr. Irish Ac. xxx, pp. 743-750. The latter referred to *P. pectinatus*, Walk.; WALKER, Ann. Nat. Hist. xviii, p. 156.

- Phronimida*, homology of joints of antennæ ; GARBOWSKI (2): secondary sexual characters of male ; CHUN (3, iv).
- Podocerus dentex*, Czern., Sea of Azof, described and figured, and compared with *P. ocius*, Sp-B.; SOWINSKI, Zapiski Kiev. Obsch. xiii, p. 335.
- Pontoporeia microphthalmia*, n. sp. (Grimm), Caspian Sea (genus only known from Arctic regions before); SARS, Bull. Ac. St. Petersb. iv, p. 428.
- Probolium grandimanum*, n. sp., Bay of Gascony, BONNIER, Ann. Univ. Lyon, xxvi, p. 638.
- Protomedea aberrans*, n. sp., near Bylot I., W. side of Baffin Bay, OHLIN, Acta Univ. Lund. xxxi, No. vi, p. 53.
- Protoventricosa*, O. F. M., in Black Sea, SOWINSKI (2) p. 255.
- Pseudalibrotus caspius*, n. sp. (Grimm), p. 422, and *P. platyceras*, n. sp. (Grimm), p. 426, Caspian Sea, (genus only known from Arctic regions before); SARS, Bull. Ac. St. Petersb. iv.
- Pseudanurus*, n. g., for (*Rhabdosoma brevicaudatus*, Stebbing); GARBOWSKI, Kosmos, xxi, p. 199.
- Rachotropus elegans*, p. 658, *R. gracilis*, p. 657, and *R. rostrata*, p. 653, n. spp., Bay of Gascony, BONNIER, Ann. Univ. Lyon, xxvi.
- (*Rhabdosoma brevicaudatus*, Stebbing) = *Pseudanurus*, n. g., GARBOWSKI.
- Scina borealis*, Sars, in Bay of Gascony; BONNIER, l. c. p. 611.
- Stegocephaloides auratus*, Sars, in Bay of Gascony, description; BONNIER, l. c. p. 636.
- Stenothoë crassicornis*, n. sp. (♂ only), 6 miles W.S.W. of Calf, I. of Man; WALKER, Rep. Brit. Ass. 1896, p. 420.
- Syrrhoites walkeri*, n. sp., Bay of Gascony, BONNIER, Ann. Univ. Lyon, xxvi, p. 647.
- Talitrus alluaudi*, n. sp., Seychelles Is., and its occurrence in hothouses in Paris; CHEVREUX, Bull. Mus. Paris, p. 65.
- Tryphosa insignis*, n. sp., Bay of Gascony, BONNIER, Ann. Univ. Lyon, xxvi, p. 619.
- Unciola incerta*, n. sp., Bay of Gascony, BONNIER, Ann. Univ. Lyon, xxvi, p. 666.
- Vibilia bovallii*, n. sp., Bay of Gascony, BONNIER, l. c. p. 612.

## LEPTOSTRACA.

- †*Entomocaris*, n. g., of *Phyllocarida*, with carapace like that of an Ostracod, for *E. telleri*, n. sp., Waubeka, Wisconsin; WHITFIELD, Bull. Amer. Mus. viii, p. 299.
- Nebalia bipes*, in Arctic Ocean; OHLIN.
- †*Ceratiocaris mourei* and *C. poduriformis*, n. spp., Wisconsin; WHITFIELD, l. c. p. 301.

## ENTOMOSTRACA.

## PHYLLOPODA.

## BRANCHIPODA.

Division of the family *Apodida* into 2 subfamilies, viz.:—*Apodina*, n. subf., marine and freshwater, Cambrian to Recent, for the genera *Protocaris*, *Lepidurus*, and *Apus*; and *Dipeltina*, n. subf., marine, Upper Carboniferous, for the genus *Dipeltis*; SCHUCHERT.

- Apus australiensis*, Spencer & Hall, figured ; SPENCER & HALL, p. 231 : description of specimen from W. Australia ; SARS, Arch. Naturv. Christian. xix, No. 1, p. 5. *A. bottegoi*, n. sp., Monkullo, PRATO, Atti Soc. Ital. xxxvi, p. 185.
- Branchipus (Streptocephalus) bengalensis*, n. sp., flooded rice-fields near Calcutta, ALCOCK, J. Asiat. Soc. Bengal, lxxv, p. 538.
- † *Dipeltis carri*, n. sp., Lower Coal Measures, near Morris, Illinois, and *D. diplodiscus*, Pack., SCHUCHERT, P. U. S. Mus. p. 673.
- Estheria elliptica*, n. sp., W. Australia, SARS, Arch. Naturv. Christian. xix, No. 1, p. 12. *E. dictyon*, n. sp., S. Australia, and 2 other species from Central Australia, including *E. packardi*, Brady, with 2 varieties besides the typical one, SPENCER & HALL, p. 236. Development of *E. packardi*, 6 larval and 9 more postlarval stages ; SARS (1).
- Eulimadia dahli*, n. sp., shallow pool on Mt. Showbridge, near Port Darwin, only 1 ♂ amongst several ♀s, external and internal anatomy, SARS, Arch. Naturv. Christian. xviii, No. 8, p. 14. (*E. stanleyana*), King (& Sars), referred to a new genus, *Paralimnadia* ; SARS, Arch. Naturv. Christian. xviii, No. 8, p. 15.
- Evadne nordmanni*, Lovén, in Black Sea, described and figured ; KARAWIEW (1) p. 51.
- Limnadopsis*, n. g., for *L. brunneus*, n. sp., in a lagoon near Port Darwin, N. Territory, and for *L. squirei* and *L. tatei*, n. spp., from muddy water at Alice Springs, and between Oodnadalta and Charlotte Waters, Central Australia ; SPENCER & HALL, pp. 239–243.
- Limnetis eremia*, n. sp., Cooper's Creek, S. Australia, SPENCER & HALL, p. 244.
- Paralimnadia*, n. g. for *Eulimadia stanleyana*, King (& Sars) ; SARS l. c. p. 15.
- † *Protocaris marshii*, Walc., its systematic position ; SCHUCHERT.
- Streptocephalus archeri*, n. sp., water hole at Cattle Station, 20 m. from Rockhampton, Queensland, and pool on Mt. Showbridge, near Port Darwin, N. Australia—anatomy ; SARS, Arch. Naturv. Christian. xviii, No. 8, p. 4.

## CLADOCERA.

- Revision of *Cladocera* ; RICHARD (3).
- Alona abbreviata*, n. sp. (p. 40), *A. whiteleggii*, n. sp. (p. 35), and *A. pulchella*, King (p. 37), all near Sydney, SARS, Arch. Naturv. Christian. xviii, No. 3.
- Alonella clathrulata*, n. sp., Marubra Swamp, near Sydney, SARS, t. c. p. 43
- Alonopsis colletti*, n. sp., Knysna, S. Africa, SARS, Skr. Vidensk. Christiania, 1895, p. 22.
- Camptocercus australis*, n. sp., Centennial Park, near Sydney, SARS, Arch. Naturv. Christian. xviii, No. 3, p. 45.
- Ceriodaphnia rigaudi*, Richard, in S. Africa, description ; SARS, Skr. Vidensk. Christiania, 1895, No. 8, p. 12.
- Chydorus barroisi*, Richard, in S. Africa, description ; SARS, t. c. p. 25. *C. leonardi*, King, of Sydney, shown to be identical with a common Norwegian form, of which, however, no name had been published, and (*C. angustus*, King), to be identical with *C. globbosus*, Baird, which therefore occurs near Sydney ; SARS, Arch. Naturv. Christian. xviii, No. 3, p. 30.
- Daphnia* : revision of genus and its species ; RICHARD, Ann. Sci. nat. (8) ii, p. 188.

- D. chevreuxi*, n. sp., Algeria, RICHARD, *l. c.* p. 207, and *D. lacustris*, Sars, var., *vicina*, n. var., Scotland, *ib. l. c.* p. 307. *D. dolichocephala*, *D. propinqua*, n. spp., and *D. thompsoni*, Sars, from Knysna, S. Africa, Sars, Skr. Vidensk. Christiania, 1895, No. 8, pp. 4-11. *D. friedeli*, n. sp., Brandenburg, HARTWIG. *D. carinata*, King, 3 varieties, near Sydney; Sars, Arch. Naturv. Christian. xviii, No. 3, p. 5. *D. jardinei*, Baird, local varieties in the different Perthshire Lochs; SCOTT, Rep. Fish. Board Scotland, xiv.
- Hyalodaphnia*: revision of genus and its species; RICHARD, Ann. Sci. nat. (8) ii, p. 326. *Hyalodaphnia jardinei*, Baird, var. *incerta*, n. var., N. Germany; RICHARD, *l. c.* p. 343. (*H. apicata*); (*H. cucullata*), (*H. incerta*), and (*H. kahlbergensis*) all = *H. jardinei*, Baird; HARTWIG.
- Ilyocryptus sordidus*, Lièvin, in Australia; Sars (2) p. 28.
- Leydigia acanthoceroides*, Fischer, in S. Africa, description; Sars, Skr. Vidensk. Christiania, 1895, No. 8, p. 18.
- (*Lynceus acanthoceroides*, Fisch.), referred to genus *Leydigia*; Sars, *t. c.* p. 18.
- Moina australiensis*, n. sp. (p. 18), and *M. tenuicornis*, n. sp. (p. 24), near Sydney; Sars, Arch. Naturv. Christian. xviii, No. 3. *M. flexuosa*, n. sp., W. Australia, Sars, *op. cit.* xix, No. 1, p. 18.
- Pleuroxus incermis*, n. sp., near Sydney; Sars, *op. cit.* xviii, No. 3, p. 31. (*P. barroisi*) referred to genus *Chydorus*; Sars (6) p. 25.
- Simocephalus capensis*, n. sp., and *S. australiensis*, Dana, in S. Africa; Sars, Skr. Vidensk. Christiania, 1895, No. 8, p. 15.
- Simocephalus gibbosus*, n. sp., Centennial Park, near Sydney (p. 15) and *S. acutirostratus*, n. sp. for (*S. elizabethæ* var. *acutirostrata*, King) (p. 12); Sars, Arch. Naturv. Christian. xviii, No. 3.

## COPEPODA.

- Acartia (Dias) clausii*, Giesbr., and *A. latisetosa*, Kricz., Black Sea, described and figured; KARAWIEW (2) p. 145 & (1) p. 42.
- Ameira gracile*, n. sp., off Spanish Head, I. of Man; A. SCOTT, P. Liverp. biol. Soc. x, p. 139.
- Anchorella quadrata*, n. sp., on gill-rakers of the dragonet (*Callionymus lyra*); BASSETT-SMITH, Ann. Nat. Hist. xviii, p. 15.
- Anomalocera patersoni*, Templet., in Black Sea; KARAWIEW (2) p. 144.
- Ascomyzon thompsoni*, n. sp., off Spanish Head, I. of Man, A. SCOTT, P. Liverp. biol. Soc. x, p. 156.
- Attheyella duthiei*, n. sp., Brough Loch, I. of Yell, Shetland, T. SCOTT, Ann. Nat. Hist. xviii, p. 4, and SCOTT & DUTHIE.
- Boeckella minuta*, n. sp., p. 71, and *B. robusta*, n. sp., p. 66, pools near Sydney; Sars, Arch. Naturv. Christian. xviii, No. 3.
- Brachiella merluccii*, n. sp., attached to points of gill-rakers of the hake (*Gadus merluccius*); BASSETT-SMITH, Ann. Nat. Hist. xviii, p. 14.
- Bradya*: diagnosis of genus and of its 6 British species, of which 5 are new, viz., *B. elegans*, p. 422, *B. fusca*, p. 424, *B. hirsuta*, p. 423, *B. similis*, p. 424, n. spp., Largo Bay, Firth of Forth, and *B. minor*, p. 423, n. sp., Firth of Forth and Liverpool Bay; T. & A. SCOTT, Tr. Linn. Soc. London, vi.
- Calanopia elliptica*, Dana, description and figure of ♀; GIESBRECHT (1) p. 325.
- Calanus finmarchicus*, Gunn., in Black Sea, KARAWIEW (2) p. 121, and *C. f.* var. *pontica*, n. var., KARAWIEW, Zapiski Kiev. Obshch. xiii, p. 37.

- Caligus scomberi*, n. sp., from operculum of *Scomber scomber*, and *C. brevipedis*, n. sp., from gill cavity of *Motella tricirrata*, Plymouth; BASSETT-SMITH, Ann. Nat. Hist. xviii, p. 11.
- Canthocamptus bidens*, n. sp., p. 73, and 8 other species very thoroughly described; SCHMEIL, Bibl. Zool. v, Heft. xv, pp. 1-77. *C. subsalsus*, n. sp., pool above high-water mark at Rockcliffe, Kirkcudbrightshire; BRADY, Nat. Hist. Tr. Northumb. xiii, p. 27. *C. taticus*, n. sp., L. Tatri, DADAY, Math. term. Ertes Magyar Ak. xiv, p. 435. *C. (?) parvus*, n. sp., between tide marks in Aberlady Bay, Firth of Forth; SCOTT, Ann. Nat. Hist. xviii, p. 6.
- Centropagidæ*: revision and discussion of systematic position of family, with special reference to the German freshwater forms; SCHMEIL, l. c.
- Centropages elongatus*, n. sp., Red Sea, GIESBRECHT, Zool. Jahrb. Syst. ix, p. 322. *C. kröyeri*, Giesbr., var. *pontica*, n. var., and *C. spinosus*, Kricz., in Black Sea; KARAWIEW, Zapiski Kiev. Obsch. xiv, p. 140.
- Chondrucanthus clavatus*, n. sp., on gills of *Pleuronectes microcephalus*; BASSETT-SMITH, Ann. Nat. Hist. xviii, p. 13. *C. gibbosus*, Kr., and *C. merlucci*, Holt, development; SCHIMKEWITSCH (2).
- (?) *Clausia cluthæ*, n. sp., Ayr Bay, Firth of Clyde, SCOTT, Ann. Nat. Hist. xviii, p. 1.
- Collocheres elegans*, n. sp., off Port Erin, A. SCOTT, P. Liverp. biol. Soc. x, p. 154.
- Cyclops australis*, King, redefined; SARS, Arch. Naturv. Christian. xviii, No. 3, p. 74.
- Delavalia giesbrechti*, n. sp., ♀, Ayr Bay, Firth of Clyde, T. & A. SCOTT, Ann. Scott. Nat. Hist. p. 226.
- Diaptomus*: diagnosis of genus, and detailed anatomy of the 9 German species recognised. The genus divided into 3 groups: the *Castor* group, the *Salinus* group, and the *Coeruleus* group; SCHMEIL, Bibl. Zool. xxi, p. 10.
- D. blanci*, n. sp., pond near Boukhara, GUERNE & RICHARD, Bull. Soc. zool. France, xxi, p. 53.
- Ectinosoma*: diagnosis of genus and its 14 British species, of which 9 are new, viz.: *E. propinquum*, p. 428, *E. armiferum*, p. 434, *E. tenuipes*, p. 436, *E. longicorne*, p. 439, *E. tenuireme*, p. 439, n. spp., Firth of Forth, *E. gracile*, p. 429, *E. herdmani*, p. 432, *E. pygmaeum*, p. 433, n. spp., Firth of Forth and near Port Erin, *E. normani*, p. 435, n. sp., Firth of Forth and Barrow Channel, T. & A. SCOTT, Tr. Linn. Soc. London, vi. *E. edwardsi*, Rich., description; SCHMEIL, l. c. p. 91; distinguished from *E. curticorne*, Boeck, with which it had been associated by T. & A. Scott (l. c. p. 430); RICHARD, Bull. Soc. zool. France, xxi, p. 171.
- Eurytemora*, Giesbr.: diagnosis of genus, and anatomy of the 3 German species, 2 of which may occur in brackish and salt water as well as in fresh; SCHMEIL, Bibl. Zool. xxi, p. 100.
- Gaetanus caudani*, n. sp., Bay of Gascony, CANU, Ann. Univ. Lyon, xxvi, p. 422.
- Hemocera*, n. g., for (*Monstrilla danæ*, Clp.); MALAQUIN.
- Harpacticidæ*: revision of family; SCHMEIL, l. c.
- Heterocope*, Sars: diagnosis of genus; only 3 of the 7 described species recognised, all occurring in Germany (and all pelagic); SCHMEIL, Bibl. Zool. xxi, p. 78.
- Ichthyophorba spinosa*, Lillj., in Black Sea, described and figured; KARAWIEW (1) p. 45.
- Idya elongata*, n. sp., Mussel-beds between Morecombe and Heysham; A. SCOTT, P. Liverp. biol. Soc. x, p. 151. *I. minor*, n. sp., Loch Fyne, T. & A. SCOTT, Ann. Scott. Nat. Hist. p. 228.

- Itunella*, n. g., with *I. subsalsa*, n. sp., pool above high water mark containing freshwater vegetation, near Rockcliffe, Kirkcudbrightshire; BRADY, Nat. Hist. Tr. Northumb. xiii, p. 24.
- Labidocera brunescens*, Czern., in Black Sea, KARAWIEW (2) p. 142.
- Laophontodes bicornis*, n. sp., off Port Erin, A. SCOTT, P. Liverp. biol. Soc. x, p. 147.
- Lepeophtheirus pollachius*, n. sp., on tongue of *Gadus pollachius*, and on gills of *Molva vulgaris*, Plymouth; BASSETT-SMITH, Ann. Nat. Hist. xviii, p. 12.
- Lerneæ luscii*, n. sp., on gills of *Gadus luscus*; BASSETT-SMITH, l. c. p. 13. A new species belonging to the fam. *Lerneæopodidæ*, parasitic in *Nephrops* (no name given); THOMPSON, P. Phys. Soc. Edinb. cxxv, p. 246.
- Maraenobiotus vejtdowskyi*, Mrzk., from Scotland (Loch Vennachar, Perthshire); T. SCOTT (2) p. 3.
- Monops kræmeri*, n. sp., ♀, Red Sea, GIESBRECHT, Zool. Jahrb. Syst. ix, p. 323.
- Monstrilla ostroumowi*, n. sp., Black Sea, KARAWIEW, Zapiski Kiev. Obshch. xiv, p. 149. (*M. danae*, Clp.), referred to *Hæmocera*, n. g.; MALAQUIN.
- Neoscolecithrix*, n. g., with *N. koehleri*, n. sp., Bay of Gascony, and including (?) *Scolecithrix minor*, Brady, as a second species; CANU, Ann. Univ. Lyon, xxvi, p. 426.
- Nitocra hibernica*, Brady, description; SCHMEIL, l. c. (p. 78).
- Normanella attenuata*, n. sp., off Spanish Head, I. of Man, A. SCOTT, P. Liverp. biol. Soc. x, p. 149.
- Notopterophorus gibber*, Thor., and *N. papilio*, Hesse, development; SCHIMKEWITSCH (2).
- Oithona rigida*, n. sp., ♀, Red Sea, GIESBRECHT, Zool. Jahrb. Syst. ix, p. 324. *O. minuta*, Kricz., identified with *O. nana*, Giesbr., Black Sea, description and figure; KARAWIEW (2) p. 147.
- Ophiocamptus sarsii*, Mrázek; SCHMEIL, Bibl. Zool. v, No. xv, p. 87.
- Paracalanus parvus*, Claus, in Black Sea, description and figure; KARAWIEW (2) p. 124.
- Paradiaptomus*, n. g. of fam. *Diaptomidæ*, with *P. lamellatus*, n. sp., Knysna, S. Africa; SARS, Skr. Vidensk. Christiania, 1895, No. 8, pp. 45-52.
- Phænna*, a n. sp., Bay of Gascony, CANU, Ann. Univ. Lyon, xxvi, p. 432.
- Platyhelipus littoralis*, Brady, description and figure; BRADY, Nat. Hist. Tr. North. xiii, p. 29.
- Pontella cristata*, and *P. whiteleggi*, n. spp., Sydney, N.S.W., KRÄMER, Zool. Jahrb. Syst. ix, p. 720. *P. mediterranea*, Claus, in Black Sea, description and figure, KARAWIEW (2) p. 143, and *P. suchamica*, Kricz, in Black Sea, description and figure, KARAWIEW (1) p. 47.
- Pseudocalanus elongatus*, Boeck, in Black Sea, description and figure; KARAWIEW (2) p. 137.
- Pseudolaophonte*, n. g. of fam. *Harpacticidæ*, for *P. aculeata*, n. sp., off Spanish Head, I. of Man; A. SCOTT, P. Liverp. biol. Soc. x, p. 144.
- Schmackeria salina*, n. sp., Red Sea, GIESBRECHT, Zool. Jahrb. Syst. ix, p. 322.
- Scolecithrix chelipes*, n. sp., ♂, Red Sea, GIESBRECHT, Zool. Jahrb. Syst. ix, p. 322. *S. hibernica*, n. sp., deep water off Co. Down coast, common, and also in Loch Fyne and off coast of Arran; SCOTT, Ann. Nat. Hist. xviii, p. 362.
- Scutellidium tisboides*, Claus, in Black Sea, description and figure; KARAWIEW (2) p. 153.
- Sphæronella sedentaria*, n. sp., parasitic in branchial cavity of certain *Cumacea*; BONNIER, Ann. Univ. Lyon, xxvi, p. 668.
- Stenhelia herdmani*, and *S. similis*, n. spp., off Spanish Head, I. of Man, A. SCOTT, P. Liverp. biol. Soc. x, pp. 135 & 136.

*Tetragoniceps trispinosus*, n. sp., off Spanish Head, I. of Man, A. SCOTT, t. c. p. 141.

*Thaumaleus filigranarum*, n. sp., in *Filigrana implexa*, Straits of Dover, MALAQUIN, C.R. Ac. Sci. cxxiii, p. 1317.

## OSTRACODA.

† *Aparchites ellipticus*, *A. granilabiatus*, *A. arrectus*, *A. chatfieldensis*, n. spp., and *A. minutissimus*, Hall, var. *trentonensis*, n. var., ULRICH, Rep. Geol. Surv. Minnesota, iii, p. 644.

(*Bairdia dactylus*, Egg.) = *Pontocypris dactylus*; (*B. glutæa*, Egg.) = *Xestoleberis depressa*, Sars; (*B. angulosa*, Egg.) = *Krithe bartonensis*, Jon., and other spp. called *Bairdia* by Egger referred to other genera; LIENENKLAUS.

† *Beyrichia initialis*, n. sp., Lower Silurian, Minnesota, ULRICH, l. c. p. 658.

† *Bollia subæquata* and *B. unguuloidea*, n. spp., ULRICH, l. c. p. 669.

† *Bythocypris granti*, n. sp., *B. (?) curta* and *B. (?) robusta*, n. spp., ULRICH, l. c. p. 689.

† *Candona candida*, Müll., var. *depressa*, n. var., and *C. lactea*, Baird, var. *acuminata*, n. var., California, Pliocene; CHAPMAN, Bull. Geol. Dep. Calif. ii, p. 98.

(*C. tenuis*), Brady, referred to gen. *Candonopsis*; SARS, Arch. Naturv. Christian. xviii, No. 3, p. 63.

*Candonopsis tenuis*, Brady, for (*Candona tenuis*); SARS, l. c. p. 63.

*Candonocypris candonoides*, King, in S. Africa; SARS, Skr. Vidensk. Christiania, 1895, No. 8, p. 45.

† *Ceratopsis*, n. g. for *Tetradella*, Ulr., ex. p., and *Beyrichia*, Barr., ex. p., with *C. (B.) chambersi*, Mill. as type, with var. *robusta*, n. var.; ULRICH, l. c. p. 675.

*Conchæcia maxima*, n. sp., off Greenland, p. 686, and *C. haddoni*, n. sp., off Achil Head, p. 690, BRADY & NORMAN, Tr. Dublin Soc. v.

*Conchæcilla lacerta*, n. sp., cold area E. of Faroë ridge in 200 faths. (or, possibly, the adult form of *C. daphnoides*), BRADY & NORMAN, l. c. p. 698.

† *Ctenobolbina fulcrata*, n. sp., Lower Silurian, Minnesota, ULRICH, l. c. p. 674.

*Cycloocypris pusilla*, n. sp., Knysna, S. Africa, SARS, Skr. Vidensk. Christiania, 1895, No. 8, p. 36.

† *C. californica*, n. sp., Wild Cat Cañon, California (Pliocene), CHAPMAN, Bull. Geol. Dep. Calif. ii, p. 96.

† *Cypridæ* of Spondylus beds of Marls of Gradisk; TOUMKOWSKI.

*Cypria capensis*, n. sp., Knysna, S. Africa, SARS, Skr. Vidensk. Christiania, 1895, No. 8, p. 28. *C. pusilla*, n. sp., Waterloo Swamps, near Sydney, SARS, Arch. Naturv. Christian. xviii, No. 3, p. 48.

† *C. subangulata*, n. sp., E. side of San Pablo ridge, and Wild Cat Cañon, Pliocene, California, CHAPMAN, Bull. Geol. Dep. Calif. ii, p. 95.

*Cypridicercus*, n. g., with *C. cuneatus*, n. sp., Knysna, S. Africa, SARS, Skr. Vidensk. Christiania, 1895, No. 8, p. 37.

*Cypridopsis turgida*, n. sp. for (*C. minna*, Sars), its distribution in New Zealand, Knysna and China; its distinction from *C. minna*, King; SARS, Arch. Naturv. Christian. xviii, No. 3, p. 62. *C. assimilis* and *C. viduella*, n. spp., Knysna, S. Africa, SARS, Skr. Vidensk. Christiania, 1895, No. 8, pp. 41 & 42.

† *C. pliocæinea*, n. sp., CHAPMAN, l. c. p. 98.

*Cyprinotus dahli*, n. sp., W. Australia, SARS, Arch. Naturv. Christian. xix, No. 1, p. 24. *C. aurea*, n. sp., Knysna (for *Cypris aurea*, q.v.), *ib.* p. 25.



- Cypris leana*, n. sp., near Sydney, SARS, Arch. Naturv. Christian. xviii, No. 3, p. 50. *C. oblongata*, n. sp., W. Australia, SARS, *op. cit.* xix, No. 1, p. 29, gamogenetic. *C. aurea*, *C. corpulenta*, and *C. trigona*, n. spp., Knysna, S. Africa, SARS, Skr. Vidensk. Christiania, 1895, No. 8, pp. 30-36. (*C. aurea*) referred to genus *Cyprinotus*; SARS, Arch. Naturv. Christian. xix, No. 1, p. 25. *C. fischeri*, Lillj., and *C. fasciata*, Müll., referred to genus *Stenocypris*, SARS, *op. cit.* xviii, No. 7, p. 4.
- † *C. procera*, n. sp., California, Pliocene, CHAPMAN, Bull. Geol. Dep. Calif. ii, p. 96.
- Cythere bavarica*, n. sp., for Egger's "*C. truncata*, Rss.," p. 194, (*C. divaricata*, Egg.) and (*C. accedens*, Egg.) = *C. jurinei*, Mstr.; (*C. draco*, Egg.) = *C. triquetarum*, Rss.; (*C. acuticosta*, Egg.) = *C. truncata*, Rss., and other species referred to different genera; LIENENKLAUS, SB. Ak. Munchen, 1896.
- Cytherella serrulata*, n. sp., W. coast of N. Africa, BRADY & NORMAN, Tr. Dublin Soc. v, p. 713. (*C. inflexa*, Egg.) = *C. compressa*, Mstr.; LIENENKLAUS, *l. c.*
- † *C. subrotunda*, n. sp., and *C. (?) rugosa*, Jones, var. *arcta*, n. var.; Lower Silurian, Minnesota, ULRICH, *l. c.* p. 685.
- Cytheridea*: full description of genus and of its Swiss representative; KAUFMANN, p. 325. (*C. heteropora*, Egg.) = *C. fabæformis*, Sp., (*C. clypeus*, Egg.) = *Loxoconcha subovata*, Mstr., and other species referred to this genus by Egger referred to other genera; LIENENKLAUS, *l. c.*
- C. (?) monensis*, n. sp., tide pool at Port St. Mary, I. of Man, BRADY & NORMAN, Tr. Dublin Soc. v, p. 734.
- Cytheropteron eggerianum*, n. sp., for Egger's "*Cytheridea subovata*, Mstr.," and *C. regulare*, n. sp., Mairhof, for the same (*ex parte*), LIENENKLAUS, SB. Ak. Munchen, 1896, p. 202.
- † *Dicranella*, n. g. of *Beyrichiidae*, with *D. bicornis*, *spinosa*, *marginata*, and *D. ? simplex*, n. spp., Lower Silurian, Minnesota; ULRICH, Rep. Geol. Surv. Minnesota, iii, p. 664.
- † *Dilobella*, n. g. of *Beyrichiidae*, with *D. typa*, n. sp., Lower Silurian, Minnesota, ULRICH, *l. c.* p. 672.
- † *Drepanella bilateralis* and *bigeneris*, n. spp., Lower Silurian, Minnesota, ULRICH, *l. c.* p. 671.
- (*Erpetocypris*, Br. & N.), = *Herpetocypris*; BRADY & NORMAN, Tr. Dublin Soc. v, p. 722.
- † *Erpetocypris lata* and *E. merriamiana*, n. spp., California, Pliocene; CHAPMAN, Bull. Geol. Dep. Calif. ii, p. 97.
- † *Eurychilina ventrosa*, n. sp. (p. 662), *E. reticulata*, Ulr., var. *incurva*, n. var. (p. 660), *E. ? subaquata*, and *E. ? symmetrica*, n. spp. (p. 663), Lower Silurian, Minnesota; ULRICH, *l. c.*
- † *Entornis imperfecta*, n. sp., Silurian, Holland, KRAUSE, Zeitschr. Deutsche geol. Ges. xlviii, p. 935.
- † *Haliella labiosa*, n. sp., Lower Silurian, Minnesota; ULRICH, *l. c.* p. 657.
- Herpetocypris* [see *Erpetocypris* and *Prionocypris*].
- Ilyodromus ellipticus*, n. sp., water holes in Bourke Street, Sydney, SARS, Arch. Naturv. Christian. xviii, No. 3, p. 57.
- † *Jonesella obscura*, n. sp., Lower Silurian, Minnesota, ULRICH, *l. c.* p. 668.
- † *Krausella*, n. g. of *Beecherellidae*, with *K. inequalis* and *K. arcuata*, n. spp., Lower Silurian, Minnesota; ULRICH, *l. c.* p. 691.
- † *Leperditia consobrina*, n. sp., *L. obtusa*, n. sp., and *L. okeni*, v. M., var. *gracilis*, n. var., Eifel Beds, Belgium, *L. dewalquei* referred to genus *Primitia*; JONES, Ann. Soc. geol. Belg. xxiii, pp. 144-146.
- † *Leperditella*, n. g. for (*Leperditia inflata*, Ulr.) non Murchison, and 7 other species; and for *L. canalis*, *persimilis*, and *marca*, n. spp., Lower Silurian, Minnesota; ULRICH, Rep. Geol. Surv. Min. iii, p. 636.

- Leucocythere*, n. g., with *L. mirabilis*, n. sp., Switzerland, KAUFMANN, Rev. Suisse Zool. iv, p. 367.
- Limnocythere*: full description of genus and of its 3 Swiss species; KAUFMANN, *l. c.* p. 339. *L. stationis*, Vavra, in fresh water of Bois du Boulogne (before only known in Bohemia), and enumeration of the 8 species known with their localities; RICHARD (1) p. 169.
- Loxoconcha eggeriana*, n. sp., for Egger's "*Cythere kostilensis*, Rss.;" LIENENKLAUS, SB. Ak. Munchen, 1896, p. 199.
- † *Macronotella*, n. g., with *M. scofieldi*, n. sp., Lower Silurian, Minnesota; ULRICH, Rep. geol. Surv. Minnesota, p. 683.
- † *Moorea angularis, punctata*, n. spp., and *M. ? perplexa*, n. sp., ULRICH, *l. c.* p. 682.
- Nematohamma*, n. g. of *Sarsiellidæ*, with *N. obliqua*, n. sp., off Valentia, Ireland, ♂ only; BRADY & NORMAN, Tr. Dublin Soc. v, p. 680.
- Paramekodon*, n. g. of *Cypridinidæ*, with *P. inflatus*, n. sp., coast of Morocco; BRADY & NORMAN, Tr. Dublin Soc. v, p. 670.
- Pionocypris*, n. g., for (*Cypridopsis*, G. O. Sars, nec Brady), with 3 species; BRADY & NORMAN, *l. c.* p. 725.
- † *Placentula jonesii*, n. sp., Silurian, Holland, KRAUSE, *l. c.* p. 936.
- Podon mecznikowii*, Czern., in Black Sea, description and figure; KARAWIEW (1) p. 56.
- Potamocypris gregaria*, n. sp., Knysna, S. Africa, SARS, Skr. Vidensk. Christiania, 1895, No. 8, p. 43.
- † *Primitia binodis*, n. sp., Silurian, Holland, KRAUSE, *l. c.* p. 934. *P. minutissima, uphami, mammata, sancti-pauli, micula, celata, duplicata, tumilula, gibbera*, n. spp., Lower Silurian, Minnesota, ULRICH, *l. c.* p. 651. *P. dewalquei*, J. & K., for *Leperditia dewalquei*, Carboniferous Limestone, Belgium; JONES, *l. c.* p. 149.
- † *Primitiella*, n. g. of *Beyrichiidæ*, for *P. constricta, limbata, simulans*, and *fillmorensis*, n. spp., and for (*Leperditia*) *unicornis*, Ulr., Lower Silurian, Minnesota; ULRICH, *l. c.* p. 647.
- Prionocypris*, n. g., for *Herpetocypris serrata*, Br. & N.; BRADY & NORMAN, Tr. Dublin Soc. v, p. 724.
- Rutidermatidæ*, n. fam., for *Rutiderma*, n. g., with *R. compressa*, n. sp., off Cap de Peñas (Bay of Biscay), and Fosse de Cap Breton; BRADY & NORMAN, *l. c.* p. 673.
- Sarsiella globulus*, n. sp., coast of Soudan, 2333 metres, BRADY & NORMAN, *l. c.* p. 679.
- † *Schmidtella affinis, umbonata, incompta, brevis*, and *subrotunda*, n. spp., Lower Silurian, Minnesota; ULRICH, Geol. Surv. Minnes. iii (2) p. 641. *S. ? belgica*, n. sp., Carboniferous Limestone, Belgium, JONES, *l. c.* p. 149.
- Stenocypris chevreuxi*, n. sp., Swamp of Bon Kamera, near Bona, Algeria, external and internal anatomy, SARS, Arch. Naturv. Christian. xviii, No. 7, p. 5.
- Streptoleberis favosa*, n. sp., W. coast of Morocco, and *S. rectirostris*, n. sp., off Arcachon, Bay of Biscay, both also off coast of Soudan at depth of 2333 metres; BRADY & NORMAN, Tr. Dublin Soc. v, pp. 665-667.
- Tetragonodon*, n. g. of *Cypridinidæ*, with *T. ctenorhynchus* and *T. erina-ceus*, n. spp., coast of Morocco; BRADY & NORMAN, *l. c.* pp. 667-669.

## CIRRIPEDIA.

- Balanus tintinabulum*, L., and its 2 varr., *zebra* and *spinosus*, growing side by side under apparently identical external conditions; PILSBRY.
- † *B. porcatus*, Costa, Tertiaries of Savoy and Dauphiny; DOUXAMI.
- † *Lepidocoleus sarlei* and *polypetalus*, n. spp., Palæozoic rocks, New York State, CLARKE, Amer. Geol. xvii, p. 140.

*Tetraclita porosa*, Schum., anatomy; GRUVEL (3); *T. p. patellaris*, ? from China; PILSBRY.  
 † *T. dumortieri*, Fischer, Tertiaries of Savoy and Dauphiny; DOUXAMI.

*Cirripede larvæ.*

*Nauplius eques*, near Madeira, *N. hastatus*, near Orotava, and *N. loricatus*, Gulf of Naples, provisional new names for larvæ of 3 of the *Lepadidæ*; CHUN, Bibl. Zool.

GIGANTOSTRACA.

*i.e.*, TRILOBITA, XIPHOSURA, AND EURYPTERIDA.

TITLES.

1. BEECHER, C. E. (1) On a supposed discovery of the antennæ of Trilobites by Linnæus in 1759. Amer. Geol. xvii, pp. 303-306, 3 figg.
2. ———. (2) The morphology of *Triarthrus*. Amer. J. Sci. (4) i, pp. 251-256, pl. viii, and Geol. Mag. (n.s.) Dec. 4, iii, pp. 193-197.
3. CLARKE, J. M. The Lower Silurian Trilobites of Minnesota. Rep. Geol. Surv. Minnesota, iii, pt. 2, pp. 694-759, 82 figg.
4. CROSFIELD, M. C., & SKEAT, E. G. On the geology of the neighbourhood of Carmarthen. Quart. J. Geol. Soc. lii, pp. 523-541, pls. xxv & xxvi.
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 GURLEY, —. [See MILLER & GURLEY.]
7. HOLM, G. Ueber eine neue Bearbeitung des *Eurypterus fischeri*, Eichw. Vorläufige Mitth. Bull. Ac. St. Petersb. iv, pp. 369-372.
8. JOLYET, F., & VIALLANES, H. Contributions à l'étude du sang et de sa circulation chez les Arthropodes. C.R. Ass. Fr. (Bordeau), 1895; pt. i, pp. 292 & 293.
9. KAYSER, E. Die Fauna des Dalmaniten-sandsteins von Kleinlinden bei Giessen. Schr. Ges. Marburg, xiii, pp. 1-42, pls. i-v.  
 6 species Trilobites, pp. 15-23.
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11. LAKE, P. The British Silurian species of *Acidaspis*. Quart. J. Geol. Soc. lii, pp. 235-245, pls. vii & viii.  
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12. MATHEW, G. F. (1) Some features of the Early Cambrian Faunas. Rep. Brit. Ass. Liverpool, 1896, pp. 785-787.

13. [MATHEW, G. F.] (2) Faunas of the *Paradoxides* Beds in Eastern North America. No. I. Tr. N. York Ac. xv, pp. 192-247, 3 pls.
14. —. (3) Organic remains of the Little River Group. No. IV. Tr. R. Soc. Canada (2) i, 1895, Sect. iv, pp. 273-279.
15. MAURER, F. Palæontologische Studien im Gebiet des rheinischen Devons. 10 Nachträge zur Fauna Stratagraphie der *Orthoceras*-schiefer des Rupbachthales. N. Jahrb. Min. x, Beilage-Band. pp. 613-756, pls. xv-xviii.  
4 Trilobites, pp. 647-651.
16. MILLER, S. A., & GURLEY, W. F. E. New species of Echinodermata and a new Crustacean from the Palæozoic Rocks. Bull. Illinois Mus. No. 10, 91 pp.; Trilobite on p. 90, pl. v, fig. 1.
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Trilobites, pp. 837-846.
18. PATTEN, W. Variations in the development of *Limulus polyphemus*. J. Morphol. xii, pp. 17-148, pls. ii-xi, 10 figg. in text.
19. POMPECKJ, J. F. Ein neuentdecktes Vorkommen von Tremadoc-Fossilien bei Hof. Ber. nordoberfrankischen Ver. i, 1896; Trilobites, 4 species, pp. 93-101.
20. REED, F. R. COWPER. (1) The Fauna of the Keisley Limestone. Part I: Trilobites. Quart. J. Geol. Soc. lii, pp. 407-437, pls. xx & xxi.  
42 species, probably Ordovician.
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23. TÖRNQUIST, S. L. On the appendages of Trilobites. Geol. Mag. (n.s.) iii, p. 142.
24. TÖRNQUIST, A. Die Arbeiten der drei letzten Jahren über die Organisation und die Entwicklung der Trilobiten. Zusammenfassende Uebersicht. Zool. Centralbl. iii, pp. 513-523, 4 figg.
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26. \*WALLERIUS, I. D. Undersökningar ofver Zonenmed *Agnostus laevigatus* i Vestergotland. Lund: 1895.

## BIOLOGY.

Resemblances of Trilobites of Pre-*Paradoxides* fauna to larval stages of those of *Paradoxides* beds; MATHEW (1).

Appendages of Trilobites; TÖRNQUIST, BEECHER (2). Fringes on exite serving for respiration in *Triarthrus*; BEECHER (3).

A new method of studying separate appendages, with detailed description of all those on the underside of the head (6 in number), of the 1st abdominal (with sexual differences), of the tail sting, and of the cuticle in *Eurypterus fischeri*, Eichw.; HOLM.

Variations in development of *Limulus*: retardation in invagination of thoracic appendages; absence of abdominal or 3 first thoracic appendages on one or both sides; multiplication of appendages (cheliceræ), or other organs (lateral eyes and neuromeres); fusion of right and left halves of embryo; fission of embryo (double and triple embryos); PATTEN.

Physiology of blood and circulation in *Limulus*; JOLYET & VIALLANES.

## SYSTEMATIC.

## TRILOBITA.

- † *Acidaspis*: revision of British Silurian species, and description of 9 of them, with their synonyms; LAKE. *A. convexa*, n. sp., Keisley Limestone, REED (1) p. 425.
- † *Acrocephalites*, n. g., for *Solenopleura*? *stenometopa*, Ang.; WALLERIUS.
- † *Agnostus exsculptatus*, Ang., varr., *integra* and *sulcifera*, n. varr., *A. fallax*, Linrs., var. *insignis*, n. var., and *A. planicauda*, Ang., var., *vestigothica*, n. var.; WALLERIUS. *A. rex*, Bar., var. *transectus*, n. var., *A. fallax*, Linrs., var. *trilobatus*, n. var., *A. nathorsti*, Brögg, var. *confluens*, n. var., *A. fissus*, Lundg., var. *trifissus*, n. var., *A. laevigatus*, Dahn, varr. *terruncovicus*, *ciceroides*, and *mamilla*, n. varr., E. N. America; MATHEWS, Tr. N. York Ac.
- † *Ampyx binodulosus*, n. sp., Keisley Limestone; REED (1) p. 409.
- † *Bathyrurus schucherti*, n. sp., CLARKE, p. 724.
- † *Ceraurus*, tabulation of American species; CLARKE, p. 738.
- † *Cheiropyge*, n. g., with *C. himalayensis*, n. sp., a single specimen from Permian Cliff of Chitichun; DIENER, Denk. Ak. Wien, lxii, p. 589.
- † *Cheirurus keisleyensis*, n. sp., and *C. (Pseudospharexochus) subquadratus*, n. sp., REED, p. 421.
- † *Conocephalites suecicus*, n. sp., W. Gothland, WALLERIUS.
- † *Cryphaeus (Malladaia) luciae*, n. sp., and 2 other species, Devonian, Santa Lucia, OEHLERT, p. 812.
- † *Cybele winchelli*, n. sp., CLARKE, p. 742.
- † *Cyphaspis*? *harknessi*, n. sp., Keisley Limestone, REED, p. 435. *C. ? galenensis*, n. sp., CLARKE, p. 759. [See also under *Törnquistia*.]
- † *Cyrtometopus schofieldi*, n. sp., CLARKE, p. 735.
- † *Dinesus*, n. g., with *D. ida*, n. sp., probably of Cambrian age, Heathcote, Australia; ETHERIDGE, P. Soc. Victoria, viii, pp. 52-64.
- † *Encrinurus cristatus* and *vannalus*, n. spp., CLARKE, p. 739.
- † *Gerasaphes*, n. subg. of *Asaphus*, with *G. ulrichana*, n. sp.; CLARKE, p. 710.
- † *Harpina minnesotensis*, *rutrellum*, n. spp., and a sp.?, CLARKE, p. 755.
- † *Illænus galleatus*, n. sp., p. 414, and *I. bowmani*, Salt., varr. *brevicapitatus* and *longicapitatus*, n. varr., p. 412, and *I. sp.?*, p. 416, Keisley Limestone, REED.
- † *Lichas*, table of American species; CLARKE (3) p. 753. *L. bifurcatus*, n. sp., for *L. bulbiceps*, Phill. ex parte, p. 431, and *L. conformis*, Ang., var. *keisleyensis*, n. var., p. 427, Keisley Limestone, REED.
- Malladaia*, n. subg. of *Cryphaeus*, with *C. (M.) luciae*, n. sp.; OEHLERT, l. c. p. 812.
- † *Odontochile harsiaca*, n. sp., Dolomite Sandstone, Kleinlinden, KAYSER, Schr. Ges. Marburg, xiii, p. 15.
- † *Oxygia marginata*, n. sp., Tremadoc Slates, Carmarthen, CROSFIELD & SKEAT, p. 538.
- † *Parabolinella*, n. sp.? Tremadoc Slate, Carmarthen, *iid.* p. 537.
- † *Paradoxides tessini*, Ang., var. *incerta*, n. var., W. Gothland; WALLERIUS.

- †*Peltura punctata*, n. sp., Tremadoc Slates, Carmarthen, CROSFIELD & SKEAT, p. 535.  
 †*Phillipsia*, n. sp., a single specimen from Permian of cliff of Chitichun, Himalayas, DIENER.  
 †*Proceratopyge*, n. g., with *P. conifrons*, n. sp., top of Cambrian, W. Gothland; WALLERIUS.  
 †*Pseudosphærexochus trentonensis*, n. sp., CLARKE, p. 734.  
 †*Pterygometopus eboraceus* and *schmidti*, n. spp., Lower Silurian, Minnesota, CLARKE, p. 728.  
 †*Ptychopyge ulrichi*, n. sp., Lower Silurian, Minnesota, CLARKE, p. 709.  
 †*Sphærexochus latirugatus*, n. sp., Keisley Limestone, REED, p. 423.  
 †*Törnquistia*, n. subg. of *Cyphaspis*, with *C. (T.) nicholsoni*, n. sp., Keisley Limestone; REED, p. 433.  
 †*Toxotes*, n. g., retaining larval characters, with *T. pusilla*, n. sp., W. Gothland, WALLERIUS.

## EURYPTERIDA.

- †*Eurypterus fisheri*, Eichw., shown to have 1st cephalic appendage like that of *E. scorpioides*, Woodw., i.e., a basal piece with claw; HOLM.  
 †*E. kokomoensis*, n. sp., Indiana (Waterline Group), MILLER & GURLEY, Bull. Illinois Mus., No. 10, p. 90.

## PANTOPODA.

## TITLES.

1. CAULLERY, M. Résultats scientifiques de la Campagne du "Caudan" dans la Golfe de Gascogne—Pycnogonidés. Ann. Univ. Lyon, xxvi, pp. 361-364, pl. xii.
2. OHLIN, A. Bidrag till Kännedomen om Malakostrakfaunan i Baffin Bay och Smith Sound. Acta Univ. Lund. xxxi, No. vi, xxii & 67 pp., 1 pl., 1 map (Bihang *Pycnogonidea*, pp. 68-70).  
2 species.
3. SCHIMKEWITSCH, W. Ueber einige neue Pantopoden. Trudui St. Petersb. Obshch. xxv, pp. 35-48, pl. ii.  
In Russian, with French abstract. Figures of previously described species.

CAULLERY describes—

- Colossendeis leptorhynchus*, Hoek, var. *septentrionalis*, n. var., p. 362.  
*Paranymphon*, n. g. of fam. *Nymphonidae*, with *P. spinosum*, n. sp., Bay of Gascony, p. 361.

The *Pycnogonida* of the Kerguelen Region and other parts of the Southern Ocean are enumerated by MURRAY (see *Crustacea*, No. 113), 2 species being added to the "Challenger" list; 4 species in the Arctic Ocean, corresponding to 4 in the Antarctic, are mentioned (p. 456). Those of the Irish Sea are enumerated in Rep. Brit. Ass. p. 442.

# XI. ARACHNIDA.

BY

ALBERT WILLIAM BROWN.

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## INTRODUCTION.

OUR knowledge of the Morphology and Embryology of the *Arachnida* has advanced considerably during the year. LAURIE has published two important papers, giving an account of the anatomy and development of Scorpions as a basis for classification, and BERNARD has written a lengthy and valuable memoir on the Comparative Morphology of the *Galeodidae*. TARNARNI has dealt with the same subject as regards *Thelyphonus*. CAUSARD has described the result of his investigations, by means of injection, into the anatomy of the circulatory system of Spiders ; whilst WAGNER has made an important study of Spermatogenesis in the same group. REEKER's papers on the life of Spiders are of interest.

As a result of the Horn Expedition to Central Australia, HOGG has been able to make considerable additions to our knowledge of the *Araneæ* of that region.

Amongst other papers on Spiders, may be mentioned F. O. PICKARD CAMBRIDGE's description of the *Theraphosidæ* of the Amazons, G. W. & E. G. PECKHAM's memoir on the *Attidæ* of Central America, and BALDWIN SPENCER's short, but interesting, account of the stridulating organs

of *Phlogius crassipes*. In connection with the same subject Pocock's paper on the stridulating organs of *Trechona zebrata* should be consulted. The last named author's papers have added to our knowledge of the Scorpions and Spiders of Central and Eastern Africa.

Two memoirs on the development of Pseudoscorpiones by BARROIS & BOUVIER must be mentioned as of importance.

A feature of the year is undoubtedly the large number of papers dealing with *Acar*i. Of these NEUMANN'S memoir on the "*Ixodida Argasinae*," OUDEMAN'S "List of Dutch *Acar*i," SOAR'S articles on British *Hydrachnida*, and KÖENIKE'S "*Holsteinische Hydrachniden*," are of importance from the systematic and faunistic points of view. MICHAEL, PROTZ, VLEET, and VERHOEFF should be consulted for some points of Acarid anatomy and physiology.

In all groups, with the exception of *Pedipalpi*, a large number of new species have been described, the majority of the papers published being of a descriptive character.

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## II. BIOLOGY.

### A. ANATOMY, EMBRYOLOGY, TAXONOMY, BIONOMICS, &c.

#### 1. General, *Scorpiones*, *Pedipalpi*, *Solifugæ*, *Pseudoscorpiones*, and *Opiliones*.

LAURIE (1, 2) gives an account of the anatomy of the nervous system,  
reproductive organs, lung-books, and of the development of Scor-  
pions, and suggests the following classification:—

##### Fam. i. *Scorpionidæ*.

Subfam. 1. *Scorpionini*; 2. *Ischnurini*; 3. *Hormurini*, nov.;  
4. *Diplocentrini*; 5. *Hemiscorpionini*; 6. *Urodacini*.

##### Fam. ii. *Juridæ*.

Subfam. 1. *Jurini*; 2. *Vejevini*.

##### Fam. iii. *Chactidæ*.

Subfam. 1. *Euscorpioni*; 2. *Chactini*.

##### Fam. iv. *Bothriuridæ*.

##### Fam. v. *Buthidæ*.

Subfam. 1. *Buthini*; 2. *Chærilini*.

LAURIE (3) also describes some embryos of *Opisthophthalmus*.

BERNARD publishes a long account of the comparative morphology of the *Galeodidae*.

TARNARNI also gives an account of the morphology of *Thelyphonus*.

BARROIS & BOUVIER publish investigations into the development of *Pseudoscorpiones*; the former describes that of *Chelifer*, the latter of *Garypus saxicola*.

LOMAN describes the secondary spiracles on the legs of *Opiliones*.

PHISALIX and VARIGNY and NORMAN discuss the poison of Scorpions.

FLORENTIN discusses the suicide of Scorpions.

POCOCK (10) describes the mechanism and process of hissing in Scorpions.

## 2. *Aranææ*.

Circulatory apparatus of Spiders; CAUSARD (1).

Stridulating organs of *Trechona zebrata*; POCOCK (3): of *Phlogius crassipes*; SPENCER.

Spermatogenesis in Spiders; WAGNER (2).

Poison of Spiders; HASSELT.

Parasites of Spiders' eggs; DAVIDSON.

Biology and life of Spiders; REEKER (1, 2, 3).

Habits of Spiders; WAGNER (1).

Industry of Spiders; SCHIMKEWITSCH & CHOLODKOVSKY.

Music and Spiders; Ent. News Philad. vii.

Reason in Spiders; COLFOX.

## 3. *Acari*.

Anatomy of *Acari*; MICHAEL (2).

Anatomy of *Bdella*; MICHAEL (1).

Anatomy of *Gamasidae*; NERI.

Classification of *Sarcoptidae*; TROUËSSART (6).

Life-history of *Bryobia ribis*; THOMAS.

Myrmecophilous *Acari*; BOSTOCK.

Revision of the *Ixodidae*, I, *Argasinae*; NEUMANN.

Respiration of *Hydrachnidae*; VLEET.

*Hydrachnidae*; PROTZ (1, 2).

*Acari* and disease:—Pathogenic rôle of Ticks; MÉGNIN. Cattle Tick plague; RAINBOW (2). Bovine Tick fever; FULLER (1).

*Acari* commensal with Ants; TROUËSSART (8).

*Acari* parasitic on vine; PERRAUD: on swine; KNOLL: on beaver; KRAMER & FRIEDRICH: on fowls; FULLER (2): on cattle; CURTICE & DAVIS (1, 2).

## B. DISTRIBUTION.

For distribution of *Galeodes*, see CRETIN, GLEADOW, & POCOCK (12).

### *Palæarctic Region.*

Great Britain; *Hydrachnidae*; SOAR (1).

Borkum: *Acari*; KRAMER (2).

Caves of Emmiskillen: *Arachnida*; JAMESON.

Clonbrook, Galway : Spiders ; CARPENTER.  
 Folkestone Warren : *Hydrachnida* ; SOAR (2).  
 Holland : *Acari* ; OUDEMANS (1).  
 Hungary : Spiders ; NOSEK.  
 Northumberland and Durham : Spiders ; HULL.  
 Norway : *Opiliones* ; ELLINGSEN.  
 Switzerland : *Hydrachnida* ; KÆNIKE (2).  
 Schleswig-Holstein : *Hydrachnida* ; KÆNIKE (4).

### *Ethiopian Region.*

Africa : *Phrynus* ; FENIZIA.  
 E. Africa : Scorpions ; POCOCK (7).  
 Cameroon : *Opiliones* ; SØRENSEN.  
 Majunga : *Arachnida* ; SIMON (1).  
 Somaliland : Scorpions ; POCOCK (9).  
 S. Africa : Spiders ; POCOCK (2) ; Scorpions ; POCOCK (4, 5, 6).  
 W. African cave : *Arachnida* ; SIMON (1).

### *Australasian Region.*

Central Australia : Spiders ; HOGG.  
 New South Wales : Spiders ; RAINBOW (2).

### *Nearctic Region.*

California : Spiders ; BANKS (3).  
 Canada : Spiders ; TYRREL.  
 Colorado : *Arachnida* ; BANKS (5).  
 Long Island : Spiders ; BANKS (4).  
 N. America : Spiders and *Acari* ; BANKS (1) : *Attidæ* ; TYRRELL.  
 Ottawa : Spiders ; HARRINGTON.

### *Neotropical Region.*

Amazons : *Theraphosida* ; PICKARD CAMBRIDGE.  
 Bolivia : *Acari* ; CANESTRINI.  
 C. America : *Attidæ* ; PECKHAM.  
 Chili : *Arachnida* ; SIMON (2) : *Acari* ; TROUËSSART (1).  
 Jamaica : Scorpions ; DUERDEN.  
 Trinidad : Scorpions and *Pedipalpi* ; POCOCK (11).

## III. SYSTEMATIC.

### SCORPIONES.

*Babycurus pictus*, Athi, p. 426, pl. xviii, fig. 1, POCOCK, Ann. Nat. Hist. xvii, n. sp.  
*Buthus eminii*, Athi, p. 425, POCOCK, *t. c.*; *B. epeus*, p. 238, *europæus*, p. 241, Russia, BIRULA, Izv. imp. ak. nauk. 1896.  
*B. polystictus*, Somaliland, p. 178, pl. xi, fig. 1, POCOCK, Ann. Nat. Hist. xviii, n. sp.  
*Hadogenes paucidens*, W. Africa, p. 316, POCOCK, *op. cit.* xvii, n. sp.

- Hemiscorpius lepturus*, p. 124, pl. ix, fig. 2 ; LAURIE, *op. cit.* xviii.  
*Hormurini* : n. subfam. of *Scorpionida*, to contain *Hormurus* (*Iomachus*),  
 . p. 128 ; LAURIE, *t. c.*  
*Hormurus australasiae*, p. 127, pl. ix, figg. 5*a*, *b* ; LAURIE, *t. c.*  
*Iomachus politus*, Mombasa, POCOCK, p. 317, *op. cit.* xvii, n. sp.  
*Ischnurus ochropus*, p. 125, pl. ix, figg. 4*a-c* ; LAURIE, *op. cit.* xviii.  
*Iurus dufourei*, p. 124, pl. ix, fig. 1 ; LAURIE, *t. c.*  
*Opisthacanthus crassimanus*, East London, p. 313, *rugulosus*, Nyasaland,  
 p. 314, *punctulatus*, Madagascar, p. 315, POCOCK, *op. cit.* xvii,  
 n. spp.  
*Opisthocentrus madagascariensis*, p. 126 ; LAURIE, *t. c.*  
*Opisthophthalmus capensis*, *pallipes*, *carinatus*, p. 235, *wahlbergi*, *austerus*,  
 pl. x, fig. 4, p. 237, *macer*, pl. x, fig. 5, *latimanus*, *calvus*, *glabrifrons*,  
 p. 238, South Africa, *pugnax*, p. 239 ; POCOCK, *t. c.* *O. capensis*,  
 p. 162, pl. iv, figg. 2-8 ; LAURIE, P. Phys. Soc. Edinb. 1896.  
*O. nitidiceps*, Port Elizabeth, p. 243, pl. x, figg. 2, 2*a*, *O. breviceps*,  
 S. Africa, p. 244, pl. x, figg. 3, 3*a*, *granifrons*, Cape, p. 240, pl. x,  
 figg. 1-1*b* ; POCOCK, Ann. Nat. Hist. xvii, n. spp.  
*Palamnceus thorellii*, p. 127, pl. ix, fig. 6 ; LAURIE, Ann. Nat. Hist. xviii.  
*Parabuthus pallidus*, Giriama, p. 425, POCOCK, *op. cit.* xvii ; *P. granimanus*,  
 Somaliland, p. 178, POCOCK, *op. cit.* xviii.  
*Prionurus australis*, Russia, p. 234, *bicolor*, Russia, p. 236 ; *P. crassicauda*,  
 Russia, pp. 232 & 235, BIRULA, Izv. imp. ak. nauk. 1896.  
*Scorpio cavimanus*, Kinani, p. 431, pl. xviii, figg. 2 & 2*a* ; POCOCK, Ann.  
 Nat. Hist. xvii.  
*S. colei*, p. 180, pl. xi, figg. 2 & 2*a*, *phillipsii*, p. 181, pl. xi, figg. 3 & 3*a*,  
 Somaliland, POCOCK, *op. cit.* xviii ; *S. gregorii*, Kinani, p. 432,  
 pl. xviii, figg. 3 & 3*a*, POCOCK, *op. cit.* xvii : n. spp.  
*Scorpiops hardwickii*, p. 123 ; LAURIE, *op. cit.* xviii.  
*Urodacus novae-hollandiae*, p. 125, pl. ix, figg. 3*a-d* ; LAURIE, *t. c.*  
*Uroplectes carinatus*, p. 380, *chlorodermus*, p. 384, *fischeri*, p. 387, *formosus*,  
 with n. subsp. *spenceri*, p. 383 ; *U. insignis*, *lineatus*, p. 382, *occiden-*  
*talis*, p. 388, *planimanus*, p. 379, *triangulifer*, p. 384, *variegatus*, p. 380,  
*vittatus*, p. 386, South Africa ; POCOCK, *op. cit.* xvii.  
*U. olivaceus*, p. 385, S. Africa, POCOCK, *t. c.* n. sp.

## ARANEÆ.

## MYGALOMORPHÆ.

## THERAPHOSIDÆ.

- Acanthoscurria brocklehursti*, pl. xxxiv, fig. 18, p. 739, *geniculata*, pl. xxxiv,  
 fig. 17, p. 737, Para, PICKARD CAMBRIDGE, P. Zool. Soc. London,  
 1896, n. spp.  
*Avicularia avicularia*, Para, p. 741, pl. xxxiii, figg. 10 & 11, pl. xxxiv,  
 fig. 19, pl. xxxv, fig. 13 ; *A. avicularia variegata*, n. subsp., Amazons,  
 p. 743, pl. xxxiii, fig. 12 ; PICKARD CAMBRIDGE, *t. c.*  
*Anisaspoides*, n. g., for *A. gigantea*, n. sp., Lower Amazons, p. 726,  
 pl. xxxiv, figg. 2 & 22 ; PICKARD CAMBRIDGE, *t. c.*  
*Actinopus formosus*, New South Wales, p. 328, pl. xx, RAINBOW, P. Linn.  
 Soc. N. S. Wales, xxi ; *A. wallacei*, Santarem, p. 728, pl. xxxv, fig. 18,  
 PICKARD CAMBRIDGE, P. Zool. Soc. London, 1896 : n. spp.  
*Acantholon santaremia*, Santarem, p. 733, pl. xxxiv, fig. 13, PICKARD  
 CAMBRIDGE, *t. c.* n. sp.



- Anisaspis tuberculata*, characters amended, p. 728, pl. xxxiv, figg. 3-5 ;  
PICKARD CAMBRIDGE, *t. c.*
- Atypoides californica*, California, p. 88, BANKS, J. N. York Ent. Soc. iv,  
n. sp.
- Diplura* and allies noticed, p. 754 ; PICKARD CAMBRIDGE, P. Zool. Soc.  
London, 1896.
- Fufius auricomis*, male described, p. 750, pl. xxxv, figg. 4, 6, 8, & 16 ;  
PICKARD CAMBRIDGE, *t. c.*
- Harmonicon*, n. g., for *H. rufescens*, n. sp., Santarem, p. 756, pl. xxxiii,  
figg. 3-6, pl. xxxv, figg. 2 & 3 ; PICKARD CAMBRIDGE, *t. c.*
- Heligomerus somaliera*, Somaliland, p. 183, POCOCK, Ann. Nat. Hist.  
xviii, n. sp.
- Homœoplacis austeni*, Manãos, Lower Amazons, p. 735, pl. xxxiv, figg. 14-  
16 a, b, PICKARD CAMBRIDGE, P. Zool. Soc. London, 1896, n. sp.
- Ischnothele siemensii*, Amazons, p. 762, pl. xxxv, figg. 7, 9, & 15, PICKARD  
CAMBRIDGE, *t. c.*
- Labdacus monastoides*, described, p. 1009, pl. lii, fig. 3 ; O. PICKARD  
CAMBRIDGE, *t. c.*
- Melodeus*, n. g., for *M. sanguineus*, n. sp., p. 758, pl. xxxiii, figg. 1, 4, & 7,  
pl. xxxv, fig. 1, and *niger*, Santarem, p. 759, pl. xxxiii, figg. 2 & 5,  
n. spp. ; PICKARD CAMBRIDGE, *t. c.*
- Neodiplura*, n. g., for *N. jelskii*, n. sp., Peru, p. 755, pl. xxxv, figg. 5, 10,  
11, & 14 ; PICKARD CAMBRIDGE, *t. c.*
- Paratropis papilligera*, Santarem, p. 723, pl. xxxiv, figg. 1, 6, 7, 8, & 23,  
pl. xxxv, fig. 17, PICKARD CAMBRIDGE, *t. c.* n. sp.
- Stephanopoides brasiliiana*, male described, p. 1010, pl. lii, fig. 4 ; O. PICKARD  
CAMBRIDGE, *t. c.*
- Santaremia*, n. g., for *S. pococki*, n. sp., Santarem, p. 746, pl. xxxiii, figg. 8,  
9, & 13, pl. xxxiv, fig. 20, pl. xxxv, fig. 12 ; PICKARD CAMBRIDGE,  
*t. c.*
- Tapinauchenius*, generic characters, p. 744, pl. xxxiv, fig. 21 ; PICKARD  
CAMBRIDGE, *t. c.*
- Trechona venosa*, Chili, p. 64 ; SIMON, Act. Soc. Chili, vi.

## ARACHNOMORPHÆ.

### AGALENIDÆ AND AMAUROBIIDÆ.

- Agalena pacifica californica*, California, BANKS, p. 89, J. N. York Ent.  
Soc. iv, n. spp.
- Amaurobius scalaris*, p. 324 ; HOGG, Rep. Horn Exped. ii.
- A. bimetallicus*, C. Australia, p. 322, pl. xxiv, figg. 6 & 7, HOGG, *t. c.* n. sp.
- Phanotea*, n. g., for *P. peringueyi*, n. sp., E. Africa, SIMON, p. 285, Bull.  
Soc. ent. France, 1896.
- Tegenaria californica*, California, p. 90, BANKS, J. N. York Ent. Soc. iv,  
n. sp.

### ATTIDÆ.

- [In the following list of *Attidæ*, "PECKHAM, *t. c.*" = PECKHAM, G. W. &  
E. G., Pap. Soc. Wisconsin, iii.]
- Akela*, n. g., p. 94, for *A. charlottæ*, Guatemala, p. 95, pl. vii, figg. 7-7d,  
*recondita*, Panama, p. 96, pl. vii, figg. 6-6b, n. spp., PECKHAM, *t. c.*
- Amycus benignus*, Panama, p. 18, pl. i, figg. 2-2e ; *A. longipalpus*, Gua-  
temala, p. 19 ; PECKHAM, *t. c.*

- A. fallax*, Panama, p. 22, pl. i, figg. 3-3c, *A. hieroglyphicus*, Panama, p. 23, pl. i, figg. 4-4c, *A. marjorii*, Guatemala, p. 25, pl. i, figg. 6-6d, *A. pacatus*, p. 20, pl. i, figg. 5-5c, Central America, PECKHAM, *t. c. n. spp.*
- Attus*; see *Hamillus*.
- Avitus*, n. g., p. 57, for *A. diolenii*, n. sp., Panama, p. 58, pl. v, figg. 3-3c.; PECKHAM, *t. c.*
- Bagheera*, n. g., for *B. kiplingi*, p. 88, pl. vii, figg. 1-1d, *Zygoballus remotus*, p. 89, pl. vii, figg. 2-2a, *minutus*, p. 90, pl. vii, figg. 3-3c, *strenuus*, p. 92, pl. vii, figg. 4-4a, n. spp., PECKHAM, *t. c.*
- Chapoda*, n. g., p. 26, for *C. festiva*, n. sp., Brazil, p. 26, pl. i, figg. 7-7d; PECKHAM, *t. c.*
- Cyrene*; see *Euophrys*.
- Dendryphantes*, p. 47, pl. iv, figg. 3-3b, *D. hondurensis*, Guatemala, p. 48, pl. iv, figg. 4-4a, *letabilis*, Panama, p. 51, pl. iv, figg. 6-6b, *dubitabilis*, Mexico, p. 52, pl. iv, figg. 7-7a, *centralis*, Panama, p. 49, pl. iv, figg. 5-5c, *nitidus*, Guatemala, p. 53, pl. iv, figg. 8-8c, PECKHAM, *t. c. n. spp.*
- Epiblemum*; see *Pachomius*.
- Escambia*, n. g., p. 41, for *E. conspecta*, p. 42, pl. iii, figg. 3-3e, *parvula*, p. 44, pl. iii, figg. 4-4c, *alacris*, p. 46, pl. iii, figg. 5 & 5a, n. spp., Guatemala, PECKHAM, *t. c.*
- Euophrys*, p. 63, pl. v, figg. 9-9b; *E. newtonii*, C. America, p. 64, pl. v, figg. 10 & 10a, *ysobolii*, Guatemala, p. 65, pl. v, figg. 11 & 11a, (*Cyrene*) *aprica*, Brazil, p. 66, pl. vi, figg. 1 & 1a, *delecta*, Guatemala, p. 68, pl. vi, figg. 2-2c, PECKHAM, *t. c. n. spp.*
- Habrocestum*, p. 59, *H. paratum*, Guatemala, p. 63, pl. v, figg. 8-8b; PECKHAM, *t. c.*
- H. belligerum*, Guatemala, p. 60, pl. v, figg. 5 & 5a, *latens*, British Honduras, p. 60, pl. v, figg. 6-6a, *mexicanum*, Mexico, p. 61, pl. v, figg. 7-7e, PECKHAM, *t. c. n. spp.*
- Hamillus*, n. g., p. 70, for *H. sylvestris*, Guatemala, p. 71, pl. vi, figg. 3-3e, *H. radians*, p. 72, pl. vi, figg. 4 & 4a, *H. (Attus) infuscatus*, p. 73, pl. vi, figg. 5 & 5a, Panama, *H. (Menemerus) fannæ*, New Granada, p. 74, pl. vi, figg. 6-6c, *H. bicolor*, E. Guatemala, p. 75, n. spp., PECKHAM, *t. c.*
- Hasarius*, p. 56, pl. v, figg. 1-1b, *H. bellicosus*, Guatemala, p. 56, pl. v, figg. 2 & 2a; PECKHAM, *t. c.*
- Helorus*, p. 28, *H. extensus*, p. 30, pl. ii, figg. 2-2b, *flavens*, p. 31, pl. ii, figg. 3-3c, *mandibularis*, p. 29, pl. ii, figg. 1-1c, Panama, n. spp., PECKHAM, *t. c.*
- Heraclea*, n. g., p. 76, for *H. regia*, p. 77, pl. iii, figg. 6-6c, iv, figg. 1-1b, *rustica*, p. 79, pl. iv, figg. 2-2c, *sanguinea*, p. 78, with var. *paradoxa*, p. 79, Guatemala, n. spp., PECKHAM, *t. c.*
- Icius pleuralis*, N. America, p. 73, BANKS, Tr. Amer. ent. Soc. xxiii, *I. diminutus*, Long I., p. 192, BANKS, J. N. York Ent. Soc. iv, n. spp.
- Leptorchestes cupereus*, C. Australia, p. 352, pl. xxiv, figg. 16 & 17, HOGG, Rep. Horn Exped. ii, n. sp.
- Lyssomanes*, p. 97, *L. patens*, p. 99, pl. vii, figg. 8-8d, *remotus*, p. 100, Panama, pl. vii, figg. 9 & 9a, *reductus*, British Honduras, p. 100, PECKHAM, *t. c. n. spp.*
- Menemerus*; see *Hamillus*.
- Messua*, n. g., p. 93, for *M. desidiosa*, n. sp., Panama, p. 94, pl. vi, figg. 9 & 9a, pl. vii, figg. 5 & 5a; PECKHAM, *t. c.*
- Nagina*, n. g., p. 54, for *N. incunda*, n. sp., Guatemala, p. 55, pl. iv, figg. 10-10c; PECKHAM, *t. c.*
- Pachomius*, n. g., p. 81, for *P. (Epiblemum) albocinctum*, Texas, p. 84, pl. vi, figg. 8 & 8a, *flavescens*, p. 82, pl. vi, figg. 11 & 11a, Panama, *similis*, Trinidad, p. 83, n. spp., PECKHAM, *t. c.*

- P. dybowski*, Guatemala, New Granada, p. 81, pl. vi, figg. 7-7*d*; PECKHAM, *t. c.*  
*Pardessus*, n. g., p. 35, for *Plexippus mimicus*, Chapoda (Brazil), p. 36, pl. iii, figg. 1-1*b*; PECKHAM, *t. c.*  
*Parvæus*, n. g., p. 37, for *cyanidens*, Guatemala and Para, p. 38, pl. iii, figg. 2-2*c*; PECKHAM, *t. c.*  
*Phidippus*, p. 32, pl. ii, figg. 4-4*b*; *P. carneus*, C. America, p. 33, pl. ii, figg. 5 & 5*a*, *georgii*, p. 34, pl. ii, figg. 6 & 6*a*, *howardii*, p. 34, pl. ii, figg. 7-7*b*, Mexico, n. spp.; PECKHAM, *t. c.*  
*Philæus*, p. 39, *P. luteus*, Mexico, p. 40, PECKHAM, *t. c.* n. spp.  
*P. monticola*, N. America, p. 73, BANKS, Tr. Amer. ent. Soc. xxiii, n. sp.  
*Plexippus*; see *Pardessus*.  
*Prostheclina insecta*, C. Australia, p. 334, pl. xxiv, fig. 18, HOGG, Rep. Horn Exped. ii, n. sp.  
*Saitis minusculus*, Long. I., p. 193, BANKS, J. N. York Ent. Soc. iv, n. sp.  
*Shira*, n. g., p. 85, for *S. designata*, n. sp., Panama, p. 86, pl. vi, fig. 12, PECKHAM, *t. c.*  
*Tulpius*, n. g., p. 86, for *T. hilarius*, n. sp., Guatemala, p. 87, pl. vi, figg. 10-10*a*, pl. vii, figg. 10-10*a*, PECKHAM, *t. c.*  
*Zygoballus*; see *Bagheera*.

## CLUBIONIDÆ AND DRASSIDÆ.

- Anyphæna floridana*, N. America, p. 63, BANKS, Tr. Amer. ent. Soc. xxiii, n. sp.  
*Apostenus cinctipes*, N. America, p. 65, BANKS, *t. c.* n. sp.  
*Callilepis pluto*, Washington, p. 60, BANKS, *t. c.* n. sp.  
*Castaneira majunga*, Majunga, p. 334, SIMON, Bull. Mus. Paris, 1896, n. sp.  
*Clubiona pacifica*, N. America, p. 65, BANKS, Tr. Amer. ent. Soc. xxiii.  
*C. investa*, N. America, p. 64, BANKS, *t. c.*; *C. achilles*, C. Australia, p. 330, fig. 9, HOGG, Rep. Horn Exped. ii : n. spp.  
*Corinna pacifica, media*, N. America, p. 66, BANKS, Tr. Amer. ent. Soc. xxiii, n. spp.  
*Drassus griseus*, C. Australia, p. 332; HOGG, Rep. Horn Exped. ii.  
*D. inornatus*, Colorado, p. 420, *assimilis*, Colorado, p. 420, BANKS, Ann. N. York Ac. viii; *D. vastus*, p. 62, *placidus*, p. 63, N. America, BANKS, Tr. Amer. ent. Soc. xxiii : n. spp.  
*Eilica bicolor*, Florida, p. 60, BANKS, *t. c.* n. sp.  
*Gayenna fraterna, pacifica*, p. 63, *maculata*, p. 64, N. America, BANKS, *t. c.* n. spp.  
*Gnaphosa americana, parvula*, N. America, p. 61, BANKS, *t. c.* n. spp.  
*Gnaphosoides*, n. g., for *G. albopunctata*, n. sp., C. Australia, p. 332, pl. xxiv, fig. 10; HOGG, Rep. Horn Exped. ii.  
*Liocranum albopunctatum*, C. Australia, p. 328, pl. xxiv, fig. 8, HOGG, *t. c.* n. sp.  
*Melanophora bastardi*, Majunga, p. 334, SIMON, Bull. Mus. Paris, 1896, n. sp.  
*Micaria punctata, coloradensis*, p. 58, *perfecta, palliditarsus*, p. 59, N. America, BANKS, Tr. Amer. ent. Soc. xxiii; *M. gentilis*, p. 62, BANKS, Canad. Ent. xxviii : n. spp.  
*Pæcilochroa pacifica*, California, p. 89, BANKS, J. N. York Ent. Soc. iv, n. sp.  
*Phrurolithus affinis*, N. America, p. 65, BANKS, Tr. Amer. ent. Soc. xxiii, n. sp.  
*Prothesima floridana*, Florida, p. 61, *niger, valida*, p. 62, N. America, BANKS, *t. c.* n. spp.

- \**Scius montanus*, p. 62, BANKS, *Canad. Ent.* xxviii, n. sp.  
*Teminius nigriceps*, Colorado, p. 421, BANKS, *Ann. N. York Ac.* viii, n. sp.  
*Vulsor penicillatus*, Majunga, p. 334; SIMON, *Bull. Mus. Paris*, 1896.  
*Zora marmorea*, C. Australia, p. 326, HOGG, *Rep. Horn Exped.* ii, n. sp.

## EPEIRIDÆ.

- Araneus titirus*, p. 68, *surculatorum*, *phaethontis*, p. 67, Chili, SIMON, *Act. Soc. Chili*, vi, n. spp.  
*Epeira ficta*, New England, p. 323, pl. xviii, figg. 2 & 2a, *wagneri*, Sydney, p. 325, pl. xix, figg. 2 & 2a-d, RAINBOW, *P. Linn. Soc. N. S. Wales*, xxi; *E. frosti*, p. 315, pl. xxiv, fig. 1, *gracilis*, p. 317, pl. xxiv, fig. 2, C. Australia, HOGG, *Rep. Horn Exped.* ii; *E. excelsa*, California, p. 90, BANKS, *J. N. York Ent. Soc.* iv: n. spp.  
*Friula*, n. g., p. 1008, for *F. wallacei*, n. sp., Sarawak, p. 1009, pl. lii, fig. 2; O. PICKARD CAMBRIDGE, *P. Zool. Soc. London*, 1896.  
*Gnotus angulifrons*, p. 69, Chili, SIMON, *Act. Soc. Chili*, vi, n. sp.  
*G. cordiformis*, Chili, p. 68; SIMON, *t. c.*  
*Meta ærea*, C. Australia, p. 320, pl. xxiv, figg. 4 & 5; HOGG, *Rep. Horn Exped.* ii, n. sp.  
*Misumena californica*, *pictilis*, California, p. 91, BANKS, *J. N. York Ent. Soc.* iv, n. spp.  
*Nephila ornata*, Sydney, p. 320, pl. xviii, figg. 1, 1a, & 1b, *picta*, Condo-bolin, N.S.W., p. 321, pl. xix, fig. 1, RAINBOW, *J. Linn. Soc. N.S.W.*, xxi; *N. eremiana*, C. Australia, p. 318, pl. xxiv, fig. 3, HOGG, *Rep. Horn Exped.* ii: n. spp.  
*Plectana venusta*, N. America, p. 69, BANKS, *Tr. Amer. ent. Soc.* xxiii, n. sp.  
*Singa floridana*, p. 69, *modesta*, p. 70, N. America, BANKS, *t. c.* n. spp.  
*Zilla californica*, p. 90, BANKS, *J. N. York Ent. Soc.* iv, n. sp.

## OXYOPIDÆ, MICRYPHANTIDÆ, AND MYRMECIDÆ.

- Ætius*, n. g., p. 1006, for *Æ. decollatus*, n. sp., Ceylon, p. 1007, pl. lii, fig. 1; O. PICKARD CAMBRIDGE, *P. Zool. Soc. London*, 1896.  
*Dismodiscus alpinus*, p. 63, BANKS, *Canad. Ent.* xxviii, n. sp.  
*Erigonoplus gigas*, p. 65, BANKS, *t. c.* n. sp.  
*Oxyopes compacta*, N. America, p. 72, BANKS, *Tr. Amer. ent. Soc.* xxiii, n. sp.

## DYSDERIDÆ, OONOPODIDÆ, HETEROPODIDÆ.

- Ariadna maxima*, p. 64; SIMON, *Act. Soc. Chili*, vi.  
*Gamasomorpha floridana*, Florida, p. 57, BANKS, *Tr. Amer. ent. Soc.* xxiii, n. sp.  
*Olios spenceri*, Durban, p. 62, pl. viii, fig. 6; POCOCK, *Ann. Nat. Hist.* xvii.  
*Palystes castaneus*, Cape Town, p. 63, pl. viii, fig. 9, *megacephalus*, Port Elizabeth, p. 63; POCOCK, *t. c.*  
*P. ellioti*, Uganda, p. 58, pl. viii, figg. 2 & 2a, *johnstoni*, Zomba, p. 57, pl. viii, figg. 1-1c, *lunatus*, S. Africa, p. 60, pl. viii, fig. 5, *pulchripes*, Port Elizabeth, p. 60, pl. viii, figg. 4 & 4a, *spenceri*, Durban, p. 58, pl. viii, figg. 3 & 3a, n. spp.; POCOCK, *t. c.*

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\* This generic name is not to be found in Scudder or the Zoological Record.

- Panaretus distinctus*, E. London, p. 61, pl. viii, figg. 7 & 7a, POCOCK, *t. c. n. sp.*  
*Selenops spenceri*, Durban, p. 55, pl. viii, figg. 8 & 8a, POCOCK, *t. c. n. sp.*

## LYCOSIDÆ.

- Dolomedes neptunus*, p. 326, pl. xviii, pp. 4 & 4a, *spinipes*, p. 327, pl. xviii, fig. 5, Port Jackson, RAINBOW, P. Linn. Soc. N. S. Wales, xxi, n. spp.  
*Lycosa aurea*, p. 345, pl. xxiv, fig. 13, *cowlei*, p. 349, pl. xxiv, fig. 15, *topaziopsis*, p. 347, pl. xxiv, fig. 14, C. Australia, HOGG, Rep. Horn Exped. ii; *L. floridana*, Florida, p. 72, BANKS, Tr. Amer. ent. Soc. xxiii: n. spp.  
*Pardosa herbigrada*, Galway, p. 227, pl. iii, figg. 1-3, CARPENTER, Irish Natural. v.  
*P. littoralis*, Long I., p. 192, BANKS, J. N. York Ent. Soc. iv, n. sp.  
*Trochosa floridana*, Florida, p. 72, BANKS, Tr. Amer. ent. Soc. xxiii, n. sp.

## THERIDIIDÆ.

- Bathyphantes floridana, parva*, Florida, p. 68, BANKS, Tr. Amer. ent. Soc. xxiii, n. spp.  
*Bolyphantes pacificus*, N. America, p. 69, BANKS, *t. c. n. sp.*  
*Ceratinopsis bicolor, similis*, N. America, p. 67, BANKS, *t. c. n. spp.*  
*Dicyphus bilobatus*, p. 63, *trilobatus*, p. 64, BANKS, Canad. Ent. xxviii, n. spp.  
*Grammonota maculata*, N. America, p. 68, BANKS, Tr. Amer. ent. Soc. xxiii, n. sp.  
*Maso polita*, N. America, p. 67, BANKS, *t. c. n. sp.*  
*Mysmena bulbifera, quadrimaculata*, N. America, p. 66, BANKS, *t. c. n. spp.*  
*Savignia frontata*, Edinburgh, p. 60, figg. 6-11; PICKARD CAMBRIDGE, P. Dorset Club, xvii.  
*Tisoa spirotubus*, Colorado, p. 424, BANKS, Ann. N. York Ac. viii, n. sp.  
*Tmeticus hardii*, Berwickshire, p. 59, fig. 12; PICKARD CAMBRIDGE, P. Dorset Club, xvii.

## THOMISIDÆ.

- Coriarachne floridana*, Florida, p. 71, BANKS, Tr. Amer. ent. Soc. xxiii, n. sp.  
*Hedana maculosa*, C. Australia, p. 335, pl. xxiv, fig. 11, HOGG, Rep. Horn Exped. ii, n. sp.  
*Misumena viridans, bellula*, p. 71, N. America, BANKS, Tr. Amer. ent. Soc. xxiii, n. spp.  
*Xysticus floridanus*, Florida, p. 70, BANKS, *t. c. n. sp.*

## OECOBODIDÆ, PHILODROMIDÆ, PHOLCIDÆ, SCYTODIDÆ.

- Hemicloea longipes*, C. Australia, p. 337, HORN, Rep. Horn Exped. ii, n. sp.  
*Heteropoda inframaculata*, C. Australia, p. 343, HOGG, *t. c. n. sp.*  
*Isopoda horni*, C. Australia, p. 340, pl. xxiv, fig. 12, HOGG, *t. c. n. sp.*  
*Pholcophora*, n. g. for *P. americana*, Colorado, p. 57, BANKS, Tr. Amer. ent. Soc. xxiii, n. sp.

- Scytodes thoracica*, British, p. 57, pl., figg. 1-5; PICKARD CAMBRIDGE, P. Dorset Club, xvii.  
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- Asopus*, n. g., for *A. raptator*, n. sp., Cameroons, p. 181; SÖRENSEN, Ent. Tidskr. xvii.  
*Cerea*, n. g., p. 196, for *C. lugubris*, p. 197; *nebulosa*, p. 199, Cameroons, n. spp.; SÖRENSEN, t. c.  
*Chilon*, n. g., p. 187, for *C. robustus*, p. 188; *undulatus*, p. 190, *nobilis*, p. 192, *cinctus*, p. 193, *scaber*, p. 195, Cameroons, n. spp.; SÖRENSEN, t. c.  
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- Biton brunnipes*, Somaliland, p. 185, pl. xi, figg. 4 & 4a, POCOCK, Ann. Nat. Hist. xviii, n. sp.  
*Rhax ornata*, n. subsp., *Phillipsii*, Somaliland, p. 185, POCOCK, t. c.  
*Solipuga dentatidens*, Somaliland, p. 185, POCOCK, t. c.

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- Chthonicus gestroi*, Liguria, p. 375, SIMON, Ann. Mus. Genova, xvi, n. sp.  
*Garypus saxicola*, p. 304, BOUVIER, Bull. Soc. ent. France, 1896, No. 13.  
*Obisium ambrorum*, p. 374, *doderoi*, p. 373, *italicum*, p. 374, Liguria, SIMON, Ann. Mus. Genova, xvi, n. spp.

## ACARI.

## GAMASIDÆ, BDELLIDÆ, EUPODIDÆ.

- Ammonia latirostris*, var. *fusca*, Bolivia, p. 92; CANESTRINI, Bull. Soc. Veneto-Trent. vi.  
*Bdella tenella*, N. America, p. 75, *floridana*, Florida, p. 76, BANKS, Tr. Amer. ent. Soc. xxiii; *B. hirta*, Borkum I., p. 447, KRAMER, Zool. Anz. xix : n. spp.  
*Eupodes marinus*, N. America, p. 75, BANKS, Tr. Amer. ent. Soc. xxiii, n. sp.  
*Megistanus balzani*, Bolivia, p. 89, CANESTRINI, Bull. Soc. Veneto-Trent, vi, n. sp.

## HALACARIDÆ.

- Agane aculeata*, Gulf of Gascogne, p. 341, pl. x, figg. 1a-c, pl. xi, fig. 3; TROUESSART, Ann. Univ. Lyon, xxvi.

- A. pugio*, Chili, p. 61, TROUESSART, Act. Soc. Chili, vi, and p. 252, Bull. Soc. ent. France, 1896, No. 11, n. sp.
- Atelopsalis*, n. g., for *A. tricuspis*, n. sp., Gulf of Gascogne, pl. x, figg. 2a, b, pl. xi, fig. 4; TROUESSART, p. 345, Ann. Univ. Lyon, xxvi.
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- Halacarus abyssorum*, Gulf of Gascogne, p. 334, pl. ix, figg. 1a-d; *H. actenos*, Gulf of Gascogne, p. 340; *H. caudani*, Gulf of Gascogne, p. 338, pl. ix, figg. 2a, b, pl. xi, figg. 2a, b; *H. gracilipes*, var. *quadricostatus*, Gulf of Gascogne, p. 337; *H. oculatus*, Gulf of Gascogne, p. 341; TROUESSART, Ann. Univ. Lyon, xxvi. *H. chevreuxi*, p. 253, *spinifer*, n. var. *affinis*, p. 253; TROUESSART, Bull. Soc. ent. France, 1896, No. 11.
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- Leptognathus falcatus*, Gulf of Gascogne, p. 351; TROUESSART, Ann. Univ. Lyon, xxvi.

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- Acerus triangularis*, Kleinzschocher, p. 440, PIERSIG, Zool. Anz. xix, n. sp.
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- A. nodosus*, Seeland, p. 358, KÆNIKE, Zool. Anz. xix; *A. battilifer*, Holstein, p. 221, figg. 7-9, *crenatus*, n. sp., Holstein, p. 224, figg. 12 & 13, KÆNIKE, Forschber. Plon, iv; *A. cuspidifer*, *cylindratus*, Thüringen, p. 441, PIERSIG, Zool. Anz. xix; *A. berlinensis*, p. 407, PROTZ, t. c. : n. spp.
- Curvipes circularis*, Ziegenrück, p. 440, *obturbans*, Kleinzschocher, p. 439, PIERSIG, Zool. Anz. xix, n. spp.
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- Feltria zschokkei*, p. 360, *setigera*, p. 361, Tyrol, KÆNIKE, Zool. Anz. xix, n. spp.
- Hydrachna schneideri*, Holstein, p. 227, fig. 17; KÆNIKE, Forschber. Plon, iv. *H. geographica*, Gt. Britain, p. 56, pl. iii; SOAR, Int. J. Micr. vi.
- H. denudata*, p. 441, PIERSIG, Zool. Anz. xix; *H. comosa*, Bremen, p. 359, KÆNIKE, t. c. : n. spp.
- Hydraphantes octoporus*, n. sp., Borkum, p. 358, KÆNIKE, t. c.
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- Hygrobates calliger*, Ziegenrück, p. 439, PIERSIG, Zool. Anz. xix, n. sp.
- H. nigro maculatus*, Holstein, KÆNIKE, Forschber. Plon, iv.
- Limnesia connata*, Holstein, p. 229, fig. 16, KÆNIKE, t. c.
- Nesaea*, p. 143, *N. longicornis*, Gt. Britain, p. 147, pl. v, figg. 1-3; SOAR, Int. J. Micr. vi.
- Panisus*, n. g., p. 356, for *P. michaeli*, n. sp. Davos, p. 356; KÆNIKE, Zool. Anz. xix.
- Piersigia*, n. g., for *P. limophila*, n. sp., Sark, p. 410; PROTZ, t. c.

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*Ixodes (Boophilus bovis)*, CURTICE, p. 454, pls. i-iii, and FULLER, p. 760, pls. i-v, Agric. Gaz. N.S.W. 1896.

## ORIBATIDÆ.

- Belba geniculata*, p. 181, pl. x, figg. 16-19; *B. torva*, p. 184, pl. x, figg. 20-23; OUDEMANS, Tijdschr. Ent. xxxix.  
*Carabodes brevis*, *dorsalis*, p. 77, N. America, BANKS, Tr. Amer. ent. Soc. xxiii, n. spp.  
*Eremæus marginalis*, N. America, p. 76, BANKS, *t. c.* n. sp.  
*Holophora magna*, p. 175, OUDEMANS, Tijdschr. Ent. xxxix.  
*Nothrus murinus*, N. America, p. 77, BANKS, Tr. Amer. ent. Soc. xxiii, n. sp.  
*Oppia confervæ*, p. 175, pl. x, figg. 1-8; OUDEMANS, Tijdschr. Ent. xxxix.  
*Oribata microptera*, Bolivia, p. 20, CANESTRINI, Bull. Soc. Veneto-Trent. vi, n. sp.  
*Oribatella perfecta*, p. 75, *minuta*, p. 76, N. America, BANKS, Tr. Amer. ent. Soc. xxiii, n. spp.  
*Otonia granulosa*, *trombidoides*, N. America, p. 74, BANKS, *t. c.* n. sp.

## SARCOPTIDÆ.

- Giardius*, n. g., for *G. vitis*, n. sp., p. 1123; PERRAUD, C.R. Soc. Biol. x.  
*Haplosoma truncatum*, n. g. & n. sp., p. 134; KRAMER, Zool. Anz. xix.  
*Myobia musculi*, p. 330, *lemnina*, p. 332; POPPE, Zool. Anz. xix.  
*Psoralges*, n. g., for *P. libertus*, n. sp.; TROUËSSART, p. 748, C.R. Soc. Biol. x, and Bull. Soc. ent. France, 1896, No. 14, p. 327.  
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## TROMBIDIIDÆ.

- Centrotrombidium*, n. g., for *C. schneideri*, n. sp., Borkum, p. 445 ; KRAMER, Zool. Anz. xix.
- Rhyncholophus plumipes*, Jersey, p. 153 ; GEORGE, Sci. Gossip, iii.
- R. bolivianus*, Bolivia, p. 92, CANESTRINI, Bull. Soc. Veneto-Trent. vi ;
- R. floridanus*, Florida, p. 74, BANKS, Tr. Amer. ent. Soc. xxiii ;
- R. robustus*, Colorado, p. 432, BANKS, Ann. N. York Ac. viii : n. spp.
- Smaris australis*, N. America, p. 74, BANKS, Tr. Amer. ent. Soc. xxiii, n. sp.
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## XII. MYRIOPODA AND PROTOTRACHEATA.

BY

ALBERT WILLIAM BROWN.

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### INTRODUCTION.

Of the 56 papers recorded here 38 are the work of Messrs. BRÖLEMANN, COOK, POCKOCK, SILVESTRI, and VERHOEFF, by far the greater number consisting of descriptions of new species and genera.

The first instalment of SILVESTRI'S Monograph of the *Diplopoda* is perhaps the most important publication of the year. SCHMIDT, GARBOWSKI, and VERHOEFF have dealt with the phylogeny of the group, COOK, ROSENSTADT, and VERHOEFF with some morphological points, but the absence of more papers on morphology is much to be regretted. COOK'S papers on the Diplopods of Liberia are valuable for their concise summaries of families represented in that region.

In order to simplify the Systematic portion of the Record, the contents of several groups have been arranged in alphabetical sequence without regard to family relationship.

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- (10) Können Diplopoden an Senkrechten Glaswänden emporklimmen? *T. c.* pp. 1-3. [Abstr. in J. R. Micr. Soc. 1896, p. 185.]
- (11) Zur Morphologie der Segmentanhänge bei Insecten und Myriopoden. *T. c.* pp. 378-383 & 385-388.
- (12) Beiträge zur Kenntniss paläarktischer Myriopoden. III Aufsatz. Zusammenfassende Darstellung der Aufenthaltsorten der mitteleuropäischen Diplopoden. Arch. Naturg. 1896, pp. 27-38. IV Aufsatz. Ueber Diplopoden Tirols, der Ostalpen und anderer Gegenden Europas, nebst vergleichend-morphologischen und biologischen Mittheilungen. *T. c.* pp. 187-242, pls. xi-xv.
- VIRÉ, A. Faune des Cavernes du Plateau-central et du Jura. Bull. Mus. Paris, 1896, pp. 323-328.

## II. BIOLOGY.

### A. ANATOMY, PHYSIOLOGY, BIONOMICS, &c.

- Anatomy of *Polydesmus spelæorum*; VERHOEFF (1).  
 Anatomy of sundry Myriopods; VERHOEFF (6).  
 Anatomy of *Lithobius variegatus*; BRÖLEMANN (3).  
 Luminosity; BOZWARD, PLOWMAN, POCOCK (5).  
 Phylogeny of *Myriopoda*; SCHMIDT, GARBOWSKI, VERHOEFF (3 & 4).  
 Segmental Sclerites of *Spirolobus*; COOK (2), KENYON.  
 Glands of *Chetechalyne*; DUBOSCQ.  
 Character of *Colobognatha*; COOK (6).  
*Siphonotus*; COOK (6).  
 Parasites; MEYER, PARONA, LÉGER.  
 Anatomy of leaf-footed Centipedes; POCOCK (3).  
 Eye of *Scutigera*; ROSENSTADT.  
 Segmentation; VERHOEFF (11), DYBOWSKI.  
 Power of climbing in Diplopods; VERHOEFF (10).  
 Copulatory organs of *Lysiopetalida*; VERHOEFF (2).

### B. DISTRIBUTION.

#### *Palæarctic Region.*

- Mediterranean: BRÖLEMANN (1).  
 Normandy: DUBOSCQ (2).  
 Hungary: NÉMEC, VERHOEFF (1).  
 Tunis: SILVESTRI (4).  
 Asia Minor: VERHOEFF (6).

Zante : SILVESTRI (6).  
 Italy : SILVESTRI (1), SIMON.  
 Bosnia : VERHOEFF (2).  
 Middle Europe : VERHOEFF (12).

*Ethiopian Region.*

Liberia : COOK (3, 7).  
 Somaliland : POCOCK (4), SILVESTRI (5).  
 Mt. Kenia : POCOCK (1).  
 Nyasaland : POCOCK (3).

*Oriental Region.*

Indo-China : BRÖLEMANN (2).  
 China : BRÖLEMANN (4).  
 Borneo : SILVESTRI (7).

*Nearctic Region.*

United States : BRÖLEMANN (5).

*Neotropical Region.*

Jamaica : DUERDEN.  
 Panama : SILVESTRI (2).

*Cave Faunas.*

Ireland : JAMESON.  
 Juras : VIRÉ.

### III. SYSTEMATIC.

#### CHILOPODA.

##### SCUTIGERIDÆ.

*Scutigera rugosa*, Merifano ; POCOCK, Ann. Nat. Hist. xvii, p. 435.  
*S. sinuata*, Indo-China ; BRÖLEMANN, Mem. Soc. zool. France, ix, p. 349.

##### LITHOBIIDÆ.

*Archilithobius atrifrons*, n. sp., Tunis, p. 149, SILVESTRI, Natural. Sicil. 1896.  
*A. crassipes*, pl. iii, figg. 1 & 2 ; *A. æruginosus*, pl. iii, figg. 4 & 5 ; GARBOWSKI, Zool. Jahrb. Syst. ix.  
*A. ionicus*, n. sp., Zante, p. 7, SILVESTRI, Ann. Mus. Genova, xvi.  
*Lithobius elongatus*, Tunis, p. 148 ; SILVESTRI, Natural. Sicil. 1896.  
*L. hoples*, United States, p. 45 ; BRÖLEMANN, Ann. Soc. ent. France, lxxv. *L. insignis*, p. 12 ; VERHOEFF, Arch. Naturg. 1896.  
*L. transmarius*, n. var., *prearmatus*, United States, p. 48 ; BRÖLEMANN, Ann. Soc. ent. France, lxxv.  
*L. variegatus*, p. 14 ; BRÖLEMANN, Irish Natural. v.  
*Polybothrus fixiatus*, pl. iii, figg. 5-9 ; *P. leptopus*, pl. iii, figg. 10 & 11 ; GARBOWSKI, Zool. Jahrb. Syst. ix.

## SCOLOPENDRIDÆ.

- Alipes multicostis*, Sierra Leone, p. 92; *A. crotalus*, Natal, p. 93; *A. grandidieri*, Zanzibar, p. 94; *A. appendiculatus*, n. sp., Nyasaland, p. 95; POCOCK, Ann. Nat. Hist. xviii.
- Chetechalyste brevis*, n. sp., Oriolo, p. 5, SILVESTRI, Boll. Mus. Torino, No. 233.
- Cormocephalus mirabilis*, Somaliland, p. 187; POCOCK, Ann. Nat. Hist. xviii.
- Cryptops anomolans*, n. var., *punicus*, Tunis, p. 151; SILVESTRI, Natural. Sicil. 1896.
- C. punctatus*, subsp. *lusitanus*, Portugal, p. 81; VERHOEFF, Zool. Anz. xix.
- Dacetum trigonopoda*, Mkonumbi, p. 435; POCOCK, Ann. Nat. Hist. xvii.
- Opisthemea lusitanum*, n. sp., Portugal, p. 78, VERHOEFF, Zool. Anz. xix.
- Otostigmus tenuatus*, n. sp., Merifano, p. 435, POCOCK, Ann. Nat. Hist. xvii; *O. carinatus*, China, p. 350, BRÖLEMANN, Mem. Soc. zool. France, ix.
- Scolopendra cingulata*, Asia Minor, p. 10, VERHOEFF, Arch. Naturg. 1896; *S. morsitans*, Athi, p. 435, POCOCK, Ann. Nat. Hist. xvii; *S. mutilans*, China, p. 350, BRÖLEMANN, Mem. Soc. zool. France, ix; *S. omaniensis*, Tunis, p. 150, SILVESTRI, Natural. Sicil. 1896; *S. valida*, Somaliland, p. 186, POCOCK, Ann. Nat. Hist. xviii.
- Scolioptanes bidens*, United States, p. 58, pl. vi, figg. 10-13, BRÖLEMANN, Ann. Soc. ent. France, lxxv; *S. imperialis*, n. sp., United States, p. 60, pl. vi, figg. 14-16 bis, BRÖLEMANN, t. c.
- Scoliocryptops*, sp. ?, China, p. 351; BRÖLEMANN, Mem. Soc. zool. France, ix.
- Simophilus*, n. g., p. 154; SILVESTRI, Natural. Sicil. 1896.

## GEOPHILIDÆ.

- Geophilus cispadanus*, n. sp., Italy, p. 4, SILVESTRI, Boll. Mus. Torino, xi, No. 233; *G. ferrugineus*, Asia Minor, p. 1; *G. flavidus*, Asia Minor, p. 2, figg. 1-3, VERHOEFF, Arch. Naturg. 1896; *G. lanius*, n. sp., United States, p. 51, pl. v, figg. 1-3; *G. louisianæ*, n. sp., United States, p. 55, pl. v, figg. 4-6; *G. virginensis*, United States, p. 54, pl. vi, figg. 7-9; BRÖLEMANN, Ann. Soc. ent. France, lxxv.
- Haplogaster*, n. g., p. 75; VERHOEFF, Zool. Anz. xix.
- Lammonyx punctifrons*, Somaliland, p. 187; POCOCK, Ann. Nat. Hist. xviii.
- Mecistocephalus lusitanus*, n. sp., Portugal, p. 75; VERHOEFF, Zool. Anz. xix.

## DIPLOPODA.

SILVESTRI adopts the following classification of the *Diplopoda* :—

Subclass. PSELAPHOGNATHA. Fam. *Polyxenidæ*.

Subclass. CHILOGNATHA.

Ord. 1. *Oniscomorpha*. Fams. *Gervasidæ*, nov.; *Glomeridæ*, *Sphærotheridæ*.

Ord. 2. *Limacomorpha*. Fam. *Glomeridesmidæ*.

Ord. 3. *Helminthomorpha*.

Subord. i. *Callipodoidea*. Fams. *Stemmiulidæ*, *Callipodidæ*.

Subord. ii. *Colobognatha*. Fams. *Siphonophoridæ*, *Platydesmidæ*, *Polyzonidæ* (subdivided into *Polyzonini*, *Hirudisomini*, *Syphonocryptini*), *Siphoniulidæ*.



DIPLOPODA.

Myr. 7

Subord. iii. *Chordeumoidea*. Fams. *Craspedosomidae*,  
*Trachysomidae*, *Campodidae*, *Chordeumidae*, *Heterochor-*  
*deumidae*.

Subord. iv. *Juloidea*. Fams. *Cambalidae*, *Pseudonannolenidae*,  
*Trachyiulidae*, *Spirostreptidae*, *Spirobolidae*, *Julidae*,  
*Nemasomidae*.

Subord. v. *Polydesmoidea*. Fams. *Sphaeriodesmidæ*, *Cyclo-*  
*desmidæ*, *Platyrhachidæ*, *Cryptodesmidæ*, *Pyrgodesmidæ*,  
*Polydesmidæ*, *Haplodesmidæ*.

PSELAPHOGNATHA.

POLYXENIDÆ.

*Polyxenus lagurus*, Mt. Baldo, p. 160 ; VERHOEFF, Zool. Anz. xix; VER-  
HOEFF, Arch. Naturg. 1896, p. 195.

*Saroxenus*, n. g. : *S. scandens*, n. sp., Liberia, p. 594, COOK, Amer. Natural.  
xxx.

ONISCOMORPHA.

GERVAISIDÆ, n. fam., Silvestri.

Created for genus *Gervaisia*, p. 87 ; SILVESTRI, I Diplopodi, Ann. Mus.  
Genova (ser. 2A) xvi (xxxvi).

GLOMERIDÆ.

*Glomeris europæa*, Tyrol, var. *connexa*, p. 195 ; *conspersa*, p. 195 ;  
*tridentina*, p. 196 ; *pustulata*, p. 196 ; *alpina*, p. 196 ; VERHOEFF,  
Arch. Naturg. 1896.

*G. sinensis*, China, p. 352, pl. xiii, pp. 19-22, BRÜLEMANN, Mem. Soc. zool.  
France, ix, n. sp.

HELMINTHOMORPHA.

STEMMIULIDÆ.

*Stemmatoiulus bioculatus*, Punta Sabana, p. 2, SILVESTRI, Boll. Mus.  
Torino, No. 254.

COLOBOGNATHA.

POLYZONIDÆ.

Subfam. HIRUDISOMINI, new.

To contain genus *Hirudisoma*, Italy, p. 39, SILVESTRI, I Diplopodi.

Subfam. POLYZONINI.

*Polyzonium germanicum*, p. 28, pl. i, figg. 5-11, KORSKOW, Trudui St.  
Peterb. Obshch. 1895.

*Siphonotus africanus*, Africa, n. sp., p. 842, pl. xviii, COOK, Amer.  
Natural. xxx.

## POLYDESMOIDEA.

(*Ammodesmidæ*, *Campodesmidæ*, *Chelodesmidæ*, *Cryptodesmidæ*, *Comodesmidæ*, *Gomphodesmidæ*, *Haplodesmidæ*, *Oxydesmidæ*, *Platyrrhachidæ*, *Polydesmidæ*, *Prepodesmidæ*, *Pterodesmidæ*, *Pyrogodesmidæ*, *Strongylosomatidæ*, *Stylodesmidæ*, and *Xystodesmidæ*.)

- Alocodesmus*, n. g., *A. angustatus*, n. sp., p. 5; SILVESTRI, Boll. Mus. Torino, No. 254.
- Ammodesmus granum*, n. sp., Liberia, p. 257, COOK, P. Ac. Philad. 1896.
- Anisodesmus konakri*, n. sp., French Gambia, *A. gracilis*, n. sp., Togo Colony, COOK, t. c. p. 263.
- A. cerasinus*, n. sp., Liberia, p. 260, COOK, t. c.
- Aulodesmus ruspoli*, n. sp., Ueb., *A. innotatus*, n. sp., Magala, p. 59, SILVESTRI, Ann. Mus. Genova, xvii.
- Bactrodesmus claviger*, n. sp., Liberia, p. 260, COOK, P. Ac. Philad. 1896.
- Brachydesmus camerani*, n. sp., Torino, p. 1, SILVESTRI, Boll. Mus. Torino, xi, No. 233.
- B. superus*, Tyrol, p. 199, figg. 37 & 38, VERHOEFF, Arch. Naturg. 1896.
- Campodesmus carbonarius*, n. sp., Liberia, p. 257, COOK, P. Ac. Philad. 1896.
- Cenchrodesmus volutus*, n. sp., Liberia, p. 257, COOK, t. c.
- Cheirodesmus ater*, n. sp., Liberia; *C. discolor*, n. sp., Liberia, p. 259, COOK, t. c.
- Choridesmus citus*, n. sp., Liberia, p. 261, COOK, t. c.
- Comodesmidæ*, n. fam. for *Cylindrodesmus*, *Thelydesmus*, and *Comodesmus*, p. 415, COOK, Amer. Natural. xxx.
- Comodesmus lanatus*, n. sp., Liberia, COOK, P. Ac. Philad. 1896, p. 258.
- Compsodesmus pulcher*, n. sp., Liberia, p. 261, *C. perlatus*, n. sp., Liberia, p. 264, COOK, t. c.
- Cookia*, n. g., p. 158; *C. novator*, n. sp., p. 159, SILVESTRI, Natural. Sicil. 1896.
- Cynedesmus formicola*, n. sp., Canaries, p. 267, COOK, P. Ac. Philad. 1896.
- Discodesmus senex*, n. sp., Liberia, p. 258, COOK, t. c.
- Eurydesmus contortus*, n. sp., Mkonambi, p. 436, pl. xviii, fig. 4, POCOCK, Ann. Nat. Hist. xvii.
- Fonturia simoni*, n. sp., United States, p. 65, pl. vii, figg. 19 & 20; *F. tennesseensis*, var. *stricta*, nov., United States, p. 63, pl. vii, figg. 17 & 18; BRÖLEMANN, Ann. Soc. ent. France, lxxv.
- Gypsodesmus priunosus*, n. sp., Liberia, p. 261, COOK, P. Ac. Philad. 1896.
- Habrodesmus falx*, n. sp., Togo, p. 265; *H. laetus*, n. sp., Liberia, p. 261; COOK, t. c.
- Helodesmus porosus*, n. sp., Java, p. 262, COOK, t. c.
- Hercodesmus aureus*, n. sp., Liberia, p. 262, COOK, t. c.
- Isodesmus immarginatus*, n. sp., *I. interruptus*, n. sp., Liberia, p. 260, COOK, t. c.
- Lampodesmus volvatus*, n. sp., Liberia, p. 261, COOK, t. c.
- Lipodesmus sublævis*, n. sp., E. Africa, p. 263, COOK, t. c.
- Lyrodesmus nigerrimus*, n. sp., Liberia, p. 259, COOK, t. c.
- Mimodesmus parallelus*, n. sp., E. Africa, p. 264, COOK, t. c.
- Myxodesmus lobatus*, n. sp., Java, p. 267, COOK, t. c.
- Napodesmus costatus*, n. sp., W. Liberia, p. 265, COOK, t. c.
- Orodesmus forceps*, Leekepia, p. 436; *O. ellipticus*, Ngatana, p. 436, POCOCK, Ann. Nat. Hist. xvii.
- Orthomorpha festæ*, n. sp., Rio Cianiti, p. 4, SILVESTRI, Boll. Mus. Torino, No. 254; *O. festiva*, n. sp., Indo-China, BRÖLEMANN, Bull. Mus. Paris, 1896, p. 332; *O. paviei*, n. sp., BRÖLEMANN, t. c.; *O. variegata*, n. sp., p. 333, BRÖLEMANN, t. c.

- Oxydesmus medius*, n. sp., *O. liber*, n. sp., Liberia, p. 260, COOK, P. Ac. Philad. 1896.
- Pelodesmus fossor*, n. sp., Sierra Leone, p. 266, COOK, *t. c.*
- Plagiodesmus obliquus*, n. sp., Congo Valley, p. 264, COOK, *t. c.*
- Platyrrhachus dorsalis*, n. sp., Borneo; *P. longispinosus*, n. sp., Borneo, p. 22; *P. magnificus*, n. sp., Borneo, p. 23; SILVESTRI, Ann. Mus. Genova, xvi.
- P. bouvieri*, n. sp., Indo-China, BRÖLEMANN, p. 333, Bull. Mus. Paris, 1896.
- Polydesmus escherichii*, n. sp., Asia Minor, p. 13, fig. 13, VERHOEFF, Arch. Naturg. 1896.
- P. tridentinus*, p. 198, fig. 36, *P. illyricus*, p. 199, *P. edentulus*, p. 199, *P. denticulatus*, p. 199, Tyrol; VERHOEFF, *t. c.*
- P. germanicus*, n. sp., Germany, p. 314, VERHOEFF, Zool. Anz. xix.
- P. spelæorum*, n. sp., Banat, p. 254, VERHOEFF, Verh. Zool. Bot. Wien, xlvi.
- Prepodesmidæ*, n. fam. for *Paradesmus*, *Oxydesmus*, &c., p. 415, COOK, Amer. Natural. xxx.
- Prepodesmus minus*, n. sp., Liberia, p. 258; *P. pictus*, n. sp., Togo, p. 263; *P. tigrinus*, n. sp., Liberia, p. 258, COOK, P. Ac. Philad. 1896.
- Pronodesmus melas*, n. sp., W. Java, p. 266, COOK, *t. c.*
- Pterodesmidæ*, n. fam. for *Polydesmus gabonicus*, *Pterodesmus*, &c., p. 417, COOK, Amer. Natural. xxx.
- Pterodesmus brownellii*, n. sp., Liberia, p. 261, COOK, P. Ac. Philad. 1896.
- Pyrgodesmidæ*, n. fam. for *Pyrgodesmus*, *Lophodesmus*, and *Urodesmus*, p. 76; SILVESTRI, Ann. Mus. Genova, xvi.
- Scelodesmus citus*, n. sp., Liberia, p. 261; *S. securis*, n. sp., Togo, p. 265, COOK, P. Ac. Philad. 1896.
- Scytodesmus kribi*, n. sp., Kamerun, p. 263, COOK, *t. c.*
- Stegodesmus leonis*, n. sp., Sierra Leone, p. 266, COOK, *t. c.*
- Stiodesmus stratus*, n. sp., Liberia, p. 262, COOK, *t. c.*
- Strongylosoma italicum*, Tyrol, p. 200, VERHOEFF, Arch. Naturg. 1896; *S. nadari*, n. sp., China, p. 357, pl. xiii, figg. 17 & 18, BRÖLEMANN, Mem. Soc. zool. France, ix; *S. pallipes*, p. 13, figg. 11 & 12, VERHOEFF, Arch. Naturg. 1896; *S. swinhoei*, p. 354, pl. xiii, figg. 9-16, BRÖLEMANN, Mem. Soc. zool. France, ix; *S. vejdvovskyi*, n. sp., NEMEC, SB. Bohmisch. Ges. 1895, Art. xii.
- Stylodesmus horridus*, n. sp., Liberia, p. 261, COOK, P. Ac. Philad. 1896.
- Tanydesmus ordinatus*, n. sp., Togo, p. 264, COOK, *t. c.*
- Tetracentrosternus flavocinctus*, n. sp., Ngatana, p. 438, pl. xviii, fig. 5, POCOCK, Ann. Nat. Hist. xvii.
- Thelydesmus dispar*, n. sp., Liberia, COOK, P. Ac. Philad. 1896, p. 258.
- Tropidodesmus jugosus*, n. sp., Liberia, p. 257, COOK, *t. c.*
- Tylodesmus crassipes*, n. sp., *T. amæbus*, n. sp., Liberia, p. 259, COOK, *t. c.*
- Udodesmus telluster*, n. sp., Liberia, p. 262, COOK, *t. c.*
- Xylodesmus planus*, n. sp., Togo, p. 262, COOK, *t. c.*

## CHORDEUMOIDEA.

- Attemsia stygium*, Tyrol, figg. 56-58, VERHOEFF, Arch. Naturg. 1896.
- Basigona lucasii*, n. sp., Tunis, p. 157, SILVESTRI, Natural. Sicil. 1896.
- Chordeuma silvestre*, Tyrol, p. 208, VERHOEFF, Arch. Naturg. 1896.
- Craspedosoma dentatum*, Tyrol, fig. 55, VERHOEFF, *t. c.*
- Microchordeuma gallicum*, Tyrol, figg. 65-70, & 75, VERHOEFF, *t. c.*
- Orthochordeuma germanicum*, Tyrol, fig. 76, VERHOEFF, *t. c.*
- Trachysomidæ*, n. fam. for genus *Trachysoma*, p. 43, SILVESTRI, Ann. Mus. Genova, xvi.

## LYSIOPETALOIDEA.

- Lysiopetalum byzantinum*, n. sp., Asia Minor, p. 14, figg. 14-16, VERHOEFF, Arch. Naturg. 1896.  
*L. lendenfeldii*, n. sp., Bosnia, p. 466, VERHOEFF, Zool. Anz. xix.

## IULOIDEA.

- Allanulus salvadorii*, n. sp., Torino, p. 2, SILVESTRI, Boll. Mus. Torino, xi, No. 233.  
*Brachyiulus intermedius*, Tyrol, p. 219, figg. 21-23, VERHOEFF, Arch. Naturg. 1896.  
*Blaniulus armatus*, n. sp., p. 2, pl. i, figg. 1-6; *B. guttulatus*, p. 6, pl. i, figg. 1 & 2; *B. palmatus*, n. sp., p. 5, pl. i, figg. 7-11, Hungary, NÉMEC, SB. Bohmisch. Ges. 1895, Art. xxxviii.  
*Cryptoiulus verhoeffi*, n. sp., Mediterranean, p. 43, BRÖLEMANN, Bull. Soc. ent. France, 1896, No. 3.  
*Diploiuulus truncorum*, n. sp., Tunis, p. 160, SILVESTRI, Natural. Sicil. 1896.  
*Julus bertkaui*, n. sp., p. 6, VERHOEFF, Zool. Anz. xix; *J. lapidarius*, Tunis, p. 159, SILVESTRI, Natural. Sicil.; *J. alemannicus*, p. 225, fig. 77; *J. allobrogicus*, p. 230, figg. 82 & 83; *J. fallax*, p. 226; *J. germanicus*, n. sp., p. 223, figg. 1-5; *J. italicus*, p. 231; *J. nigrofuscus*, p. 226, figg. 78 & 79; *J. riparius*, p. 222; *J.*, sp.?, p. 228; *J. trilineatus*, p. 227, figg. 19, 20, 80, & 81; *J. verhoeffi*, p. 229, figg. 24-26, Tyrol. VERHOEFF, Arch. Naturg. 1896.  
*Leptophyllum austriacum*, n. sp., Tyrol, p. 221, figg. 6 & 7, VERHOEFF, t. c.  
*Ophiuulus parellenicus*, n. sp., Zante, p. 7, SILVESTRI, Ann. Mus. Genova, xvi.  
*Oxyppyge*, n. g., *O. varicolor*, Punta Sabana, p. 4; SILVESTRI, Boll. Mus. Torino, No. 254.  
*Pachyiulus cyprius*, n. sp., p. 46, BRÖLEMANN, Bull. Soc. ent. France, 1896, No. 3; *P. unicolor*, Tyrol, VERHOEFF, p. 217, Arch. Naturg. 1896.  
*Paraiulus furcifer*, p. 69, pl. vii, figg. 21-23; *P. ellipticus*, p. 69, United States; BRÖLEMANN, Mem. Soc. zool. France, lxxv.  
*Plusioporus festæ*, n. sp., Punta Sabana, p. 3, SILVESTRI, Boll. Mus. Torino, No. 254.  
*Schizophyllum mediterraneum*, Tyrol, p. 216, fig. 31; *S. sabulosum*, Tyrol, p. 210, VERHOEFF, Arch. Naturg. 1896.  
*Tachypodiulus albipes*, Tyrol, figg. 32-35; VERHOEFF, Arch. Naturg. 1896.  
*Trachiulidæ*, n. fam., for genera *Trachyiulus*, *Cambalopsis*, *Glyphiulus*, and *Cambalomorpha*, p. 52; SILVESTRI, I Diplopodi.  
*Trachelomegalus*, n. g. for *T. hoplurus* and *Tryoniulus sanguineus*, *T. carnifex*, and *T. erythropus*; SILVESTRI, p. 27, Ann. Mus. Genova, xvi.

## SPIROSTREPTOIDEA.

- Alloporus sulcatulus*, n. sp., Giriamia, p. 439, POCOCK, Ann. Nat. Hist. xvii.  
*Archispirostreptus guayrensis*, n. sp., La Guayra, p. 2, SILVESTRI, Boll. Mus. Torino, No. 254; *A. jallæ*, n. sp., p. 2, *A. dexter*, n. sp., Kazungula, p. 3, SILVESTRI, Boll. Mus. Torino, No. 257; *A. sumptuosus*,

- n. sp., Somaliland, p. 60, *A. ruspolii*, n. sp., Somaliland, p. 61, SILVESTRI, Ann. Mus. Genova. xvii; *A. nigricolor*, n. sp., Somaliland, p. 188, pl. xi, fig. 6, *A. phillipsii*, n. sp., Somaliland, p. 187, pl. xi, figg. 5-5b, POCOCK, Ann. Nat. Hist. xviii.
- Craspedosoma alticolum*, Tyrol, p. 208, figg. 59-62; *A. rawlinsii*, Tyrol, p. 200, figg. 44-53; *A. canestrinii*, Tyrol, p. 206, figg. 39-43; VERHOEFF, Arch. Naturg. 1896.
- Lophostreptus armatus*, n. sp., Ngatana, p. 439, pl. xviii, fig. 6, POCOCK, Ann. Nat. Hist. xvii; *L. cameranii*, n. sp., Kazungula, p. 3, SILVESTRI, Boll. Mus. Torino, No. 257.
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# XIII. INSECTA.

By D. SHARP.

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## INTRODUCTION.

THE amount of entomological work recorded in this volume appears to be fully equal in extent to that of the previous year : the Titles amount to 1264, compared with 1251 in Volume xxxii.

The third volume of the general Catalogue of Hemiptera, prepared by LETHIERRY & SEVERIN (706), has appeared, and it is to be hoped may meet with the encouraging reception it deserves. COCKERELL'S checklist of *Coccidæ* (202) will also certainly be appreciated. KOHL'S work (657) apparently completely systematises the present state of our knowledge of the genera of *Sphegides*—the most extensive division of fossorial *Hymenoptera*. KELLOGG'S papers on *Mallophaga* (600, 601), besides describing a number of new forms, include some valuable observations on points of general interest. ENZIO REUTER'S work on the palpi of butterflies (966) includes a detailed discussion of affinities and phylogeny, with a complex phylogenetic tree ; though it is chiefly concerned with the palpi, yet the views of other entomologists are discussed, and the author fully recognizes the importance of considering the subject from other points of view. PACKARD'S work (850) on the early stages of North American Notodontid Moths, contains a section on the classification of the order, generalising and extending the views he has previously expressed. MAYER (764) has renewed the investigations of Semper, Schäffer, and others, in connection with the lepidopterous wing, confirming most of the results of his predecessors, and tracing to some extent the physiology of scale-pigmentation.

FÉNARD'S account (325) of the internal structures accessory to the genital organs of *Orthoptera*, adds considerably to the knowledge of this difficult subject, and is preceded by a detailed historical sketch. RENGEL (965) has given us an addition to the scanty list of papers on the physiological aspects of Coleopterous metamorphosis. HOLMGREN has made an apparently valuable contribution (515) on the subject of the structure of the integument. It will be a source of regret to many that a memoir of this kind should be entirely in the Swedish language, with which very few entomologists are familiar. A similar remark applies to some memoirs published in Russian, such as PORTSCHINSKY (911).

The experiments and observations of STANDFUSS (1120) on variation and hybridisation have interested a very large circle of readers. M. CH. OBERTHUR'S new livraison (829) is specially devoted to variation ; he brings forward many facts of great interest, while the beauty and faithfulness of his plates could scarcely be surpassed. MARCHAL'S memoir (739) on the reproduction of social wasps is an important contribution to the comprehension of the mode of production of caste, and is remarkable for its judicious and impartial tone. To Dr. HEYMONS we are indebted for further important contributions to development and morphology : the relations of *Aptera* to other insects (502), the development and morphology of *Odonata* (500), and of *Epheméridæ* (501), the morphology of abdominal appendages (498) have been discussed by him, and our knowledge much increased. CHOLODKOVSKY'S paper on *Chermes* (174) gives a full account, historical as well as actual, of the information that has been obtained about these remarkable insects. He points out how much more easy are anatomical and embryological studies than observation of habits or experiments on physiological biology. Prof. J. B. SMITH'S book (1105) though designed specially for agriculturists, may be recommended as a good introductory work for entomologists in general.

The first part of the *Orthoptera* of Madagascar, by DE SAUSSURE & ZEHNTER, has appeared (419); it includes many new species, and

is beautifully illustrated. WILLISTON'S contribution to the West Indian fauna (1250) is really more valuable, because it deals with one of the most neglected of the orders of Insects. The numerous interesting forms described by Dr. HELLER in his paper on Celebes *Coleoptera* (485), lead us to suppose that the importance of the Coleopterous fauna of this island has not been sufficiently recognized. M. PÉRINGUEY'S volume on the *Carabidae* of S. Africa (861) is amongst the most important of the faunistic works of the year; it includes 899 species, of which 341 are new. REITTER (940) has thought it desirable to provide nearly 60 named subgenera or genera for the genus *Curabus* in addition to those that already existed. One of the best of local lists of British *Lepidoptera* has been given us by RICHARDSON (973).

M. PIEPER'S paper on mimicry (903) will, we hope, receive the attention it deserves on account of its philosophical tone, and the fact that the author is actually acquainted with, and has for long been an observer of, the phenomena theorised on. GREEN'S work on the *Coccidae* of Ceylon promises to be one of the most extensive and useful of the works on this family, the literature of which is exceptionally fragmentary. The union of BERLESE'S papers into a separate volume, greatly facilitates access to this valuable store of information (70). SCUDDER'S revision of American fossil *Blattidae* (1053), besides introducing us to a considerable number of new forms, discusses several points of considerable general interest.

In the expectation that it may be of interest to entomologists and others we give the numbers of new species and of new genera and subgenera of Insects recorded in the following pages:—

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<i>Aculeata</i> .....	541	19
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<i>Chrysididae</i> .....	670	47
<i>Sessiliventres</i> .....	177	10
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<i>Heterocera</i> .....	1726	327
<i>Diptera</i> .....	700	66
<i>Rhynchota</i> .....	403	45
<i>Neuroptera</i> , s.l. ....	161	9
<i>Thysanoptera</i> .....	4	0
<i>Aptera</i> .....	68	3
<i>Orthoptera</i> .....	366	84
Totals.....	8907	1040

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CAMBRIDGE, *t. c.* p. 132.—New Forest, HUGHES, p. 333, *t. c.*, WELLS, p. 195, *t. c.*, and WELLS & NASH, *t. c.* pp. 260 & 261.—Brockenhurst, PICKARD CAMBRIDGE, pp. 146-150, *t. c.*—Lymington, FROHAWK, p. 216, *t. c.*, and PATTERSON, p. 315, *t. c.*—Christchurch, DRUITT, pp. 23 & 24, *t. c.*—Isle of Wight, ABBOTT, p. 335, *t. c.*, and PRI-DEAUX, pp. 89-92, *t. c.*—Portland, RICHARDSON (1973).—Purbeck, BANKES, p. 183, Ent. Mag. xxxii.—Isle of Purbeck, BANKES, *t. c.* p. 19; Blandford, EATON, *t. c.* p. 39.—Leatherhead, BRIGGS, p. 184, *t. c.*—Guildford, GROVER, p. 92, Entomologist, 1896.—Epsom, LANCASTER, *t. c.* p. 65.—Richmond, Surrey, COPE, p. 18, Ent. Mag. xxxii.—Brighton, GRIFFITHS, *t. c.* p. 19.—Dulwich, BATE, pp. 301-306, Ent. Rec. vii.—Kent, STOCKWELL, p. 332, Entomologist, 1896, and UPTON, *t. c.* p. 316.—Sevenoaks, GOODWIN, p. 65, Ent. Mag. xxxii.—Sheppey, WALKER, p. 226, *t. c.*—Wye, THEOBALD, Entomologist, 1896, p. 65.—Bristol, additions and corrections to local list, HARDING, P. Bristol Soc. (n.s.) viii, pp. 55-59.—Reading, CLARKE, p. 93, Entomologist, 1896, BUTLER, *t. c.* p. 264, and NASH, p. 195, *t. c.*—Oxfordshire, BARNES, p. 333, *t. c.*—Chalfont Road, SOUTH, p. 264, *t. c.*—Harrow, ROTHSCHILD, p. 124, *t. c.*—Watford, COTTAM, p. 184, Ent. Mag. xxxii.—Essex, WEEKS, Essex Natural. ix, p. 261.—Suffolk, HOCKING, p. 21, Entomologist, 1896; SOUTH, *t. c.*—Ipswich, PYETT, *t. c.* pp. 53-55.—Ipswich, BAYLIS, pp. 87-89, *t. c.*—Dovercourt, MATHEW, p. 23, *t. c.*—Gloucestershire, NASH, pp. 22, 23, & 264, *t. c.*—*Lycæna arion* in Gloucestershire, MARSDEN, p. 176, Ent. Mag. xxxii.—Salop, THORNEWILL, Entomologist, 1896, p. 288.—Staffordshire, BLAGG, *t. c.* p. 264.—Cannock Chase, FREER, Ent. Mag. xxxii, p. 138.—Merton, Norfolk, DURRANT, p. 228, *t. c.*—Lincoln, ELLISON, p. 303, Naturalist, 1896.—Lincolnshire, ELLISON, p. 333, Entomologist, 1896, and LEWINGTON, p. 288, *t. c.*—Cheshire, OLDHAM, p. 354, Naturalist, 1896.—Yorkshire *Lepidoptera* in 1891, HALL, Tr. Yorksh. Union, pt. 20, pp. 143-156.—Scarborough, ROWN-TREE, p. 354, Naturalist, 1896, and p. 368, Entomologist, 1896.—Beverley, HEWETT, Naturalist, 1896, p. 34.—Leeds, JUDGE, p. 258, *t. c.*—Hartlepool, GARDNER, Ent. Mag. xxxii, p. 214.—Huddersfield, PORRITT, *t. c.* pp. 9-11.—Lake district, CRABTREE, p. 291, Entomologist, 1896.—North of England, list of records for 1892, ROEBUCK, pp. 211-232, Naturalist, 1896.—South Wales, SIMMS, p. 195, Entomologist, 1896.—N. Wales, BLAGG, p. 289, *t. c.*—Colwyn Bay, IMMS, p. 336, *t. c.*—Midlothian, GRIMSHAW, p. 193, Ann. Scott. Nat. Hist. 1896.—Culross, MCGREGOR, p. 227, Ent. Mag. xxxii.—Aviemore, EVANS, p. 258, Ann. Scott. Nat. Hist. 1896; Oban, *id. t. c.* p. 259.—Argyllshire, CHRISTY, Entomologist, 1896, p. 262.—Skye, ELLIS, p. 316, *t. c.*—Orkneys, WALKER, p. 368, *t. c.*—Ross-shire, DAVIDSON, Ann. Scott. Nat. Hist. 1896, p. 125.—Moray, BROWN, pp. 192 & 193, *t. c.*—Shetland, KING, BRIGHT, & REID (633).—Ireland (catalogue continued), KANE, Entomologist, 1896, pp. 16, &c., &c., and PEARSON, p. 66, *t. c.*—Wicklow, BARRETT, p. 280, Ent. Mag. xxxii.—Co. Dublin, FAVRAN, p. 317, Irish Natural. v.

*Diptera.* Jersey and Guernsey, LUFF (724).—Dorset, EATON, Ent. Mag. xxxii, p. 65.—New Forest, ADAMS, pp. 162, 182, & 233, *t. c.*, and RICARDO, p. 181, *t. c.*—Lyndhurst, ADAMS, *t. c.* p. 18.—Some *Diptera* of the Alford district, MASON, pp. 175-180, Naturalist, 1896.—Midlands, BRADLEY, Ent. Mag. xxxii, p. 51.—Cheshire, OLDHAM, p. 340, Naturalist, 1896.—Cairngorm, GRIMSHAW, p. 61, Ann. Scott. Nat. Hist. 1896.

*Hemiptera.* New Forest, SAUNDERS, p. 213, Ent. Mag. xxxii.—Doddington, Kent, CHITTY, p. 141, *t. c.*—North of England, records 1889 to 1893, ROEBUCK, Naturalist, 1896, pp. 305-308.—Ben Nevis, THORNLEY, Ann. Scott. Nat. Hist. 1896, p. 168.—Wicklow, HALBERT, p. 212, Irish Natural. v; Galway, *id. t. c.* p. 229.

*Neuroptera.* Leatherhead, BRIGGS, p. 231, Ent. Mag. xxxii.—Folkestone, BRIGGS, p. 231, *t. c.*—North Yorkshire, PORRITT, p. 41, *t. c.*—Huddersfield, PORRITT, p. 41, *t. c.*—Carlisle, MORTON, p. 112, *t. c.*—Ben Nevis, MCLACHLAN, Ann. Scott. Nat. Hist. 1896, pp. 105 & 106.—East Yorkshire, *Trichoptera*, PORRITT, Ent. Mag. xxxii, p. 278.—Huddersfield, PORRITT, p. 372, Naturalist, 1896.—North Devon, BRIGGS, p. 258, Ent. Mag. xxxii.—Uddingston, MORTON, *t. c.* p. 231, Unst, Shetland, KING, pp. 151 & 152, *t. c.*—*Odonata*, New Forest, MCLACHLAN, Ent. Mag. xxxii, p. 181.

*Orthoptera.* Hauts, LUCAS, p. 278, Ent. Mag. xxxii.—Lyndhurst, BURR, p. 231, *t. c.*—Folkestone, BURR, p. 230, *t. c.*—“*Locusta peregrina*” in London, BELL-MARLEY, p. 66, Entomologist, 1896.—Bradford, BURR, p. 278, Ent. Mag. xxxii.

(d.) *North Europe and Siberia* [see also (a.) and (b.)].

*Insecta.* THOMSON, Sweden, Opusc. Ent. xxi, pp. 2388–2404.—ROTH, Sweden, Ent. Tidskr. xvii, pp. 273–278.—KIRBY, Norway, Ent. Rec. viii, p. 297.

*Coleoptera.* ERICSON, Sweden, Ent. Tidskr. xvii, pp. 257–266, also (297).—POPPIUS, Finland, p. 14, Medd. Soc. Faun. Fenn. xxi.—HEYDEN, Catalog der Coleopteren von Siberien. Nachtrag I, pp. 177–217; completion. Zweiter Nachtrag, pp. 1–32 (497).—REITTER, E. Siberia (950).—ULLMANN, Scandinavia, pp. 203–208, Ent. Tidskr. xvii.—WEISE, Siberia (1230).

*Hymenoptera.* SAHLBERG, Finland, pp. 10–12, Medd. Soc. Faun. Fenn. xxi.—TRYBOM, Sweden, Ent. Tidskr. xvii, pp. 77 & 78.—MORAWITZ, Siberia (805).

*Lepidoptera.* Beitrag zur Kenntniss der Schmetterlingsfauna des Gouvernements St. Petersburg, BLÖCKER, pp. 464–480, Horæ Soc. ent. Ross. xxx.

*Diptera.* E. REUTER, Finland (967).—BORG, Finland, p. 43, Medd. Soc. Faun. Fenn. xxi.

*Hemiptera.* WARLOE, Norway, Ent. Tidskr. xvii, p. 144.—CHOLODKOVSKY, *Aphididae* (170).—Gulf of Finland, *Aphididae*, CHOLODKOVSKY (172, 173).—LAMPA, Scandinavia, *Coccidae*, Ent. Tidskr. xvii, p. 170.

*Neuroptera.* O. M. REUTER, Finland, pp. 62–64, Medd. Soc. Faun. Fenn. xxi.—MCLACHLAN, Varanger Fiord, *Trichoptera*, p. 277, Ent. Mag. xxxii.—TRYBOM, Siberia *Thysanoptera* (1157).

*Aptera.* REUTER, Finland (971).—LIE-PETTERSEN, Norway, *Aptera* (714).

(e.) *Central and Eastern Europe, incl. Denmark* [see also (a.) and (b.)].

*Insecta.* ROSTRUP, Denmark, galls (996).—Breslau, Zeitschr. ent. Breslau, pp. ix–xx, and GERHARDT, Neuheiten der schlesischen Koleoptern fauna, *t. c.* pp. 13–22.—GRENTZENBERG, Karthaus, W. Prussia, pp. 239–244, Schr. Ges. Danzig, ix.—NÄGELI, Switzerland (818).—Beitrag zur Insekten-Fauna der Kantone St. Gallen und Appenzell, WEGELIN, Ber. St. Gall. Ges. 1894–95, pp. 115–132.—Hungary, SZÉPLIGETI, galls (1134).—Orenburg, RUZSKI, Trudui Kazan Univ. xxviii, No. 5, pp. 35–64.

*Coleoptera.* GANGLBAUER (398), KIEFFER (622).—E. Europe, JACOBSON (561).—Netherlands, EVERTS, p. 173, Tijdschr. ent. xxxix.—Borkum I., SCHNEIDER (1035).—Hamburg, WIMMEL, p. 4, Verh. Ver. Hamburg, ix; GEBIEN, *t. c.* pp. 8 & 10; BEUTHIN, *Cicindelidae*, pp. 12–16.—Silesia, GERHARDT, pp. 179 & 180, Deutsche ent. Zeitschr. 1896.—Die Käfer von

Nassau und Frankfurt; Siebenter Nachtrag; HEYDEN, Jahrb. Nassau. Ver. xlix, pp. 71-92.—Germany, VORBRINGER, Berlin. ent. Zeitschr. 1896, p. 277.—Switzerland, DANIEL (233).—Austria, GANGLBAUER (395).—Siebenbürgen, MÉHELY, pp. 179-197; Ertes. Erdel. Mus. xx, and BIELZ, pp. 52-54, Verh. Sieben. Ver. xlv. — Bukowina, HORMUZAKI, Soc. ent. xi, pp. 11, &c.—Carinthia, GANGLBAUER (396).—Croatia, EPPELSHEIM (296).—Hungary, BRAUNS (111).—S. Russia, JACOBSON (560), PIC (898).

*Hymenoptera.* MAYR (771).—Denmark, BORRIES (104).—Belgium, DEPPEZ, pp. 505-507, Ann. Soc. ent. Belgique, xl.—Germany, FRIESE, pp. 189 & 190, Ent. Nachr. xxii.—Mark Brandenburg, RUDOW, pp. 325, &c., Illustr. Wocheuschr. i.—Aargau, *Tenthredinidae*, DÖBELI, D. & S., Mt. Aargau Ges. vii, pp. 21-33.—Hungary, SZÉPLIGETI (1132, 1133).—Styria, HOFFER (505).—Orenburg, RUSZKI (1009).—East Russia and Ural Mts., RUSZKY (1007).

*Lepidoptera.* KLEMENSIEWICZ (647).—Kurland, SLEVOGT, pp. 10, &c., Soc. ent. xi.—Netherlands, CALAND, p. 164, Tijdschr. Ent. xxxix; OUDEMANS, p. cxxxvi, Tijdschr. Ent. xxxix; Eenige faunistische en biologische aantekeningen betreffende verschillende in 1895 gevangen en gekweekte, *Macrolepidoptera*, OUDEMANS, Tijdschr. Ent. xxxix, pp. 77-90.—Zevenhuisen, LECHNER, pp. 75 & 76, Tijdschr. Ent. xxxix.—Belgium, CROMBRUGGHE, pp. 149 & 427, Ann. Soc. ent. Belgique, xl, and HIPPERT, *t. c.* p. 399.—Ardennes, BATH, Entomologist, 1896, p. 226.—Lower Elbe, SAUBER, pp. 17 & 18, Verh. Ver. Hamburg, ix.—Germany, BANKES (47); HOFMANN, *Pterophoridae* monograph (507).—Oberlausitz, Saxony, SCHÜTZE, II Theil (Sphinges and Bombyces), Deutsche ent. Zeitschr. Lep. ix, pp. 321-343.—Dresden, STEINERT, pp. 344-348, Deutsche ent. Zeitschr. Lep. ix.—Mecklenburg, SCHRÖDER, Arch. Ver. Mecklenb. xlix, pp. 136-138.—Switzerland, BATH, Entomologist, 1896, pp. 9-12; HECKEL, Verh. Ver. Hamburg, ix, pp. 42-52; PÜNGELER (915).—Graubünden, CAFLISCH, Mt. Schweiz. ent. Ges. ix, pp. 411-413.—Tessin, KNECHT, pp. 322-325, Mt. Schweiz. ent. Ges. ix.—Tyrol, LEMANN, pp. 221-224, Ent. Rec. vii.—Wolmar, LUTZAN (727).—Poprad, Galicia, SCHILLE (1026).

*Diptera.* KIEFFER (618, 620, 627).—Belgium, COUCKE (222).—Borkum I., LICHTWARDT (713), and KUNTZE (688).—Lorraine, KIEFFER (624, 625).—Hungary, KERTÉSZ (612).

*Aphaniptera.* Denmark, MEINERT (777).—Borkum I., HELLER (487).

*Hemiptera.* MELICHAR, *Homoptera* (779).—Belgium, DE BORRE, p. 65, Ann. Soc. ent. Belgique, xl, and JONCK, pp. 237-240, *t. c.*; JONCK, *Pentatomides* (583).—Styria, THEN (1141).—HENRICH, *Aphididae* (491).

*Neuroptera.* SCHWAIGHOFER, *Odonata* (1045).—Die *Neuroptera*-Fauna der weiteren Umgebung von Frankfurt-a.-M., Ber. Senckenberg. Ges. 1896, pp. 105-124.—Switzerland, RIS (979), and McLACHLAN, Ent. Mag. xxxii, p. 42.—Tyrol, McLACHLAN, p. 258, *t. c.*

*Aptera.* Switzerland, VOGLER (1194).

(f.) *France* [see also (a.) (b.) and (g.)].

*Insecta.* Chasses dans la Loire-inférieure, DOMINIQUE, Bull. Soc. Ouest France, vi, 1896, pp. 57-66.

*Coleoptera.* ACLOQUE (8), BÉGUIN, p. 140, Rev. Sci. Bourbonnais, ix, DEMAISON (240), DESBROCHERS (244), PUTON, Rev. Ent. franc. xv, p. 236.—Compiègne, BEDEL, p. 336, Bull. Soc. ent. France, 1896.—Nueil-sur-Seine, DECAUX, p. 263, Bull. Soc. ent. France, 1896.—Gardon, MINGAUD, p. lxix and pp. 100-109, Bull. Soc. Nimes, xxiii, and p. 65, *op. cit.* xxiv.—Pont-du-Gard, MINGAUD, Feuille Natural.

xxvi, pp. 56 & 81.—Maine-et-Loire, PERKAUDIÈRE, p. 303, Bull. Soc. ent. France, 1896.—East France, SAUBINET, pp. 111–113, Echange, xii.

*Hymenoptera.* Catalogue of *Chrysididae* completed, R. DU BUYSSON, Rev. Sci. Bourbonnais, ix, pp. 52, 88, &c.—ANDRÉ (17), KIEFFER (630), CHRÉTIEN, p. 412, Bull. Soc. ent. France, 1896.—Paris, ANDRÉ, Bull. Mus. Paris, 1896, p. 24; ants in hothouses, ANDRÉ in DOLLFUS (253).—Loire-inférieure, DOMINIQUE (254); *Tenthredinidae*, DOMINIQUE, pp. 17–22, Bull. Soc. Ouest France, vi, 1896; *Pimplaricæ*, DOMINIQUE, Bull. Soc. Ouest France, v, 1895, pp. 59–61.—Liste annotée des fourmis de Saone-et-Loire, MARCHAL, Bull. Soc. Autun, viii, pp. 431–441,

*Lepidoptera.* *Saturnia pyri*, distribution, ROCQUIGNY-ADANSON, Feuille Natural. xxvi, p. 121, GIARD, *t. c.* p. 182.—CH. OBERTHUR (829), CHRÉTIEN (180).—Paris, POUJADE, p. 366, Bull. Soc. ent. France, 1896.—Loire-inférieure, BONJOUR, pp. 23–30, Bull. Soc. Ouest France, vi, 1896.—Maine-et-Loire, *Rhopalocera*, CHEUX, pp. 213–215, Bull. Soc. Ouest France, v, 1895.—Nanterre, CHRÉTIEN, p. 193, Bull. Soc. ent. France, 1896.—La Bretagne, DUPONT, Feuille Natural. xxvi, p. 56.—Aix-les-Bains, TUTT, p. 233, Ent. Rec. viii.—Alps of Dauphiné, TUTT, pp. lvii & lviii, P. ent. Soc. London, 1896, and pp. 253–260, Ent. Rec. viii.

*Diptera.* KIEFFER (621), MARCHAL (738).

*Hemiptera.* Corrections et additions au catalogue des *Hémiptères*, Bull. Soc. Ouest France, v, 1895, pp. 21–26.

*Neuroptera.* Chalon, *Formicaleo*, GUILLEMIN, Bull. Soc. Saone, 1896, p. 82.—Matériaux pour servir à la faune des *Neuroptères* de la Loire-inférieure, *Odonates* ou *Libellulidées*, PIEL DE CHURCHEVILLE, Bull. Soc. Ouest France, v, 1895, pp. 45–52.—Sur la Faune des *Odonates* de la Loire-inférieure, MARTIN, *t. c.* pp. 151–157.

*Orthoptera.* FINOT, pp. 13 & 14, Bull. Soc. ent. France, 1896; AZAM, pp. 373–375, Bull. Soc. ent. France, 1896.

(g.) *Southern Europe and Mediterranean Basin* [see also (a.) (b.) and (f.)].

*Insecta.* Piedmont, various lists by GRIFFINI in Miscell. ent. i–iii.—Italy, GRIFFINI (434).—Candia, CECCONI, Bull. Soc. ent. Ital. xxvii, pp. 194–218.—Algeria, PIC, pp. 4–8, Rev. Sci. Bourbonnais, ix, SCHMIEDEK-NECHT (1033).—Tripolis, RIZZARDI, Bull. Soc. ent. Ital. xxviii, pp. 14–19.

*Coleoptera.* ABEILLE (6), CROISSANDEAU (227), ESCHERICH (300, 301), FAIRMAIRE (313), GUILLEBEAU (459, 460, 462), MEYER (791), ORBIGNY (840), PIC (872, 877–879, 881, 893, 900).—Portugal, BARROS, Subsídios para o estudo da fauna entomologica transmontana; Ann. Sci. nat. Porto, iii, pp. 39, &c., &c.—Spain, BLEUSE (92), REITTER (944), VAULOGER (1183).—Barcelona, TRAZET, pp. 182 & 183, Act. Soc. Espana. xxiv.—Nice, GOZIS (418).—Summit of the Procinto, NERI, pp. 105–107, Atti Soc. Toscana, pr.-verb. x.—Italy, FIORI (336, 337).—Sicily, GESTRO (404); PALUMBO, pp. 124–131, Natural. Sicil. (n.s.) i; RAGUSA, *t. c.* pp. 138–142. Sicily, continuation of catalogue, RAGUSA, *t. c.*—Contribuzione alla fauna Trentina; Fine, *Cerambycidae*, *Chrysomelidae*, *Coccinellidae*; BERTOLINI, Bull. Soc. ent. Ital. xxvii, pp. 117–168.—Balkans, APFELBECK (25) —Taygetos, FLEISCHER (338).—N. Africa, ABEILLE (4).—BEDEL, Cat. raisonné continued (*cf.* Zool. Rec. 1895), pp. 49–108; DESBROCHERS (242), FAIRMAIRE (312), GUILLEBEAU (459), PIC (873, 876, 901), and pp. 107 & 108, Echange, xii; REITTER (955).—Tangier, LEWIS (710).—Algeria, ABEILLE (3, 5, 7), BEDEL (55, 56), BRENSKE (114), CHOBOUT (162–169), CLOUET (182, 183), DESBROCHERS (243, 245), GROUVELLE (458), PIC (872, 875, 887, 888, 890, 894, 895, 902, 927), and Bull. Soc. ent. France, 1896,



p. 337; SCHMIDT (1031).—Tunis, REITTER (951); ESCHERICH, pp. 274–277, Verh. Ges. Wien, xlvi.—Egypt, GROUVELLE (453).—Asia Minor, REITTER (943), SCHWARZ (1050), WASMANN (1221).—Asia Minor and Syria, PIC (871).—Syria, ABEILLE (2, 5), BENDERITTER (62, 63); BUYS-SON, pp. 38–42, Ann. Soc. ent. France, 1896; DEMAISON (240), GROUVELLE (458), PIC (875, 886, 892).—Persia, ESCHERICH (302), ROESCHKE (994), THÉRY (1145).—Tauria, REITTER (964).

*Hymenoptera*. FERTON (331), FRIESE (374), GRIBODO (431).—E. Pyrenees, ANDRÉ (19).—Spain, KIEFFER (630), DUSMET (269).—Italy, MAGRETTI (737); *Tenthredinidæ* of Italy, COSTA (220); *Tenthredinidæ* and *Siricidæ* of Modena, BENZI & PICAGLIA, Atti Soc. Modena, xxix, pp. 73–102.—N. Africa, TOSQUINET (1154).—Algeria, EMERY (287), GRIBODO (429).—List of *Chrysididæ* of Barbary, R. DU BUYSSON, C.R. Ass. Franc. xxv, 2, pp. 467–471.

*Lepidoptera*. Spain, KORB (667).—South Spain, NICHOLSON (825).—Pyrenees, OBERTHUR (831).—Corsica, WALSINGHAM (1198).—Roumania, CARADJA (143), JOANNIS, pp. 31 & 32, Bull. Soc. ent. France, 1896.—Morocco, REBEL (533).—Algeria, CHRÉTIEN, p. 193, Bull. Soc. ent. France, 1896, and (180).—Egypt, BRABANT (108).—Asia Minor, RÜBER (991); Cilicischen Taurus, RÜBER (986a).

*Diptera*. Italy, BEZZI (77), FICALBI (332, 333), GRIFFINI (439); *Anthracidæ* of Piedmont, GRIFFINI (435).—Algeria, MARCHAL (738).—Asia Minor, RÜBER (993).

*Hemiptera*. PUTON (917).—Portugal, OLIVEIRA, Ann. Sci. nat. Porto, iii, pp. 17, &c.—Spain, PUTON (918).—Italy, GRIFFINI, Aquatic, pp. 68, &c., &c., Miscell. ent. iv.—Piedmont, GRIFFINI, Miscell. ent. iv, p. 143.—Crimea, *Aphididæ*, MOKRZECKY (798).

*Homoptera*. Asia Minor, MELICHAR (782).—Egypt, *Coccidæ*, COCKERELL (210).

*Neuroptera*. KLAPÁLEK (646).—Piedmont, GRIFFINI, Miscell. ent. iv, pp. 44 & 45.—Tortona, *Odonata*, BENTIVOGLIO, pp. 101–103, Atti Soc. Modena, xxviii; Mortara, *id. t. c.* pp. 199–207.—Materiali per un catalogo dei *Mallofagi e Pediculini italiani*, cont.; BERLESE, pp. 232–244, Bull. Soc. ent. Ital. xxvii.—Algeria, *Trichoptera*, MORTON (813), *Planipennia*, BRONGNIART, p. 30, Bull. Mus. Paris, 1896.

*Orthoptera*. GRIFFINI (440).—Spain, PANTEL (857).—Tunis, ESCHERICH, p. 273, Verh. Ges. Wien, xlvi.—N. Africa, KRAUSS & VOSSELER (682).—Asia Minor, KRAUSS (681).—I. of Alboran, ALLUAUD, pp. 219 & 220, Bull. Soc. zool. France, xxi.

(h.) *Caucasus and West and Central Asia, including ARABIA*  
[see also (a.) and (b.)]; for THIBET, see 6.

*Insecta*. Transcaspian, SEMENOW (1069).

*Coleoptera*. Caucasus, PIC (882), REITTER (941, 943), SCHULTZE (1043).—Somchetia, SCHWARZ (1051).—Caucasus and Turcomania, REITTER (949).—Turkestan, REITTER (955).—Caucasus and W. Centr. Asia, REITTER (962).—Caucasus and W. Asia, STIERLIN (1129).—Arabia, FAIRMAIRE (310, 311), PIC (872, 900).—Aden, GAHAN (394).—Transcaspian, SEMENOW (1063, 1065), SOKOLOV (1118).—W. and Centr. Asia, REITTER (961).—Centr. Asia, PIC (880), SEMENOW (1072).—Centr. Asia, Chinese Turkestan, SEMENOW (1064).—Chinese Turkestan, SEMENOW (1070).—Chinese Turkestan, Mongolia, Transcaspian, JAKOWLEW (569).—Centr. Asia, SEMENOW (1066).

*Hymenoptera*. W. Asia, MORAWITZ (805), GRIBODO (430).—Transcaspian, MORAWITZ (806).—Aden, BUYSSON (134).

*Lepidoptera*. Caucasus, TEICH (1137).—Arabia, BUTLER (121), WALSINGHAM & HAMPSON (1201), WARREN (1210, p. 413).

*Hemiptera.* Turkestan, HORVÁTH (527), OSCHANIN (843), MARTIN, Bull. Mus. Paris, 1896, p. 29.—Centr. Asia, BIANCHI (78).—Baluchistan, *Coccidæ*, NEWSTEAD (820).

*Neuroptera.* Turkestan, SAUSSURE (1015).

*Orthoptera.* Transcaspian, SUBOWSKY (1131).—Mongolia, ZUBOWSKY (1264).

#### 4. AFRICA (TROPICAL AND SOUTH ; for NORTH AFRICA, see 3 (g.); for COMORO IS., see 5).

*Insecta.* *Orthoptera*, *Hymenoptera*, *Hemiptera*, KIRBY (639).

*Coleoptera.* Distinctions of Cape Town and Natal Coleopterous fauna, RAFFRAY, p. 198, Bull. Soc. ent. France, 1896 ; BLANDFORD (90), BRENSKE (114, 116), CANDÈZE (140) ; FAIRMAIRE, St. Thomas (306, and 307, p. 357, and 310) ; FAUST (316, 319, 320), FLEUTIAUX (341, 342, 346).—GAHAN, Somaliland (394), GROUVELLE (449, 456), HARTMANN (480), HORN (521, 523, 524, 527), JACOBY (565), JORDAN (585, 586), KERREMANS (608, 611), KOLBE (658-660), KRAATZ (670, 671-675, 677, 678), LINELL (718), MÖLLENKAMP (799), OLIVIER (838), PÉRINGUEY (861, 862), PIC (870, 884, 890, 891), RAFFRAY (926), SCHILSKY (1028), SCHOCH (1037-1039), SCHWARZ (1048, 1049).—SENNA, Liberia, *Brenthidæ*, p. 253, Notes Leyden Mus. xvii ; SHIPP (1087), THIÉRY (1145), TSCHITSCHÉRINE (1163), WASMANN (1211, p. 78), WATERHOUSE (1225), WEISE (1232), ANDRÉ (20, 22).—Somaliland, *Mutillidæ*, ANDRÉ (23), BINGHAM (81), EMERY (286, p. 62, and 292), EMERY, GRIBODO, KRIECHBAUMER (293), FOX (366), GRIBODO (429, 431), KONOW (664), MAYR (770), TOSQUINET (1154).

*Lepidoptera.* AURIVILLIUS (34, 35), BUTLER (120, 122-124, 129-131).—BUTLER, Somaliland (121), WALSHINGHAM & HAMPSON (1201), DRUCE (259), H. H. DRUCE (264), HAMPSON (471), HOLLAND (508, 510-513), KARSCH (589, 591-593), KIRBY (636), LANZ (694), MARSHALL (747), ROTHSCHILD (999, 1002), ROTHSCHILD & JORDAN (1004) ; SCOTT-ELLIOTT, Naturalist in Mid-Africa, pp. 388 & 389 ; SEELDRAIERS (1059), SHARPE (1081-1084), STAUDINGER (1122), WARREN (1210), WEYMER (1234).

*Diptera.* BECKER (54).

*Hemiptera.* BERGROTH (67, 69), MONTANDON (800, 801), NEWSTEAD (820), W. Africa, *Coccidæ*.

*Neuroptera.* KIRBY (638), SJÖSTED, *Termitidæ* (1088).—*Odonata.* CALVERT (137) and P. U. S. Mus. xviii, pp. 143-145 ; KARSCH (594).—Somaliland, KIRBY (637), MCLACHLAN (730).

*Orthoptera.* KARSCH (596), KIRBY (641, 643, 644), MARTINEZ (759), SAUSSURE & ZEINTNER (419).

#### 5. MADAGASCAR, including SEYCHELLES and MASCARENE IS.

Fauna of Madagascar ; SAUSSURE (419).

*Coleoptera.* ALLUAUD (16), CANDÈZE, Réunion, Comoro Is. (140), FAIRMAIRE (307, 308, 312), *id.*, Aldabra (309), FAUST (316), FLEUTIAUX (341, 342, 346, 349), GROUVELLE (449), GUILLEBEAU (461), HORN (521), JORDAN (586), KOLBE (659), PIC (885), RAFFRAY (926), SCHOCH (1039), SHIPP (1086), TSCHITSCHÉRINE (1162).

*Hymenoptera.* EMERY (286, p. 63), MOCSÁRY (797).

*Lepidoptera.* HOLLAND, Seychelles, &c (509), ROTHSCHILD (1004).

*Hemiptera-Heteroptera.* MONTANDON (800, 801).—*Homoptera*, MELICHAR (783).

*Neuroptera.* SAUSSURE (1015). *Odonata.* SELYS (1062).—MARTIN, Seychelles (756).

*Orthoptera.* SAUSSURE (1017), SAUSSURE & ZEINTNER (419).

## 6. TROPICAL AND EASTERN ASIA, WITH JAPAN.

For outskirts see also 3, (a.), (g.), (h.). ARABIA, see 3 (h.).

FEA, account of his zoological discoveries in Burma and neighbouring countries (321).

*Coleoptera.* ALLARD, India (15), BRENSKE (114); BLANDFORD, Indo-China (91); BOILEAU, China (96); BOURGEOIS, India (105); BRENSKE India (115), CANDÈZE (140); FAIRMAIRE, India (314); FAIRMAIRE, India (omitted title, cf. *Tenebrionidæ* at head); *id.*, China and E. Thibet (314); *id.*, India, China (315), FAUST (318), FLEUTIAUX (341, 342); *id.*, Burma (343); GORHAM, Burma (416), GROUVELLE (453); *id.*, Tonkin (451); *id.*, Burma (452); HORN, India (525, 528); *id.*, Indo-China (520); JACOBY, India (563); JAKOWLEW, Burma (568); *id.*, China (570); JORDAN, India (586); LESNE, Indo-China (703); LEWIS, Japan (707, 708); *id.*, Japan and Oshima (709); PIC, India (884), PLANET (907); Ceylon, POLL, p. 132, Notes Leyden Mus. xvii; Indo-China, RÉGIMBART, Bull. Mus. Paris, 1896, p. 245, ALLARD, *t. c.* p. 246, TERTRIN, *t. c.* p. 247, FLEUTIAUX, *t. c.* p. 249, BRONGNIART & PIC, *t. c.* p. 250; REITTER, China (940, 952); *id.*, Japan (952); RITSEMA, Siam (981); *id.*, Saigon (986), SCHOCH (1037, 1038), SCHWARZ (1050); SHARP, Japan and Kurile Is. (1076); THÉRY, China (1146); TSCHITSCHÉRINE, Singapore (1165), WASMANN (1215); *id.*, India (1220, 1221); WATERHOUSE (1225).

Loo-choo, *Coleoptera*, see INSULAR.

*Hymenoptera.* ANDRÉ (20); *id.*, Siam (18); BINGHAM (82); *id.*, India and Burma (81); *id.*, Ceylon, list of the Aculeate *Hymenoptera* (80); BUYSSON, India (134); CAMERON, India and Ceylon (138); HOWARD & ASHMEAD, Ceylon (542); KONOW Japan (664); MAGRETTI, Burma (736); MOCSÁRY, Japan (797); DE SAUSSURE, Indo-China, Bull. Mus. Paris, 1896, p. 260, ANDRÉ, *t. c.* p. 261; SEMENOW, East Tibet (1067, 1068).

*Lepidoptera.* CROWLEY, Burma (228); DAVIDSON, BELL, & AITKEN, India (238); DRUCE, China (260); FRUHSTORFER, Ceylon (380); GROUVELLE, India (450); HAMPSON, India (470, 471); HERON, Ceylon (495); HOLLAND, Kashmir, pp. 275-278, P. U. S. Mus. xviii; A. JANET, Tonkin (572); MOORE, India (804), NICÉVILLE (821); *id.*, Burma (822, 823); NICÉVILLE & MARTIN, Malay peninsula, Burma, &c. (824); CH. OBERTHUR, India and E. Tibet (829); POUJADE, Indo-China, p. 262, Bull. Mus. Paris, 1896; ROTHSCHILD (1004); SNELLEN, India (1113); STAUDINGER, Chinese Mongolia (1124); SWINHÖE, India (1135); WARREN (1205, 1207, 1210); *id.*, India (1206, 1209); *id.*, Japan (1205, 1207, 1210, p. 395); WATSON, Burma (1227).

*Diptera.* JACOBSON, Se-tschuan (559); WULF, Ta-tsien-lu (1259).

*Hemiptera.* BIANCHI, W. China (78, 79); NOUALHIER (828).—*Heteroptera*, BERGROTH, India (66); MONTANDON (801); *id.*, India (800); *id.*, Burma, *Cryptocerata* (803); *id.*, Japan (800); UHLER, Japan (1180).—*Homoptera*, BUCKTON, India (118); COCKERELL, Japan, *Coccidæ* (204, 206, 211); CRAW, China, *Coccidæ* (225); MASKELL, E. India and Ceylon, *Aleurodidæ* (760); GREEN, Ceylon, *Coccidæ* (421, 422); *id.*, India, *Coccidæ* (425); MASKELL, E. India, *Coccidæ* (762).

*Neuroptera.* SAUSSURE, India and Ceylon (1015); WASMANN, Burma, *Termitidæ* (1215); MCLACHLAN, India, *Odonata* (730); *id.*, Moupin and Szechuen, *Odonata* (731).

*Orthoptera.* KIRBY, India and China (642); MARTINEZ, India (759); DE SAUSSURE, Burma (1017).

## 7. ASIATIC ARCHIPELAGO, including PAPUA.

*Coleoptera.* BLANDFORD (88), BRENSKE (114), CANDÈZE (140); *id.*, Mentawai Is. (141); *id.*, Sumatra (142); *id.*, Bintang, Arch. Riouw, Natuna I. (142), FAIRMAIRE (314, 315); FAUST, Java (318), FLEUTIAUX (341, 344); *id.*, Sumatra (347, 348), and p. 398, Bull. Soc. ent. France, 1896; *id.*, Sumatra, Java (349); *id.*, New Guinea, *Triaxigidae* (345); GESTRO, Mentawai Is. (403); *id.*, Natuna Is., N.W. from Borneo, *Hispidæ* (405), GROUVELLE (450, 453); *id.*, Sumatra (451); *id.*, Sumatra and Philippines (457); HELLER, Celebes (485), HORN (525); *id.*, Sumatra (522); *id.*, Borneo, New Guinea (528); JACOBY, Sumatra (564); *id.*, Mentawai Is. (566), JORDAN (586), KERREMANS (607); *id.*, Sumatra (610); *id.*, Papua (606); KRAATZ, Borneo (679); LEWIS, Sumatra (711); OLIVIER, Java (838), PIC (870); *id.*, Borneo (883); *id.*, Java (898); RITSEMA, *Helota* (920); *id.*, Borneo (982-984); *id.*, Sumatra (985); *id.*, Borneo, Sumatra, *Cerambycidae* (921); SCHMIDT, Sumatra, *Histeridae* (1032); SCHOCH, Borneo (1037, 1038); *id.*, Lombok (1039), TSCHITSCHÉRINE (1162); WASMANN, Java (1211).

*Hymenoptera.* ANDRÉ (18, 20, 22); BINGHAM, Sumatra (82); *id.*, Java and Sumatra (81); EMERY, Java (289), GRIBODO (429); MOCSÁRY, Sumbawa (797).

*Lepidoptera.* BUTLER, Borneo and Nias (124); H. H. DRUCE, Java, Cagayan (262); *id.*, Borneo (262, 263), FRUHSTORFER (380, 381); *id.*, Lombok (382); *id.*, Celebes (383); HAGEN, Bawean (between Java and Borneo) (465); *id.*, Sumatra (466), HAMPSON (470); *id.*, Sumbawa (471); MARTIN, Sumatra (755), NICÉVILLE (821); NICÉVILLE & MARTIN, Sumatra, list of the butterflies (824), SMITH & KIRBY (1104); PIEPERS & SNELLEN, Talaut Is. (904), SNELLEN (1114); *id.*, Sumatra (1116), STAUDINGER (1122), WARREN (1207, 1210); *id.*, Java (1206, p. 116); *id.*, N. Guinea (1206), PAGENSTECHE (854); *id.*, Sumba and Sumbawa (855); RÖBER, Celebes (987); *id.*, Lombok (988); *id.*, New Guinea (990), ROTHSCHILD (999, 1001); *id.*, Borneo (1002); *id.*, Sumba (1003), ROTHSCHILD & JORDAN (1004).

*Diptera.* Die Dipteren der Semon'schen Sammlung; Denk. Ges. Jena, v, iii Lief. pp. 355 & 356; WULP (1257).

*Hemiptera.* BREDDIN, Java (112).—*Heteroptera*, MONTANDON (800, 801); *id.*, Sumatra, Mentawai, Papua (802).—*Homoptera*, DISTANT, New Guinea (246); *id.*, Mentawai I. (247).

*Neuroptera.* FÖRSTER, *Odonata* (361); FOERSTER, Sumba (350).

*Orthoptera.* KARSCH (595), KIRBY (644); *id.*, Borneo (642), SAUSSURE & ZEHNTER (419); SAUSSURE, Java (1017).

## 8. AUSTRALIA AND TASMANIA.

*Insecta.* AFLALO (12).

*Coleoptera.* Supplement to part ii of the catalogue published in 1886; pp. 49-108, P. Linn. Soc. N. S. Wales, 1896, suppl. (*Dytiscidae* to *Copridae*, part).—BLACKBURN (83-85), CANDÈZE (140), CHAMPION (149, 151), FLEUTIAUX (340, 344); *id.*, *Triaxigidae* (345); GROUVELLE, Tasmania (451), KERREMANS (611), LEA (697), JORDAN (586), OLIVIER (838), PIC (870), SCHOCH (1037, 1038), SHIPP (1085), SLOANE (1096-1099), TSCHITSCHÉRINE (1162, 1165).—Lake Callabonna, TEPPER, Tr. R. Soc. S. Austral. xx, pp. 212-216.

*Hymenoptera.* ANDRÉ (18, 22), ASHMEAD (29); FLETCHER, P. Linn. Soc. N. S. Wales, 1895, p. 537; FROGGATT (376), HOWARD (535), MOCSÁRY (797).

*Lepidoptera.* LOWER (722, 723), ROTHSCHILD (999-1002), TURNER (1169), WARREN (1205-1207, 1210).—Catalogue of Victorian *Heterocera*

(contd.), LOWER, Victorian Natural. xii & xiii.—Castlemaine *Rhopalocera*, BILLINGHURST, *op. cit.* xii, pp. 91–93.

*Diptera.* SKUSE (1091).

*Hemiptera.* MONTANDON (801); MASKELL, *Aleurodidæ* (760); FULLER, *Coccidæ* (389); MASKELL, *Coccidæ* (762).

*Orthoptera.* KIRBY (642, 644), SAUSSURE & ZEHNTNER (419), TEPPER (1138, 1139).

## 9. NORTH AMERICA.

*Insecta.* COCKERELL (185); DAVIDSON, *Dipteron, Hymenopteron* (237).—Mount Washington, Alpine, SLOSSON, pp. 262–265, Ent. News Philad. vii.—Elkhart, Indiana, WEITH, p. 104, *t. c.*—Texas, MARLATT, p. 44, P. ent. Soc. Washington, iv.—Texas, tropical forms in, SCHWARZ, p. 1, *t. c.*—Georgia and Florida, CASTLE & LAURENT, pp. 300–305, Ent. News Philad. vii.

*Coleoptera.* CANDÈZE (140), CHITTENDEN (160), and p. 197, Canad. Ent. xxviii, HAMILTON (469), HORN (519), and Lower California (518), KERREMANS (611), LENG (701), LINELL (716, 719, 720), PIC (889).—Canada, WICKHAM (1243); Lake Superior, WICKHAM (1245); Manitoba, CHAGNON, pp. 156, &c., Natural. Canad. xxiii; Massachusetts, BOWDITCH, Ent. News Philad. vii, p. 33; Mt. Washington, BOWDITCH (107); *Coleoptera* of Central Illinois, II, WOLCOTT, pp. 234–238, Ent. News Philad. vii; Indiana, BLATCHLEY, Psyche, vii, pp. 336–339, 379–381, &c., &c.; Catalogue of *Coleoptera* of South-western Pennsylvania, HAMILTON (468); Kansas, KNAUS, Tr. Kansas Ac. xiv, p. 126; New Mexico and Arizona, WICKHAM (1244).

*Hymenoptera.* ASHMEAD (29–31, 234, 236), ASHMEAD, Bahamas (32); BAKER, *Oxybelus* (40); COCKERELL (186–200), COCKERELL & BAKER (214), DUNNING (267, 268), FOX (363, 364), FYLES (392), GILLETTE (407), HARRINGTON (475), *id.*, Ottawa (577), HOWARD (538), MARLATT (743, 744), PROVANCHER (914), ROBERTSON (992); New Mexico and Arizona, TOWNSEND, Canad. Ent. xxviii, pp. 110–112 & 138–142.

*Lepidoptera.* List of *Eupterotidæ, Ptilodontæ, Thyatiridæ, Apatellidæ, Agrotidæ*, GROTE (445); PACKARD, geographical distribution of N. American *Notodontidæ* (850, p. 44); BEUTENMÜLLER (76), *id.*, *Sesiidæ* (74), DYAR (274–276), and p. 69, Ent. News Philad. vii; FERNALD, *Crambidæ* (328), HULST (547), LETCHER (705); LYMAN, *Chionobas tarpeia*, Ent. News Philad. vii, p. 172, OTTOLENGUI (847), SKINNER (1090), SMITH (1109, 1110); Canada, SMITH (1111); GILSON, p. 294, Canad. Ent. xxviii; *t. c.* p. 218; Sherbrooke, BÉGIN, pp. 39, &c., &c., Natural. Canad. xxiii; Ottawa, WINN, p. 278, Canad. Ent. xxviii; Orillia, Ont., GRANT, pp. 270–274, Canad. Ent. xxviii; Sudbury, Ont., EVANS, Canad. Ent. xxviii, pp. 9–13; Port Hope, Ont., Canad. Ent. xxviii, p. 190; Winnipeg, HANHAM, pp. 241 & 299, Canad. Ent. xxviii; British Columbia, DANBY & GREEN, Bull. Soc. British Columbia, pp. 13–18, pl. i; Oneonta, New York, CLEVELAND, pp. 72–74, Ent. News Philad. vii; Staten I., DAVIS, p. 200, J. N. York Ent. Soc. iv; New England, FISKE, Entomologist, 1896, pp. 118–121; New Hampshire, FISKE, pp. 240–242, Ent. News Philad. vii; *Hesperiidæ*, FISKE, pp. 162–164, Canad. Ent. xxviii; *Sphingidæ*, CROSS, p. 297, Ent. News Philad. vii; Evanston, Chicago, SNYDER, pp. 99–103, Ent. News Philad. vii; S. Dakota, TRUMAN, Ent. News Philad. vii, p. 298; Utah, SNYDER, p. 105, Canad. Ent. xxviii; Colorado, high altitudes, BRUCE, pp. 162–167, Ent. News Philad. vii.

*Diptera.* ALDRICH (13), COQUILLET (216–219), HUNTER (548–550), SNOW (117), TOWNSEND (1156), WHEELER (1238–1241), WILLISTON (1252, 1255).

*Aphaniptera.* BAKER (44).

*Hemiptera-Heteroptera.* MONTANDON (801).—*Homoptera*, BAKER (42, 45), FOWLER (362).—*Coccidæ*, COCKERELL (204, 208–210), JOHNSON (579).

*Neuroptera.* BANKS (49); *id.*, *Odonata* (48).—*Termitidæ*, Texas, SCHWARZ (1046).

*Thysanoptera.* TRYBOM (1157).

*Mallophaga.* KELLOGG (599–601).

*Thysanoptera.* PERGANDE (860).

*Aptera.* FOLSOM (351–355), HARVEY (481), MACGILLIVRAY (729), MARLATT (745).

*Orthoptera.* HANCOCK, *Tettigidæ* (472), MORSE (811), SCUDDER (1055, 1057, 1058); *id.*, New England (1056).

## 10. CENTRAL AMERICA, including MEXICO.

*Insecta.* CHITTENDEN (159), TOWNSEND (1155).

*Coleoptera.* HORN, Lower California (518).—GROUVELLE (450), KERREMANS (611), LINELL (717), OLIVIER (838), PIC (889); Costa Rica, PITTIER & BIOLLEY (905); SCHOCH (1039), TSCHITSCHÉRINE (1162), WASMANN (1214).

*Hymenoptera.* COCKERELL (187, 188, 190, p. 85), EMERY (286, 290, 291), GRIBODO (429), PERGANDE (859); *id.*, Lower California (859).

*Lepidoptera.* DRUCE (261), SCHAUS (1021, 1023), SMITH (1103).

*Diptera.* GIGLIO-TOS (408).—*Aphaniptera*, BAKER (43).

*Hemiptera-Heteroptera.* Costa Rica, PITTIER & BIOLLEY (905).

*Aleurodidæ*, COCKERELL (201), MASKELL (760).—*Coccidæ*, COCKERELL (204, 212).

*Neuroptera.* SAUSSURE (1015).—*Odonata*, MARTIN (758).

*Orthoptera.* GRIFFINI (437, 438), KIRBY (642), SAUSSURE (1017), SCUDDER (1057, 1058).

## 11. ANTILLES.

*Coleoptera.* GROUVELLE (451); CHAMPION, St. Vincent, Grenada, Grenadines (150); KERREMANS, Guadeloupe (609); WATERHOUSE, Grenada (1225).

*Hymenoptera.* ASHMEAD (29); *id.*, Bahamas and Cuba (32); HOWARD (207); *id.*, Grenada (534).—Bahamas, see also North America.

*Lepidoptera.* GODMAN & SALVIN, St. Vincent and Grenada (413); HEDEMANN, Danish Is. (484), SCHAUS (1023); *id.*, Jamaica (1021); WARREN, Jamaica (1205, 1207, p. 131, and 1210, p. 388).

*Diptera.* COQUILLET, Jamaica (216); WILLISTON, St. Vincent (1250).

*Hemiptera.* *Aleurodidæ*, MASKELL (760); *Coccidæ*, COCKERELL, Grenada (204); *id.*, Jamaica (207); *id.*, Grenada (205).

*Neuroptera.* CARPENTER, Jamaica (144).

*Aptera.* FOLSOM (354).

## 12. SOUTH AMERICA.

*Coleoptera.* BELON (59–61), CANDÈZE (140), CHITTENDEN & LINELL (161), FAUST (317), FLEUTIAUX (341, 342), GROUVELLE (450, 451, 454), HORN (520–522, 526), JORDAN (586), KERREMANS (609–611), KRAATZ (676), OLIVIER (837, 838), PIC (872, 883, 899), RAFFRAY (925); REITTER, Chili (946), SCHMIDT (1030), SCHOCH (1038, 1039), SCHWARZ (1050, 1051), SENNA (1074), THIÉRY (1145), TSCHITSCHÉRINE (1162), WEISE (1232, 1233).

*Hymenoptera.* ASHMEAD (29); *id.*, Trinidad (33). EMERY (286, 288, 291), FOX (365), GRIBODO (431), KONOW (664), MOCSÁRY (797).

*Lepidoptera.* BERG, An. Mus. Buenos Aires, v, p. 23; *id.*, Paraguay and Argentina (64); BÖNNINGHAUSEN, Rio de Janeiro (98); BUTLER (126-128); *id.*, S. America and Trinidad (125), DOGNIN (250-252), DRUCE (258, 261), HAMPSON (471); IZQUIERDO, Chili (557), KHEIL (613, 614), RÖBER (989), ROTHSCHILD (999, 1001), ROTHSCHILD & JORDAN (1004), SCHAUS (1021-1023), STAUDINGER (1123), THIERRY-MIEG (1147), WEYMER (1235).

*Hemiptera.* BERG, Tierra del Fuego (65), FOWLER (362); MASKELL, Trinidad, *Aleurodidæ* (760); *Coccidæ*, COCKERELL, Trinidad (204).

*Neuroptera.* SAUSSURE, Trinidad (1016), MARTIN (757, 758), MCLACHLAN (730); *Embiidæ*, SAUSSURE (1015); *Thysanoptera*, BERGROTH (68).

*Orthoptera.* BOLIVAR (97), GRIFFINI (436), KARSCH (595), KIRBY (642, 644); SCHAUS, Trinidad (1023).

### PALÆO-ENTOMOLOGY.

Note on Brongniart's primary fossil insects; WESTHOFF, p. 47, Jahresber. Westfal. Ver. xxiii.

Catalogue of the fossil insects of the Winkler collection, Arch. Mus. Teyler, v, pp. 300-314.

Account of the *Diptera* and *Coleoptera* in his collection of amber insects; HELM (490).

*Coleoptera.* *Clidicus balticus*, Prussian amber; SCHAUFUSS, p. 51, Berlin. ent. Zeitschr. 1896, n. sp.

*Arthropterus helmi*, Prussian amber; SCHAUFUSS, p. 53, Berlin. ent. Zeitschr. 1896, n. sp.

*Isomira avula*, in Prussian amber; SEIDLITZ, p. 102, Ins. Deutsch. v, 2, n. sp.

*Hemiptera.* On fossil *Belostoma*; MEUNIER (786).

*Neuroptera.* *Isophlebia aspasia*, Hagen, figure; MEUNIER, pl. iv, Ann. Soc. ent. France, lxxv.

The Mesozoic *Agrionides* described by Hagen; MEUNIER (787).

*Orthoptera.* Revision of American fossil cockroaches; SCUDDER (1053).

*Etblattina deanensis*, England; SCUDDER, p. 35, Bull. U. S. Geol. Surv. No. 124.

*Etblattina*: many new species from N. America described and figured; SCUDDER, *t. c.* pp. 66-111.

*Myiacris elongata*, p. 41, *gurleyi*, p. 43, *ampla*, p. 45, N. America; SCUDDER, Bull. U. S. Geol. Surv. No. 124, n. spp.

*Promylacris harei*, *testudo*; *id. t. c.* pp. 48 & 49, n. spp.

*Paromylacris triangularis*, p. 52, *clintoniana*, p. 53, *P. ? pluteus*, p. 54, *id. t. c.*, n. spp.

*Microblattina*, n. g., p. 56, for *M. perdita*, n. sp., Rhode Island coal-field; SCUDDER, p. 57, Bull. U. S. Geol. Surv. No. 124.

*Gerblattina*: numerous N. American new species described and figured; SCUDDER, *t. c.* pp. 111-128.

*Anthracoblattina americana*, p. 129, *virginiensis*, p. 130, N. America, SCUDDER, *t. c.*, n. spp.

*Progonblattina columbiana*, N. America, *id. t. c.* p. 131, n. sp.

*Oryctoblattina laqueata*, N. America, *id. t. c.* p. 133, n. sp.

*Poroblattina longinqua*, p. 135, *gratiosa*, p. 136, *fossa*, p. 137, *ohioensis*, p. 138, *complexinervis*, p. 139, N. America, SCUDDER, *t. c.*, n. spp.

*Petrablattina hastata*, N. America, SCUDDER, p. 141, *t. c.*, n. sp.

## III. SYSTEMATIC.

N.B.—The reference-numbers collected under the headings of the various groups refer to "Titles" on pp. 4-68, and are intended to give, in each case, a complete list of all memoirs containing anything of importance in connection with the group.

Morphology of mouth parts in the class ; SMITH (1106).  
 Computation of the number of species known in 1830 and in 1881 ;  
 GÜNTHER (464).

## (A.) COLEOPTERA.

Notes on amber *Coleoptera* ; HELM (490).

## CICINDELIDÆ.

[The following titles relate to *Cicindelide*, viz., ENOCK (294), FLEUTIAUX (340), W. HORN (520-528), KOLBE (658), PÉRINGUEY (861), SEMENOW (1070, 1072).]

Many synonymical notes ; W. HORN, pp. 353-357, *Deutsche ent. Zeitschr.* 1896.

Synonymical and other remarks, especially as to Brancsik's Madagascar species ; HORN, pp. 51-53, *Deutsche ent. Zeitschr.* 1896.

Synonymy in connection with the Dohrn collection ; HORN (522).

*Bostrychophorus lieugmei, egregius*, S. Africa, PÉRINGUEY, p. 103, *Tr. S. African Soc.* vii, n. spp.

*Caledonomorpha*, n. g., near *Opisthencentrus*, for *C. jordani*, n. sp., Mts. Astrolabe ; HORN, p. 270, *Ann. Mus. Genova*, xxxvii.

*Cicindela campestris*, larval habits ; ENOCK, pp. 87-93, *P. S. London Soc.* 1896. *C. hybrida*, larval habits ; GÜNTHER, *Berlin. ent. Zeitschr.* 1896, SB. p. 24. *C. sublacerata* and allies, characters ; SEMENOW, p. 230, *Horæ Soc. ent. Ross.* xxx. *C. compressicornis* is not a *Bostrychophorus* ; W. HORN, p. 60, *Deutsche ent. Zeitschr.* 1896. *C. dongalensis*, n. var. *abyssinica* ; HORN, p. 272, *Ann. Mus. Genova*, xxxvii.

*C. vicaria*, East Turkestan, SEMENOW, p. 236, *Horæ Soc. ent. Ross.* xxx ; *C. nox*, Bucharia, SEMENOW, p. 238, *Horæ Soc. ent. Ross.* xxx ; *C. megalomoides*, Nossi-bé, p. 342, *quedenfeldti*, Congo, p. 343, HORN, *Ent. Nachr.* xxii ; *C. marshalli*, Salisbury, PÉRINGUEY, p. 108, *Tr. S. African Soc.* vii ; *C. (Thopeutica) simulatrix*, p. 150, *suavis*, p. 151, *rothschildi*, Philippines, *boisduvali*, New Guinea, p. 152, HORN, *Deutsche ent. Zeitschr.* 1896 ; *C. ancorifera*, p. 271, *loria*, p. 272, New Guinea, *doria*, Sarawak, *renei*, Trichinopolis, p. 273, HORN, *Ann. Mus. Genova*, xxxvii ; *C. malaris*, Pebas, HORN, p. 329, *Bull. Mus. Paris*, 1896 ; *C. nigrovittata*, Minas Geraes, HORN, p. 172, *Ent. Zeit. Stettin*, lvii ; *C. celeripedestris*, Minas Geraes, W. HORN, p. 357, *Deutsche ent. Zeitschr.* 1896 : n. spp.

*Collyris orichalcina*, Naga Hills, HORN, p. 149, *Deutsche ent. Zeitschr.* 1896 ; *C. sumatrensis*, Sumatra, HORN, p. 176, *Ent. Zeit. Stettin*, lvii : n. spp.

*Cosmemu quadriguttata*, variation, synonymy ; W. HORN, p. 59, *Deutsche ent. Zeitschr.* 1896.



- C. miranda*, *aspera*, p. 111, *transitoria*, p. 112, *gloriosa*, p. 113, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii, n. spp.
- Dromica* (*Myrmecoptera*) *peringueyi*, p. 338, *flavovittata*, Mozambique, *D. planifrons*, Zululand, p. 339, Ent. Nachr. xxii, n. spp.
- Euryoda guttipennis* = (*algoensis*, Pér.) ; HORN, p. 51, Deutsche ent. Zeitschr. 1896.
- E. bottegi*, Somaliland, HORN, p. 268, Ann. Mus. Genova, xxxvii ; *E. bowvieri*, Lakhon, HORN, p. 328, Bull. Mus. Paris, 1896 : n. spp.
- Mantica*, n. g., p. 5, near *Manticora*, for *M. horni*, n. sp., S.W. Africa, p. 7 ; KOLBE, Ent. Nachr. xxii.
- Megacephala benningseni*, E. Africa, W. HORN, p. 56, Deutsche ent. Zeitschr. 1896, n. sp.
- Megalomma sikoræ*, Madagascar, HORN, p. 342, Ent. Nachr. xxii, n. sp.
- Myrmecoptera benningseni*, E. Africa, W. HORN, p. 58, Deutsche ent. Zeitschr. 1896 ; *M. umfuliana*, *dissepta*, p. 116, *mima*, p. 118, *speciosa*, p. 120, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii : n. spp.
- Odontochila scapularis*, Cayenne, HORN, p. 328, Bull. Mus. Paris, 1896, n. sp.
- Ophryodera foliicornis*, E. Africa, HORN, p. 64, Deutsche ent. Zeitschr. 1896, n. sp.
- Orychila similis*, varr. ; HORN, pp. 337 & 338, Ent. Nachr. xxii.
- O. oberthuri*, Bolivia, HORN, p. 337, t. c., n. sp.
- Orygonia oberthuri*, Bolivar, *fleutiauxi*, Peru, p. 340, *elongata*, Ecuador, p. 341, HORN, Ent. Nachr. xxii, n. spp.
- Prodotes mimula*, Salisbury, PÉRINGUEY, p. 109, Tr. S. African Soc. vii, n. sp.
- Styphloderma asperatum*, variation, = (*subopacum*, Fairm.) ; W. HORN, p. 57, Deutsche ent. Zeitschr. 1896.
- Tetracha murchisona*, Australia, FLEUTIAUX, p. 285, Rev. Ent. franc. xv ; *T. angusticollis*, Orinoco, HORN, p. 328, Bull. Mus. Paris, 1896 : n. spp.
- Therates basalis*, n. var. *abdominalis*, *cæruleus*, n. var. *apicalis* ; HORN, p. 270, Ann. Mus. Genova, xxxvii.
- T. rothschildi*, New Guinea, HORN, p. 150, Deutsche ent. Zeitschr. 1896, n. sp.

## CARABIDÆ.

- [The following memoirs relate to *Carabidæ*, viz., ALLUAUD (16), BEDEL (55), BOILEAU (96), DANIEL (233), FAIRMAIRE (308, 311, 313), FIORI (336, 337), GANGLBAUER (397), GESTRO (402, 404), HELLER (485), G. H. HORN (518), KOLBE (660), LESNE (703), LEWIS (709), LINELL (718), PÉRINGUEY (861), REITTER (935, 936, 940-944), ROESCHKE (994), SEMENOW (1071, 1072), SLOANE (1096-1099), TSCHITSCHÉRINE (1162-1167).]
- Tables of the palæarctic *Carabini* ; REITTER, pp. 36-198, Verh. Ver. Brunn, xxxiv.
- Criticisms and synonymical remarks on Reitter's tables of European *Coleoptera* ; KRAATZ, pp. 330-336, Deutsche ent. Zeitschr. 1896 ; ROESCHKE, t. c. pp. 337, &c.
- Carabidæ* of S. Africa ; PÉRINGUEY, Tr. S. African Soc. vii.
- Abacetus wakefieldi* = (*Omasæus reflexicollis*, Fairm.) ; TSCHITSCHÉRINE, p. 68, Annuaire Mus. St. Petersb. 1896.
- A. palustris*, *crassicornis*, p. 547, *mashunus*, p. 548, *alacer*, p. 549, *majorinus*, *aterrimus*, p. 550, *nanniscus*, *trechoides*, p. 551, *perplexus*, *ænescens*, p. 552, *agilis*, *chalcites*, p. 553, *conformis*, p. 607, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii, n. spp.
- Abax* : notes on first group, with n. varr. ; FIORI, pp. 28-42, Atti Soc. Modena, xxix.
- A. angustatus*, Southern Alps, FIORI, p. 40, t. c., n. sp.

- Acathaicus*, n. subg. for *Cathaicus potanini*, Sem. ; REITTER, p. 74, Verh. Ver. Brunn, xxxiv.
- Acupalpus capicola*, p. 463, *egenus*, *insidiosus*, *umbripennis*, *terminalis*, p. 464, *natalicus*, *decoratus*, p. 465, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii, n. spp.
- Adamaster*, n. g. for part of *Damaster* ; REITTER, p. 56, Verh. Ver. Brunn, xxxiv.
- Adelocarabus*, n. subg. for *C. semiopacus*, Reitt. ; REITTER, p. 192, Verh. Ver. Brunn, xxxiv.
- Æchmites stussineri*, Thessaly, GANGLBAUER, p. 464, Verh. Ges. Wien, xlvi, n. sp.
- Agriodus*, n. g., p. 420, *Daptides*, for *A. simplex*, n. sp., S. Africa, p. 421 ; PÉRINGUEY, Tr. S. African Soc. vii.
- Alipuster*, n. subg. for *Cratocephalus pupulus*, Mor. ; REITTER, p. 77, Verh. Ver. Brunn, xxxiv.
- Amara* : of North-Eastern America ; WICKHAM, pp. 33-42, J. N. York Ent. Soc. iv.
- Amblystomus cephalotes*, Akbés, REITTER, p. 267, Wien. ent. Zeit. xv ; *A. promontorii*, *natalicus*, p. 467, *blandus*, p. 468, *scitus*, *basalis*, p. 469, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii : n. spp.
- Amœbea*, n. g., near *Ega*, for *A. mashuna*, n. sp., S. Africa ; PÉRINGUEY, Tr. S. African Soc. vii.
- Anarmosta*, n. g., p. 221, near *Plagyopyga*, for *A. dispar*, n. sp., Salisbury, p. 222 ; PÉRINGUEY, Tr. S. African Soc. vii.
- Anaulacus capensis*, S. Africa, PÉRINGUEY, p. 543, Tr. S. African Soc. vii, n. sp.
- Ancylocarabus*, n. subg. for *C. tarbagataicus*, Kr. ; REITTER, p. 173, Verh. Ver. Brunn, xxxiv.
- Anisodactylus nemorivagus* = (*atricornis*, Steph.) ; CHAMPION, p. 253, Ent. Mag. xxxii.
- A. sobrinus*, *harpalinus*, p. 426, *nitens*, p. 427, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii, n. spp.
- Anophthalmus doriæ* and *liguricus*, distinguished ; GESTRO, p. 11, Ann. Mus. Genova, xxxvi. *A. ganglbaueri*, corrected locality ; REITTER, p. 18, Wien. ent. Zeit. xv.
- A. silvestrii*, Sicily, GESTRO, p. 611, Ann. Mus. Genova, xxxvi, n. sp.
- Anthia mima*, p. 362, *algoa*, p. 372, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii, n. spp.
- Apostocarabus*, n. subg. for *C. odoratus*, Motsch. ; REITTER, p. 178, Verh. Ver. Brunn, xxxiv.
- Apotomus annulaticornis*, Cape, PÉRINGUEY, p. 539, Tr. S. African Soc. vii, n. sp.
- Apristus deceptor*, Transvaal, PÉRINGUEY, p. 240, Tr. S. African Soc. vii, n. sp.
- Aptocarabus*, n. subg. for *Carabus rossi* ; REITTER, p. 94, Verh. Ver. Brunn, xxxiv.
- Aræocarabus*, n. subg. for *C. successor*, n. sp., Thian-Schan ; REITTER, p. 172, Verh. Ver. Brunn, xxxiv.
- Aristocarabus*, n. subg., cf. *Carabus*.
- Arsinoë caffra*, *egregia*, pl. vii, fig. 7, p. 272, *distinguenda*, *plausibilis*, *notabilis*, p. 273, *fraterna*, p. 274, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii, n. spp.
- Aspastus*, n. subg. of *Hystrihopus* ; PÉRINGUEY, p. 213, *t. c.*
- Assotatus*, n. subg. of *Hystrihopus* ; PÉRINGUEY, p. 213, *t. c.*
- Assoterus*, n. subg. of *Hystrihopus* ; PÉRINGUEY, p. 213, *t. c.*
- Astata gentilis*, Natal, PÉRINGUEY, p. 265, Tr. S. African Soc. vii, n. sp.
- Astastus*, n. g., near *Dromius* ?, p. 237, for *A. debilis*, n. sp., Cape Colony, p. 238 ; PÉRINGUEY, Tr. S. African Soc. vii.

- Astus*, n. subg. of *Hystriehopus*; PÉRINGUEY, Tr. S. African Soc. vii.
- Atimus*, n. g., near *Abacetus*, for *A. crenatostrigatus*, n. sp., S. Africa; PÉRINGUEY, p. 555, Tr. S. African Soc. vii.
- Atrotus*, n. g., p. 582, near *Platynus*, for *A. forcipatus*, n. sp., Cape Colony, p. 583; PÉRINGUEY, Tr. S. African Soc. vii.
- Aulonocarabus*, n. subg. for *C. canaliculatus* and *koreanus*; REITTER, p. 192, Verh. Ver. Brunn, xxxiv.
- Automaimus*, n. g. *Dromiides*, for *A. singularis*, n. sp., Cape Colony; PÉRINGUEY, p. 238, Tr. S. African Soc. vii.
- Axinotoma obtuseangula, posticalis*, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii, n. spp.
- Badister*, N. American; WICKHAM, pp. 47-49, J. N. York. Ent. Soc. iv.
- B. promontorii*, Cape, PÉRINGUEY, p. 530, Tr. S. African Soc. vii, n. sp.
- Bascanus*, n. g., p. 540, *apotomides*, for *B. gracilis, longicollis*, n. spp., Cape Good Hope, p. 541; PÉRINGUEY, Tr. S. African Soc. vii.
- Bembidium amœnulum*, Natal, PÉRINGUEY, p. 592, Tr. S. African Soc. vii, n. sp.
- Bleusea*, n. g., *Harpalini*, p. 345, for *B. deserticola*, n. sp., Algeria, p. 346; BEDEL, Bull. Soc. ent. France, 1896.
- Bœomimetes*, n. g. (Chaud. i. 1), near *Harpalus*, for *B. atratus*, n. sp., S. Africa; PÉRINGUEY, p. 453, Tr. S. African Soc. vii.
- Bohemia minor*, Natal, PÉRINGUEY, p. 405, Tr. S. African Soc. vii, n. sp.
- Boreobia*, n. subg. of *Feronia*, q.v.; TSCHITSCHÉRINE, p. 375, Annuaire Mus. St. Petersb. 1896.
- Brachinus algoensis*, p. 179, *simulans, distinctus*, p. 181, *natalicus*, p. 182, *rikatla, inconditus*, p. 183, *fallax*, p. 184, *placidus*, p. 185, *obliterus*, p. 603, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii; *B. comoricus*, Mayotte, FAIRMAIRE, p. 50, Bull. Soc. ent. France, 1896; *B. paviei*, Cambodia, LESNE, p. 245, Bull. Mus. Paris, 1896 : n. spp.
- Calister*, n. g. for *Calosoma caraboides*, Raff.; REITTER, p. 41, Verh. Ver. Brunn, xxxiv.
- Culleida coquereli*, allies, synonymy, p. 33, *C. fastuosa*, n. var. *holochalca*, p. 35; ALLUAUD, Bull. Soc. ent. France, 1896.
- C. hamorrhœa*, Madagascar, FAIRMAIRE, p. 48, Bull. Soc. ent. France, 1896; *C. grata, distincta*, p. 197, *silvicola*, p. 199, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii : n. spp.
- Callidomorphus*, n. g. for *Metaxymorphus vittiger*, Chaud.; PÉRINGUEY, p. 211, Tr. S. African Soc. vii.
- Cullistocarabus*, n. subg. for *marginatus*, Fab., and *decorus*, Seidl.; REITTER, p. 140, Verh. Ver. Brunn, xxxiv.
- Cullistomimus amœnus*, p. 524, *gratus*, p. 525, *insuetus*, p. 526, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii, n. spp.
- Calocheenus*, n. subg. for *C. malachiticolor*, n. sp., China; REITTER, p. 76, Verh. Ver. Brunn, xxxiv.
- Calosoma deserticola*, Transcaspien, SEMENOW, p. 242, Horæ Soc. ent. Ross. xxx, n. sp.
- Curabus (Ceroglossus)*: note on Germain's work; GOUNELLE, p. 266, Bull. Soc. ent. France, 1896. *C. hortensis*, metamorphoses; KOLBE, pp. 1 & 2, Zeitschr. ent. Breslau, xxi. *C. vinctus*, habits, FISHER, p. 135, Ent. News Philad. vii. *C. arvensis*, varr.; BEUTHIN, p. 55, Ent. Nachr. xxii. *C. catenulatus*, n. var. *mulverstedti*; REITTER, p. 267, Wien. ent. Zeit. xv. *C. linnei*, n. var. *ludovicus*; DIETL, p. 197, Wien. ent. Zeit. xv. *C. monilis*, varr.; BEUTHIN, pp. 217-220, Ent. Nachr. xxii. *C. cancellatus*, varr.; BEUTHIN, t. c. pp. 115-119. *C. alajensis*, n. n. for *punctatostrigatus*, Heyd., p. 197; SEMENOW, Horæ Soc. ent. Ross. xxx.
- C. (Megodontus) deubeli*, Transsylvania, REITTER, p. 225, Wien. ent. Zeit. xv; *C. persianus*, Elbourz, ROESCHKE, p. 113, Ent. Nachr.

- xxii; *C. donkieri*, Wa Shan, BOILEAU, p. 203, *Naturaliste*, 1896; *C. (Lamprostus) athleta*, Armenia, p. 193, *C. (Pantophyrus) debilis*, Turkestan, p. 196, *C. (Cechenus) jakowlewi*, Transcaucasus, p. 199, *tschitscherini*, p. 200, *prichodkoi*, p. 202, *euxinus*, p. 204, Caucasus, *C. (Aristocarabus, n. subg.) romanowi*, W. China, p. 206, *C. (Plectes) satanas*, p. 210, *punctiger*, p. 212, *C. (Tribax) kasakorum*, p. 214, *tschetschenicus*, p. 215, *kubaniensis*, p. 217, Caucasus, *C. (Algocharabus) oschanini*, Bucharia, p. 218, *C. (Cyclocarabus) majusculus*, p. 219, *brosciformis*, p. 220, *aulacocnemus*, p. 221, Turkestan, *C. (Semnocarabus) transiliensis*, p. 222, *C. (Zoocarabus) korolkowi*, p. 223, Heptapotamia, *corax*, Mongolia, p. 225, SEMENOW, *Horæ Soc. ent. Ross.* xxx : n. spp.
- Carpathophilus*, n. subg. for *C. linnei*; REITTER, p. 191, *Verh. Ver. Brunn*, xxxiv.
- Casnomia algoensis*, p. 150, *dorsalis*, *suturalis*, *amaenula*, p. 151, *distincta*, *capicola*, p. 152, S. Africa, PÉRINGUEY, *Tr. S. African Soc.* vii : n. spp.
- Catadromus*: characters of the species; TSCHITSCHÉRINE, pp. 141–149, *Annuaire Mus. St. Petersb.* 1896.
- C. malayanus*, Singapore, *latro*, p. 146, *goliath*, p. 149, Australia, TSCHITSCHÉRINE, *Annuaire Mus. St. Petersb.* 1896 : n. spp.
- Cathaicodes*, n. subg. for *Cathaicus alexandrae*, Sem.; REITTER, p. 74, *Verh. Ver. Brunn*, xxxiv.
- Cechenus æqualiceps*, Caucasus, REITTER, p. 80, *Verh. Ver. Brunn*, xxxiv : n. sp.
- Chatocarabus kruperi*, Thessaly, REITTER, p. 87, *t. c.*, n. sp.
- Chetodactyla*, n. g., p. 271, near *Oodimorphus*, for *C. mirabilis*, n. sp., Nossi-bé, p. 273; TSCHITSCHÉRINE, *Horæ Soc. ent. Ross.* xxx.
- Chatoprostus*, n. subg. for *Carabus hemprichi*; REITTER, p. 66, *Verh. Ver. Brunn*, xxxiv.
- Chlanius cæruleolimbatu*s, p. 492, *crudelis*, p. 493, *mimus*, p. 499, *commistus*, p. 503, *consobrinus*, p. 509, *hypocritus*, p. 511, *comes*, p. 512, *mashunus*, *consors*, p. 516, *aculeatus*, p. 518, S. Africa, PÉRINGUEY, *Tr. S. African Soc.* vii; *C. nimrod*, Dakota, HORN, p. 372, *P. Calif. Ac.* (2) vi : n. spp.
- Chrysotribax*, n. subg. for *Carabus hispanus*, *rutilans*; REITTER, p. 119, *Verh. Ver. Brunn*, xxxiv.
- Clivina*: revision of Australian; SLOANE, *P. Linn. Soc. N. S. Wales*, 1896, pp. 143–257 & 275–280.
- C. damarina*, p. 408, *cognata*, *perplexa*, p. 410, S. Africa, PÉRINGUEY, *Tr. S. African Soc.* vii; *C. parallela*, p. 239, *julieni*, p. 240, *alutacea*, *mekongensis*, p. 241, Cochin-China, LESNE, *Bull. Mus. Paris*, 1896; *C. obliterated*, p. 154, *fortis*, p. 158, *frenchi*, p. 159, *riverinae*, p. 164, *cylindriformis*, p. 166, *obsoleta*, p. 167, *bicolor*, p. 170, *denticollis*, p. 171, *quadratifrons*, p. 174, *carpentaria*, p. 175, *grandiceps*, p. 177, *tumidipes*, p. 180, *lobipes*, p. 182, *blackburni*, p. 184, *olliffi*, p. 185, *australica*, p. 193, *occulta*, p. 201, *nana*, p. 202, *queenslandica*, p. 208, *leai*, p. 209, *vittata*, p. 211, *felix*, p. 213, *eximia*, p. 214, *simulans*, p. 218, *sydneyensis*, p. 222, *monilicornis*, p. 229, *macleayi*, p. 236, *regularis*, p. 238, *interstitialis*, p. 241, *mastersi*, p. 242, *ovipennis*, p. 244, *gracilipes*, p. 247, *froggatti*, p. 278, Australia, SLOANE, *P. Linn. Soc. N. S. Wales*, 1896 : n. spp.
- Clivinarchus*, n. g. near *Clivina*, p. 249, for *C. perlongus*, n. sp., Queensland, p. 250; SLOANE, *P. Linn. Soc. N. S. Wales*, 1896.
- Colpodes dilaticollis*, Madagascar, FAIRMAIRE, p. 49, *Bull. Soc. ent. France*, 1896, n. sp.
- Coptoptera capicola*, p. 231, *scutellaris*, *punctatostriatus*, p. 232, S. Africa, PÉRINGUEY, *Tr. S. African Soc.* vii, n. spp.

- Cratocarabus*, n. subg. for *Cratocephalus puer*, Mor. ; REITTER, p. 75, Verh. Ver. Brunn, xxxiv.
- Cratocechenus*, n. subg. for *Cratocephalus akinini*, Mor. ; REITTER, p. 76, Verh. Ver. Brunn, xxxiv.
- Cratognathus minor*, p. 422, *maxillosus fallax*, p. 423, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii, n. spp.
- Cratophyrtus*, n. subg. for *Pantophyrtus hauseri* and *Cratocephalus segregatus* ; REITTER, p. 75, Verh. Ver. Brunn, xxxiv.
- Crepidogaster insignis*, pl. vii, fig. 5, p. 188, *scutellaris*, p. 189, *consobrinus*, p. 190, *damarensis natalicus caffer*, p. 191, *montanus pallidus*, p. 192, *posticalis*, p. 193, *notulatipennis*, p. 603, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii, n. spp.
- Cryptocarabus*, n. subg. for *C. lindemanni*, Ball. ; REITTER, p. 174, Verh. Ver. Brunn, xxxiv.
- Cychrostomus*, n. subg. for *C. anchocephalus*, n. sp., Central Asia ; REITTER, p. 124, Verh. Ver. Brunn, xxxiv.
- Cyclocarabus*, n. subg. for *C. mnizechi*, Chaud. ; REITTER, p. 169, Verh. Ver. Brunn, xxxiv.
- Cylindrocranius ruficollis*, p. 224, *errans*, p. 225, pl. v, fig. 13, S. Africa ; PÉRINGUEY, Tr. S. African Soc. vii, n. spp.
- Cymindis* : various eastern species discussed, *C. violacea*, Chaud. = (*frivaldskyi*, Reitt.), p. 273 ; TSCHITSCHÉRINE, Annuaire Mus. St. Petersb. 1896.
- C. strasseri*, Monte Viso, REITTER, p. 225, Wien. ent. Zeit. xv ; *C. rostowtzeni*, p. 253, Mongolia, *oschanini*, Bukhara, p. 254, *solskii*, p. 257, *fedtschenkoi*, p. 258, W. Turkestan, *sewertzowi*, Bukhara, p. 621, *dostojewskii*, Syria, p. 265, *turkestanica*, Turkestan, p. 270, *alajensis*, Alaï, p. 271, TSCHITSCHÉRINE, Annuaire Mus. St. Petersb. 1896 : n. spp.
- Cytilocarabus*, n. subg. for *C. cribellatus*, Fisch., &c. ; REITTER, p. 193, Verh. Ver. Brunn, xxxiv.
- Deltomerus andalusicus*, Lanjaron, REITTER, p. 304, Deutsche ent. Zeitschr. 1896 ; *D. depressus*, Italy, FIORI, p. 19, Atti Soc. Modena, xxix : n. spp.
- Demetrius fragilis*, Salisbury, PÉRINGUEY, p. 226, Tr. S. African Soc. vii, n. sp.
- Derulus*, n. subg. of *Feronia*, for *F. samojedorum* and *nordenskjöldi*, Sahl. ; TSCHITSCHÉRINE, p. 112, Annuaire Mus. St. Petersb. 1896.
- Deutero-carabus*, n. subg. for *montivagus*, Pall., &c. ; REITTER, p. 141, Verh. Ver. Brunn, xxxiv. *D. wiedemanni* and allies, synonymical and varietal notes ; KRAATZ, pp. 377-380, Deutsche ent. Zeitschr. 1896.
- Dicelus* of N.E. America ; WICKHAM, pp. 44-47, J. N. York Ent. Soc. iv.
- Dichocarabus*, n. subg. for *Carabus rugosus*, Fab. ; REITTER, p. 131, Verh. Ver. Brunn, xxxiv.
- Diocarabus*, n. subg. for *C. loschnikovi* ; REITTER, p. 185, Verh. Ver. Brunn, xxxiv.
- Diplochila* : N. American ; WICKHAM, p. 43, J. N. York Ent. Soc. iv.
- Dischissus amoenulus*, Mozambique, PÉRINGUEY, p. 485, Tr. S. African Soc. vii, n. sp.
- Discoptera arabica*, Hedjaz, FAIRMAIRE, p. 255, Bull. Soc. ent. France, 1896, n. sp.
- Disphæricus clavicornis*, *couracti*, E. Africa, KOLBE, p. 346, Ent. Zeit. Stettin, lvi, n. spp.
- Ditomus modestus* = (*Aristus punctatissimus*, Baudi) ; REITTER, p. 283, Wien. ent. Zeit. xv.
- Dorcarabus*, n. subg. for *C. morbillosus*, Fab., &c. ; REITTER, p. 132, Verh. Ver. Brunn, xxxiv.

- Drimostoma natalense*, S. Africa, PÉRINGUEY, p. 556, Tr. S. African Soc. vii, n. sp.
- Dromius affinis*, p. 234, *fuscus*, *tibialis*, p. 235, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii, n. spp.
- Drypta sobrina*, p. 157, *capicola*, p. 158, *brevis*, p. 160, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii, n. spp.
- Dyoriche vidua*, Natal, PÉRINGUEY, p. 456, Tr. S. African Soc. vii, n. sp.
- Dyschirius dispar*, p. 411, *flavicornis*, *parvulus*, *puncticollis*, p. 413, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii; *D. macleayi*, King's Sound, SLOANE, P. Linn. Soc. N. S. Wales, 1896, p. 279 : n. spp.
- Ectenognathus dispar*, S. Africa, PÉRINGUEY, p. 521, Tr. S. African Soc. vii, n. sp.
- Ega natalensis*, S. Africa, PÉRINGUEY, p. 146, pl. x, fig. 10, Tr. S. African Soc. vii, n. sp.
- Enoicus*, n. g., p. 581, near *Platynus*, for *Euleptus fallax*, n. sp., Cape Colony, p. 582; PÉRINGUEY, Tr. S. African Soc. vii.
- Eudema (Craspedophorus) zambezianum*, p. 477, *E. (Epicosmus) rikatlense*, p. 479, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii, n. spp.
- Euleptus elegans*, *intermedius*, p. 580, *albicornis*, *gracilis*, p. 581, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii, n. spp.
- Euporocarabus*, n. subg. for *C. hortensis*, L., &c.; REITTER, p. 180, Verh. Ver. Brunn, xxxiv.
- Eurymelanius*, n. subg., cf. *Pterostichus*.
- Euschizomerus junodi*, Mozambique, PÉRINGUEY, Tr. S. African Soc. vii, n. sp.
- Fustra batesi*, Japan, LEWIS, p. 330, Ann. Nat. Hist. (6) xvii, n. sp.
- Exocus*, n. g., near *Drimostoma*, for *E. ferrugineus*, n. sp., Natal; PÉRINGUEY, Tr. S. African Soc. vii, p. 557.
- Extromus*, n. g., p. 586, near *Pogonus*, for *E. pusillus*, n. sp., S. Africa, p. 587; PÉRINGUEY, Tr. S. African Soc. vii.
- Feronia (Pseudocryobius) borealis*, n. var. *gracilior*; TSCHITSCHÉRINE, p. 376, Annuaire Mus. St. Petersb. 1896. *F. (Derus)*, revision and characters of the subgen. and species; TSCHITSCHÉRINE, pp. 105–112, *F. (D.) motschulskii*, n. n. for *Pocilus politus*, Motsch., p. 111, Annuaire Mus. St. Petersb. 1896. *F. sumojedorum* and *nordenskjöldi*, cf. *Derulus*. *F. (Eucamptognathus) boucardi* referred to *Oodimorphus*; TSCHITSCHÉRINE, p. 68, Annuaire Mus. St. Petersb. 1896.
- F. (Boreobia, n. subg.) imitatrix*, Novaja Zemlja, p. 373, TSCHITSCHÉRINE, Annuaire Mus. St. Petersb. 1896; *F. (Derus) turimensis*, E. Turkestan, p. 108, *mesembrina*, Transcaspian, p. 109, *cyrtophthalma*, Mongolia, p. 110, *humerosa*, Mongolia, p. 111, TSCHITSCHÉRINE, Annuaire Mus. St. Petersb. 1896; *F. olivacea*, p. 285, *aulacostigma*, p. 286, *pachycera*, p. 289, *jelskii*, p. 290, Peru, *F. (Pterostichus) ignava*, p. 303, *sinica*, p. 305, China, *andree*, p. 307, *chydaea*, p. 323, *tschetschenica*, p. 324, *eriwanica*, p. 328, *cratocephala*, p. 329, Caucasus, *F. (Steropus) parens*, Amur, p. 339, *tuberculigera*, Nikolskoje, p. 341, *F. (Haptoderus) vecors*, E. Europe, p. 342, *F. (Tapinopterus) ganglbaueri*, Syria, p. 343, *F. (Rhagadulus, n. subg.) modicella*, p. 345, *F. (Argutor) jankowskyi*, p. 346, *ussuriensis*, p. 348, E. Siberia, *F. (Pacilus) azteca*, Mexico, p. 349, *F. (Marsyas) cyanoptera*, Brazil, p. 350, TSCHITSCHÉRINE, Horæ Soc. ent. Ross. xxx; *F. (Cophosomorpha) severini*, p. 63, *F. (Ogmophora, n. subg.) peringueyi*, p. 66, S. Africa, TSCHITSCHÉRINE, Annuaire Mus. St. Petersb. 1896 : n. spp.
- Geobanus incertus*, *ingenuus*, Capo Good Hope, PÉRINGUEY, p. 471, Tr. S. African Soc. vii, n. spp.
- Goniocarabus*, n. subg. for part of *Eucarabus*, Geh.; REITTER, p. 150, Verh. Ver. Brunn, xxxiv.

- Graphipterus damarensis*, p. 301, *gratiosus*, p. 302, *consobrinus*, p. 310, *insidiosus*, *lineellus*, p. 311, *assimilis*, *suspectus*, p. 312, *mashunus*, p. 313, pl. viii, fig. 2, *irritans*, p. 314, *basalis*, p. 318, *consocius*, p. 319, *egressus*, p. 322, *nanniscus*, p. 326, *antiokanus*, p. 327, *purcelli*, p. 605, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii, n. spp.
- Haplomaseus*, n. subg. of *Pterostichus*, for *armenus*, Fald.; REITTER, p. 201, Wien. ent. Zeit. xv.
- Harpalomorphus*, n. g., near *Harpalus*, for *H. capicola*, p. 454, *rufipennis*, *aneipennis*, *modestus*, p. 455, n. spp., S. Africa; PÉRINGUEY, Tr. S. African Soc. vii.
- Harpalus ruficornis*, swarming; DOMINIQUE, pp. 311-313, Bull. Soc. Ouest France, vi, 1896.
- H. fallax*, *miles*, p. 444, *defector*, *errans*, p. 445, *nanniscus*, p. 446, *spurius*, *congener*, *spretus*, p. 449, *agilis*, *cursorius*, *natalicus*, p. 450, *phœopterus*, p. 451, *precarius*, p. 452, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii, n. spp.
- Heterillus*, n. g., p. 600, near *Scotodipnus*, for *H. adventitius*, n. sp., Cape Town, p. 601; PÉRINGUEY, Tr. S. African Soc. vii.
- Heterochira*, n. g., p. 274, near *Oodimorphus*, for *H. feronioides*, n. sp., Madagascar, p. 275; TSCHITSCHÉRINE, Horæ Soc. ent. Ross. xxx.
- Homœocarabus*, n. subg. for *C. mæander*, Fisch.; REITTER, p. 144, Verh. Ver. Brunn, xxxiv.
- Hypolithus porrectus*, p. 434, *integer*, p. 435, *connexus*, *difficilis*, p. 436, *scitus*, p. 438, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii; *H. (Coleolissus ?) biseriatus*, Cambodia, LESNE, p. 244, Bull. Mus. Paris, 1896 : n. spp.
- Hystrichopus similis*, p. 214, *H. (Assotatus, n. subg.) gracilis*, *mnizechi*, p. 216, *H. (Assoterus, n. subg.) tenuicollis*, *H. (Astus, n. subg.) prædator*, p. 217, *recticollis*, p. 218, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii, n. spp.
- Iniopachys pyrenæus*, n. var. *ignitus*, *auriculatus*, n. var. *impensus*; REITTER, p. 79, Verh. Ver. Brunn, xxxiv.
- Isiocarabus*, n. subg. for *C. fiducarius*, &c.; REITTER, p. 170, Verh. Ver. Brunn, xxxiv.
- Klepsiphrus*, n. g., near *Dromius*, for *K. pugnaæ*, Mozambique, p. 237, *apicalis*, Natal, p. 604, n. spp.; PÉRINGUEY, Tr. S. African Soc. vii.
- Klepterus*, n. g., near *Dromius*, for *K. consobrinus*, *pallidicollis*, p. 236, *majorinus*, p. 604, n. spp., S. Africa; PÉRINGUEY, Tr. S. African Soc. vii.
- Laehanissus*, n. g. for *L. deceptor*, *inconspicuus*, n. spp., Cape Colony, p. 612, suppressed as part of *Metaxymorphus*; PÉRINGUEY, Tr. S. African Soc. vii.
- Lemosthenes nanniscus*, S. Africa, PÉRINGUEY, p. 572, Tr. S. African Soc. vii, n. sp.
- Lagarus degorsi*, Briançon, CROISSANDEAU, p. 133, Miscell. ent. i, n. sp.
- Lasiocera egregia*, S. Africa; PÉRINGUEY, p. 145, pl. x, fig. 9, Tr. S. African Soc. vii, n. sp.
- Lebia (Nematopeza) fraterna*, p. 256, *invicta*, p. 257, pl. vi, fig. 18, *L. (N. P) insidiosa*, p. 258, *L. transvaalensis*, *eximia*, p. 259, *adamantina*, pl. iii, fig. 8, *congrua*, pl. vi, fig. 13, p. 260, *amabilis*, pl. vi, fig. 10, p. 261, *peregrinator*, fig. 7, *vagans*, fig. 8, p. 262, *dubia*, *imitator*, fig. 9, *inconspicua*, fig. 11, *debilis*, fig. 12, p. 263, *speciosa*, p. 264, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii, n. spp.
- Lebistina holubi*, Transvaal, PÉRINGUEY, p. 270, Tr. S. African Soc. vii, n. sp.
- Leiradira purpurascens*, Australia, TSCHITSCHÉRINE, p. 270 (but cancelled, p. 351), Horæ Soc. ent. Ross. xxx, n. sp.

- Leptinocarabus*, n. subg. for *C. acutesculptus*, Chd., &c. ; REITTER, p. 191, Verh. Ver. Brunn, xxxiv.
- Leptosarcus*, n. g., p. 218, near *Cymindoidea*, for *Hystrichopus porrectus*, Pér. ; PÉRINGUEY, Tr. S. African Soc. vii.
- Lesticus celestis*, p. 265, *fortis*, p. 266, *dichrous*, p. 267, Java, *suavis*, p. 268, Borneo, *strictus*, p. 269, Java, TSCHITSCHÉRINE, Horæ Soc. ent. Ross. xxx, n. spp.
- Lichnocarabus*, n. subg. for *C. vinctus*, &c. ; REITTER, p. 161, Verh. Ver. Brunn, xxxiv.
- Liocarabus*, n. subg. for *courcatus*, Br., &c. ; REITTER, p. 159, Verh. Ver. Brunn, xxxiv.
- Liodaptus longicornis*, Laos, LESNE, p. 244, Bull. Mus. Paris, 1896, n. sp.
- Lionychus basalis*, Salisbury, PÉRINGUEY, p. 239, Tr. S. African Soc. vii, n. sp.
- Lobodontus gentilis*, Natal, PÉRINGUEY, p. 275, Tr. S. African Soc. vii, n. sp.
- Loxandrus* : N. American ; WICKHAM, pp. 42 & 43, J. N. York Ent. Soc. iv.
- Loxocarabus*, n. g. for *obsoletus*, St. ; REITTER, p. 160, Verh. Ver. Brunn, xxxiv.
- Macrochilus hybridus*, p. 166, *proximus*, p. 167, Natal, PÉRINGUEY, Tr. S. African Soc. vii, n. spp.
- Macrotelus persimilis*, S. Africa, PÉRINGUEY, p. 387, Tr. S. African Soc. vii, n. sp.
- Madecassa dilutipes*, Madagascar, FAIRMAIRE, p. 49, Bull. Soc. ent. France, 1896, n. sp.
- Mastax extremus*, Cape Colony, PÉRINGUEY, p. 187, Tr. S. African Soc. vii, n. sp.
- Matabele*, n. g., p. 267, *Labiides*, for *M. miranda*, n. sp., S. Africa, p. 268 ; PÉRINGUEY, Tr. S. African Soc. vii.
- Megaloodes*, n. g., near *Oodes*, for *M. politus*, n. sp., Siam ; LESNE, p. 242, Bull. Mus. Paris, 1896.
- Meladroma agnatus*, S. Africa, PÉRINGUEY, p. 169, Tr. S. African Soc. vii, n. sp.
- Melanodes intermedius*, Natal, PÉRINGUEY, p. 535, Tr. S. African Soc. vii, n. sp.
- Metabletus sagitta*, Greece, REITTER, p. 226, Wien. ent. Zeit. xv, n. sp.
- Metaxymorphus pictus*, *agilis*, *cursor*, p. 207, *pusillus*, *affinis*, *stigmatellus*, p. 208, *modestus*, *namaquensis*, *vicinus*, p. 209, *atriceps*, p. 603, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii, n. spp.
- Microcosmus natalensis*, S. Africa, PÉRINGUEY, p. 483, Tr. S. African Soc. vii, n. sp.
- Microlestia sobrina*, S. Africa, PÉRINGUEY, p. 354, Tr. S. African Soc. vii, n. sp.
- Microplectes*, n. subg. for *Plectes riedeli*, Mén. ; REITTER, p. 105, Verh. Ver. Brunn, xxxiv.
- Molops (Stenochromus) nivalis*, Bosnia, APFELBECK, p. 554, Wiss. Mitt. Bosnien, iv, n. sp.
- Nebria aterrima*, Italy, FIORI, p. 17, Atti Soc. Modena, xxix, n. sp.
- Neoplesius*, n. subg. for *Carabus tanguticus*, Sem. ; REITTER, p. 130, Verh. Ver. Brunn, xxxiv.
- Ogmophora*, n. subg. of *Feronia*, q.v.
- Ohomopterus*, n. subg. for *Carabus dehaani*, Chd., &c. ; REITTER, p. 169, Verh. Ver. Brunn, xxxiv.
- Omostropus*, n. g., p. 429, *Harpalides*, for *O. tersulus*, p. 430, *vicarius*, *con-sanguineus*, *similis*, p. 431, n. spp., S. Africa ; PÉRINGUEY, Tr. S. African Soc. vii.
- Omphreoides*, n. g., near *Dyscolus*, for *O. bispinus*, n. sp., Madagascar ; FAIRMAIRE, p. 50, Bull. Soc. ent. France, 1896.



- Oodes nanus*, p. 531, *lenis*, p. 532, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii; *O. parviceps*, Centr. Australia, SLOANE, p. 382, Horn Exped. pt. ii : n. spp.
- Ophiocarabus*, n. subg. for *C. striatulus*, Geh., &c.; REITTER, p. 174, Verh. Ver. Brunn, xxxiv.
- Orinocarabus heteromorphus*, Alps, REITTER, p. 187, t. c., n. sp.
- Orthogonius kickeli*, *nyassicus*, *parcepunctatus*, p. 348, *coracinus*, p. 349, E. Africa, KOLBE, Ent. Zeit. Stettin, lvi; *O. brevicornis*, *amulus*, S. Africa, PÉRINGUEY, p. 290, Tr. S. African Soc. vii : n. spp.
- Pachycarabus vincens*, Caucasus; REITTER, p. 184, Verh. Ver. Brunn, xxxiv.
- Pachytrachelus promontorii*, *capensis*, S. Africa, PÉRINGUEY, p. 420, Tr. S. African Soc. vii, n. spp.
- Pancarabus*, n. subg. for *C. aeruginosus*, Fisch.; REITTER, p. 172, Verh. Ver. Brunn, xxxiv.
- Paracarabus*, n. subg. for *C. planatus*, Chaud.; REITTER, p. 131, Verh. Ver. Brunn, xxxiv.
- Paraplesius midas*, Turkestan, REITTER, p. 126, Verh. Ver. Brunn, xxxiv, n. sp.
- Peliocypus natalensis*, S. Africa, PÉRINGUEY, p. 227, Tr. S. African Soc. vii, n. sp.
- Pentagonica elegans*, S. Africa, PÉRINGUEY, p. 283, pl. vii, fig. 10, Tr. S. African Soc. vii, n. sp.
- Percosteropus*, n. subg., cf. *Tapinopterus*.
- Perileptus promontorii*, S. Africa, PÉRINGUEY, p. 590, Tr. S. African Soc. vii, n. sp.
- Periphobus*, n. g., near *Metaxymorphus*, for *P. ferox*, n. sp., Cape Colony; PÉRINGUEY, Tr. S. African Soc. vii.
- Pheropsophus bipartitus* = *fulviventris*, Künck.; ALLUAUD, p. 34, Bull. Soc. ent. France, 1896.
- P. transvaalensis*, *mashumus*, S. Africa, PÉRINGUEY, p. 177, Tr. S. African Soc. vii, n. spp.
- Phlæozetus stigma*, *virgatus*, p. 246, *dorsalis*, *ambulans*, *gentilis*, p. 247, *mashuna*, *simplex*, *plausibilis*, p. 248, *signatus*, *cordiger*, *fasciatus*, *præstans*, p. 249, *blandus*, *letus*, *incertus*, p. 250, *venator*, *posticalis*, *præustus*, p. 251, *cyaneus*, p. 252, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii, n. spp.
- Phorticosomus horni*, Centr. Australia, SLOANE, p. 383, Horn Exped. pt. ii, n. sp.
- Phricocarabus*, n. subg. for *C. glabratus*; REITTER, p. 193, Verh. Ver. Brunn, xxxiv.
- Piezia algoensis*, p. 330, *sulcipennis*, p. 332, *mashuna*, *marshalli*, *dissidens*, *virgulifera*, p. 333, *selousi*, p. 334, pl. viii, fig. 5, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii, n. spp.
- Piocarabus*, n. subg., type *C. wladimirski*, Dej.; REITTER, p. 180, Verh. Ver. Brunn, xxxiv.
- Plagyopyga cymindoides*, Cape Colony, PÉRINGUEY, p. 221, Tr. S. African Soc. vii, n. sp.
- Planetes limbatus*, Mozambique, PÉRINGUEY, p. 172, Tr. S. African Soc. vii, n. sp.
- Platycarabus creutzeri* and *Pseudocechenus pseudonothus* maintained to be one species, KRAATZ, pp. 327 & 328; *P. creutzeri*, n. var. *fossiger*, p. 329, Deutsche ent. Zeitschr. 1896.
- Platynodes westermanni*, n. var. *peregrina*; KOLBE, p. 351, Ent. Zeit. Stettin, lvi.
- Platynus crenatostrigatus*, p. 574, *pauper*, p. 576, *striatitarsis*, *cupicola*, p. 577, *namaquensis*, *diversus*, *harpaloides*, p. 578, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii, n. spp.

- Pleroticus*, n. g., *Chlaniides*, p. 521, for *Vertagus lucidulus*, Boh. ; PÉRINGUEY, Tr. S. African Soc. vii.
- Pogonus luctuosus*, Cape Town, PÉRINGUEY, p. 610, Tr. S. African Soc. vii, n. sp.
- Polyhirma chanleri*, Somaliland, LINELL, p. 687, P. U. S. Mus. xviii ; *P. marquezæ*, p. 345, *consobrina*, p. 350, *algoensis*, p. 351, *tembena*, p. 605, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii : n. spp.
- Procerus scabrosus*, variation ; ROESCHKE, p. 348, Deutsche ent. Zeitschr. 1896.
- Proclitus*, n. g., near *Rhopalomelus*, for *P. singularis*, n. sp., pl. x, fig. 8, S. Africa ; PÉRINGUEY, p. 570, Tr. S. African Soc. vii.
- Promecochila nigra*, Natal, PÉRINGUEY, p. 267, Tr. S. African Soc. vii, n. sp.
- Promorphocarabus*, n. subg. for *monilis*, &c. ; REITTER, p. 161, Verh. Ver. Brunn, xxxiv. *P. simulator*, note on ; KRAATZ, p. 329, Deutsche ent. Zeitschr. 1896.
- Prosopognus insperatus*, Central Australia, SLOANE, Horn Exped. pt. ii, n. sp.
- Pseudocoptolabrus*, n. subg. for *Coptolabrus taliensis*, Fairm. ; REITTER, p. 95, Verh. Ver. Brunn, xxxiv.
- Pseudocranium*, n. subg. for *gansuensis*, Sem. ; REITTER, p. 104, Verh. Ver. Brunn, xxxiv.
- Pseudoselenophorus*, n. g., p. 428, *Harpalides*, for *P. imitator*, n. sp., S. Africa, p. 429 ; PÉRINGUEY, Tr. S. African Soc. vii.
- Pterostichus escheri*, n. varr., FIORI, p. 22, Atti Soc. Modena, xxix.
- P. champenoisi*, Pyrénées orientales, CROISSANDEAU, p. 133, Miscell. ent. i ; *P. (Eurymelanius)*, n. subg. *abagonensis*, *kubanicus*, Caucasus, REITTER, p. 202, Wien. ent. Zeit. xv ; *P. (Agonolemus)* *depressidorsis*, p. 212, *tantillas*, p. 213, *cordifer*, *daghestanus*, p. 214, *tscherkessicus*, p. 215, Caucasus, REITTER, Ent. Nachr. xxii ; *P. degener*, p. 561, *intermedius*, *congruens*, p. 562, *lugubrinus*, p. 563, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii : n. spp.
- Pyrotachys*, n. g., p. 374, *Subulipalpi*, for *P. constrictipes*, n. sp., N. S. Wales, p. 375, SLOANE, P. Linn. Soc. N. S. Wales, 1896.
- Reicheia promontorii*, S. Africa, PÉRINGUEY, p. 414, Tr. S. African Soc. vii, n. sp.
- Rhagadulus*, n. subg., cf. *Feronia*.
- Rhembus capensis*, S. Africa, PÉRINGUEY, p. 537, Tr. S. African Soc. vii ; *R. levis*, Bangkok, LESNE, p. 243, Bull. Mus. Paris, 1896 : n. spp.
- Rhigocarabus*, n. subg. for *C. morawitzianus*, Sem. ; REITTER, p. 171, Verh. Ver. Brunn, xxxiv.
- Rhipocarabus*, n. subg. for *C. alysidotus*, Ill. ; REITTER, p. 177, Verh. Ver. Brunn, xxxiv.
- Scambocarabus*, n. subg. for *C. bifoveicollis*, n. sp., Kuku-noor ; REITTER, p. 139, Verh. Ver. Brunn, xxxiv.
- Scarites costipennis*, Cape Good Hope, PÉRINGUEY, p. 392, Tr. S. African Soc. vii, n. sp.
- Scolyptus meridionalis*, Natal, PÉRINGUEY, p. 404, Tr. S. African Soc. vii, n. sp.
- Scotodipnus capensis*, S. Africa, PÉRINGUEY, pl. x, fig. 11, p. 600, Tr. S. African Soc. vii, n. sp.
- Selousia*, n. g. near *Glycia*, for *S. nobilis*, n. sp., Manicaland ; PÉRINGUEY, Tr. S. African Soc. vii, p. 202.
- Semnocarabus*, n. subg. for *C. regulus*, Dohrn ; REITTER, p. 174, Verh. Ver. Brunn, xxxiv.
- Siagona conradti*, *illairei*, E. Africa, KOLBE, p. 350, Ent. Zeit. Stettin, lvi, n. spp.
- Singiliomimus*, n. g., p. 243, *Lebiides*, for *S. posticalis*, *modestus*, n. spp., S. Africa, p. 244, PÉRINGUEY, Tr. S. African Soc. vii.

- Singilis maroccana*, Tangier, FAIRMAIRE, p. 344, Bull. Soc. ent. France, 1896, n. sp.
- Siopelus insutus, limbatus*, S. Africa, PÉRINGUEY, p. 440, Tr. S. African Soc. vii, n. spp.
- Spanus subdepressus*, Usambara, KOLBE, p. 347, Ent. Zeit. Stettin, lvi, n. sp.
- Sphærostylus bimaculatus*, E. Africa, KOLBE, p. 349, Ent. Zeit. Stettin, lvi, n. sp.
- Stenidia elegantula, angusta, jucunda*, pl. vii, fig. 3. p. 154, *fraterna*, p. 155, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii, n. spp.
- Stenolophus capensis*, p. 458, *fallax, gratus*, p. 459, *amœnulus, agilis*, p. 460, *S. (Engadroma) elegans*, p. 461, *alacer, simplex*, p. 462, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii, n. spp.
- Stereostoma stuhlmanni*, E. Africa, KOLBE, p. 351, Ent. Zeit. Stettin, lvi, n. sp.
- Styphromerus puberulus*, S. Africa, PÉRINGUEY, p. 602, Tr. S. African Soc. vii, n. sp.
- Syndetus*, n. g., near *Plagyopyga*, for *S. simplex*, n. sp., Transvaal; PÉRINGUEY, Tr. S. African Soc. vii, p. 222.
- Tachycellus nitidus*: variation; HAMILTON, p. 291, Ent. News Philad. vii.
- Tachys tetraphacus*, Algeria, BEDEL, p. 79, Cat. Col. Nord Afrique; *T. precarius, caffer, capicola*, p. 595, *spurius, vagans, faustus*, p. 596, *fartus, imitans*, p. 597, *crassescens*, p. 598, *humeralis, humilis, naniscus, pusillimus*, p. 599, *gratus*, p. 610, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii; *T. spenceri*, Centr. Australia, SLOANE, p. 380, Horn Exped. pt. ii; *T. ectromioides*, p. 359, *buprestioides*, p. 361, *froggatti*, p. 362, *curticollis*, p. 363, *iaspideus*, p. 365, *seticollis*, p. 366, *habitans*, p. 368, *australicus*, p. 369, *leai*, p. 370, *macleayi*, p. 373, *olliffi*, p. 376, Australia, SLOANE, P. Linn. Soc. N. S. Wales, 1896: n. spp.
- Tanaocarabus*, n. subg. for *C. sylvosus*, Say, &c.; REITTER, p. 135, Verh. Ver. Brunn, xxxiv.
- Tapinopterus kaufmanni*, Hungary, p. 464, *T. (Percosteropus)*, n. subg.) *byzantinus*, Constantinople, p. 466, GANGLBAUER, Verh. Ges. Wien, xlvi: n. spp.
- Tefflus finitimus*, E. Africa, KOLBE, p. 345, Ent. Zeit. Stettin, lvi; *T. molossus*, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii: n. spp.
- Tetragonoderus toamasina*, Madagascar, ALLUAUD, p. 35, Bull. Soc. ent. France, 1896, n. sp.
- Thenarotes gagatinus*, Macl. (sub. *Bembidium*) = (*Bem. flavipes*, Macl.); SLOANE, p. 355, P. Linn. Soc. N. S. Wales, 1896.
- Thlibops paviei*, Siam, LESNE, p. 239, Bull. Mus. Paris, 1896, n. sp.
- Thyreopterus crispatifrons*, Madagascar, FAIRMAIRE, p. 48, Bull. Soc. ent. France, 1896, n. sp.
- Tmesicarabus*, n. subg. for *C. christoforii* Sp.; REITTER, p. 159, Verh. Ver. Brunn, xxxiv.
- Tomocarabus*, n. subg. for pt. of *Oreocarabus*, *C. biseriatus*, &c.; REITTER, p. 135, Verh. Ver. Brunn, xxxiv.
- Trechus elegans*, varr. discussed, GANGLBAUER, pp. 457 & 458, *T. (Anophthalmus) globulipennis*, characters, p. 462, Verh. Ges. Wien, xlvi. *T.* aff. *micros*. in Paris catacombs, VIRÉ, p. 232, Bull. Mus. Paris, 1896.
- T. brandisi*, Bosnia, *T. (Anophthalmus) dietli*, Transsylvania, p. 459, *paganetti*, Dalmatia, p. 460, GANGLBAUER, Verh. Ges. Wien, xlvi; *T. aterrimus*, p. 588, *ambiguus, affinis*, p. 589, *vivax*, p. 590, *scitulus*, p. 611, S. Africa, PÉRINGUEY, Tr. S. African Soc. vii; *T. ovipennis*, Japan, LEWIS, p. 330, Ann. Nat. Hist. (6) xvii: n. spp.
- Triœnogenius vicinus*, S. Africa, PÉRINGUEY, p. 170, Tr. S. African Soc. vii, n. sp.

- Tribax certus*, Circassia, REITTER, p. 4, Ent. Nachr. xxii; *T. formaneki*, Caucasus, REITTER, p. 107, Verh. Ver. Brunn, xxxiv: n. spp.
- Trigonotoma venus*, p. 260, *psyche*, p. 262, Borneo, *palavanica*, Philippines, p. 263, *athiops*, Birma, p. 264, TSCHITSCHÉRINE, Horæ Soc. ent. Ross. xxx, n. spp.
- Tylocarabus*, n. subg. for *C. cumanus*, Fisch.; REITTER, p. 173, Verh. Ver. Brunn, xxxiv.
- Ulocarabus*, n. subg. for *C. stschurovskyi* and *theanus*; REITTER, p. 183, Verh. Ver. Brunn, xxxiv.
- Vulcanophilus*, n. g., near *Platynus*, for *V. calathoides*, p. 2, fig. 1, *spini-fer*, p. 3, n. spp., Celebes; HELLER, Abh. Mus. Dresden, 1896-97, No. 3.
- Wahlbergia*, n. subg. of *Feronia*, for *F. undulatorugosa*, Tschit.; TSCHITSCHÉRINE, p. 62, Annuaire Mus. St. Petersb. 1896.
- Xenitenus*, n. g., p. 227, *Dromiides*, for *X. modestus*, p. 228, *inornatus*, *debilis*, *dilucidus*, *limbatus*, p. 229, *tessellatus*, p. 230, *ornatellus*, p. 604, n. spp., S. Africa; PÉRINGUEY, Tr. S. African Soc. vii.
- Xystrocarabus*, n. subg. for *C. catenatus*, Panz., &c.; REITTER, p. 157, Verh. Ver. Brunn, xxxiv.
- Zoocarabus*, n. subg. for *C. campestris*, Fisch., &c.; REITTER, p. 175, Verh. Ver. Brunn, xxxiv.
- Zuphiolum*, n. g., near *Masoreus*, for *Z. angusticeps*, n. sp., Malta; FAIRMAIRE, p. 344, Bull. Soc. ent. France, 1896. *Z. angusticeps* is probably *Limnastis niloticus*; FAIRMAIRE, p. 366, Bull. Soc. ent. France, 1896.
- Zuphium damascenum*, Damascus, FAIRMAIRE, p. 344, Bull. Soc. ent. France, 1896, n. sp.

## DYTISCIDÆ.

- [The following memoirs relate to *Dytiscidæ*, viz., JAKOWLEW (569), NAGEL (817), REITTER (934), SAHLBERG (1012).]
- GRIFFINI'S observations on flight, recorded last year, reproduced in Arch. ital. Biol. xxv, pp. 326-331.
- Agabus (Gaurodytes) cordaticollis*, Samarcand, REITTER, p. 233, Wien. ent. Zeit. xv, n. sp.
- Colymbetes dolabratus* and allied forms; LUNDBECK, pp. 200-203, Vid. Medd. 1896.
- Cymatopterus*, stridulation apparatus; JAKOWLEW, p. 181, Horæ Soc. ent. Ross. xxx.
- C. semenowi*, p. 176, *tschitscherini*, p. 177, Chinese Turkestan, *kokujewi*, Transcaspian, p. 180, JAKOWLEW, Horæ Soc. ent. Ross. xxx, n. spp.
- Dystiscus*: means by which the larva empties its victim; NAGEL, Biol. Centralbl. xvi, p. 51. *D. disjunctus*, characters; GRIFFINI, Boll. Mus. Torino, xi, No. 248. *D. herbeti*, note, SHARP, p. xxi, P. ent. Soc. London, 1896.
- Gaurodytes setulosus*, Lapland, SAHLBERG, p. 39, Medd. Soc. Faun. Fenn. xxi, n. sp.
- Rhantus regimbarti*, with var. *shurpi*, Mongolia, JAKOWLEW, p. 182, Horæ Soc. ent. Ross. xxx, n. sp.

## HYDROPHILIDÆ.

- [The following memoirs relate to *Hydrophilidæ*, viz., BLACKBURN (85), FAIRMAIRE (307), GUILLEBEAU (460), REITTER (938).]
- Amphiops abeillei*, Egypt, GUILLEBEAU, p. 229, Bull. Soc. ent. France, 1896, n. sp.

- Berosus inermis*, Madagascar, FAIRMAIRE, p. 452, Ann. Soc. ent. Belgique, xl; *B. macumbensis*, Central Australia, BLACKBURN, p. 259, Horn Exped. pt. ii : n. spp.
- Cercyon abeillei*, Syria, GUILLEBEAU, p. 231, Bull. Soc. ent. France, 1896, n. sp.
- Helophorus trisulcatus* [? N. Africa], p. 232, *abeillei*, Syria, p. 239, GUILLEBEAU, Bull. Soc. ent. France, 1896, n. spp.
- Hydræna chobauti*, p. 242, *rivularis*, p. 243, Algeria, GUILLEBEAU, Bull. Soc. ent. France, 1896; *H. simplicicollis*, *rudallensis*, Central Australia, BLACKBURN, p. 261, Horn Exped. pt. ii : n. spp.
- Hydrobaticus tatei*, Central Australia, BLACKBURN, p. 258, Horn Exped. pt. ii, n. sp.
- Hydrochus horni*, p. 259, *interioris*, *lateviridis*, p. 260, Central Australia, BLACKBURN, Horn Exped. pt. ii, n. spp.
- Laccobius caretti*, Biskra, p. 227, *syriacus*, Syria, p. 228, GUILLEBEAU, Bull. Soc. ent. France, 1896, n. spp.
- Limnobius pilicauda*, p. 228, *bonnairei*, *pectoralis*, p. 229, Algeria, GUILLEBEAU, Bull. Soc. ent. France, 1896, n. spp.
- Octhebius clathratus*, p. 239, *acutangulus*, Algeria, *fluviatilis*, Switzerland, p. 240, *abeillei*, Syria, *bonnairei*, Algeria, p. 241, GUILLEBEAU, Bull. Soc. ent. France, 1896; *O. novicius*, Central Australia, BLACKBURN, p. 260, Horn Exped. pt. ii : n. spp.
- Paracymus rufipes*, Syria, GUILLEBEAU, p. 226, Bull. Soc. ent. France, 1896; *P. apicalis*, Lake Baikal, REITTER, p. 285, Wien. ent. Zeit. xv; *P. spenceri*, p. 256, *horni*, *eremita*, p. 257, Central Australia, BLACKBURN, Horn Exped. pt. ii : n. spp.
- Philhydrus quadrinotatus*, Syria, *parvulus*, Cairo, GUILLEBEAU, p. 226, Bull. Soc. ent. France, 1896; *P. andersoni*, p. 257, *deserticola*, p. 258, Central Australia, BLACKBURN, Horn Exped. pt. ii : n. spp.

## STAPHYLINIDÆ.

- [The following memoirs relate to *Staphylinidæ*, viz., ABEILLE (2), BLACKBURN (85), EPELSHEIM (296), ERICSON (297), HAMILTON (468), THOMSON (1149), VAULOGER (1183), WASMANN (1213-1215), WICKHAM (1246).]
- Acrotona curtipennis*, Sweden, THOMSON, p. 2389, Opusc. Ent. xxi, ERICSON, p. 325, Deutsche ent. Zeitschr. 1896, n. spp.
- Dicax deserti*, Central Australia, BLACKBURN, p. 262, Horn Exped. pt. ii, n. sp.
- Dinarda* : n. varr., the races and species discussed; WASMANN, pp. 125-142, Wien. ent. Zeit. xv.
- Dinusa saulcyi*, *particeps*, Syria, ABEILLE, p. 130, Miscell. ent. iv, n. spp.
- Dolicaon spenceri*, Central Australia, BLACKBURN, p. 263, Horn Exped. pt. ii, n. sp.
- Homalium flavidum*, Pennsylvania, HAMILTON, p. 347, Tr. Amer. ent. Soc. xxii, n. sp.
- Liparocephalus cordicollis* and *brevipennis* are one; HAMILTON, p. 261, Canad. Ent. xxviii.
- Lomechusa*, *Xenodusa*, and *Atemeles*, revision; WASMANN, pp. 244-256, Deutsche ent. Zeitschr. 1896.
- L. amurensis*, p. 247, *mongolica*, p. 248, N.E. Asia, WASMANN, Deutsche ent. Zeitschr. 1896, n. spp.
- Megarthrus affinis*, metamorphoses; XAMBEU, p. 109, Mœurs, vi.
- Microsaurus pectinator*, Europe, THOMSON, p. 2388, Opusc. Ent. xxi, n. sp.
- Myllæna palmensis*, Central Australia, BLACKBURN, p. 262, Horn Exped. pt. ii, n. sp.

- Myrmedonia* (*Rhynchodonia*, n. subg.) *fecæ*, p. 620, *gestroi*, *termitobia*, p. 622, *M. trisulcata*, p. 623, Burma, WASMANN, Ann. Mus. Genova, xxxvi; *M. schmitti*, Pennsylvania, HAMILTON, p. 346, Tr. Amer. ent. Soc. xxii : n. spp.
- Orphnebius laticornis*, Sikkim, WASMANN, p. 624, Ann. Mus. Genova, xxxvi, n. sp.
- Phlæocharis* (*Scotodytes*) *biroi*, Croatia, EPPELSHEIM, p. 220, Termes. Fuzetek, xvii, n. sp.
- Platystethus striatulus*, metamorphoses; XAMBEU, p. 123, Mœurs, vi.
- Quedius molochinus*, larva; KOLBE, p. 2, Zeitschr. Ent. Breslau, xxi. *Q. spelæus*, larva; WICKHAM, p. 196, Rep. Dep. Geol. Indiana, 1896, cuts, p. 198.
- Rhynchodonia*, n. subg., cf. *Myrmedonia*.
- Silusa uniplicata*, *areolata*, distinguished; REITTER, p. 78, Wien. ent. Zeit. xv.
- Stichoglossa semirufa* = (*Silusa gobanzi*, Reitt.); REITTER, p. 77, t. c.
- Sunius setiger*, Spain, VAULOGER, p. 368, Bull. Soc. ent. France, 1896, n. sp.
- Velleius dilatatus*, habits; VITURAT, pp. 413-419, Bull. Soc. Autun, viii.
- Xantholinus erythropterus*, metamorphoses; FROGGATT, p. 78, pl. ix, figg. 4 & 5, P. Linn. Soc. N. S. Wales, 1895.
- Xenodusa sharpi*, Mexico, WASMANN, p. 251, Deutsche ent. Zeitschr. 1896, n. sp.

## PSELAPHIDÆ.

- [The following memoirs relate to *Pselaphidæ*, viz., CROISSANDEAU (227), GANGLBAUER (395), GUILLEBEAU (462), HETSCHKO (496), RAFFRAY (925-928).]
- Anasis savesi*, New Caledonia, *adumbrata*, Loyalty Is., RAFFRAY, p. 300, Bull. Soc. ent. France, 1896, n. spp.
- Baraxina*, n. g., near *Bryaxis*, for *B. francoisi*, n. sp., New Caledonia; RAFFRAY, p. 301, Bull. Soc. ent. France, 1896.
- Batrybraxis caviceps*, Brazil, RAFFRAY, p. 128, Ann. Soc. ent. France, 1896, n. sp.
- Bryaxis* (*Reichenbachia*) *rupestris*, p. 238, *truncaticornis*, p. 239, Abyssinia, *sternalis*, *parallela*, p. 240, *punctipennis*, p. 241, *punctulata*, *decipiens*, *zanzibarica*, p. 242, E. Africa, *madecassa*, p. 243, *analis*, *hova*, p. 244, *goudoti*, *gibbicollis*, p. 245, *coquereli*, p. 246, Madagascar, *B. trifoveata*, p. 247, *lubiata*, p. 248, *B. (Acamaldes) vagepunctata*, Africa, p. 249, RAFFRAY, Rev. Ent. franc. xv, n. spp.
- Bythinomorpha caviceps*, Vanikoro; RAFFRAY, p. 302, Bull. Soc. ent. France, 1896.
- Bythinus diversicornis* = (*mauritii*, Reitt.); PIC, p. 30, Bull. Soc. ent. France, 1896.
- B. (Tychobythinus)*, n. subg.) *ottonis*, Hungary, GANGLBAUER, p. 170, Verh. Ges. Wien, xlvi, n. sp.
- Cercoceroides*, n. n. for *Cercocerus*, Raffr. nec Lec.; RAFFRAY, p. 135, Ann. Soc. ent. France, 1896.
- Claviger testaceus*, habits; HETSCHKO, pp. 45-50, Berlin. ent. Zeitschr. 1896.
- Enoptostomus abeillei*, Syria, GUILLEBEAU, p. 48, Echange, xii, n. sp.
- Eupines caledonica*, *villosula*, New Caledonia, RAFFRAY, p. 302; Bull. Soc. ent. France, 1896, n. spp.
- Euplectus nubigena* and *nitidus* distinguished; REITTER, p. 78, Wien. ent. Zeit. xv.
- Faronus mesmini*, France, CROISSANDEAU, pl. iii, fig. 14, p. 153, Miscell. ent. i, n. sp.

- Hamotus*, *Cercocerus*, *Upoluna* : synonymy and characters ; RAFFRAY p. 133, Ann. Soc. ent. France, 1896.  
*Harmophola*, n. g., *Bythinini*, for *H. clavata*, n. sp., Brazil ; RAFFRAY, p. 130, Ann. Soc. ent. France, 1896.  
*Jubus trouessarti*, *cæculus*, Brazil, RAFFRAY, p. 128, Ann. Soc. ent. France, 1896, n. spp.  
*Machærodes* is a subg. of *Bythinus* ; RAFFRAY, p. 132, Ann. Soc. ent. France, 1896.  
*Pselaphus sencieri* = (*simoni*, Reitt.) ; RAFFRAY, p. 219, Bull. Soc. ent. France, 1896.  
*P. algirus*, Algeria, RAFFRAY, p. 219, Bull. Soc. ent. France, 1896, n. sp.  
*Pselaptrichus* is a subg. of *Bythinus* ; RAFFRAY, p. 131, Ann. Soc. ent. France, 1896.  
*Reichenbachia mallicolensis*, New Hebrides, RAFFRAY, p. 299, Bull. Soc. ent. France, 1896, n. sp.  
*Schanfussia* : all the described forms = *formosa*, King ; RAFFRAY, p. 132, Ann. Soc. ent. France, 1896.  
*Tychobythinus*, n. subg. ; cf. *Bythinus*.  
*Tychus pici*, pl. iii, figg. 1-3, *koziorowiczi*, figg. 4-6, Algeria, *aurerti*, figg. 7-9, hab. ?, p. 152, *cornutus*, figg. 10-12, p. 153, CROISSANDEAU, Miscell. ent. i., n. spp.

PAUSSIDÆ.

- [The following memoirs relate to *Pausside*, viz., FAIRMAIRE (314), KOLBE (658, 660), KRAATZ (674), PÉRINGUEY (862), SCHAU-FUSS (1020), WASMANN (1211).]  
 Notes on habits ; WASMANN, pp. 71-78, Notes Leyden Mus. xviii.  
*Arthropterus*, n. sp., in amber ; cf. PALÆO-ENTOMOLOGY, p. 97.  
*Cerapterus stuhlmanni*, Zanzibar, KOLBE, p. 351, Ent. Zeit. Stettin, lvi ; *C. trinitatis*, p. 296, *hottentottus*, *myrmidonum*, p. 297, Centr. Africa, KOLBE, Ent. Nachr. xxii : n. spp.  
*Paussus acuminicoxis*, *conradti*, *bituberculatus*, p. 89, *oertzeni*, p. 90, Africa, KOLBE, Ent. Nachr. xxii ; *P. arduus*, *manicanus*, p. 149, *raffrayi*, *concinus*, p. 150, *viator*, p. 151, *barkeri*, p. 152, *marshalli*, p. 153, S. Africa, PÉRINGUEY, Tr. ent. Soc. London, 1896 : *P. pasteuri*, p. 63, pl. i, fig. 1, *kannegieteri*, fig. 2, p. 67, *ritsemæ*, p. 69, *lucasseni*, p. 70, Java, WASMANN, Notes Leyden Mus. xviii : n. spp.  
*Pentaplatarthrus bemigsenii*, E. Africa, KRAATZ, p. 88, Deutsche ent. Zeitschr. 1896 ; *P. gestroi*, E. Africa, KOLBE, p. 90, Ent. Nachr. xxii ; *P. leroyi*, Bagamoyo, WASMANN, p. 78, Notes Leyden Mus. xviii, but, p. 97, said to be probably *P. gestroi* : n. spp.  
*Platyhopalus armicornis*, Sumatra, FAIRMAIRE, p. 81, Notes Leyden Mus. xviii, n. sp.  
*Pleuropterus laticornis*, E. Africa, KOLBE, p. 298, Ent. Nachr. xxii, n. sp.

SCYDMENIDÆ.

- [The following memoirs relate to *Scydmenida*, viz., GANGLBAUER (396, 398), GUILLEBEAU (460, 462), REITTER (935, 937, 945), SCHAU-FUSS (1020).]  
 Critical and synonymical remarks on Croissandeau's 1893 monograph ; REITTER, pp. 19-26, Wien. ent. Zeit. xv.  
*Clidicus* : revision ; WASMANN, pp. 14-18, Notes Leyden Mus. xviii. New species in amber ; cf. PALÆO-ENTOMOLOGY, p. 97.  
*Cyrtoscydmus sibiricus*, Irkutsk, REITTER, p. 66, Wien. ent. Zeit. xv, n. sp.  
*Eucoanus scabripennis*, *carinthiacus*, Carinthia, GANGLBAUER, p. 172, Verh. Ges. Wien, xlvi ; *E. (Tetramelus) karamani*, Dalmatia, p. 226, *mohamedis*, Herzegovina, p. 227, REITTER, Wien. ent. Zeit. xv : n. spp. 1896. [VOL. XXXIII.]

- Euthia deubeli*, Siebenburgen, GANGLBAUER, p. 468, Verh. Ges. Wien, xlvi; *E. carreti*, Italy, *nigriceps*, Algeria, GUILLEBEAU, p. 49, Echange, xii; *E. irkutensis*, *euplecticornis*, E. Siberia; REITTER, p. 64, Wien. ent. Zeit. xv : n. spp.
- Neuraphes caudatus*, Circassia, N. (*Pararaphes*) *filiolus*, p. 65, *fraterculus*, p. 66, E. Siberia, REITTER, Wien. ent. Zeit. xv, n. spp.
- Scydmaenus ferrugineus*, Algeria, GUILLEBEAU, p. 244, Bull. Soc. ent. France, 1896, n. sp.

## PLATYPSYLLIDÆ.

- Platypsyllus castoris*, captures in France; MINGAUD, pp. lxxix & 100–109, Bull. Soc. Nimes, xxiii, & xxiv, p. 65, and MINGAUD, Feuille Natural. xxvi, pp. 81 & 223.
- On the habits and life-history of *Platypsyllus castoris*; BRANDES (109).

## SULPHIDÆ.

- [The following memoirs relate to *Silphidæ*, viz., FAIRMAIRE (314), GUILLEBEAU (460, 462), REITTER (935, 937).]
- Agathidium piceum*, habits; VITURAT, p. 422, Bull. Soc. Autun, viii.
- A. cloueti*, Algeria, GUILLEBEAU, p. 244, Bull. Soc. ent. France, 1896, n. sp.
- Agyrtes ferrugineus* = (*rufus*, Reitt.); REITTER, p. 77, Wien. ent. Zeit. xv.
- Anisotoma* (*Liodes*) *orbicularis*, habits; VITURAT, p. 423, Bull. Soc. Autun, viii.
- Catopomorphus*: habits in relation to ants; CHOBOUT, p. 150, Bull. Soc. ent. France, 1896.
- Choleva elongata*, Payk., unrecognisable; REITTER, p. 282, Wien. ent. Zeit. xv.
- C. adusta*, Amasia, REITTER, p. 227, Wien. ent. Zeit. xv, n. sp.
- Colon cloueti*, Algeria, GUILLEBEAU, p. 50, Echange, xii, n. sp.
- Cyrtoplastus cloueti*, Algeria, GUILLEBEAU, p. 50, Echange, xii, n. sp.
- Necrophorus lunatus* (= *stenophthalmus*, Reitt.), *particeps*, distinctions; HELLER, p. 23, Ent. Nachr. xxii.
- N. encaustus*, Simla, FAIRMAIRE, p. 82, Notes Leyden Mus. xviii, n. sp.
- Ptomaphagus sericeus*, variation; CHAMPION, p. 229, Ent. Mag. xxxii.
- Sciodrepa angustitarsis*, Mongolia, p. 66, *amæna*, Velebit Mts., p. 67, REITTER, Wien. ent. Zeit. xv, n. spp.
- Silpha quadripunctata*, metamorphoses; XAMBEU, p. 114, Mœurs, vi.
- Thanatophilus rugosus*, larva; KOLBE, p. 3, Zeitschr. ent. Breslau, xxi.

## HISTERIDÆ.

- [The following memoirs relate to *Histeridæ*, viz., BLACKBURN (85), LEWIS (710, 711), REITTER (936, 947), SCHMIDT (1030, 1031, 1032), XAMBEU (1261).]
- Bacanius angulosus*, Sumatra, SCHMIDT, p. 300, Ann. Mus. Genova, xxxvii; *B. convergens*, Brazil, SCHMIDT, p. 65, Berlin. ent. Zeitschr. 1896 : n. spp.
- Carcinops* (*Cissister*) *fuentei*, Spain, REITTER, p. 269, Wien. ent. Zeit. xv, n. sp.
- Epiurus inscriptus*, *angularis*, Brazil, SCHMIDT, p. 62, Berlin. ent. Zeitschr. 1896, n. spp.
- Gnathoncus*: table of species; REITTER, p. 306, Ent. Nachr. xxii.
- G. punctator*, Caucasus, *urganensis*, Mongolia, p. 307, *potanini*, Kan-ssu, *suturifer*, Caucasus, p. 308, *id. t. c.* : n. spp.



- Hister carbonarius*, metamorphoses; XAMBEU, p. 53, Ann. Soc. Linn. Lyon, xlii. *H. ruficornis*, metamorphoses; XAMBEU, p. 105, Mœurs, vi.
- H. gestroi*, Sumatra, SCHMIDT, p. 293, Ann. Mus. Genova, xxxvii, n. sp.
- Hypobletus*, n. g. for pt. of *Apobletes*, p. 57, with *H. orbatus*, n. sp., Brazil, p. 58; SCHMIDT, Berlin. ent. Zeitschr. 1896.
- Liopygus scrobiculatus*, Sumatra, SCHMIDT, p. 287, Ann. Mus. Genova, xxxvii, n. sp.
- Pachylomalus*, n. g., near *Paromalus*, for *Par. leo* and allies; SCHMIDT, p. 295, Ann. Mus. Genova, xxxvii, n. sp.
- Pachylopus*: composition; SCHMIDT, p. 205, Bull. Soc. ent. France, 1896.
- P. henoni*, Algeria, *id. t. c.* p. 206, n. sp.
- Paromalus luberti* = (*schaufussi*, Mars.); LEWIS, p. 270, Ent. Mag. xxxii.
- P. tuberosus*, Sumatra, LEWIS, p. 270, Ent. Mag. xxxii; *P. modiglianii*, p. 296, *schultzeissi*, p. 297, *derasus*, p. 298, Sumatra, SCHMIDT, Ann. Mus. Genova, xxxvii; *P. irregularis*, p. 64, *addendus*, p. 65, Brazil, SCHMIDT, Berlin. ent. Zeitschr. 1896: n. spp.
- Phelister ovulum*, Sumatra, SCHMIDT, p. 292, Ann. Mus. Genova, xxxvii; *P. distractus*, p. 59, *suturalis*, p. 60, *sejunctus*, p. 61, Brazil, SCHMIDT, Berlin. ent. Zeitschr. 1896: n. spp.
- Platysoma vanum*, p. 288, *diffusum*, p. 289, *silvestre*, p. 291, Sumatra, SCHMIDT, Ann. Mus. Genova, xxxvii, n. spp.
- Sternocelis vaucheri*, Tangier, LEWIS, p. 62, Ent. Mag. xxxii, n. sp.
- Trypeticus silvicola*, p. 298, *frontalis*, p. 299, Sumatra, SCHMIDT, Ann. Mus. Genova, xxxvii, n. spp.
- Tryponceus petropolitanus, obesus*, Brazil, SCHMIDT, p. 56, Berlin. ent. Zeitschr. 1896, n. spp.

PHALACRIDÆ.

- [*Cf.* GUILLEBEAU (461), HORN (518).]
- Astenulus*, n. g. for *A. micropus*, n. sp., Madagascar; GUILLEBEAU, p. 299, Bull. Soc. ent. France, 1896.
- Litolibrus pictus*, Lower California, HORN, p. 374, P. Calif. Ac. (2) vi, n. sp.
- Megischius*, n. g., near *Heterolitus*, for *M. limbicollis*, n. sp., Madagascar; GUILLEBEAU, p. 298, Bull. Soc. ent. France, 1896.
- Nesiotus*, n. g., near *Heterolitus*, for *N. olibroides*, n. sp., Madagascar; GUILLEBEAU, p. 298, Bull. Soc. ent. France, 1896.
- Olibrus egenus*, Madagascar, GUILLEBEAU, p. 299, Bull. Soc. ent. France, 1896, n. sp.
- Parischius*, n. g., near *Heterolitus*, for *P. alluaudi*, p. 297, *perparvulus*, p. 298, n. spp., Madagascar; GUILLEBEAU, Bull. Soc. ent. France, 1896.
- Phalacrus alluaudi*, Madagascar, GUILLEBEAU, p. 296, Bull. Soc. ent. France, 1896, n. sp.

NITIDULIDÆ (incl. CYBOCEPHALIDÆ).

- [The following memoirs relate to *Nitidulidæ*, viz., CHABAUT (163), GROUVELLE (449, 458), GUILLEBEAU (462), REITTER (934, 936, 948, 949).]
- Brachyleptus tomentiventris*, Turcomania, p. 294, *argenteolus, bicoloratus*, Samarcand, *discolor*, Caucasus, p. 295, REITTER, Ent. Nachr. xxii, n. spp.
- Brachypterus nigriclavis*, Algeria, GUILLEBEAU, p. 104, Echange, xii, n. sp.
- Carpophilus hemipterus*, hatits, XAMBEU, p. 56, Ann. Soc. Linn. Lyon, xlii.

- Circopes rotundatus*, Madagascar, GROUVELLE, p. 75, Ann. Soc. ent. France, 1896, n. sp.  
*Cryptarcha raffrayi*, Zanzibar, GROUVELLE, p. 79, *t. c.*, n. sp.  
*Cyllodes ruficollis*, Gaboon, GROUVELLE, p. 76, *t. c.*, n. sp.  
*Dissia*, n. g., *Cybocephalini*, for *D. albopilosa*, n. sp., Algeria; CHOBOUT, p. 167, Bull. Soc. ent. France, 1896.  
*Epurcea latipes*, Algeria, *parallela*, Syria, GROUVELLE, p. 278, Bull. Soc. ent. France, 1896, n. spp.  
*Europs (Nomophlæus) raffrayi*, Abyssinia, p. 79, *E. brevis*, Réunion, p. 80, GROUVELLE, Ann. Soc. ent. France, 1896; *E. (Nomophlæus) depressus*, Burma, GROUVELLE, p. 39, Ann. Mus. Genova, xxxvi : n. spp.  
*Lobiopa raffrayi*, S. Africa, GROUVELLE, p. 71, Ann. Soc. ent. France, lxxv, n. sp.  
*Meligethes bicolor, perviridis*, Algeria, REITTER, p. 268, Wien. ent. Zeit. xv; *M. (Acanthogethes) schilskyi*, Syr-Darja, *M. punctatissimus*, Caucasus, REITTER, p. 312, Deutsche ent. Zeitschr. 1896; *M. alluaudi*, p. 73, *madagascariensis, minimus*, p. 74, *phalacroides*, p. 75, Madagascar, GROUVELLE, Ann. Soc. ent. France, 1896 : n. spp.  
*Pallodes sikorai, klugi*, p. 77, *variabilis, dorsalis*, p. 78, Nossi-bé; GROUVELLE, Ann. Soc. ent. France, 1896.  
*Pria reitteri*, Madagascar, GROUVELLE, p. 73, Ann. Soc. ent. France, 1896, n. sp.  
*Prometopia quadrinotata*, Africa, GROUVELLE, p. 72, Ann. Soc. ent. France, 1896, n. sp.  
*Pseudocamptodes*, n. g., near *Camptodes*, for *P. africanus*, n. sp., Central Africa; GROUVELLE, p. 76, Ann. Soc. ent. France, 1896.  
*Soronia alluaudi*, Madagascar, GROUVELLE, p. 71, Ann. Soc. ent. France, 1896, n. sp.

## TROGOSITIDÆ.

- Holocephala longiceps*, Burma, &c., GROUVELLE, p. 40, Ann. Mus. Genova, xxxvi, n. sp.  
*Shoguna feæ*, Tenasserim, GROUVELLE, p. 41, Ann. Mus. Genova, xxxvi, n. sp.

## COLYDIIDÆ.

- [*Cf.* GROUVELLE (449, 452, 456), XAMBEU (1261).]  
*Aglenus brunneus*, larva noticed, XAMBEU, p. 57, Ann. Soc. Linn. Lyon, xlii.  
*Atyscus minutus*, Burma, GROUVELLE, p. 29, Ann. Mus. Genova, xxxvi, n. sp.  
*Aulonium trisulcum*, larva; KOLBE, p. 5, Zeitschr. ent. Breslau, xxi.  
*Bothrideres signatus*, p. 82, *hexagonus*, p. 83, Madagascar, GROUVELLE, Ann. Soc. ent. France, 1896; *B. feæ, frater*, Burma, GROUVELLE, p. 35, Ann. Mus. Genova, xxxvi : n. spp.  
*Cerylon raffrayi*, Abyssinia, p. 83, *vicinum*, Zanzibar, *sikorai*, p. 84, *rotundicolle*, Madagascar, *nitidum*, Mahé, *excavatum*, Sierre Leone p. 85, GROUVELLE, Ann. Soc. ent. France, 1896; *C. frater*, Tenasserim, GROUVELLE, p. 38, Ann. Mus. Genova, xxxvi : n. spp.  
*Cicones squamosus*, E. Africa, GROUVELLE, p. 187, Bull. Soc. ent. France, 1896; *C. madagascariensis*, Madagascar, GROUVELLE, p. 80, Ann. Soc. ent. France, 1896, n. spp.  
*Coxelus birmanicus*, Burma, GROUVELLE, p. 30, Ann. Mus. Genova, xxxvi, n. sp.  
*Erotylathris elongatus*, Burma, GROUVELLE, p. 36, *t. c.*, n. sp.  
*Hyberis inflata*, Burma, GROUVELLE, p. 30, *t. c.*, n. sp.  
*Lubromimus gestroi, feæ*, Burma, GROUVELLE, p. 32, *t. c.*, n. spp.  
*Leptoglyphus feæ*, Burma, GROUVELLE, p. 37, *t. c.*, n. sp.

- Neotrichus cylindricus*, Burma, GROUVELLE, p. 33, Ann. Mus. Genova, xxxvi, n. sp.  
*Teredolæmus zonatus*, p. 81, *crassus*, p. 82, Madagascar, GROUVELLE, Ann. Soc. ent. France, 1896; *T. concolor*, Burma, GROUVELLE, p. 34, Ann. Mus. Genova, xxxvi : n. spp.

## CUCUJIDÆ.

- [Cf. GROUVELLE (449, 457).]  
*Hyllota conformis*, Manilla, GROUVELLE, p. 199, Bull. Soc. ent. France, 1896, n. sp.  
*Læmophlæus sulcifrons*, p. 87, *planulatus*, p. 88, Réunion, GROUVELLE, Ann. Soc. ent. France, 1896, n. spp.  
*Prostomis africana*, GROUVELLE, p. 87, Ann. Soc. ent. France, 1896, n. sp.  
*Silvanus surinamensis*, and allies, characters; CHAMPION, pp. 268 & 269, Ent. Mag. xxxii.  
*Tenebrio ferrugineus*, Fab., is a Cucujid, allied to *Xenoscelis*; WATERHOUSE, p. 230, Ann. Nat. Hist. (6) xvii.

## CRYPTOPHAGIDÆ.

- [Cf. GROUVELLE (449), HAMILTON (468), REITTER (937, 938, 946), XAMBEU (1261).]  
*Atomaria pusilla*, habits; VITURAT, p. 419, Bull. Soc. Autun, viii.  
*A. (Agathengis) grossepunctata*, *plicibasis*, p. 68, *globoicollis*, Irkutsk, *herbigrada*, Margelan, p. 69, REITTER, Wien. ent. Zeit. xv; *A. humeralis*, Pennsylvania, HAMILTON, p. 347, Tr. Amer. ent. Soc. xxii : n. spp.  
*Cryptophagus lamellicornis*, larva; XAMBEU, p. 58, Ann. Soc. Linn. Lyon, xlii.  
*C. conicollis*, Irkutsk, *C. (Micrambe) opacosericus*, Transcaucasus, REITTER, p. 67, Wien. ent. Zeit. xv; *C. subfasciatus*, *C. (Micrambe) madagascariensis*, Madagascar, GROUVELLE, p. 90, Ann. Soc. ent. France, 1896 : n. spp.  
*Cryptophilus alluaudi*, Madagascar, GROUVELLE, p. 89, Ann. Soc. ent. France, 1896, n. sp.  
*Loberoschema*, n. g. for *L. bimaculata*, n. sp., Chili; REITTER, p. 160, Deutsche ent. Zeitschr. 1896.  
*Loberus insularis*, Madagascar, GROUVELLE, p. 89, Ann. Soc. ent. France, 1896, n. sp.  
*Sternodea dichroa*, Caucasus, REITTER, p. 285, Wien. ent. Zeit. xv, n. sp.

## LATHRIDIDÆ (incl. MONOTOMIDÆ).

- [Cf. ERICSON (297), GROUVELLE (452, 457), THOMSON (1149), WASMANN (1221).]  
*Belonilla*, referred to *Tenebrionidæ*; BELON, p. 266, Rev. Ent. franc. xv.  
*Enicmus testaceus*, habits; VITURAT, p. 421, Bull. Soc. Autun, viii.  
*Europs*, cf. *Nitidulidæ*.  
*Hesperobænus communis*, Sumatra, GROUVELLE, p. 199, Bull. Soc. ent. France, 1896, n. sp.  
*Holocephala* and *Shoguna*, cf. *Trogositidæ*.  
*Lathridius microps*, Sweden, THOMSON, p. 2390, Opusc. Ent. xxi; *L. microps*, Sweden, ERICSON, p. 326, Deutsche ent. Zeitschr. 1896: n. spp.  
*Merophysia oblonga*, n. var. *escherichi*; WASMANN, p. 239, Deutsche ent. Zeitschr. 1896.  
*Monotomopsis*, n. g. for *M. monotomoides*, n. sp., Tenasserim, &c.; GROUVELLE, p. 38, Ann. Mus. Genova, xxxvi.  
*Reitteria escherichi*, Angora, WASMANN, p. 238, Deutsche ent. Zeitschr. 1896, n. sp.

## MYCETOPHAGIDÆ, THORICTIDÆ.

*Atritomus reitteri*, Japan, LEWIS, p. 331, Ann. Nat. Hist. (6) xvii, n. sp.  
*Thorictus*: notes on various, with *T. baudii*, n. var. *ganglbaueri*, p. 242,  
*grandicollis*, n. var. *loricatoides*; WASMANN, Deutsche ent. Zeitschr.  
 1896.

## DERMESTIDÆ.

Structure of hairs of *Anthrenus* larvæ; VOGLER (1195).  
*Anthrenus* (*Anthrenops*) *amœnulus*, Persia, REITTER, p. 286, Wien. ent.  
 Zeit. xv, n. sp.  
*Attagenus sieversi*, Askabad, REITTER, p. 286, Wien. ent. Zeit. xv, n. sp.  
*Dermestes undulatus*, metamorphoses, XAMBEU, p. 111, Mœurs, vi; *D.*  
*murinus*, larva, KOLBE, p. 5, Zeitschr. ent. Breslau, xxi.

## BYRRHIDÆ.

[Cf. ALLUAUD (16), REITTER (938, 950), XAMBEU (1261).]  
*Byrrhus fasciatus*, metamorphoses, XAMBEU, p. 60, Ann. Soc. Linn. Lyon,  
 xlii, and p. 128, Mœurs, vi.  
*Nosodendron madagascariense*, Diego-Suarez, ALLUAUD, p. 36, Bull. Soc.  
 ent. France, 1896, n. sp.  
*Seminolus subœneus*, *imstriatus*, E. Siberia, REITTER, Deutsche ent.  
 Zeitschr. 1896, n. spp.  
*Simplocaria macularis*, Lake Baikal, REITTER, p. 285, Wien. ent. Zeit.  
 xv, n. sp.

## PARNIDÆ.

[Cf. GROUVELLE (449, 451, 453, 454, 455), XAMBEU (1261).]  
 Synonymical observations on Kuwert's Bestimmungstabellen; GROU-  
 VELLE, pp. 75 & 76, Bull. Soc. ent. France, 1896.  
 Mode of collecting *Elmides*; DEGORS, Feuille Natural. xxvi, p. 120.  
*Ancyronyx acaroides*, Sumatra, GROUVELLE, p. 50, Ann. Mus. Genova,  
 xxxvii, n. sp.  
*Cyllæpus bouchardi*, Sumatra, GROUVELLE, p. 44, Ann. Mus. Genova,  
 xxxvii; *C. consobrinus*, p. 42, *germaini*, p. 43, Bolivia, *granosus*,  
 p. 44, Brazil, GROUVELLE, Notes Leyden Mus. xviii : n. spp.  
*Dryopidius*, n. g. for *D. truncatus*, *castaneus*, p. 33, *sericeus*, *carinatus*,  
 p. 34, Sumatra, *javanicus*, Java, p. 35, GROUVELLE, Ann. Mus.  
 Genova, xxxvii : n. spp.  
*Dryops vestitus*, p. 91, *alluaudi*, *umbrinus*, p. 92, Madagascar, GROUVELLE,  
 Ann. Soc. ent. France, 1896; *D. æquinoxialis*, N. Grenada, p. 34,  
*germaini*, Bolivia, p. 35, *sobrinus*, *sublevis*, p. 36, *hirtus*, *cribratus*,  
 p. 37, *vicinus*, *similis*, p. 38, *gounelli*, p. 39, *crassus*, p. 40, Brazil,  
 GROUVELLE, Notes Leyden Mus. xviii : n. spp.  
*Elmis*, not *Helmis*, to be used; HEYDEN, p. 105, Wien. ent. Zeit. xv.  
*Elsianus antiquus*, Brazil, GROUVELLE, p. 41, Notes Leyden Mus. xviii,  
 n. sp.  
*Helmis foveicollis*, Ceylon, *monticola*, Sumatra, GROUVELLE, p. 45, Ann.  
 Mus. Genova, xxxvii; *H. simsoni*, Tasmania, p. 47, *thoracica*, Bolivia,  
 p. 48, *apicata*, Ecuador, p. 49, *tibialis*, p. 50, *cervina*, *longior*, p. 51,  
 Bolivia, GROUVELLE, Notes Leyden Mus. xviii : n. spp.  
*Heterelmis neglecta*, Bolivia, GROUVELLE, p. 46, Notes Leyden Mus. xviii,  
 n. sp.  
*Lutrochus*: table of species; GROUVELLE, p. 17, Bull. Soc. ent. France,  
 1896.

- L. montanus*, Bolivia, p. 16, *misellus*, Brazil, GROUVELLE, p. 17, Bull. Soc. ent. France, 1896, n. spp.
- Microdes frater*, *modiglianii*, p. 46, *æneus*, p. 47, Sumatra, GROUVELLE, Ann. Mus. Genova, xxxvii, n. spp.
- Parnus*, *Dryops*, *Limnius*, *Helmis*: application of these names; GROUVELLE, p. 27, Bull. Soc. ent. France, 1896. *P. auriculatus*: metamorphoses; XAMBEU, Ann. Soc. Linn. Lyon, xlii.
- Parygrus elateroides*, Brazil, GROUVELLE, p. 33, Notes Leyden Mus. xviii, n. sp.
- Pelonomus insularis*, St. Domingo, GROUVELLE, p. 33, Notes Leyden Mus. xviii, n. sp.
- Potamodytes*, n. g., type *abdominalis*, Waterh.; GROUVELLE, p. 78, Bull. Soc. ent. France, 1896.
- Potamophilinus*, n. g., type *longipes*, Grouv.; GROUVELLE, p. 78, Bull. Soc. ent. France, 1896.
- Potamophilus*, n. g., type *cinereus*, Bl.; GROUVELLE, p. 78, Bull. Soc. ent. France, 1896.
- Potamophilops abdominalis* = (*oxypterus*, Fairm.); GROUVELLE, p. 75, Bull. Soc. ent. France, 1896.
- P. albertisi*, New Guinea, GROUVELLE, p. 32, Ann. Mus. Genova, xxxvii, n. sp.
- Sostea viridipennis*, Siam, *analis*, p. 36, *striata*, Sumatra, *fasciata*, Assam, p. 37, *tomentosa*, Singapore, *fryi*, Perak, p. 38, *picina*, *atra*, *dubia*, p. 39, *hæmorrhoidalis*, *atrocyanea*, p. 40, Sumatra, *hirta*, Perak, p. 41, GROUVELLE, Ann. Mus. Genova, xxxvii, n. spp.
- Stenelmis vicina*, Engano, p. 47, *minuta*, *concolor*, Sumatra, p. 48, GROUVELLE, Ann. Mus. Genova, xxxvii; *S. subsulcata*, p. 44, *stricticollis*, p. 45, Sumatra, *villosocostata*, p. 46, Tonkin, GROUVELLE, Notes Leyden Mus. xviii: n. spp.

## HETEROCERIDÆ.

[Cf. GROUVELLE (449, 450, 453, 460), SCHNEIDER (1035).]

- Heterocerus fuscus*: metamorphoses; PORTEVIN, p. 294, Bull. Soc. ent. France, 1896. *H. amœnus* and *biskrensis* are one species; GROUVELLE, p. 77, t. c.
- H. burchanensis*, Borkum Is., SCHNEIDER, p. 177, Deutsche ent. Zeitschr. 1896; *H. humilis*, Algeria, GUILLEBEAU, p. 243, Bull. Soc. ent. France, 1896; *H. elongatus*, *incertus*, Madagascar, GROUVELLE, p. 93, Ann. Soc. ent. France, 1896; *H. (Littorimus) fecæ*, p. 51, *suturalis*, p. 52, *atratus*, *birmanicus*, p. 53, Burma, *niloticus*, Egypt, p. 54, *H. sinensis*, Pekin, *thebaicus*, Egypt, p. 55, GROUVELLE, Ann. Mus. Genova, xxxvii; *H. javanicus*, p. 3, *parvulus*, Java, *fryi*, Sumatra, p. 4, *tonkinensis*, Tonkin, p. 5, *H. (Littorimus) quinquemaculatus*, Java, *H. difficilis*, p. 7, *sharpi*, p. 8, *perplexus*, p. 9, Mexico, *assimilis*, p. 10, *insidiosus*, *minutissimus*, p. 11, Brazil, *similis*, p. 12, *germaini*, p. 13, Chili, GROUVELLE, Notes Leyden Mus. xviii: n. spp.

## PASSALIDÆ.

[Cf. BLACKBURN (84), HELLER (485), KUWERT (689).]

KUWERT (689) gives tables of the groups and genera; the latter probably contain many new names, but as no indication of novelty are given (indeed no references at all are to be found), we leave the treatment of the paper till it shall be before us in its entirety.

- Aulacocyclus errans*, *collaris*, Australia, BLACKBURN, p. 233, Tr. R. Soc. S. Austral. xx, n. spp.
- Comacupes minor*, Celebes, p. 3, fig. 11 HELLER, Abh. Mus. Dresden, 1896-97, No. 3, n. sp.

## LUCANIDÆ.

- [*Cf.* JAKOWLEW (568, 570), KOLBE (658), KRAATZ (670), MÖLLENKAMP (799), PLANET (907), RITSEMA (982, 983).]  
 List of the *Lucanidæ* of Borneo; POLL, pp. 141-144.  
*Cyclomnatus metallifer*, n. var. *ritsemæ*; JAKOWLEW, p. 173, Horæ Soc. ent. Ross. xxx.  
*Eurytrachelus hirticornis*, China, JAKOWLEW, p. 457, Horæ Soc. ent. Ross. xxx, n. sp.  
*Figulus impressicollis*, Borneo, RITSEMA, p. 139, Notes Leyden Mus. xvii, n. sp.  
*Hadronigidius*, n. g., p. 65, for *H. bennigseni*, n. sp., E. Africa, p. 66; KRAATZ, Deutsche ent. Zeitschr. 1896.  
*Homoderus preussi*, W. Africa, KOLBE, p. 7 (p. 301, this and *H. gladiator* are said to be one species), Ent. Nachr. xxii, n. sp.  
*Lucanus* and *Pseudolucanus*, the species and varieties with numerous figures; PLANET, Naturaliste, 1896. *L. maculifemoratus*, var. *dybowskii*, characters; JAKOWLEW, p. 171, Horæ Soc. ent. Ross. xxx.  
*Macrodorcus rubrofemoratus*, characters; JAKOWLEW, p. 173, Horæ Soc. ent. Ross. xxx.  
*Mesotopus regius*, Guinea, MÖLLENKAMP, p. 360, cut, Deutsche ent. Zeitschr. 1896, n. sp.  
*Metopodontus kannegieteri* = (*volkmanni*, Nonfr.); RITSEMA, p. 130, Notes Leyden Mus. xviii.  
*M. calcaratus*, Burma, JAKOWLEW, p. 172, Horæ Soc. ent. Ross. xxx, n. sp.  
*Nigidius grandis* = (*albersi*, Duv., = *spectabilis*, Kr.); RITSEMA, p. 130, Notes Leyden Mus. xviii.  
*Pseudolucanus oberthuri*, Sikkim, PLANET, p. 279, Naturaliste, 1896, n. sp.

## SCARABÆIDÆ.

[The following memoirs relate to *Scarabæidæ*, viz., BLACKBURN (84, 85), BRENSKE (114, 115, 116), CHAMPENOIS (148), CHOBOUT (166, 168), CLOUET (182, 183), DESBROCHERS (244), ESCHERICH (303), FABRE (305), FAIRMAIRE (306, 307, 311, 314, 315), GAHAN (394), HELLER (485), KOLBE (658, 659, 660), KRAATZ (676), LEWIS (709), LINELL (717, 718, 719, 720), ORBIGNY (839, 840), PÉRINGUEY (862), PEYERIMHOF (866), REITTER (936, 938, 939, 951, 952), RITSEMA (984, 985, 986), SEMENOW (1064, 1066, 1072), SHIPP (1085, 1086, 1087), XAMBEU (1261); also see *Cetoniini*, p. 126.]

*Coprini.*

- Mode of rolling the balls of dung; ESCHERICH (303).  
 Structures formed by *Coprines*; FABRE (305).  
 Synopsis of Palæarctic *Aphodiens*; ORBIGNY, Abeille, xxviii, pp. 197-271.  
*Actinophorus grandidieri*, Madagascar, SHIPP, p. 420, Nov. Zool. iii;  
*A. leei*, Swan River, SHIPP, p. 72, t. c. : n. spp.  
*Ammœcius pyrenæus*, metamorphoses; XAMBEU, p. 96, Mœurs, vi, and p. 198, Naturaliste, 1896.  
*Aphodius rufescens*, p. 70, *piceus*, p. 74, metamorphoses; XAMBEU, Ann. Soc. Linn. Lyon, xlii. *A. mulsanti*, n. n. for *syriacus*, Muls.; ORBIGNY, p. 247, Abeille, xxviii. *A. tunicatus* belongs to subg. *Amidorus*; REITTER, p. 282, Wien. ent. Zeit. xv.  
*A. (Agolius) bernhaueri*, Silesia, REITTER, p. 269, Wien. ent. Zeit. xv;  
*A. (Erytus) chobauti*, Algeria, CLOUET, p. 371, Bull. Soc. ent. France, 1896; *A. sitiphoides*, N. Africa, *alleoni*, Bosphorus, ORBIGNY, p. 149, t. c.; *A. (Trichonotus) merdaroides*, Irkutsk, REITTER,

- p. 288, Wien. ent. Zeit. xv; *A. (Melinopterus) costulatus*, E. Siberia, REITTER, p. 33, Deutsche ent. Zeitschr. 1896; *A. subvittatus*, Madagascar, FAIRMAIRE, p. 452, Ann. Soc. ent. Belgique, xl.; *A. coquilletti*, California, LINELL, p. 722, P. U. S. Mus. xviii : n. spp.
- Atenius goyderensis*, Central Australia, BLACKBURN, p. 264, Horn Exped. pt. ii, n. sp.
- Aulonocnemis sumatræ*, Sumatra, FAIRMAIRE, p. 83, Notes Leyden Mus. xviii, n. sp.
- Bolboceras panza*, S. Africa, PÉRINGUEY, p. 159, Tr. ent. Soc. London, 1896; *B. conicifrons*, Yunnan, FAIRMAIRE, p. 82, Notes Leyden Mus. xviii : n. spp.
- Bradycinctus minor*, Texas, LINELL, p. 723, P. U. S. Mus. xviii, n. sp.
- Copris gopheri*, habits; HAMILTON, p. 286, Ent. News Philad. vii.
- Craniorhynchus*, n. g., *Orphnince*, for *C. grandiceps*, n. sp., Africa eq.; KOLBE, p. 343, Ent. Zeit. Stettin, lvi.
- Didactylia*, n. g., near *Oxyomus*, for *Aphodius pallidicolor*, Fairm.; ORBIGNY, p. 247, Abeille, xxviii.
- Esimaphodius mendidioides* = (*Meraphodius selenocaris*, Kosh.); REITTER, p. 78, Wien. ent. Zeit. xv.
- Eubolbitus sicardi*, Tunis, REITTER, p. 270, Wien. ent. Zeit. xv, n. sp.
- Geotrupes mutator*, early stages; XAMBEU, p. 75, Ann. Soc. Linn. Lyon, xlii.
- G. (Thorectes) mandibularis*, Tunis, REITTER, p. 271, Wien. ent. Zeit. xv, n. sp.
- Gymnopleurus crenulatus*, *cupreovirens*, p. 333, *malleolus*, *consanguineus*, p. 334, *pustulatus*, *mærens*, *atrovirens*, p. 335, *krugeri*, p. 336, Africa, KOLBE, Ent. Zeit. Stettin, lvi, n. spp.
- Helicopris colossus*, sexes described, p. 336, *H. eryx* = (*mutabilis*, Kolbe), *hunteri* = (*trilobus*, Kolbe), p. 338, *biimpressus*, sexes, p. 339; KOLBE, Ent. Zeit. Stettin, lvi.
- H. selousi*, Zambezi, PÉRINGUEY, p. 153, Tr. ent. Soc. London, 1896, n. sp.
- Irrorhotides*, n. g., near *Actinophorus*, p. 116, for *A. fryii*, n. sp., S. Africa, p. 117; SHIPP, Entomologist, 1896.
- Ochodæus mandibularis*, Arizona, LINELL, p. 723, P. U. S. Mus. xviii, n. sp.
- Onitis zambezianus*, p. 154, *dispar*, p. 155, Zambezi, PÉRINGUEY, Tr. ent. Soc. London, 1896, n. spp.
- Onthophagus quadrinodus*, Samarcand, REITTER, p. 287, Wien. ent. Zeit. xv; *O. subextensus*, E. Africa, KOLBE, p. 340, Ent. Zeit. Stettin, lvi; *O. mashunus*, p. 155, *ponderosus*, p. 156, *insignis*, *gemmeus*, p. 157, Zambezi, PÉRINGUEY, Tr. ent. Soc. London, 1896 : n. spp.
- Orphnus thoracicus*, Somaliland, LINELL, p. 689, P. U. S. Mus. xviii; *O. nyassicus* with var. *impresso-striata*, *sansibaricus*, p. 341, *subfurcatus*, p. 342, Africa, KOLBE, Ent. Zeit. Stettin, lvi; *O. zambezianus*, p. 157, *mashunus*, *ovampoanus*, p. 158, *pugnax*, p. 159, Zambezi, PÉRINGUEY, Tr. ent. Soc. London, 1896 : n. spp.
- Otophorus hæmorrhoidalis*, metamorphoses; XAMBEU, p. 68, Ann. Soc. Linn. Lyon, xlii.
- Phæochridius haroldi*, Sumatra, FAIRMAIRE, p. 86, Notes Leyden Mus. xviii, n. sp.
- Phæochrous stercorarius*, Usambara, KOLBE, p. 342, Ent. Zeit. Stettin, lvi; *P. asiaticus*, Japan, LEWIS, p. 332, Ann. Nat. Hist. (6) xvii : n. spp.
- Philharmostes*, n. g., *Trogineæ*, for *P. æncoviridis*, Madagascar, *integer*, E. Africa, n. spp.; KOLBE, Ent. Zeit. Stettin, lvi.
- Plagiogonus theryi*, Algeria, CLOUET, p. 54, Bull. Soc. ent. France, 1896, n. sp.

- Pleurophorus cæsus*, metamorphoses ; XAMBEU, p. 107, Mœurs, vi.  
*Prougoderus ritsemæ*, var. ; SHIPP, p. 20, Entomologist, 1896.  
*Psammobius pallidus* and *basalis*, distinctive characters ; ORBIGNY, p. 372, Bull. Soc. ent. France, 1896.  
*P. schwarzi*, Florida, LINELL, p. 721, P. U. S. Mus. xviii, n. sp.  
*Rhyparus* = (*Antrisis*, Pasc.) ; FAIRMAIRE, p. 84, Notes Leyden Mus. xviii.  
*R. dentatus*, Borneo, p. 83, *simplicicollis*, Sumatra, p. 84, FAIRMAIRE, Notes Leyden Mus. xviii ; *R. comorianus*, Comoro Is., FAIRMAIRE, p. 452, Ann. Soc. ent. Belgique, xl : n. spp.  
*Rhysemodes reitteri*, n. n. for *aspericeps*, Reitt. ; ORBIGNY, p. 254, Abeille, xxviii.  
*Sebasteos adelphus*, Usagara, KOLBE, p. 332, Ent. Zeit. Stettin, lvi, n. sp.  
*Scarabæus laticollis*, habits ; KRIECHBAUMER, p. 57, Ent. Nachr. xxii.  
*S. fraterculus*, p. 331, *glabratus*, p. 332, Central Africa, KOLBE, Ent. Zeit. Stettin, lvi, n. spp.  
*Sicardia*, n. g., near *Psammodes*, for *S. psammiformis*, n. sp., Tunis ; REITTER, p. 318, Deutsche ent. Zeitschr. 1896.  
*Sybacodes*, n. g., p. 84, near *Rhyparus*, for *S. lutulentus*, p. 85, n. sp., Birma ; FAIRMAIRE, Notes Leyden Mus. xviii.  
*Thorectes cheroni*, Corsica, CROISSANDEAU, p. 134, Miscell. ent. i, n. sp.  
*Trox perlatus*, metamorphoses ; XAMBEU, p. 86, Mœurs, vi.  
*T. insignicollis*, p. 265, *mentitor*, p. 266, Central Australia, BLACKBURN, Horn. Exped. pt. ii, n. spp.

### *Glaphyrini.*

- Translation into French of Reitter's paper on *Amphicoma* [cf. Zool. Rec. xxvii, *Ins.* Titles (647)] ; PEYERIMHOF, Abeille, xxix, pp. 1-11 : observations thereon ; CHAMPENOIS, *t. c.* pp. 12-16.  
*Amphicoma vulpes*, n. var. *nigripennis*, p. 13, *arctos*, n. var. *præusta*, p. 15 ; CHAMPENOIS, Abeille, xxix.

### *Melolonthini.*

- Achranoxia varentzowi*, Transcaspian, SEMENOW, p. 244, Horæ Soc. ent. Ross. xxx, n. sp.  
*Amaladera*, n. g., p. 183, type *Serica euphorbiæ*, Burm., with n. subg. *Omalodera*, p. 188, *A. (O.) cavifrons*, China, n. sp., p. 188 ; REITTER, Wien. ent. Zeit. xv.  
*Apogonia* : list of recently described species ; RITSEMA, pp. 55-57, Notes Leyden Mus. xviii.  
*A. unida*, p. 332, *bicarinata*, p. 333, Japan, LEWIS, Ann. Nat. Hist. (6) xvii ; *A. kombirana*, India, BRENSKE, p. 155, Ann. Soc. ent. Belgique, xl ; *A. metasternalis*, Saigon, RITSEMA, p. 207, Notes Leyden Mus. xvii ; *A. expeditionis*, Sumatra, RITSEMA, p. 53, *op. cit.* xviii : *A. goedhuisi*, p. 25, *abdominalis*, p. 26, *pygidialis*, p. 28, *waterhousei*, p. 29, *buttikoferi*, p. 31, Borneo, RITSEMA, *t. c.* ; *A. frontalis*, *adelphica*, p. 4, *pilosa*, *minor*, p. 5, *sericata*, Celebes, *lasia*, Banggai, p. 6, *amaura*, *subvittata*, p. 7, *lepidota*, *sharpi*, p. 8, Celebes, HELLER, Abh. Mus. Dresden, 1896-97, No. 3 : n. spp.  
*Asactopholis squamipennis*, redescribed ; BRENSKE, p. 178, Ent. Zeit. Stettin, lvii.  
*Brachyllus*, n. g., *Rhizotrogidarum*, for *B. ulcerosus*, p. 162, *frontalis*, p. 163, n. spp., India ; BRENSKE, Ann. Soc. ent. Belgique, xl.  
*Brahmina braeti*, India, BRENSKE, p. 161, Ann. Soc. ent. Belgique, xl, n. sp.  
*Brenskeu* and allies, characters ; SEMENOW, p. 43, Annuaire Mus. St. Petersb. 1896.



- B. varentzowi*, Transcaspian region, SEMENOW, p. 45, Annuaire Mus. St. Petersb. 1896, n. sp.
- Chatoserica cymosa*, India, BRENSKE, p. 154, Ann. Soc. ent. Belgique, xl, n. sp.
- Cheronia*, n. g., between *Melolontha* and *Rhizotrogus*, for *C. bonnemaisoni*, n. sp., Pyrénées orientales, but probably exotic; CROISSANDEAU, Miscell. ent. i, p. 113, pl. i, fig. 20.
- Chrysoserica auricoma*, India, BRENSKE, p. 154, Ann. Soc. ent. Belgique, xl, n. sp.
- Cycloserica*, n. g., p. 181, near *Serica*, for *C. excisiceps*, n. sp., Turkestan, p. 184, REITTER, Wien. ent. Zeit. xv.
- Cyphonoxia glasunowi*, Transcaspian, SEMENOW, p. 245, Horæ Soc. ent. Ross. xxx, n. sp.
- Dicrania flavipennis*, Paraguay, KRAATZ, p. 189, Deutsche ent. Zeitschr. 1896, n. sp.
- Diplotaxis rufa*, Florida, LINELL, p. 725, P. U. S. Mus. xviii; *D. brevisetosa*, Texas, LINELL, *op. cit.* xix : n. spp.
- Empecta gentilis*, Madagascar, FAIRMAIRE, p. 453, Ann. Soc. ent. Belgique, xl, n. sp.
- Encya brevispina*, Madagascar, FAIRMAIRE, p. 453, *t. c.*, n. sp.
- Eulepida oberthuri*, W. Africa, p. 181, *nitidicollis*, p. 182, *maboica*, p. 184, *anatina*, p. 185, E. Africa, BRENSKE, Ent. Zeit. Stettin, lvii, n. spp.
- Europteron bayonnci*, Algeria, CHUBAUT, p. 413, Bull. Soc. ent. France, 1896, n. sp.
- Euserica*, n. g., p. 182, type *Serica mutata*, Gyll.; REITTER, Wien. ent. Zeit. xv.
- Exopholis philippinica*, Philippines, BRENSKE, p. 179, Ent. Zeit. Stettin, lvii, n. sp.
- Gymnopyge*, n. g., *Dichelonychini*, p. 723, for *G. hopliæformis*, *pygmaea*, *coquilletti*, n. spp., p. 724, N. America; LINELL, P. U. S. xviii.
- Gynæcoserica pелlecta*, India, BRENSKE, p. 154, Ann. Soc. ent. Belgique, xl, n. sp.
- Holopycnia*, n. g., p. 198, near *Holotrichia*, for *H. celebesiaca*, n. sp., Celebes, p. 199; BRENSKE, Ent. Zeit. Stettin, lvii.
- Holotrichia quadrangulata*, Philippines, BRENSKE, p. 198, Ent. Zeit. Stettin, lvii; *H. glabricollis*, p. 157, *fulgida*, p. 158, *braeti*, *clypealis*, p. 159, *tetarana*, p. 160, BRENSKE, Ann. Soc. ent. Belgique, xl : n. spp.
- Homaloptia diabolica* = (*ursina*, Fairm.); REITTER, p. 77, Wien. ent. Zeit. xv.
- Hoplosternus bifurcatus*, *carinatus*, India, BRENSKE, p. 164, Ann. Soc. ent. Belgique, xl; *H. virescens*, p. 202, *shanghaianus*, China, p. 203, BRENSKE, Ent. Zeit. Stettin, lvii : n. spp.
- Lachnosterna elongata*, p. 725, *parva*, *alpina*, p. 726, *grandior*, p. 727, *rugosoides*, *minor*, p. 728, N. America, LINELL, P. U. S. Mus. xviii; *L. karlsioei*, Arkansas, LINELL, p. 400, *op. cit.* xix : n. spp.
- Lasioserica braeti*, *pilosella*, *calva*, India, BRENSKE, p. 155, Ann. Soc. ent. Belgique, xl, n. spp.
- Lepidiota squamulata*, habits, life-history; TRYON (1161).
- L. renardi*, India, BRENSKE, p. 156, Ann. Soc. ent. Belgique, xl, n. sp.
- Leucopholis tetaranus*, India, BRENSKE, p. 157, Ann. Soc. ent. Belgique, xl; *L. helleri*, Sangir, p. 186, *selenkana*, Borneo, p. 190, *palembangia*, Palembang, p. 192, *sharpi*, Borneo, *semperi*, Philippines, p. 194, *tristricula*, *curvidens*, p. 195, *castelnavi*, p. 196, *insularis*, p. 197, Sumatra, BRENSKE, Ent. Zeit. Stettin, lvii : n. spp.
- Leucoserica*, n. g., p. 181, type *Serica arenicola*. Solsky, *L. diluta*, n. sp., Murgab, p. 185; REITTER, Wien. ent. Zeit. xv.
- Listrochelus pulcher*, Texas, LINELL, p. 730, P. U. S. Mus. xviii, n. sp.

- Maladera (Aserica) armeniaca*, Amasia ; REITTER, p. 187, Wien. ent. Zeit. xv.
- Melolontha vulgaris*, habits, oviposition ; RASPAIL, p. 331, &c., Mem. Soc. zool. France, ix : dates of oviposition ; BOAS (93). *M. tibialis*, note on ; BRENSKE, p. 204, Ent. Zeit. Stettin, lvii. *M. afflicta, clypeata*, characters and synonymy ; SEMENOW, pp. 18–20, Annuaire Mus. St. Petersb. 1896.
- M. tenuicauda*, Tibet, FAIRMAIRE, p. 87, Notes Leyden Mus. xviii ; *M. tarimensis*, Chinese Turkestan, SEMENOW, p. 22, Annuaire Mus. St. Petersb. 1896 : n. spp.
- Microserica bremskei*, Japan, REITTER, p. 186, Wien. ent. Zeit. xv ; *M. quadripunctata*, India, BRENSKE, p. 154, Ann. Soc. ent. Belgique, xl : n. spp.
- Omalodera*, n. subg., cf. *Amaladera*.
- Paraserica*, n. g., p. 183, type *Serica grisea*, Motsch. ; REITTER, Wien. ent. Zeit. xv.
- Pegylis rufomaculatus*, Somaliland, LINELL, p. 690, P. U. S. Mus. xviii, n. sp.
- Phytalus cavifrons*, Texas, LINELL, p. 730, P. U. S. Mus. xviii, n. sp.
- Polyphylla algerana*, Algeria, p. 200, *sikkimensis*, India, p. 201, BRENSKE, Ent. Zeit. Stettin, lvii, n. spp.
- Rhabdopholis irrorata*, Transvaal, PÉRINGUEY, p. 160, Tr. ent. Soc. London, 1896, n. sp.
- Rhizotrogus rufescens*, metamorphoses ; XAMBEU, p. 76, Ann. Mus. Linn. Lyon, xlii.
- R. mascarauxi*, Landes, DESBROCHERS, p. 166, Frelon, v ; *R. sieversi*, Askhabad, REITTER, p. 33, Deutsche ent. Zeitschr. 1896 : n. spp.
- Schizonycha longitarsis*, Somaliland, LINELL, p. 691, P. U. S. Mus. xviii ; *S. major, duplicata, nyassica*, p. 354, *angustata, elongata*, p. 355, *sansibarica, consueta, angulata*, p. 356, *gerstaeckeri, pygmaea, granulata*, p. 357, *ferruginea, bicolor, vicaria, cribrata*, p. 358, *fusca*, p. 359, Africa, KOLBE, Ent. Zeit. Stettin, lvi : n. spp.
- Schönherria maculosa*, Ceylon, BRENSKE, p. 201, Ent. Zeit. Stettin, lvii, n. sp.
- Serica* : table of palæarctic forms ; REITTER, pp. 180–188, Wien. ent. Zeit. xv.
- S. consimilis, nitidirostris*, Somaliland, LINELL, p. 689, P. U. S. Mus. xviii ; *S. himalayica, duvivieri, lugubris, carinifrons*, p. 152, *barwayana, setosa, severini, modesta, carinirostris, quinquidens, cardoni, rustica, quinqueflabellata*, p. 153, *quadrilamellata*, *S. (Neoserica) quadriflabellata, S. flavoviridis, marginata*, p. 154, *marginipes, olivacea*, p. 155, India, BRENSKE, Ann. Soc. ent. Belgique, xl : n. spp.
- Stephanopholis*, n. g., with *S. philippinensis*, p. 180, *singalensis*, Ceylon, p. 181, n. spp. ; BRENSKE, Ent. Zeit. Stettin, lvii.
- Trichoserica*, n. g., p. 181, for *T. fulvopubens*, n. sp., East Siberia, p. 183 ; REITTER, Wien. ent. Zeit. xv.
- Trigonocnemis*, Kr., referred to *Rutelidae* ; BRENSKE, p. 116, Wien. ent. Zeit. xv.
- Triodonta sansibarica*, Dar es Salam, BRENSKE, p. 178, Ent. Zeit. Stettin, lvii, n. sp.
- Trochaloschema*, n. g., p. 182, type *Serica iris*, Sem., *T. ruginota*, n. spp., Alai Mts., p. 186 ; REITTER, Wien. ent. Zeit. xv.
- Trochalus subrotundus*, Somaliland, LINELL, p. 690, P. U. S. Mus. xviii, n. sp.
- Rutelini.*
- Adoretus parallelus*, Somaliland, LINELL, p. 692, P. U. S. Mus. xviii ; *A. melanoleucus*, Zambezi, PÉRINGUEY, p. 161, Tr. ent. Soc. London, 1896 ; *A. scutatus*, p. 453, *melolonthoides, eunectoides*, p. 454, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique, xl : n. spp.

- Ammogenia varentzowi*, n. var. *unguicularis*; SEMENOW, p. 378, Annuaire Mus. St. Petersb. 1896.
- Anomala geniculata* = (*gottschei*, Kolbe); LEWIS, p. 334, Ann. Nat. Hist. (6) xvii. *A. pluschevskyi*, n. var. *circumcineta*; REITTER, p. 34, Deutsche ent. Zeitschr. 1896.
- A.* (*Hoplopus*) *bleusei*, Algeria, CHOBOUT, p. 388, Bull. Soc. ent. France, 1896; *A. egregia*, Aden and Somaliland, GAHAN, p. 451, Ann. Nat. Hist. (6) xviii; *A. crassa*, p. 691, *chanleri*, p. 692, Somaliland, LINELL, P. U. S. Mus. xviii; *A. pinguis*, Zambezi, PÉRINGUEY, p. 161, Tr. ent. Soc. London, 1896 : n. spp.
- Mimela macassara*, Celebes, HELLER, p. 11, Abh. Mus. Dresden, 1896-97, No. 3, n. sp.
- Nothophanus*, n. g., near *Anomala*, p. 9, for *N. megaphyllus*, *brenskiei*, n. spp., Celebes, p. 10; HELLER, Abh. Mus. Dresden, 1896-97, No. 3.
- Phyllopertha dentipennis*, Tibet, FAIRMAIRE, p. 88, Notes Leyden Mus. xviii, n. sp.
- Plusiotis keithi*, Costa Rica, LINELL, p. 77, P. U. S. Mus. xviii, n. sp.
- Popilia atronitens*, Tibet, FAIRMAIRE, p. 89, Notes Leyden Mus. xviii; *P. minahassæ*, Celebes, HELLER, p. 11, fig. 3, Abh. Mus. Dresden, 1896-97, No. 3 : n. spp.
- Prodoretus ophthalmicus*, Madagascar, FAIRMAIRE, p. 455, Ann. Soc. ent. Belgique, xl, n. sp.
- Spilota burmeisteri*, Lansb. = (*Anomala fruhstorferi*, Nonfr.); RITSEMA, p. 130, Notes Leyden Mus. xviii.
- S. vernicata*, Kurseong, FAIRMAIRE, p. 88, Notes Leyden Mus. xviii, n. sp.
- Trigonochilus*, n. g., near group *Trogonochilides*, for *T. coriaceus*, n. sp., E. Africa, p. 34, cuts p. 33; BRENSKE, Ent. Nachr. xxii.
- Trigonocnemis*, a Rutelid; KRAATZ, p. 203, Wien. ent. Zeit. xv.
- Xenoproctis*, n. g., *Areodines*, for *X. ohausi*, n. sp., Cameroons; KOLBE, p. 88, Ent. Nachr. xxii.

### *Dynastini.*

- Aneurystypus aurilegulus*, p. 257, *dives*, p. 258, W. Australia, BLACKBURN, Tr. R. Soc. S. Austral. xx, n. spp.
- Asemantus*, n. g., near *Semanopterus*, p. 248, for *S. subæqualis*, Hope, described, p. 249; BLACKBURN, Tr. R. Soc. S. Austral. xx.
- Cheiroplatys bifossus*, p. 243, *acredens*, p. 245, *compactus*, p. 246, *pygmaeus*, p. 247, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xx, n. spp.
- Cælocorynus*, n. g., *Oryctinae*, for *C. runsoricus*, n. sp., E. Africa; KOLBE, Ent. Zeit. Stettin. lvi, p. 353.
- Heteronychus sumatrensis*, Sumatra, FAIRMAIRE, p. 225, Notes Leyden Mus. xviii, n. sp.
- Isodon meyricki*, p. 237, *terræreginae*, p. 238, *nasutus*, *bidens*, p. 239, *lavipennis*, p. 240, *intermedius*, p. 241, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xx, n. spp.
- Neocavonus bidens*, S. Australia, BLACKBURN, Tr. R. Soc. S. Austral. xx, p. 254, n. sp.
- Neohyphus*, n. g., p. 12, near *Melanyphus*, for *N. celebesus*, n. sp., Celebes, p. 13, fig. 16; HELLER, Abh. Mus. Dresden, 1896-97, No. 3.
- Oryctes arabicus*, Hedjaz, FAIRMAIRE, p. 256, Bull. Soc. ent. France, 1896; *Oryctes latecavatus*, St. Thomas, W. Africa, FAIRMAIRE (306) p. 3 : n. spp.
- Palmerstonia pusilla*, Queensland, BLACKBURN, p. 253, Tr. R. Soc. S. Austral. xx, n. sp.
- Pimelopus sydneyanus*, Australia, BLACKBURN, p. 256, Tr. R. Soc. S. Austral. xx, n. sp.

*Semanopterus meridianus*, p. 250, *concentricus*, p. 251, *tricostatus*, *distributus*, p. 252, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xx, n. spp.

*Xynedria interioris* = (*Novapus bidentatus*, Blk.); BLACKBURN, p. 248, Tr. R. Soc. S. Austral. xx.

### *Cetoniini.*

[*Cf.* BEDEL (56), BENDERITTER (62, 63), FAIRMAIRE (307), HELLER (485), KRAATZ (671, 672, 677, 678, 679), PÉRINGUEY (862), REITTER (936, 943, 953), RITSEMA (922), SCHOCH (1036-1039), XAMBEU (1261).]

Catalogue of *Cetoniidae*; SCHOCH (1036).

*Amaurodes passerinii*, variation; KRAATZ, pp. 349 & 350, Deutsche ent. Zeitschr. 1896.

*Amithao obscurus*, Brazil, SCHOCH, p. 84, Ent. Nachr. xxii, n. sp.

*Anthracophara teniata*, N. Queensland, SCHOCH, p. 381, Mt. Schweiz. ent. Ges. ix, n. sp.

*Anthracopharis teniata*, Queensland, SCHOCH, p. 179, Ent. Nachr. xxii, n. sp.

*Argyrophegges kolbei*, ♀, cut; HINTZ, p. 359, Deutsche ent. Zeitschr. 1896.

*Atrichia*, n. g., p. 399, near *Trichostetha*, for *A. bugnioni*, n. sp., Natal, p. 400, SCHOCH, Mt. Schweiz. ent. Ges. ix.

*Brachymacroma*, n. g., *Cremastochilides*, for *B. rufithorax*, n. sp., E. Africa; KRAATZ, p. 74, Deutsche ent. Zeitschr. 1896.

*Bricoptis variolosa*, n. var. *rufescens*; FAIRMAIRE, p. 336, Ann. Soc. ent. Belgique, xl.

*Cetonia*: table of species and varieties, *C. chrysosoma* and *asiatica* of the former list being here considered as good species; REITTER, pp. 241-246, Ent. Nachr. xxii. *C. morio*, p. 78, *metallica*, p. 82, metamorphoses; XAMBEU, Ann. Soc. Linn. Lyon, xlii. *C. floricola*, habits; VITURAT, p. 428, Bull. Soc. Autun, viii. *C. pryeri* = (*oshimana*, Nonf.); LEWIS, p. 335, Ann. Nat. Hist. (6) xvii.

*C. (Potosia) amethystina*, Syria, BENDERITTER, p. 40, Miscell. ent. iv; *C. (P.) amethystina*, Syria, BENDERITTER, p. 193, Bull. Soc. ent. France, 1896 (according to BEDEL, p. 194, *t. c.*, a variety of *C. angustata*); *C. chrysocoma*, Syria, REITTER, p. 4, Ent. Nachr. xxii: *C. nigropunctulata*, Transvaal, *aspersa*, Zambezi, PÉRINGUEY, p. 163, Tr. ent. Soc. London, 1896: n. spp.

*Clinteria fruhstorferi*, Lombok, SCHOCH, p. 329, Ent. Nachr. xxii, n. sp.

*Cœlorrhina oberthuri*, Africa, KOLBE, p. 300, Ent. Nachr. xxii, n. sp.

*Cœnochilus maurus*: characters amended; RITSEMA, Notes Leyden Mus. xviii.

*C. villosulus*, E. Africa, KRAATZ, p. 77, Deutsche ent. Zeitschr. 1896, n. sp.

*Comythovalgus sansibaricus*, E. Africa, KOLBE, p. 10, Ent. Nachr. xxii, n. sp.

*Coptomia bontempsii*, Madagascar, FAIRMAIRE, p. 456, Ann. Soc. ent. Belgique, xl, n. sp.

*Coquerelia*, Kr., not distinct from *Anochilia*, and name is preoccupied; ALLUAUD, p. 34, Bull. Soc. ent. France, 1896.

*Coryphocera schadenbergi* and allies: note; POLL, p. 129, Notes Leyden Mus. xvii.

*Cremastochilus harrisii*: habits; HAMILTON, p. 186, Canad. ent. xxviii.

*Desicasta nonfriedli*, Honduras, SCHOCH, p. 329, Ent. Nachr. xxii, n. sp.

*Dicranorrhina oberthuri*, varr., KRAATZ, pp. 111 & 112, Deutsche ent. Zeitschr. 1896.

*Dolichostethus pictus*, E. Africa, SCHOCH, p. 331, Ent. Nachr. xxii, n. sp.

- Eccoctocnemis donckieri*, W. Africa, SCHOCH, p. 84, Ent. Nachr. xxii, n. sp.
- Elaphinis thoracica*, Natal, SCHOCH, p. 383, Mt. Schweiz. ent. Ges. ix ;  
*E. thoracica*, Natal, SCHOCH, p. 181, Ent. Nachr. (note on the species, KRAATZ, p. 375, Deutsche ent. Zeitschr. 1896) : n. spp.
- Epicometis* (n. subg. *Hemiopta*) for *E. bleusei*, n. sp., Algeria ; BEDEL, p. 384, Bull. Soc. ent. France, 1896.
- Fornasinius hauseri*, Cameroons, p. 67, *westwoodi*, Zambezi, p. 69, KRAATZ, Deutsche ent. Zeitschr. 1896, n. spp.
- Glycosia tricolor*, Ol. = (*plagiata*, Schoch) ; KRAATZ, p. 376, Deutsche ent. Zeitschr. 1896.
- Glycosia*, n. g., near *Glycyphana*, p. 392, for *A. plagiata*, n. sp., Ceylon, p. 393 ; SCHOCH, Mt. Schweiz. ent. Ges. ix. *Glycosia*, n. g., for *G. plagiata*, n. sp., Ceylon ; SCHOCH, p. 86, Ent. Nachr. xxii.
- Glycyphana variolosa*, n. var., *subfasciata* ; REITTER, p. 70, Wien. ent. Zeit. xv.
- Gnathocera hirsutula*, Cameroons, SCHOCH, p. 328, Ent. Nachr. xxii, n. sp.
- Goliathus giganteus*, var. *intermedius* : note ; KRAATZ, p. 326, Deutsche ent. Zeitschr. 1896.
- Hematonotus hauseri*, p. 371, E. Africa, *minor*, Transvaal, p. 373, KRAATZ, Deutsche ent. Zeitschr. 1896, n. spp.
- Hemiopta*, n. subg. ; cf. *Epicometis*.
- Leucocelis simillima*, *limbata*, *notaticollis*, p. 71, *nigricollis*, *marginicollis*, p. 72, *similis*, p. 73, E. Africa, KRAATZ, Deutsche ent. Zeitschr. 1896 ;  
*L. apicalis*, E. Africa, KRAATZ, t. c. p. 373 : n. spp.
- Macromoides*, n. g., *Cremastochilidarum*, for *M. vittata*, n. sp., Angola ; SCHOCH, p. 332, Ent. Nachr. xxii.
- Mazoe*, n. g., *Ischnostomini*, for *M. jucunda*, n. sp., Zambezi, and *I. albo-notata*, Pér. ; PÉRINGUEY, p. 162, Tr. ent. Soc. London, 1896.
- Mecinonota monticola*, p. 14, fig. 5, *elegans*, p. 15, fig. 4, Celebes ; HELLER, Abh. Mus. Dresden, 1896-97, No. 3, n. spp.
- Mecinorrhina torquata*, n. var., *viridinigra* ; KRAATZ, p. 350, Deutsche ent. Zeitschr. 1896.
- Micrelaphinis*, n. g. for *M. gracilis*, Transvaal, *maculata*, Sierre Leone, n. spp. ; SCHOCH, p. 331, Ent. Nachr. xxii : note on the genus and its species ; KRAATZ, pp. 350-352, Deutsche ent. Zeitschr. 1896.
- Micropœcila breweri* : larva ; FROGGATT, p. 75, P. Linn. Soc. N. S. Wales, 1895.
- Netocia (Melanosa) subcarinata*, Mardin, REITTER, p. 266, Wien. ent. Zeit. xv, n. sp.
- Pachnoda fimbriata*, var. = (*leonina*, Schoch) ; KRAATZ, p. 375, Deutsche ent. Zeitschr. 1896.
- P. leonina*, Sierre Leone, SCHOCH, p. 180, Ent. Nachr. xxii ; *P. rufipes*, Cameroons, KRAATZ, p. 70, Deutsche ent. Zeitschr. 1896 ; *P. kraatzi*, Cameroons, SCHOCH, p. 385, Mt. Schweiz. ent. Ges. ix ; *P. kraatzi*, Cameroons, p. 87, Ent. Nachr. xxii : n. spp.
- Pantolia elongata*, Brancs., referred to *Hemilia* ; KRAATZ, p. 156, Deutsche ent. Zeitschr. 1896.
- Plasiorrhina hotoni*, Congo, SCHOCH, p. 328, Ent. Nachr. xxii, n. sp.
- Plochilia*, n. g., near *Heterophana*, for *P. scalabrii*, n. sp., Madagascar ; FAIRMAIRE, p. 336, Ann. Soc. ent. Belgique, xl.
- Polystulactica zanzibarica*, Zanzibar, KRAATZ, p. 80, Deutsche ent. Zeitschr. 1896, n. sp.
- Potosia konigi* = (*C. amethystina*, Bend., *suprà*) ; REITTER, p. 283, Wien. ent. Zeit. xv.
- Protatia (Protetiophana*, n. subg.) *excisithorax*, p. 15, fig. 2, Celebes, HELLER, Abh. Mus. Dresden, 1896-97, No. 3, n. sp.

- P. fulva, borneana*, Kina Balu, SCHUCH, p. 85, Ent. Nachr. xxii; *P. borneana*, p. 390, *fulva*, p. 391, Kini-balu, SCHUCH, Mt. Schweiz. ent. Ges. ix : n. spp.
- Protætiophana*, n. subg., cf. *Protætia*.
- Pseudoclinteria maculicollis*, Transvaal, SCHUCH, p. 330, Ent. Nachr. xxii, n. sp.
- Pygoropsis*, n. g. for *P. albomaculata*, n. sp., Madagascar; SCHUCH, p. 330, Ent. Nachr. xxii.
- Stenotarsia sinillima*, Madagascar, FAIRMAIRE, p. 456, Ann. Soc. ent. Belgique, xl, n. sp.
- Tetragonorhina*, n. g. near *Cetonia*, p. 369, for *T. albomaculata*, n. sp., E. Africa, p. 370; KRAATZ, Deutsche ent. Zeitschr. 1896.
- Trichius fasciatus*, n. var. *kuenii*; FRIESE, p. 225, Ent. Nachr. xxii.
- Trichothyrea*, n. g., p. 400, *Leucocelidæ*, for *T. elegantula*, n. sp., Congo, p. 401; SCHUCH, Mt. Schweiz. ent. Ges. ix.
- Valgus testaceus, fuscatus*, p. 380, *albomaculatus*, p. 381, *bimaculatus*, p. 382, Borneo, KRAATZ, Deutsche ent. Zeitschr. 1896, n. spp.
- Xenogenius convexus*, E. Africa, KRAATZ, p. 78, Deutsche ent. Zeitschr. 1896, n. sp.

## BUPRESTIDÆ.

- [The following memoirs relate to *Buprestidæ*, viz., ABEILLE (1, 5), BLACKBURN (83, 85), FAIRMAIRE (307), FLEISCHER (338), KERREMANS (606-611), KRAATZ (673), LEWIS (709), PÉRINGUEY (862), SEMENOW (1069, 1072), THIÉRY (1145), WATERHOUSE (1225), XAMBEU (1261).
- Acmeodera adasperula*, metamorphoses; XAMBEU, p. 105, Mœurs, vi.
- A. personata*, Transcaspian, SEMENOW, p. 378, Annuaire Mus St. Petersb. 1896, n. sp.
- Agelia analis*, Mpuapua, KRAATZ, p. 84, Deutsche ent. Zeitschr. 1896, n. sp.
- Agrilus fugitivus*, n. n. for *fugax*, Kerr., Mexico; KERREMANS, p. 154, Ann. Soc. ent. France, 1896.
- A. somalicus*, Abyssinia, KERREMANS, p. 109, Ann. Mus. Genova, xxxvii; *A. cylindratus*, p. 138, *fulvopictus*, p. 139, *comes, fidelis*, p. 140, *semi-villosus, alacris*, p. 141, *insidiosus*, p. 142, *simiolus, tantillus*, p. 143, Sumatra, KERREMANS, Ann. Soc. ent. France, 1896; *A. densus*, Mentawai, *deletus*, Engano, p. 362, *melas*, Mentawai, p. 363, KERREMANS, Ann. Mus. Genova, xxxvi; *A. nixus*, p. 369, *fructus*, p. 370, Sumbawa, KERREMANS, t. c.; *A. simoni*, p. 23, *petarensis*, p. 24, *cabellanus*, p. 25, Venezuela, KERREMANS, Ann. Soc. ent. France, 1896; *A. congener*, p. 155, *differens, honestus*, p. 156, *generosus*, p. 157, *analis*, p. 158, *tabaci, fastidiosus*, p. 159, *grouvellei*, p. 160, *duplicatus*, p. 161, *inornatus, chrysifrons*, p. 162, Brazil, KERREMANS, t. c. : n. spp.
- Ancylochira douei*, metamorphoses; XAMBEU, p. 83, Ann. Soc. Linn. Lyon, xlii.
- Anthaxia (Cratomerus) abyssinica*, Abyssinia, THIÉRY, p. 106, Bull. Soc. ent. France, 1896, n. sp.
- Aphanisticus aeneicollis, fluviatilis*, p. 306, *minutus, vicinus*, p. 307, Tropical Africa, KERREMANS, Ann. Soc. ent. Belgique, xl; *A. filiformis*, Sumatra, KERREMANS, p. 144, Ann. Soc. ent. France, 1896; *A. bicolor*, p. 363, *aeneus*, p. 364, *nigerrimus*, p. 365, Sumatra, KERREMANS, Ann. Mus. Genova, xxxvi; *A. oblongus*, New Guinea, KERREMANS, p. 359, t. c. : n. spp.
- Aurigena*: variation of Mediterranean species; ABEILLE, pp. 271-273, Rev. Ent. franc. xv.

- A. malachitica*, Syria, ABEILLE, *t. c.* p. 273, n. sp.  
*Brachys carinellus, tuberculifer*, p. 323, S. America, *horni*, Kansas, *nigro-fasciatus*, p. 324, *ineditus, aurulans*, p. 325, *cyanicollis*, p. 326, *frontalis, viridans*, p. 327, *fasciatus*, p. 328, S. America, KERREMANS, Ann. Soc. ent. Belgique, xl; *B. simoni, tovaricus*, Venezuela, KERREMANS, p. 27, Ann. Soc. ent. France, 1896; *B. rudis*, p. 164, *albopictus*, p. 165, Brazil, KERREMANS, *t. c.* : n. spp.  
*Callimicra scapha*, Brazil, KERREMANS, p. 333, Ann. Soc. ent. Belgique, xl, n. sp.  
*Capnodis* : characters of the species, synonymy; ABEILLE, p. 269, Rev. Ent. franc. xv.  
*Chalcophora satsumæ*, Japan, LEWIS, p. 334, Ann. Nat. Hist. (6) xvii, n. sp.  
*Chalcotænia beltanæ, cerata*, characters; BLACKBURN, p. 268, Horn Exped. pt. ii.  
*C. angulipennis*, p. 269, *sulciventris*, p. 270, Central Australia, BLACKBURN, *t. c.* n. spp.  
*Chrysobothris femorata*, habits; BOWDITCH, p. 387, Psyche, vii. *C. affinis*, nymph; XAMBEU, p. 85, Ann. Soc. Linn. Lyon, xlii.  
*C. minuta*, Brazil, KERREMANS, p. 147, Ann. Soc. ent. France, 1896, n. sp.  
*Chrysodema lewisii* = (*oshimana*, Noufried); LEWIS, p. 335, Ann. Nat. Hist. (6) xvii.  
*Cisseis 12-maculata*, habits; FROGGATT, p. 75, P. Linn. Soc. N. S. Wales, 1895.  
*Coræbastus*, n. g., p. 456, near *Coræbus*, for *C. quinquepustulatus*, n. sp., Mayotte, p. 457; FAIRMAIRE, Ann. Soc. ent. Belgique, xl.  
*Coræbus* : table of European species, habits, &c.; ABEILLE, pp. 277-283, Rev. Ent. franc. xv.  
*C. sculpticollis*, Stolac, p. 280, *graminoides*, Russia mer. p. 281, ABEILLE, Rev. Ent. franc. xv; *C. oberthüri*, Oshima, LEWIS, p. 335, Ann. Nat. Hist. (6) xvii : n. spp.  
*Cyphogastra javanica*, and allies, KERREMANS, p. 357, Ann. Mus. Genova, xxxvi; *C. gestroi*, p. 354, *amabilis*, p. 355, *clara, nigricollis*, p. 356, New Guinea, KERREMANS, *t. c.* : n. spp.  
*Diceropygus auricollis*, New Guinea, KERREMANS, p. 358, Ann. Mus. Genova, xxxvi, n. sp.  
*Endelus nitidus*, Sumatra, p. 365, *modiglianii*, Mentawai, p. 366, KERREMANS, Ann. Mus. Genova, xxxvi, n. spp.  
*Galbella levis*, Zanzibar, KERREMANS, p. 308, Ann. Soc. ent. Belgique, xl, n. sp.  
*Icarina*, n. n. for *Icaria*, Saund.; ALLUAUD, p. 34, Bull. Soc. ent. France, 1896.  
*Iridotania scutellaris*, Borneo, *violacea*, Sumatra, KERREMANS, p. 368, Ann. Mus. Genova, xxxvi, n. sp.  
*Julodis bleusei*, Algeria, p. 262, *noë*, Syria, p. 263, ABEILLE, Bull. Soc. ent. France, 1896; *J. schochi*, Persia, THÉRY, p. 107, *t. c.* : n. spp.  
*Lampra festiva*, nymph; XAMBEU, p. 86, Ann. Soc. Linn. Lyon, xlii.  
*Leiopleura cupricollis, unicolor*, Venezuela, KERREMANS, p. 28, Ann. Soc. ent. France, 1896; *L. trochilus, socialis*, p. 169, *hypocrita, tabaci*, p. 170, *ovata, amica*, p. 171, *fallax*, p. 172, *soror, incerta, taciturna*, p. 173, *puella, distincta*, p. 174, *mærens, modesta*, p. 175, *pacifica*, p. 176, Brazil, KERREMANS, *t. c.*; *L. grandis, elongata, gibbosa*, p. 331, *dives, subcircularis*, p. 332, S. America, KERREMANS, Ann. Soc. ent. Belgique, xl : n. spp.  
*Lius æneicollis, minutus*, p. 166, *atratus, carmineus*, p. 167, *agriloides, grouvellei, elongatus*, p. 168, Brazil, KERREMANS, Ann. Soc. ent. France, 1896; *L. cyanellus*, p. 328, *nigerrimus, holochalceus*, S. America, *amabilis*, Mexico, p. 329, *æneus, elateroides*, S. America, p. 330, KERREMANS, Ann. Soc. ent. Belgique, xl. : n. spp.

- Mastogeniini* : characters tabulated ; KERREMANS, pp. 148–150, Ann. Soc. ent. France, 1896.
- Mastogenius uniformis*, Grenada, p. 105, *felix*, Transvaal, p. 106, sp. Hong Kong, p. 107, WATERHOUSE, Ann. Nat. Hist. (6) xviii, n. spp.
- Melobasis viridifrons*, Sumatra, KERREMANS, p. 369, Ann. Mus. Genova, xxxvi, n. sp.
- Micrasta viridis*, p. 151, *parallela*, p. 152, *minuta*, p. 153, Brazil, KERREMANS, Ann. Soc. ent. France, 1896, n. spp.
- Pachyschelus æneus*, *scintillans*, Sumatra, KERREMANS, p. 147, Ann. Soc. ent. France, 1896 ; *P. auricollis*, *humeralis*, p. 315, *nodifer*, *cælestis*, p. 316, *ineditus*, *pulverulentus*, *obscurellus*, p. 317, *olivaceus*, *subundulatus*, p. 318, *expansus*, *truncatus*, p. 319, *basalis*, *transversus*, p. 320, *cordiformis*, *simplex*, p. 321, *atratus*, *chrysocephalus*, S. America, *politus*, N. America, p. 322, KERREMANS, Ann. Soc. ent. Belgique, xl ; *P. pictus*, *levis*, p. 163, *acutus*, p. 164, Brazil, KERREMANS, Ann. Soc. ent. France, 1896 : n. spp.
- Paracupta lorice*, New Guinea, KERREMANS, p. 353, Ann. Mus. Genova, xxxvi, n. sp.
- Paragrilus æneifrons*, Brazil ; KERREMANS, p. 154, Ann. Soc. ent. France, 1896.
- Philocteanus subcupreus*, Borneo, KERREMANS, p. 367, Ann. Mus. Genova, xxxvi, n. sp.
- Pæcilouota* : variation and synonymy of European ; ABEILLE, pp. 275–277, Rev. Ent. franc. xv.
- P. setulosa*, Taygetos, FLEISCHER, p. 31, Wien. ent. Zeit. xv, n. sp.
- Polycesta bottegoi*, Somaliland, KERREMANS, p. 109, Ann. Mus. Genova, xxxvii ; *P. brevicornis*, Obock, THIÉRY, p. 106, Bull. Soc. ent. France, 1896 : n. spp.
- Pseudocastalia*, n.g., p. 84, for *P. bennigsenii*, *viridicyanea*, n. spp., E. Africa, p. 86 ; KRAATZ, Deutsche ent. Zeitschr. 1896.
- Psiloptera chalcophoroides*, *æneola*, p. 164, *stutaria*, *intrusa*, p. 165, *cognata*, p. 166, Zambezi, PÉRINGUEY, Tr. ent. Soc. London, 1896, n. spp.
- Sambus minutus*, Sumatra, KERREMANS, p. 138, Ann. Soc. ent. France, 1896, n. sp.
- Sphenoptera* (*Hoplistura*) *morawitzi*, p. 248, *S.* (*Chrysoblemma*) *aurore*, p. 249, *rhododactyla*, p. 251, *eos*, p. 254, Transcaspian region, SEMENOW, Horæ Soc. ent. Ross. xxx, n. spp.
- Steraspis brunneipennis*, ♂ ; KERREMANS, p. 108, Ann. Mus. Genova, xxxvii.
- Sternocera chrysis*, large eggs, HOWARD, p. 244, Ent. News Philad. vii.
- Stigmodera lorice*, New Guinea, KERREMANS, p. 358, Ann. Mus. Genova, xxxvi ; *S. magnifica*, Queensland, BLACKBURN, p. 35, Tr. R. Soc. S. Austral. xx : n. spp.
- Taphrocerus alboplagiatus*, *squamulatus*, p. 309, *parallelus*, *amazonicus*, p. 310, *depilis*, *pictus*, p. 311, S. America, *texanus*, *cylindricollis*, N. America, KERREMANS, Ann. Soc. ent. Belgique, xl, n. spp.
- Trachys pauperula*, *blackburni*, N. S. Wales, *fluviatilis*, p. 313, *tschoffeni*, *zanzibarica*, Tropical Africa, KERREMANS, Ann. Soc. ent. Belgique, xl ; *T. signata*, *globosa*, p. 145, *obscura*, p. 146, Sumatra, KERREMANS, Ann. Soc. ent. France, 1896 ; *T. lanceolata*, Mentawai, KERREMANS, p. 366, Ann. Mus. Genova, xxxvi ; *T. albopicta*, *humeralis*, New Guinea, KERREMANS, p. 360, *t. c.* ; *T. estebana*, Venezuela, p. 25, *amazonica*, Amazons, *chevrolati*, Guadeloupe, p. 26, KERREMANS, Ann. Soc. ent. France, 1896 : n. spp.
- Tyndaris lethierryi*, Paraná, THIÉRY, p. 105, Bull. Soc. ent. France, 1896, n. sp.



## THROSCIDÆ (TRIXAGIDÆ).

[Cf. FLEUTIAUX (343, 345).]

- Aulonthroscus tibialis*, Burma, FLEUTIAUX, p. 534, Ann. Mus. Genova, xxxvi; *A. cuneatus*, p. 329, *grandis*, p. 330, New Guinea, FLEUTIAUX, *op. cit.* xxxvii : n. spp.  
*Drapetes vicinus*, N. Australia and New Guinea, *albertisi*, p. 327, *loriai*, p. 328, New Guinea, FLEUTIAUX, Ann. Mus. Genova, xxxvii, n. spp.  
*Throscus dubius*, New Guinea, FLEUTIAUX, p. 329, Ann. Mus. Genova, xxxvii, n. sp.

## EUCNEMIDÆ.

[Cf. FAIRMAIRE (307), FLEUTIAUX (341-344, 346-349), REITTER (934).]  
 List of the *Eucnemidæ* in the Paris Museum; FLEUTIAUX, pp. 92-94, Bull. Mus. Paris, 1896.

- Agastocerus bouchardi*, Sumatra, FLEUTIAUX, p. 369, Bull. Soc. ent. France, 1896, n. sp.  
*Anischia*, n. g., near *Cerophytum*, for *A. boliviana*, p. 300, *germaini*, p. 301, n. spp., Bolivia; FLEUTIAUX, Mem. Soc. zool. France, ix.  
*A. stupenda*, New Guinea; FLEUTIAUX, p. 555, Ann. Mus. Genova, xxxvi, n. sp.  
*Arrhipis brasiliensis*, Brazil, p. 311, *orientalis*, Cochin China, p. 312, FLEUTIAUX, Mem. Soc. zool. France, ix; *A. albertisi*, New Guinea, FLEUTIAUX, p. 592, Ann. Mus. Genova, xxxvi : n. spp.  
*Cephalodendron alternatum*, Nossi-Bé, FAIRMAIRE, p. 337, Ann. Soc. ent. Belgique, xl, n. sp.  
*Ceratus doriai*, Borneo, p. 569, *sumatrensis*, Sumatra, p. 570, *frontalis*, p. 571, *brunneus*, p. 572, *vicinus*, p. 573, New Guinea, FLEUTIAUX, Ann. Mus. Genova, xxxvi, n. spp.  
*Compsocnemis albertisi*, New Guinea, FLEUTIAUX, p. 595, Ann. Mus. Genova, xxxvi, n. sp.  
*Dendrocharis intermedia*, Tenasserim, FLEUTIAUX, p. 541, Ann. Mus. Genova, xxxvi, n. sp.  
*Dromæolus semirugosus*, p. 302, *gabonensis*, p. 303, Gaboon, FLEUTIAUX, Mem. Soc. zool. France, ix; *D. goudoti*, p. 279, *hova*, p. 280, Madagascar, *oblitus*, p. 281, Minas Geraes, *rugosus*, Java, p. 282, *parallelus*, Madagascar, p. 283, FLEUTIAUX, *t. c.*; *D. rufus*, Tenasserim, FLEUTIAUX, p. 535, Ann. Mus. Genova, xxxvi; *D. minimus*, Sumatra, FLEUTIAUX, p. 334, Bull. Soc. ent. France, 1896; *D. unicus*, p. 559, *bicarinatus*, p. 560, *longicollis*, p. 561, *confusus*, p. 562, Sumatra, *dissimilis*, Mentawai, p. 563, *modiglianii*, p. 564, *sumatrensis*, p. 565, Sumatra, *beccarii*, Java, *doriai*, Borneo, p. 566, FLEUTIAUX, Ann. Mus. Genova, xxxvi : n. spp.  
*Dyscolocerus pasteuvi*, Java, FLEUTIAUX, p. 295, Mem. Soc. zool. France, ix, n. sp.  
*Entomophthalmus loriai*, New Guinea, FLEUTIAUX, p. 589, Ann. Mus. Genova, xxxvi, n. sp.  
*Eumenes chloropterus*, Aru Is., FLEUTIAUX, p. 598, Ann. Mus. Genova, xxxvi, n. sp.  
*Euryostus albertisi*, New Guinea, FLEUTIAUX, p. 556, Ann. Mus. Genova, xxxvi, n. sp.  
*Feaia*, n. g., near *Mesogenus*, for *F. singularis*, n. sp., Tenasserim; FLEUTIAUX, p. 540, Ann. Mus. Genova, xxxvi.  
*F. dubia*, New Guinea, FLEUTIAUX, p. 603, Ann. Mus. Genova, xxxvi, n. sp.  
*Fornax*: its generic distinctions; FLEUTIAUX, p. 412, Bull. Soc. ent. France, 1896.

- F. alluaudi*, Madagascar, FLEUTIAUX, p. 157, Bull. Soc. ent. France, 1896;  
*F. vestitus*, Tenasserim, FLEUTIAUX, p. 535, Ann. Mus. Genova, xxxvi;  
*F. rufus*, p. 150, *dromæoloides*, p. 151, Sumatra, *lucasseni*, Java  
p. 152, *convexus*, Madagascar, p. 153, FLEUTIAUX, Notes Leyden Mus.  
xviii; *F. scutellaris*, Mentawai, p. 574, *beccarii*, New Guinea, p. 575,  
*cinctus*, Sumatra, p. 576, *niger*, New Guinea, p. 577, *sumatrensis*  
Sumatra, p. 578, *gigas*, p. 579, *melanopterus*, p. 580, New Guinea,  
*mentawaiensis*, Mentawai, p. 581, *levistriatus*, p. 582, *brevicornis*,  
p. 583, New Guinea, *opacus*, p. 584, *simplex*, p. 585, Sumatra, *cylindricus*,  
p. 586, Borneo, FLEUTIAUX, Ann. Mus. Genova, xxxvi; *F. punctatus*,  
New Guinea, p. 285, *longicollis*, Java, p. 286, *raffrayi*,  
p. 287, *emarginatus*, New Guinea, p. 288, *scythonoides*, Congo, p. 290,  
*sulcatus*, Java, p. 291, FLEUTIAUX, Mem. Soc. zool. France, ix; *F. brasiliensis*,  
San Paulo, p. 305, *germaini*, Bolivia, p. 306, *vicinus*,  
Cameroon, *gabonensis*, p. 307, *unicus*, p. 308, Gaboon, FLEUTIAUX,  
*t. c.* : n. spp.
- Galba agastoceroïdes*, Burma, FLEUTIAUX, p. 543, Ann. Mus. Genova,  
xxxvi; *G. lorïai*, New Guinea, FLEUTIAUX, p. 604, *t. c.* : n. spp.
- Hypocælus australis*, Australia, FLEUTIAUX, p. 596, Ann. Mus. Genova,  
xxxvi, n. sp.
- Lycæon sumatrensis*, Sumatra, FLEUTIAUX, p. 598, Ann. Mus. Genova,  
xxxvi, n. sp.
- Mesogenus blumei*, Java, FLEUTIAUX, p. 158, Notes Leyden Mus. xviii;  
*M. sumatrensis*, Sumatra, FLEUTIAUX, p. 601, Ann. Mus. Genova,  
xxxvi : n. spp.
- Microrhagus pasteuri*, Java, FLEUTIAUX, p. 154, Notes Leyden Mus.  
xviii; *M. doriai*, Borneo, p. 590, *beccarii*, Java, p. 591, FLEUTIAUX,  
Ann. Mus. Genova, xxxvi; *M. maindroni*, New Guinea, FLEUTIAUX,  
p. 292, Mem. Soc. zool. France, ix : n. spp.
- Nematodes feai*, Burma, FLEUTIAUX, p. 537, Ann. Mus. Genova, xxxvi;  
*N. beccarii*, New Guinea, p. 593, *suturalis*, Sumatra, p. 594, FLEU-  
TIAUX, *t. c.*; *N. bonvouloiri*, Brazil, FLEUTIAUX, p. 313, Mem. Soc.  
zool. France, ix : n. spp.
- Otho modiglianii*, Sumatra, FLEUTIAUX, p. 599, Ann. Mus. Genova, xxxvi,  
n. sp.
- Paradiæretus*, n. g. for *P. flabellicornis*, n. sp., Bolivia, FLEUTIAUX, p. 304,  
Mem. Soc. zool. France, ix.
- Phanerochila*, n. g., p. 314, near *Calyptocerus*, for *P. boliviensis*, n. sp.,  
Cochabamba, FLEUTIAUX, Mem. Soc. zool. France, ix.
- Plesioformax sumatrensis*, Sumatra, FLEUTIAUX, p. 587, Ann. Mus.  
Genova, xxxvi; *P. curtus*, Amazons, p. 309, *frontalis*, Bolivia, p. 310,  
*perroti*, Madagascar, p. 311, FLEUTIAUX, Mem. Soc. zool. France, ix :  
n. spp.
- Pæcilochrus intermedius*, New Guinea, p. 557, *modiglianii*, Mentawai Is.,  
p. 558, FLEUTIAUX, Ann. Mus. Genova, xxxvi, n. spp.
- Porraulacus*, n. g., p. 567, near *Diæretus*, for *P. submarginalis*, n. sp.,  
New Guinea, p. 568, FLEUTIAUX, Ann. Mus. Genova, xxxvi.
- Proformax*, n. g. for *P. linguei*, n. sp., Tonkin, FLEUTIAUX, p. 284, Mem.  
Soc. zool. France, ix.
- Pseudophylloceros*, n. g. near *Cephalodendron*, for *P. atricolor*, n. sp., Asia  
Minor, pl. iii, fig. 3, REITTER, p. 234, Wien. ent. Zeit. xv.
- Sarpedon bipectinatus*, Tonkin, FLEUTIAUX, p. 296, Mem. Soc. zool. France,  
ix, n. sp.
- Scopulifer*, n. g. near *Dendrocharis*, for *S. feai*, Tenasserim, p. 542, *floren-  
tini*, Tonkin, p. 543, n. spp.; FLEUTIAUX, Ann. Mus. Genova, xxxvi.
- Scython gabonensis*, Gaboon, FLEUTIAUX, p. 158, Bull. Soc. ent. France,  
1896; *S. ramosus*, Burma, FLEUTIAUX, p. 536, Ann. Mus. Genova,  
xxxvi : n. spp.

- Semnodema harmandi*, Siam, FLEUTIAUX, p. 297, Mem. Soc. zool. France, ix ; *S. resplendens*, Sumatra, FLEUTIAUX, p. 156, Notes Leyden Mus. xviii ; *S. loraii*, New Guinea, FLEUTIAUX, p. 601, Ann. Mus. Genova, xxxvi : n. spp.
- Soleniscus curtus*, Sumatra, FLEUTIAUX, p. 158, Notes Leyden Mus. xviii, n. sp.
- Temnillus sumatrensis*, p. 147, *differens*, p. 148, Sumatra, FLEUTIAUX, Notes Leyden Mus. xviii, n. spp.
- Thylacosternus melinoti*, Cayenne, FLEUTIAUX, p. 299, Mem. Soc. zool. France, ix, n. sp.
- Xylobius orientalis*, Burma, FLEUTIAUX, p. 538, Ann. Mus. Genova, xxxvi, n. sp.

## ELATERIDÆ.

- [The following memoirs relate to *Elateridæ*, viz., ALLUAUD (16), BLACKBURN (83), CANDÈZE (140, 141, 142), CHAMPION (414), LEWIS (709), LINELL (718), REITTER (934, 938, 939, 954), O. SCHWARZ (1048-1051), XAMBEU (1261).]
- DU BUYSSON has published pp. 145-244 of the Faune Gallo-rhenane, extending to and including the genus *Elater*.
- Carnivorous habits of larvæ ; ORMONDE, p. 200, Ent. News Philad. vii.
- Acanthathous*, n. g. for *A. pachyderoides*, n. sp., Central America, pl. xx, fig. 17, p. 462 ; CHAMPION, Biol. Centr.-Amer. Col. iii, pt. i.
- Adelocera monticola*, Himalaya, CANDÈZE, p. 6, El. nouv. vi, n. sp.
- Adrastus* : table of European ; REITTER, p. 157, Deutsche ent. Zeitschr. 1896.
- A. circassicus*, Amuco, REITTER, p. 158, Deutsche ent. Zeitschr. 1896, n. sp.
- Æolus hauseri*, Transcaspian, REITTER, p. 35, Deutsche ent. Zeitschr. 1896 ; *Æ. quinarius*, *palliatus*, p. 34, *distigma*, *liberalis*, *ventricosus*, p. 35, *macilentus*, p. 36, S. America, CANDÈZE, El. nouv. vi : n. spp.
- Agonischius* = (*Ludioschema*) ; REITTER, p. 17, Wien. ent. Zeit. xv.
- A. armus*, *anticus*, Mentawai Is., CANDÈZE, p. 256, Ann. Mus. Genova, xxxvi ; *A. auratipennis*, Borneo, *bilaterus*, p. 72, *remiger*, *diffusus*, Banguay, *simulator*, Darjiling, p. 73, *corpulentus*, Borneo, *vulneratus*, Banguay, p. 74, *asceticus*, *proximus*, p. 75, *rusticulus*, *popularis*, p. 76, Borneo, *balabakensis*, Balabak, p. 77, CANDÈZE, El. nouv. vi : n. spp.
- Agriotes hova*, Madagascar, CANDÈZE, p. 70, El. nouv. vi ; *A. sikoræ*, Madagascar, SCHWARZ, p. 96, Deutsche ent. Zeitschr. 1896 ; *A. sublineatus*, pl. xxii, fig. 17, p. 514, *castaneipennis*, fig. 24, p. 517, *pectoralis*, *acutus*, pl. xxiii, fig. 1, p. 519, *trivittatus*, fig. 3, p. 520, *scapularis* (Chev.), fig. 7, p. 522, *trilineatus*, fig. 10, p. 523, *binotatus*, fig. 11, p. 524, *curticollis*, fig. 14, *quadraticollis*, fig. 15, p. 525, *cinereiventris*, *insolitus*, figg. 16 & 17, p. 526, *quadrilineatus*, fig. 19, *cruciatus*, fig. 20, p. 528, *incallidus*, *monticola*, p. 529, *mexicanus*, *guatemalensis*, p. 530, *opacicollis*, fig. 21, *hirsutus*, p. 531, *mixtus*, *pauvillus*, p. 532, *angustatus*, fig. 22, p. 533, Central America, CHAMPION, Biol. Centr.-Amer. Col. iii, pt. i : n. spp.
- Agrypnella squamifera* = (*Heterostethus pictus*, Schwarz) ; CHAMPION, p. 161, Ent. Mag. xxxii.
- Agrypnus ponderatus*, Philippines, *arizonæ*, Tucson, CANDÈZE, p. 5, El. nouv. vi, n. spp.
- Alampes*, n. g. for *Pyrophorus abnormis* and *melanoxanthus*, and *A. vestitus*, n. sp., Nicaragua, pl. xxi, fig. 3, p. 474 ; CHAMPION, Biol. Centr.-Amer. Col. iii, pt. i.

- Alaus pulvereus*, Caffraria, *parallelus*, Zanzibar, p. 12, *famulus*, Sierra Leone, *gracilis*, Sumatra, p. 13, *sulaensis*, *quadrivittatus*, Moluccas, p. 14, *lectilis*, N. S. Wales, *albatus*, N. Australia, p. 15, CANDÈZE, El. nouv. vi, n. spp.
- Allotriopsis*, n. g., p. 489, for *A. nasalis*, n. sp., Guatemala, p. 490, pl. xxi, fig. 18; CHAMPION, Biol. Centr.-Amer. Col. iii, pt. i.
- Anchastus falsus*, Bengal, *imitans*, p. 47, *diploconoides*, *carinatus*, Sumatra, *strenuus*, p. 48, *carneus*, Java, *febriculosus*, Gaboon, *virgatus*, Peru, p. 49, CANDÈZE, El. nouv. vi, n. spp.
- Anoplischiopsis trinotatus*, Nicaragua, CHAMPION, p. 555, Biol. Centr.-Amer. Col. iii, pt. i, n. sp.
- Anoplischius semiruber*, Brazil, *griseopilosus*, Cauca, p. 29, *insolitus*, Bolivia, p. 30, CANDÈZE, El. nouv. vi, n. spp.
- Anthrocopteryx mexicanus*, Oaxaca, CHAMPION, p. 476, pl. xxi, fig. 4, Biol. Centr.-Amer. Col. iii, pt. i, n. sp.
- Aphanobius fuscomarginatus*, Oshima, LEWIS, p. 337, Ann. Nat. Hist. (6) xvii; *A. melanurus*, Himalaya, SCHWARZ, p. 102, Deutsche ent. Zeitschr. 1896 : n. spp.
- Arrhaphes luteipes*, Mysore, *granulatus*, Guinea, CANDÈZE, p. 54, El. nouv. vi, n. spp.
- Ascesis campyloides*, N. S. Wales, CANDÈZE, p. 77, El. nouv. vi, n. sp.
- Athous perniger*, Araxes Valley, REITTER, p. 35, Deutsche ent. Zeitschr. 1896; *A. photinoides*, p. 457, pl. xx, figg. 9 & 10, *campanulatus*, p. 458, fig. 11, *æquinocialis*, fig. 13, *marcidus*, p. 459, *aztecus*, *rugipennis*, pl. xx, fig. 14, p. 460, *angusticollis*, *funestus*, fig. 15, *carinicollis*, fig. 16, p. 461, Central America, CHAMPION, Biol. Centr.-Amer. Col. iii, pt. i : n. spp.
- Atractodes castaneus*, Brazil, CANDÈZE, p. 30, El. nouv. vi, n. sp.
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- Cardiophorus somcheticus*, Somchetia, SCHWARZ, p. 148, Deutsche ent. Zeitschr. 1896; *C. tricolor*, Turkestan, REITTER, p. 289, Wien. ent. Zeit. xv; *C. raffrayi* (Cand.), E. Africa, SCHWARZ, p. 92, Deutsche ent. Zeitschr. 1896; *C. grumus*, Zanzibar, p. 55, *assula*, Caffraria, *vellicatus*, *pilarius*, Gaboon, p. 56, *liberatus*, *lutosus*, Comoro Is., p. 57, *gaudens*, Abyssinia, *hebes*, *accuratus*, Bengal, p. 58, *holosericeus*, Ceylon, *marmoratus*, Sumatra, *fallaciosus*, Palawan, p. 59, CANDÈZE, El. nouv. vi : n. spp.
- Cardiorhinus binotatus*, Nicaragua, CHAMPION, p. 495, pl. xxi, fig. 27, Biol. Centr.-Amer. Col. iii, pt. i; *C. andicola*, Bolivia, CANDÈZE, p. 68, El. nouv. vi : n. spp.
- Cardiotarsus picticollis*, Madagascar, CANDÈZE, p. 69, El. nouv. vi : n. sp.
- Corymbites cupreus* : metamorphoses; XAMBEU, p. 87, Ann. Soc. Linn. Lyon, xlii. *C. amplicollis* : metamorphoses; XAMBEU, p. 133, Mœurs, vi. *C. elongaticollis* and *carcinus* distinguished; HAMILTON, p. 262, Canad. Ent. xxviii. *C. semicribrosus*, Fairm., referred to *Agrypnus*; CANDÈZE, p. 6, El. nouv. vi.
- C. fraudator*, p. 66, *falsus*, p. 67, N. India, CANDÈZE, El. nouv. vi; *C. pilatei*, Mexico, CHAMPION, p. 476, pl. xxi, fig. 2, Biol. Centr.-Amer. Col. iii, pt. i : n. spp.
- Cosmesus drakei*, Paraguay, SCHWARZ, p. 103, Deutsche ent. Zeitschr. 1896; *C. hilaris*, Brazil, *imitans*, p. 71, *boliviensis*, p. 72, Bolivia, CANDÈZE, El. nouv. vi : n. spp.
- Crepidomenus sulcicollis*, p. 67, *vulneratus*, *cyanescens*, p. 68, Australia, CANDÈZE, El. nouv. vi, n. spp.
- Cryptohypnus cachemirensis*, p. 52, *pulvereus*, E. India, *scitus*, Java, p. 53, CANDÈZE, El. nouv. vi, n. spp.

- Ctenicera candezei*, Tamatave, ALLUAUD, p. 36, Bull. Soc. ent. France, 1896.  
*Cylindroderus cribricollis*, Guatemala, CHAMPION, p. 550, pl. xxiv, fig. 2, Biol. Centr.-Amer. Col. iii, pt. i, n. sp.  
*Dicronychus bipectinatus*, Niam-Niam, SCHWARZ, p. 94, Deutsche ent. Zeitschr. 1896, n. sp.  
*Dilobitarsus corrosus*, Bolivia, *flum*, Gaboon, CANDÈZE, p. 7, El. nouv. vi, n. spp.  
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*Dodecactenus*, systematic position, *D. staudingeri*, figure and note, CHAMPION, p. 446, pl. xx, fig. 1, Biol. Centr.-Amer. Col. iii, pt. i.  
*D. guatemalensis*, Vera Paz, CHAMPION, t. c. p. 447, pl. xx, fig. 2, n. sp.  
*Drasterius severus*, Java, CANDÈZE, p. 36, El. nouv. vi, n. sp.  
*Elater atripes*, Thiau-Schau, *nigror*, p. 288, *adrastoides*, Amurland, p. 289, REITTER, Wien. ent. Zeit. xv, n. spp.  
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*Glypheus decoratus*, Australia, CANDÈZE, p. 32, El. nouv. vi, n. sp.  
*Glyphonyx illepidus* = (*bicolor*, Cand.); LEWIS, p. 337, Ann. Nat. Hist. (6) xvii.  
*G. fencus*, Balabak, *dissimilis*, Borneo, *falsus*, Palawan, CANDÈZE, p. 78, El. nouv. vi; *G. quadraticollis*, p. 536, *brevicollis*, p. 537, *cuneatus*, pl. xxiii, fig. 23, p. 538, *rugipennis*, *vittatus*, p. 539, *angulatus*, fig. 28, *propinquus*, fig. 24, p. 540, *depressus*, p. 541, *tenuis*, p. 542, *laticollis*, fig. 29, p. 543, *flohri*, *ebeninus*, fig. 26, p. 544, *quadrinotatus*, fig. 31, p. 545, *fasciatus*, *cinctus*, fig. 32, p. 546, *teapensis*, p. 547, *parallelus*, fig. 27, *minimus*, p. 548, Central America, CHAMPION, Biol. Centr.-Amer. Col. iii, pt. i: n. spp.  
*Hemicleus majusculus*, Senegal, CANDÈZE, p. 8, El. nouv. vi, n. sp.  
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*Hemirhaphes ferrugineus*, Java, *pallidus*, Gaboon, CANDÈZE, p. 55, El. nouv. vi; *H. brevis*, Mentawai Is., CANDÈZE, p. 255, Ann. Mus. Genova, xxxvi: n. spp.  
*Hemirhipus ferrugineus*, figured and noticed, pl. xxiv, fig. 3, p. 552; CHAMPION, Biol. Centr.-Amer. Col. iii, pt. i.  
*Heterocrepidius majusculus*, Cauca, p. 27, *marginatus*, Parana, *corvinus*, Monte Video, *morio*, Amazons, *contractus*, Mysore, p. 28, CANDÈZE, El. nouv. vi, n. spp.  
*Heteroderes diplotrychus*, Abyssinia, CANDÈZE, p. 36, El. nouv. vi, n. sp.  
*Heterostethus*, n. g., near *Cryptohypnus*, for *H. pictus*, n. sp., Paraguay; SCHWARZ, p. 147, Deutsche ent. Zeitschr. 1896 (but cf. *Agrypnella*, *suprà*).

- Hypodesis sericea*, pl. xxi, fig. 21, p. 491, *penicillata*, p. 493, fig. 23, *vittata*, fig. 25, p. 494, figured and noticed, CHAMPION, Biol. Centr.-Amer. Col. iii, pt. i.
- H. aureipilis*, pl. xxi, fig. 22, p. 492, *auricoma*, fig. 24, p. 493, *viridipennis*, fig. 26, p. 494, Central America, CHAMPION, t. c., n. spp.
- Ischiodontus prominens*, Brazil?, SCHWARZ, p. 97, Deutsche ent. Zeitschr. 1896, n. sp.
- Ischius haagi*, Mexico, CHAMPION, p. 475, pl. xxi, fig. 5, Biol. Centr.-Amer. Col. iii, pt. i, n. sp.
- Lacon cordicollis*, *binodulus*, ♂ characters; LEWIS, p. 336, Ann. Nat. Hist. (6) xvii.
- L. lineatus*, Choa, p. 8, *canescens*, Ogowé, *inflatus*, Mysore, *duplex*, Sikkim, p. 9, *anathesinus*, China, *exiguus*, Banguay, *torresi*, Australia, p. 10, CANDÈZE, El. nouv. vi, n. spp.
- Limonius longulus*, Mexico, CHAMPION, p. 455, pl. xx, fig. 8, Biol. Centr.-Amer. Col. iii, pt. i, n. sp.
- Ludius cupreus*, n. var. *bosnicus*, APFELBECK, p. 556, Wiss. Mitt. Bosnien, iv. *L. physorhinus*, pl. xxii, fig. 10, *setosus*, fig. 11, p. 505, figured and noticed; CHAMPION, t. c. pt. i.
- L. antennatus*, Borneo, CANDÈZE, p. 70, El. nouv. vi; *L. cylindricollis*, pl. xxii, fig. 6, *nigricollis*, fig. 7, p. 501, *isthmicus*, p. 502, *subopacus*, *breviusculus*, fig. 8, p. 503, *tropicalis*, p. 504, *depressus*, fig. 9, p. 505, *meridanus*, p. 507, Central America, *peninsularis*, Lower California, p. 507, CHAMPION, t. c. : n. spp..
- Megapenthes bicarinatus* (Champ., nec Lewis), renamed *bicostatus*; CHAMPION, t. c. p. 556.
- M. perditus*, W. Africa, *bistrigatus*, Réunion, p. 37, *zanzibaricus*, Africa, *heterodoxus*, Singapore, *longicollis*, Bengal, p. 38, *altitudinum*, *circgens*, *informatus*, Java, p. 39, *coalescens*, *vergulatus*, Borneo, p. 40, *miser*, *monachus*, p. 41, Borneo, *maceratus*, *congestus*, p. 42, Balabak, CANDÈZE, El. nouv. vi; *M. variatus*, Bintang I., p. 141, *seriatus*, Sumatra, p. 142, CANDÈZE, Notes Leyden Mus. xviii : n. spp.
- Melanotus flavohirtus*, Mysore, *mediocris*, Birma, p. 62, *trapezicollis*, Tonkin, *dispunctatus*, Java, p. 63, *pulvereus*, *immisus*, *mendiculus*, p. 64, *recessus*, Borneo, *interjectus*, Balabak, p. 65, CANDÈZE, El. nouv. vi; *M. carinifer*, pl. xx, fig. 3, p. 452, *rugulipennis*, *mexicanus*, p. 454, Central America, CHAMPION, Biol. Centr.-Amer. Col. iii, pt. i : n. spp.
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- Melanthoides partitus*, Tonkin, *bomaensis*, Congo, CANDÈZE, p. 31, El. nouv. vi, n. spp.
- Meristhus ornatulus*, *longicollis*, Bengal, *erinaceus*, Borneo, CANDÈZE, p. 11, El. nouv. vi, n. spp.
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- Octinodes carinatus*, Panama, CHAMPION, p. 551, pl. xxiv, fig. 1, Biol. Centr.-Amer. Col. iii, pt. i, n. sp.
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- Pantolamprus sulcicollis*, Ashanti, SCHWARZ, p. 93, Deutsche ent. Zeitschr. 1896; *P. mirabilis*, p. 20, *plasoni*, *ligneus*, p. 21, W. Africa, CANDÈZE, El. nouv. vi; *P. bennigseni*, E. Africa, SCHWARZ, p. 89, Deutsche ent. Zeitschr. 1896: n. spp.
- Paracardiophorus bimargo*, Turkestan, REITTER, p. 235, pl. iii, fig. 4, Wien. ent. Zeit. xv, n. sp.
- Pomachilioides*, n. g., p. 51, for *P. ludiiformis*, n. sp., Sumatra, p. 52; CANDÈZE, El. nouv. vi.
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- Porthmidius parvicollis*, Darjiling, CANDÈZE, p. 46, El. nouv. vi, n. sp.
- Probotrium suturale*, Brazil, CANDÈZE, p. 69, El. nouv. vi, n. sp.
- Psephus melanotoides*, S. Thomas, W. Africa, FAIRMAIRE (306) p. 4; *P. pectoralis*, *variabilis*, E. Africa, O. SCHWARZ, p. 90, Deutsche ent. Zeitschr. 1896; *P. sordidulus*, Niam-Niam, p. 94, *semiferrugineus*, Delagoa Bay, p. 95, O. SCHWARZ, *t. c.*; *P. hoehneli*, Somaliland, LINELL, p. 688, P. U. S. Mus. xviii; *P. rugulipennis*, p. 21, *radula*, *umbilicatus*, p. 22, *campyloides*, *zambianus*, *hebetatus*, p. 23, *angustus*, *neglectus*, *aspersus*, p. 24, *illinitus*, *conicicollis*, *cervinus*, p. 25, *severus*, Tropical Africa, *incautus*, Borneo, p. 26, CANDÈZE, El. nouv. vi: n. spp.
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- Pyrophorus*: figures of ♂ characters of Central American species; CHAMPION, pl. xx, Biol. Centr.-Amer. Col. iii, pt. i.
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- Selatosomus sphaerothorax*, *alpestris*, *globoicollis*, synonymy; REITTER, p. 17, Wien. ent. Zeit. xv.
- S. auronebulosus*, Turkestan, REITTER, p. 290, Wien. ent. Zeit. xv, n. sp.
- Semiotus carus*, var. *antennalis*, figured, pl. xxiv, fig. 4; CHAMPION, Biol. Centr.-Amer. Col. ii, pt. i.
- S. antennalis*, Véragua, *boliviensis*, Bolivia, CANDÈZE, p. 16, El. nouv. vi, n. spp.
- Silesis musculus*, var., = (*crocatus*, Cand.) ; LEWIS, p. 337, Ann. Nat. Hist. (6) xvii.
- S. lateralis*, *rufipes*, E. India, *formicans*, Banguay, p. 79, *accentus*, Borneo, p. 80, CANDÈZE, El. nouv. vi, n. spp.
- Singhalenus candezi*, Cochin China, SCHWARZ, p. 97, Deutsche ent. Zeitschr. 1896, n. sp.
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*Tetrigus australicus*, Queensland, BLACKBURN, p. 35, Tr. R. Soc. S. Austral. xx, n. sp.  
*Tomocephalus substriatus*, p. 496, pl. xxii, fig. 1, *sardioderus*, fig. 3, p. 498, figured and noticed ; CHAMPION, Biol. Centr.-Amer. Col. iii, pt. i.  
*T. melanotus*, pl. xxii, fig. 2, p. 497, *bicolor*, fig. 4, p. 498, *insignis*, fig. 5, p. 499, Central America, CHAMPION, *t. c.*, n. spp.

## CEBRIONIDÆ, RHIPICERIDÆ.

- [Cf. BLACKBURN (84), BOURGEOIS (105), CHAMPION (414), CHOBOUT (167), FAIRMAIRE (314).]  
*Arrhaphipterus dioni*, Algeria, CHOBOUT, p. 423, Bull. Soc. ent. France, 1896, n. sp.  
*Callirhipis cardwellensis*, Queensland, BLACKBURN, p. 258, Tr. R. Soc. S. Austral. xx ; *C. carinifer*, pl. xxiv, fig. 6, *valida*, p. 576, *obsoleta*, fig. 10, p. 577, *dilatocollis*, figg. 13 & 14, p. 578, *mexicana*, figg. 17 & 18, *venosa*, fig. 19, p. 581, *tenuipes*, fig. 26, p. 582, Central America, CHAMPION, Biol. Centr.-Amer. Col. iii, pt. i : n. spp.  
*Cebrio sefrensis*, p. 399, *decolor*, p. 400, Algeria, CHOBOUT, Bull. Soc. ent. France, 1896, n. spp.  
*Cebriorhipis striatulus*, Burma, BOURGEOIS, p. 117, Bull. Soc. ent. France, 1896 ; *C. validus*, Java, *elegans*, Burma, FAIRMAIRE, p. 90, Notes Leyden Mus. xviii : n. spp.  
*Ptorthocera*, n. g. for *P. calva*, n. sp., Guatemala, &c., p. 584, pl. xxiv, fig. 27, CHAMPION, Biol. Centr.-Amer. Col. iii, pt. i.  
*Sandalus orientalis*, India, p. 118, *truncatus*, Burma, p. 119, BOURGEOIS, Bull. Soc. ent. France, 1896, n. spp.  
*Scaptolenus* : revision of Central American, with figures and with following new species, *S. palpalis*, p. 560, *acutangulus*, p. 561, pl. xxv, fig. 3, *hirticollis*, p. 563, fig. 6, *acrogathus*, fig. 8, *laticollis*, fig. 9, p. 564, *nigriceps*, fig. 14, p. 566, *brevicollis*, fig. 15, p. 567, *teapensis*, fig. 23, p. 571, *longicornis*, fig. 26, p. 573, Central America, CHAMPION, Biol. Centr.-Amer. Col. iii, pt. i, n. spp.

## DASCILLIDÆ.

- [Cf. BLACKBURN (85), BOURGEOIS (105), FAIRMAIRE (307, 314).]  
*Brachycyphon*, n. g. for *B. anthracinus*, n. sp., Madagascar ; FAIRMAIRE, Ann. Soc. ent. Belgique, xl, p. 338.  
*Cyphon humerosus*, p. 338, *dichrous*, *fuscopictus*, *ovatulus*, *suturalis*, p. 339, *oblongulus*, p. 340, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique, xl, n. spp.  
*Dæmon basalis*, *colossus*, p. 340, *equalis*, p. 341, *atopoides*, *trifasciatus*, *fasciolatus*, p. 342, *truncatulus*, *longulus*, p. 343, *nigriceps*, *distinguendus*, *elateroides*, *minutus*, p. 344, *lineellus*, *cebrionoides*, p. 345, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique, xl, n. spp.  
*Dascyllus pruinosisus*, Java, FAIRMAIRE, p. 91, Notes Leyden Mus. xviii, n. sp.  
*Helodes nigrimembris*, p. 337, *impressicollis*, p. 338, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique, xl ; *H. nigrovittatus*, Himalaya, BOURGEOIS, p. 119, Bull. Soc. ent. France, 1896 : n. spp.  
*Notiocyphon*, n. g., near *Artematopus*, for *N. convexus*, n. sp., Central Australia ; BLACKBURN, p. 272, Horn Exped. pt. ii.  
*Pherocladus andrewesi*, India, BOURGEOIS, p. 121, Bull. Soc. ent. France, 1896, n. sp.



- Scirtes maculatus*, India, BOURGEOIS, p. 120, Bull. Soc. ent. France, 1896, n. sp.  
*Stenactyla*, n. g., near *Ptilodactyla*, for *S. pallipes*, n. sp., Madagascar; FAIRMAIRE, p. 346, Ann. Soc. ent. Belgique, xl.

## MALACODERMIDÆ.

- [The following memoirs relate to *Malacodermidæ*, viz., ABEILLE (4, 7), BLEUSE (92), FAIRMAIRE (306, 307, 314, 315), LEWIS (709), MURAOKA (816), OLIVIER (837, 838), PÉRINGUEY (862), PIC (879, 880, 881), REITTER (937, 939), SCHILSKY (1027, 1028).]  
 Physical properties of the light of some Japanese (unnamed) *Lampyridæ*; MURAOKA (816).  
 Hostility of *Lampyridæ* towards *Coccinellidæ*; REEKER, p. 57, Jahresber. Westfal. Ver. xxiii.  
*Acanthocnemus ciliatus* = (*Eurema dilutum*, Ab.); ABEILLE, p. 261, Bull. Soc. ent. France, 1896.  
*A. kraatzi*, Guinea, SCHILSKY, p. 361, Deutsche ent. Zeitschr. 1896, n. sp.  
*Antholinus amictus*, metamorphoses; XAMBEU, p. 129, Mœurs, vi.  
*Aspidosoma bohlsi*, Paraguay, OLIVIER, p. 7, Nov. Zool. iii, n, sp.  
*Attalus bizonatus*, Algeria, ABEILLE, p. 393, Bull. Soc. ent. France, 1896, n. sp.  
*Axinotarsus algiricus*, Algeria, ABEILLE, p. 392, Bull. Soc. ent. France, 1896, n. sp.  
*Cautires rufus*, Mayotte, FAIRMAIRE, p. 347, Ann. Soc. ent. Belgique, xl, n. sp.  
*Cerallus smaragdinus*, p. 37, *longulus*, Turkestan, *schilskyi*, Ordubad, p. 39, REITTER, Deutsche ent. Zeitschr. 1896, n. spp.  
*Chaetomalachius forticornis*, *kotschyi*, *ruficornis*, *dispar*, *punctatus*, Europe, SCHILSKY, Kaf. Eur. xxxii, n. spp.  
*Cratomorphus elevatus*, Mexico, OLIVIER, p. 1, Nov. Zool. iii, n. sp.  
*Danacæa*: synonymic notes; SCHILSKY, pp. 363-365, Deutsche ent. Zeitschr. 1896: notes; PIC, pp. 66-69, Miscell. ent. iii: synonymy of European; PIC, p. 115, Wien. ent. Zeit. xv. *D. reyi*, Proch., = (*pallidipalpis*, Ab.), p. 261, *nigritarsis*, Kust., = (*opacula*, Ab.), p. 262; ABEILLE, Bull. Soc. ent. France, 1896.  
*D. pici*, Cordova, BLEUSE, p. 250, Rev. Ent. franc, xv; *D. kraatzi*, Tunis, *delagrangei*, Anatolia, p. 121, *bleusei*, Rhodes, *cavifrons*, Syria, *sicula*, Sicily, *pubescens*, Siberia?, p. 122, PIC, Miscell. ent. iii; *D. nadari*, Bukara, PIC, p. 148, Bull. Soc. ent. France, 1896: n. spp.  
*Dasytes delagrangei* and allies, synonymy; REITTER, p. 18, Wien. ent. Zeit. xv.  
*D. apenninus*, *fausti*, *crassicornis*, *carbonarius*, *leviusculus*, *nitidicollis*, *caspicus*, *mixtus*, Europe, SCHILSKY, Kaf. Eur. xxxii; *D. dilutipes*, Turkestan, p. 36, *circassicola*, Caucasus, p. 37, REITTER, Deutsche ent. Zeitschr. 1896; *D. (Pseudodasytes) sefrensis?*, n. sp., PIC, p. 87, Echange, xii: n. spp.  
*Dasytiscus bourgeoisi*, *quadricollis*, *pusillus*, *ganglbaueri*, *alboscuteUellatus*, Europe, SCHILSKY, Kaf. Eur. xxxii; *D. theresæ*, Algeria, PIC, p. 48, Miscell. ent. iv: n. spp.  
*Dodacles erebeus*, Paraguay, OLIVIER, p. 4, Nov. Zool. iii, n. sp.  
*Haplocnemus desertorum*, Algeria, *akbesianus*, Syria, PIC, p. 48, Miscell. ent. iv, n. spp.  
*Hauseria*, n. g., *Dasytides*, p. 70, for *H. acmæopsiformis*, n. sp., Turkestan, p. 70; REITTER, Wien. ent. Zeit. xv.  
*Henicopus spinosus*, *korbi*, *gracilis*, *plumbeus*, *transcaucasicus*, Europe, SCHILSKY, Kaf. Eur. xxxii, n. spp.

- Ichthyurus lateralis*, habits ; ZEHNTNER, p. 258, Notes Leyden Mus. xviii.  
*Læmoglyptus bomfordii*, Simla, p. 225, *fulvicollis*, Tonkin, p. 226, FAIRMAIRE, Notes Leyden Mus. xviii, n. spp.  
*Lamprocera extincta*, Paraguay, OLIVIER, p. 4, Nov. Zool. iii, n. sp.  
*Lamprohiza reticulata*, habits, female ; WENZEL, p. 294, Ent. News Philad. vii, pl. xi, figg. 1-6.  
*Lucidota thoracica* = (*rubricollis*, Gorh.) ; OLIVIER, p. 4, Nov. Zool. iii.  
*L. disjuncta*, Rio de Janeiro, *tenuis*, Para, OLIVIER, p. 1, Nov. Zool. iii ;  
*L. cucullata*, *aulax*, *tardita*, *misera*, Paraguay, OLIVIER, p. 5, t. c. : n. spp.  
*Luciola stigmaticollis*, *intermedia*, p. 347, *biscutellata*, *deleta*, p. 348, Madagascar, FAIRMAIRE, Ann. Soc. ent. France, xl ; *L. ambita*, Java, *humilis*, Queensland, p. 2, *præstans*, Congo, p. 3, OLIVIER, Nov. Zool. iii : n. spp.  
*Malachius dentifrons*, early stages ; NICOLAS, pp. 19-22, Miscell. ent. iv, pl. ii.  
*Malthinus fasciatus* and *balteatus*, distinctions ; NEWBERY, p. 179, Ent. Mag. xxxii.  
*Malthodes australis*, Zambezi, PÉRINGUEY, p. 166, Tr. ent. Soc. London, 1896, n. sp.  
*Microjulistus* = (*Ceralliscus*, Bourg.) ; PIC, p. 205, Bull. Soc. ent. France, 1896.  
*Phengodes pallens*, larva ; OLIVIER, p. 6, Nov. Zool. iii.  
*Photuris telephorina*, n. var. *mixta* ; OLIVIER, p. 3, Nov. Zool. iii.  
*Podabrinus*, n. g., near *Podabrus*, for *P. ædemeroides*, n. sp., Kurseong ; FAIRMAIRE, Notes Leyden Mus. xviii, p. 92.  
*Podistrina vaucheri*, Tangier, ABEILLE, p. 155, Bull. Soc. ent. France, 1896, n. sp.  
*Prionocerus metallescens*, Simla, *cæruleatus*, Malabar, FAIRMAIRE, p. 94, Notes Leyden Mus. xviii, n. spp.  
*Pseudaphyctus tournieri*, Marocco, PIC, p. 47, Miscell. ent. iv, n. sp.  
*Pyraclomera ecostata*, larva, habits ; WENZEL, p. 295, Ent. News Philad. vii, pl. xi, figg. 7-10.  
*Pyrocalia atripennis*, Oshima, LEWIS, p. 337, Ann. Nat. Hist. (6) xvii, n. sp.  
*Rhagophthalmus ingens*, China, *brevipennis*, Nagpore, FAIRMAIRE, p. 227, Notes Leyden Mus. xviii, n. spp.  
*Stadenus semifulvus*, St. Thomas, W. Africa, FAIRMAIRE (306) p. 5, n. sp.  
*Telephorus obscurus*, nymph ; XAMBEU, p. 91, Ann. Soc. Linn. Lyon, xlii.  
*T. impressicollis*, Madagascar, FAIRMAIRE, p. 457, Ann. Soc. ent. Belgique, xl ; *T. trabeatus*, Pedong, FAIRMAIRE, p. 93, Notes Leyden Mus. xviii : n. spp.  
*Trichocele grandis*, *oertzeni*, *lederi*, *oculata*, Europe, SCHILSKY, Kaf. Eur. xxxii, n. spp.  
*Troglops fascipennis*, Ordubad, REITTER, p. 36, Deutsche ent. Zeitschr. 1896, n. sp.  
*Tryblius*, n. g., near *Telephorus*, for *T. cavipennis*, n. sp., Sikkim ; FAIRMAIRE, p. 228, Notes Leyden Mus. xviii.

## CLERIDÆ.

- [*Cf.* DESBROCHERS (245), FAIRMAIRE (300, 312), G. H. HORN (518), LEWIS (709), LINELL (718).]  
*Callimerus prasinatus*, Oshima, LEWIS, p. 338, Ann. Nat. Hist. (6) xvii, n. sp.  
*Clerus 4-guttatus*, habits ; BOWDITCH, p. 387, Psyche, vii.  
*Corynetes fulgidicollis*, Algeria, DESBROCHERS, pp. 167 & 183, Frelon, v, n. sp.

- Hydnocera* = (*Emmepus*, Motsch.) ; REITTER, p. 283, Wien. ent. Zeit. xv.  
*Myrmecomœa perroti*, Madagascar, FAIRMAIRE, p. 295, Bull. Soc. ent.  
 France, 1896, n. sp.  
*Phyllobœnus merkei*, Arizona, HORN, p. 374, P. Calif. Ac. (2) vi, n. sp.  
*Placocerus fulvus*, E. Africa, LINELL, p. 688, P. U. S. Mus. xviii, n. sp.  
*Trichodes umbellatarum*, var. *maroccanus*, = (*maroccanus*, Fairm.) ;  
 KRAATZ, p. 343, Bull. Soc. ent. France, 1896.  
*T. maroccanus*, Fez, FAIRMAIRE, p. 296, Bull. Soc. ent. France, 1896 ;  
*T. martini*, Arabia, FAIRMAIRE, p. 223, t. c. : n. spp.

## LYMEXYLONIDÆ.

- Hylecætus cossis*, Japan, LEWIS, p. 65, Ann. Nat. Hist. (6) xvii, n. sp.

## PTINIDÆ.

- [Cf. HORN (518), PIC (872, 873, 877, 882-885), REITTER (937), XAMBEU (1261).]  
 Popular views as to ticking of *Anobiidæ* ; Ent. News Philad. vii,  
 pp. 75-77.  
*Anobium panicum*, ravages ; MINGAUD, pp. lxvi-lxviii, Bull. Soc.  
 Nismes, xxiii.  
*Bruchus sexornatus*, Baikal, p. 72, *B. (Gynopterus) desertor*, Samarcand,  
 p. 73, REITTER, Wien. ent. Zeit. xv, n. spp.  
*Cœnocara bovistæ*, habits ; VITURAT, p. 426, Bull. Soc. Autun, viii.  
*Diegous*, n. subg. of *Ptinus*, q.v.  
*Dryophilus siculus*, Sicily, RAGUSA, p. 90, Natural. Sicil. (n.s.) i, n. sp.  
*Eutaphrus græcus*, p. 41, Greece, *monstrositarsis*, p. 42, Dalmatia, PIC,  
 Miscell. ent. iv, n. spp.  
*Hedobia regalis*, larva ; PORTEVIN, p. 15, Bull. Soc. ent. France, 1896.  
*H. angustior, rosti*, Caucasus, PIC, p. 71, Bull. Soc. ent. France, 1896,  
 n. spp.  
*Lasioderma, lævis*, metamorphoses ; XAMBEU, p. 98, Ann. Soc. Linn.  
 Lyon, xlii.  
*Petalium brunneum*, Lower California, HORN, p. 375, P. Calif. Ac. (2) vi,  
 n. sp.  
*Priobium tricolor*, metamorphoses ; XAMBEU, p. 92, Ann. Soc. Linn.  
 Lyon, xlii.  
*Pseudoptinus gracilicornis*, Hungary, PIC, p. 41, Miscell. ent. iv, n. sp.  
*Ptinus fur*, larva, p. 123, *auberti*, nymph, p. 126 ; XAMBEU, Ann. Soc.  
 Linn. Lyon, xliii. *P. fur*, destroying nests of *Vespa crabro* ;  
 BUTLER, p. 109, Ent. Mag. xxxii. *P. peringueyi*, n. n. for *affinis*,  
 Pér. ; PIC, p. 30, Bull. Soc. ent. France, 1896.  
*P. cumaniensis*, Morea, p. 42, *P. (Bruchoptinus) antematus*, Turkey,  
*brumescens*, Veluchi, p. 43, PIC, Feuille Natural. xxvi ; *P. (Bruchus)*  
*separatus*, Algeria, PIC, p. 201, t. c. ; *P. (Pseudoptinus) longipilis*,  
 Tunis, PIC, p. 93, Miscell. ent. iv ; *P. (Bruchoptinus) syriacus*, ? n. sp.,  
 PIC, p. 87, Echange, xii ; *P. (Gynopterus) alluaudi*, p. 352,  
*P. (Diegous, n. subg.) elongatus, soarezicus*, p. 353, *caroli, lineatus*,  
 p. 354, Madagascar, PIC, Bull. Soc. ent. France, 1896 ; *P. (Bruchus)*  
*maculifer, P. (Eutaphrus) impressithorax*, India, PIC, p. 6, Miscell.  
 ent. iii, iv ; *P. maculithorax, gounellei*, p. 45, *latus, albonotatus, semi-*  
*obscurus*, Brazil, *niger*, p. 46, *rugosithorax*, p. 47, N. Borneo, PIC,  
 Miscell. ent. iv : n. spp.  
*Sphæricus africanus*, Cape, *grandjeani*, Indo-China, PIC, p. 6, Miscell.  
 ent. iv, n. spp.

*Trigonogenius furctus*, note on; SCHWARZ, p. 177, *Canad. Ent.* xxviii.  
*Xyletinus laticollis*, metamorphoses; XAMBEU, p. 95, *Ann. Soc. Linn.*  
 Lyon, xlii.

## BOSTRYCHIDÆ.

[*Of. LESNE* (702), *LEWIS* (709).]

Revision: pt. 1, *Psoinæ, Polycanoninæ*; LESNE, *Ann. Soc. ent. France*,  
 1896, pp. 95-127, pls. viii & ix.

For many synonyms, see LESNE, pp. 334-336, *Bull. Soc. ent. France*,  
 1896.

*Apate nitidipennis* referred to *Phonapate*; GAHAN, p. 453, *Ann. Nat.*  
*Hist.* (6) xviii.

*A. carinipennis*, p. 338, *nipouensis*, Japan, *carinata*, Andaman Is., p. 339,  
 LEWIS, *Ann. Nat. Hist.* (6) xvii, n. spp.

## TENEBRIONIDÆ.

[The following memoirs relate to *Tenebrionidæ*, viz., ALLARD (15),  
 BLACKBURN (85), CHAMPION (150, 151), CHITTENDEN (160), FAIR-  
 MAIRE (307, 310, 313, 314, 315), GAHAN (394), G. H. HORN (518),  
 KOLBE (616), LEA (697), LEWIS (709), LINELL (718), PÉRINGUEY  
 (862), REITTER (934, 937, 939, 955-962), WASMANN (1215, 1220,  
 1221), WICKHAM (1242), XAMBEU (1261).]

The following is accidentally omitted from our list of titles:—

306A. FAIRMAIRE, L. *Hétéromères de l'Inde* recueillis par M. Andrewes.  
*Ann. Soc. ent. Belgique*, xl, pp. 6-62.

*Rhyzopaussidæ*, n. fam. for the following two genera and *Azarelius*,  
 Fairm.; WASMANN (1215), who considers these insects allied to *Rhy-*  
*solidæ* and *Paussidæ*.

*Rhyzopaussus*, n. g., p. 616, for *R. dohertyi*, n. sp., Perak, p. 617, pl. ii,  
 fig. 1; WASMANN, *Ann. Mus. Genova*, xxxvi.

*Xenotermes*, n. g., p. 616, for *X. fee*, n. sp., Pegu, p. 617, pl. ii, fig. 2;  
 WASMANN, *Ann. Mus. Genova*, xxxvi.

*Azarelius oberthuri*, Pegu, WASMANN, p. 617, pl. ii, fig. 3, *Ann. Mus.*  
*Genova*, xxxvi; *A. singularis*, Pedong, WASMANN, p. 151, *op. cit.*  
 xxxvii: n. spp.

Stridulation in *Praogena gagatina*; GAHAN, p. 456, *Ann. Nat. Hist.* (6)  
 xviii.

*Acastus*, n. g., near *Hoplonyx*, p. 177, for *A. segnis*, *rusticus*, *agrestis*,  
 p. 178, *impressicollis*, p. 179, n. spp., Zambezi; PÉRINGUEY, *Tr. ent.*  
*Soc. London*, 1896.

*Achrostus cylindricornis*, E. Africa, LINELL, p. 697, *P. U. S. Mus.* xviii,  
 n. sp.

*Acropteron quadraticolle*, Antilles, CHAMPION, p. 29, *Tr. ent. Soc. London*,  
 1896, n. sp.

*Adesmia tuberculosa*, n. n. for *A. tuberculifera*, Gah., *nec* Kolbe; GAHAN,  
 p. 250, *Mem. Soc. ent. Belgique*, iii.

*A. phillipsi*, p. 453, *consimilis*, p. 454, Somaliland, GAHAN, *Ann. Nat.*  
*Hist.* (6) xviii, n. spp.

*Allostrongylium*, n. g., p. 364, near *Strongylium*, for *A. silvestre*, *lignarium*,  
 p. 365, *tritomicrum*, p. 366, n. spp., Africa; KOLBE, *Ent. Zeit. Stettin*,  
 lvi.

*Amarygmus purpureofossus*, p. 32, *cribripennis*, p. 33, India, FAIRMAIRE,  
*Ann. Soc. ent. Belgique*, xl, n. spp.

- Amblyspagus*, n. g., near *Pachyterus*, for *A. pachyderus*, n. sp., India ; FAIRMAIRE, Ann. Soc. ent. Belgique, xl.
- Amiantus octocostatus*, *globulipennis*, *mashuus*, p. 167, *costatus*, p. 168, S. Africa ; PÉRINGUEY, Tr. ent. Soc. London, 1896, n. spp.
- Anacycus*, n. g., p. 33, near *Dietyusus*, for *A. alternepictus*, *decurvatus*, n. spp., India, p. 34, and including *D. navicularis*, Fairm. ; FAIRMAIRE, Ann. Soc. ent. Belgique, xl.
- Anædus quadrinotatus*, Antilles, CHAMPION, p. 26, Tr. ent. Soc. London, 1896, n. sp.
- Anemia coriaria*, p. 21, *trapezicollis*, *suilla*, p. 22, India, FAIRMAIRE, Ann. Soc. ent. Belgique, xl, n. spp.
- Anomalipus* (*Acmeæus*) *podagricus*, p. 168, *proximus*, *plebeius*, p. 169, *A. (Apodemus) marshalli*, p. 170, *segnis*, p. 171, Zambezi, PÉRINGUEY, Tr. ent. Soc. London, 1896, n. spp.
- Apasis puncticeps*, Australia, LEA, p. 293, P. Linn. Soc. N. S. Wales, 1896, n. sp.
- Aphaleria*, n. g., p. 235, *Trachyscelidarum*, for *A. capnisoides*, n. sp., Buchara, p. 236, pl. iii, fig. 5 ; REITTER, Wien. ent. Zeit. xv.
- Arrhabæus debilis*, St. Vincent, CHAMPION, p. 20, Tr. ent. Soc. London, 1896, n. sp.
- Arrhenoplita suilla*, St. Vincent, CHAMPION, p. 11, Tr. ent. Soc. London, 1896, n. sp.
- Asida fuentei*, Spain, FAIRMAIRE, p. 345, Bull. Soc. ent. France, 1896 ; *A. flaccida*, Lower California, HORN, p. 379, P. Calif. Ac. (2) vi : n. spp.
- Asyleptus*, n. g., near *Hoplonyx*, for *A. fumosus*, n. sp., Cape Colony ; PÉRINGUEY, p. 179, Tr. ent. Soc. London, 1896.
- Aulonoscelis*, n. subg. of *Platyscelis*, for *P. hauseri*, Reitt. ; REITTER, p. 173, Deutsche ent. Zeitschr. 1896.
- Baratus*, n. g., p. 233, near *Osdara*, for *B. crenulatus*, n. sp., Philippines, p. 234 ; FAIRMAIRE, Notes Leyden Mus. xviii.
- Belonilla* referred to *Tenebrionidæ* ; BELON, p. 266, Rev. Ent. franc. xv.
- Blapida castaneipennis*, Grenada, CHAMPION, p. 28, Tr. ent. Soc. London, 1896, n. sp.
- Bolitophagus subinteger*, Talysch Mts., REITTER, p. 74, Wien. ent. Zeit. xv, n. sp.
- Brachyoschium*, n. g., near *Adelostoma*, p. 348, for *B. parvitarse*, n. sp., Madagascar, p. 349 ; FAIRMAIRE, Ann. Soc. ent. Belgique, xl.
- Brachypilium*, n. g., p. 23, near *Bradymerus*, for *B. sculpturatum*, n. sp., India, p. 24 ; FAIRMAIRE, Ann. Soc. ent. Belgique, xl.
- Bradymerus spinicollis*, p. 22, *modestus*, *bidentulus*, p. 23, India, FAIRMAIRE, Ann. Soc. ent. Belgique, xl ; *B. corinthius*, *ferruginipes*, Philippines, FAIRMAIRE, p. 229, Notes Leyden Mus. xviii ; *B. aratus*, Sumatra, FAIRMAIRE, p. 100, t. c. : n. spp.
- Byzacnus capensis*, Cape Colony, PÉRINGUEY, p. 171, Tr. ent. Soc. London, 1896, n. sp.
- Cædius indicus*, *asper*, India, FAIRMAIRE, p. 18, Ann. Soc. ent. Belgique, xl, n. spp.
- Camaria angulicollis*, India, FAIRMAIRE, p. 32, Ann. Soc. ent. Belgique, xl, n. sp.
- Camariodes nitidipennis*, n. n. for *opacicollis*, Fairm., 1895 ; FAIRMAIRE, p. 353, Ann. Soc. ent. Belgique, xl.
- Calyptopsis sulcimargo*, *rosti*, Persia, p. 306, *capnisoides*, p. 307, *pandaroides*, p. 308, Greece, *lineimargo*, Akbes, *nitescens*, Caucasus, *lavipennis* (Ball.), Turkestan, p. 310, REITTER, Deutsche ent. Zeitschr. 1896, n. spp.
- Catapiestus indicus*, Sikkim, FAIRMAIRE, p. 28, Ann. Soc. ent. Belgique, xl, n. sp.

- Catomulus*, n. g., *Tentyrini*, for *C. subcæneus*, n. sp., Marocco; REITTER, p. 302, Deutsche ent. Zeitschr. 1896.
- Clitobius rugulipennis*, locality is Arabia, BEDEL, p. 346, Bull. Soc. ent. France, 1896.
- C. grandis*, p. 223, *rugulipennis*, p. 224, Arabia, FAIRMAIRE, Bull. Soc. ent. France, 1896, n. spp.
- Cnemeplatia indica*, Belgaum, FAIRMAIRE, p. 16, Ann. Soc. ent. Belgique, xl, n. sp.
- Cælolophus æquecostatus*, India, FAIRMAIRE, p. 35, Ann. Soc. ent. Belgique, xl, n. sp.
- Cossyphus madecassus*, Madagascar, FAIRMAIRE, p. 351, Ann. Soc. ent. Belgique, xl; *C. asperatus*, Burma, FAIRMAIRE, p. 59, t. c. : n. spp.
- Crypticus*: table of palæarctic species; REITTER, pp. 145-151, Ent. Nachr. xxii.
- C. thessalicus*, Thessaly, p. 147, *C. (Seriscius) paradoxus*, Marocco, p. 149, *mollis*, *pelitus*, Tunis, *uniformis*, Tripoli, *ovatulus*, Mougolia, p. 150, REITTER, Ent. Nachr. xxii; *C. obtusus*, Sea of Aral, REITTER, p. 74, Wien. ent. Zeit. xv; *C. undatus*, Antilles, CHAMPION, p. 5, pl. i, fig. 3, Tr. ent. Soc. London, 1896 : n. spp.
- Ctesicles*, n. g. for *C. insularis*, p. 7, pl. i, fig. 2, *maritimus*, p. 8, n. spp., Antilles; CHAMPION, Tr. ent. Soc. London, 1896.
- Cyclonesus*, n. g., p. 104, near *Eucyrtus*, for *C. parvicollis*, n. sp., Sumatra, p. 105; FAIRMAIRE, Notes Leyden Mus. xviii.
- Cyrtotyche rikatlæ*, Mozambique, PÉRINGUEY, p. 172, Tr. ent. Soc. London, 1896, n. sp.
- Dailognatha*: species tabulated; REITTER, pp. 313-317, Deutsche ent. Zeitschr. 1896.
- D. obtusangula*, p. 314, *hellenica*, Greece, *rugipleuris*, Asia Minor, p. 316, *granimentum*, *gracilicornis*, Turkestan, p. 317, REITTER, Deutsche ent. Zeitschr. 1896, n. spp.
- Damatrix cyaneostriata*, p. 352, *clypealis*, p. 353, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique, xl, n. spp.
- Dengitha* and allies, characters; SEMENOW, p. 47, Annuaire Mus. St. Petersb. 1896.
- D. crystallina*, p. 49, *hyalina*, p. 52, Transcaspian Region, SEMENOW, Annuaire Mus. St. Petersb. 1896, n. spp.
- Derosphaerus carbonatus*, Somaliland, LINELL, p. 697, P. U. S. Mus. xviii; *D. cancellatus*, India, FAIRMAIRE, p. 27, Ann. Soc. ent. Belgique, xl; *D. cribrum*, Calcutta, FAIRMAIRE, p. 231, Notes Leyden Mus. xviii; *D. asperipennis*, Sikkim, ALLARD, p. 320, Bull. Soc. ent. France, 1896 : n. spp.
- Dichillus indicus*, Dharmasala, WASMANN, p. 239, Deutsche ent. Zeitschr. 1896; *D. himalayanus*, FAIRMAIRE, p. 57, Ann. Soc. ent. Belgique, xl : n. spp.
- Dichotymus minor*, Somaliland, LINELL, p. 698, P. U. S. Mus. xviii, n. sp.
- Dietysus ænescens*, India, FAIRMAIRE, p. 33, Ann. Soc. ent. Belgique, xl; *D. acutestriatus*, Java, FAIRMAIRE, p. 111, Notes Leyden Mus. xviii : n. spp.
- Diphyrhynchus geminatus*, Sikkim, ALLARD, p. 320, Bull. Soc. ent. France, 1896, n. sp.
- Echocerus dentiger*, Texas, p. 79, *recurvatus*, Florida, p. 80, CHITTENDEN, P. U. S. Mus. xviii, n. spp.
- Encyalesthus? celestinus*, Bourou, FAIRMAIRE, p. 102, Notes Leyden Mus. xviii, n. sp.
- Entelus echinatus*, Madagascar, FAIRMAIRE, p. 459, Ann. Soc. ent. Belgique, xl, n. sp.
- Epitragus exaratus*, p. 2, *jamaicensis*, p. 3, West Indies, CHAMPION, Tr. ent. Soc. London, 1896, n. spp.

- Ethas anomalus*, *semicribrosus*, India, FAIRMAIRE, p. 56, Ann. Soc. ent. Belgique, xl, n. spp.
- Eucyrtus (Platycrepis) viridicinctus*, p. 29, *kanaræ*, *E. pyrozonius*, India, FAIRMAIRE, Ann. Soc. ent. Belgique, xl; *E. sanguinicrus*, Java, FAIRMAIRE, p. 232, Notes Leyden Mus. xviii; *E. impressicollis*, Sumatra, p. 105, *gloriosus*, Celebes, p. 106, *semipurpureus*, Sumatra, *testaceipes*, Nias I., p. 107, *femoralis*, Sumatra, p. 108, FAIRMAIRE, t. e. : n. spp.
- Gnathosia* = (*Capnisa*), table of species; REITTER, pp. 129-135, Ent. Nachr. xxii.
- G. suturalis*, *barschewskyi*, p. 130, *declivis*, p. 131, Samarcand, *crypticola*, Margelan, p. 132, *hydrobiformis*, p. 133, *compressa*, p. 134, Transcaspian, REITTER, Ent. Nachr. xxii, n. spp.
- Gauromaia suturata*, Nias I., *haagi* (Bates) p. 109, *diversipes*, p. 110, Borneo, FAIRMAIRE, Notes Leyden Mus. xviii, n. spp.
- Herlesa*, n. g., *Tentyrini*, for *H. globicollis*, n. sp., Algeria; REITTER, p. 298, Deutsche ent. Zeitschr. 1896.
- Heterophylus parvulus*, Araxes valley, p. 159, *angustitarsis*, *amplicollis*, Transcaspian, p. 160, REITTER, Deutsche ent. Zeitschr. 1896, n. spp.
- Helcus fulvohirtus*, p. 288, *granulatus*, p. 289, Australia, LEA, P. Linn. Soc. N. S. Wales, 1896, n. spp.
- Helops coffeti*, larva; XAMBEU, p. 128, Ann. Soc. Linn. Lyon, xliii.
- Holaniara angulatipes*, India, FAIRMAIRE, p. 26, Ann. Soc. ent. Belgique, xl, n. sp.
- Hopatrum catenulatum*, *dorsogranosum*, *papulosum*, *expansicolle*, India, FAIRMAIRE, p. 19, Ann. Soc. ent. Belgique, xl, n. spp.
- Hypocilibe heroina*, Central Australia, BLACKBURN, p. 279, Horn Exped. pt. ii, n. sp.
- Iccius rufotestaceus*, p. 18, *grenadensis*, p. 19, Antilles, CHAMPION, Tr. ent. Soc. London, 1896, n. spp.
- Læna indica*, p. 96, *denticrus*, *minuta*, p. 97, *clypealis*, p. 98, Simla, FAIRMAIRE, Notes Leyden Mus. xviii, n. spp.
- Leipopleura tenuissima*, Turkestan, REITTER, p. 174, Deutsche ent. Zeitschr. 1896, n. sp.
- Lepispilus stygianus*, characters; LEA, p. 293, P. Linn. Soc. N. S. Wales, 1896.
- L. punctato-lineatus*, Sikkim, ALLARD, p. 318, Bull. Soc. ent. France, 1896, n. sp.
- Leprocaulus*, n. g., p. 95, near *Derosphærus*, for *L. clavipes*, n. sp., Java, p. 96; FAIRMAIRE, Notes Leyden Mus. xviii.
- Lorelopsis*, n. g., near *Lorelus*, p. 15, for *L. pilosus*, n. sp., St. Vincent, p. 16, pl. i, fig. 7, CHAMPION, Tr. ent. Soc. London, 1896.
- Lorelus brevicornis*, St. Vincent, CHAMPION, p. 14, pl. i, fig. 6, Tr. ent. Soc. London, 1896, n. sp.
- Lyprops cribratellus*, Sikkim, FAIRMAIRE, Notes Leyden Mus. xviii, p. 102; *L. gracilior*, *curticollis*, p. 28, *marginicollis*, p. 29, India, FAIRMAIRE, Ann. Soc. ent. Belgique, xl : n. spp.
- Megeleates sequoiarum*, larva; WICKHAM, p. 118, J. N. York Ent. Soc. iv.
- Melarachnica lævipennis*, India, FAIRMAIRE, p. 12, Ann. Soc. ent. Belgique, xl, n. sp.
- Menimopsis*, n. g., near *Menimus*, p. 16, for *M. excæcus*, n. sp., St. Vincent, p. 17, pl. 1, fig. 17; CHAMPION, Tr. ent. Soc. London, 1896.
- Mentes aneopiceus*, Antilles, CHAMPION, p. 30, Tr. ent. Soc. London, 1896, n. sp.
- Meracantha contracta*, larva; WICKHAM, p. 119, pl. v, fig. 2, J. N. York Ent. Soc. iv.
- Meracanthoides*, n. g., *Amarygmides*, for *M. capreolineatus*, n. sp., E. Africa; LINELL, p. 698, P. U. S. Mus. xviii.

- Mesomorphus crassiusculus*, India, FAIRMAIRE, p. 20, Ann. Soc. ent. Belgique, xl, n. sp.
- Micrantereus nitidus*, Aden, GAHAN, p. 455, Ann. Nat. Hist. (6) xviii; *M. limpopoanus*, p. 172, *carinatus*, *luctuosus*, p. 173, *gratiosus*, *spurius*, p. 174, *fallax*, *ovampoanus*, p. 175, *deverus*, *pronus*, *algoensis*, S. Africa, PÉRINGUEY, Tr. ent. Soc. London, 1896 : n. spp.
- Nesogena caeruleata*, *micanticollis*, Madagascar, FAIRMAIRE, p. 458, Ann. Soc. ent. Belgique, xl, n. spp.
- Nyctobates confusus*, India, FAIRMAIRE, p. 27, Ann. Soc. ent. Belgique, xl; *N. striatifrons*, Kiangsi, FAIRMAIRE, p. 102, Notes Leyden Mus. xviii; *N. (Setenis?) laevis*, Sikkim, FAIRMAIRE, p. 230, t. c. : n. spp.
- Nyctozoilus crassicornis*, p. 276, *approximatus*, *inequalis*, p. 277, *irregularis*, p. 278, Central Australia, BLACKBURN, Horn Exped. pt. ii, n. spp.
- Oodoscelis hirsuta*, Turkestan, REITTER, p. 176, Deutsche ent. Zeitschr. 1896, n. sp.
- Opatrum riparium*, characters; GERHARDT, p. 383, Deutsche ent. Zeitschr. 1896.
- Orocina*, n. g., *Tentyrini*, for *O. capnisiceps*, *semenowi*, n. spp., Turkestan, REITTER, p. 303, Deutsche ent. Zeitschr. 1896.
- Osdara plicicollis*, New Guinea, FAIRMAIRE, p. 233, Notes Leyden Mus. xviii, n. sp.
- Ozanimorphus angustior*, Madagascar, FAIRMAIRE, p. 460, Ann. Soc. ent. Belgique, xl, n. sp.
- Ozolais tuberculifera*, Antilles, CHAMPION, p. 10, pl. i, fig. 1, Tr. ent. Soc. London, 1896, n. sp.
- Pachychila lampedusa*, Sicily, KRAATZ, p. 101, Natural. Sicil. (n.s.) i, n. sp.
- Pachymastus*, n. g., near *Brachyesthes*, for *P. asperulus*, n. sp., Madagascar; FAIRMAIRE, Ann. Soc. ent. Belgique, xl.
- Palorus*: the species and their characters; CHAMPION, pp. 26–29, Ent. Mag. xxxii.
- P. austrinus*, N. Australia, CHAMPION, Ent. Mag. xxxii, p. 30, n. sp.
- Penthicinus*, n. g., p. 161, for *P. koltzei*, p. 171, *pedinoides*, p. 172, n. spp., Turkestan, REITTER, Deutsche ent. Zeitschr. 1896.
- Penthicoides*, n. g., near *Penthicus*, for *P. seriatoporus*, n. sp., India; FAIRMAIRE, p. 20, Ann. Soc. ent. Belgique, xl.
- Penthicus subpubescens*, Syria, *corpulentus*, Persia, p. 163, *humeridens*, Mongolia, p. 164, *explanatus*, Altai, *poricollis*, Kulab, p. 165, *tenebrioides* (Faust), Turkestan, p. 166, *truncatus*, Buchara, p. 167, *serpens*, *heydeni*, Turkestan, *samgarensis* (Faust), Samgar, p. 168, *hirsutus* (Faust), Kirghiz Steppes, *remotus*, Transcaspian, p. 170, *alaiensis*, Schahimard, p. 171, REITTER, Deutsche ent. Zeitschr. 1896; *P. striolatus*, *frater*, *vicinus*, India, FAIRMAIRE, p. 21, Ann. Soc. ent. Belgique, xl : n. spp.
- Phæogala*, n. g., near *Mitrælabrus*, p. 353, for *P. grisescens*, n. sp., Madagascar, p. 354; FAIRMAIRE, Ann. Soc. ent. Belgique, xl.
- Phylacinus*, n. g., near *Eurynotus*, for *P. asperipennis*, n. sp., Madagascar; FAIRMAIRE, p. 349, Ann. Soc. ent. Belgique, xl.
- Phymatosoma metallicum*, Java, FAIRMAIRE, p. 234, Notes Leyden Mus. xviii, n. sp.
- Pimelia pilifera*, n. var., *rugosipennis*; ESCHERICH, p. 276, Verh. Ges. Wien, xlvi.
- Plamius*, n. g., near *Eucyrtus*, p. 30, for *P. tenuestriatus*, n. sp., India, p. 31; FAIRMAIRE, Ann. Soc. ent. Belgique, xl.
- Platydema catopoides*, *sericans*, p. 24, *hieroglyphica*, *semirufa*, *polyspila*, p. 25, FAIRMAIRE, Ann. Soc. ent. Belgique, xl; *P. piliferum*, p. 12, *apicenotatum*, p. 13, pl. i, fig. 5, Antilles, CHAMPION, Tr. ent. Soc. London, 1896 : n. spp.



- Platynotus insularis*, Hope = (*Hypanulax iridescens*, Blackb.); CHAMPION, p. 449, Tr. ent. Soc. London, 1896.
- P. tumidipes*, p. 12, *bellii*, *pandaroides*, p. 13, *mediocris*, p. 14, India, FAIRMAIRE, Ann. Soc. ent. Belgique, xl, n. spp.
- Platynoscelis humeralis*, *blapoides*, Turkestan, p. 175, *turanica*, Transcaspian, p. 176, REITTER, Deutsche ent. Zeitschr. 1896, n. spp.
- Platyscelis*; cf. *Aulonoscelis*.
- P. seidlitzii*, hab.?, p. 172, *kirghisica*, Kirghis Steppes, p. 173, REITTER, Deutsche ent. Zeitschr. 1896, n. spp.
- Plesiophthalmus brevipennis*, Oshima, LEWIS, p. 340, Ann. Nat. Hist. (6) xvii, n. sp.
- Pocadiopsis*, n. g., near *Opatrum*, for *P. simulator*, *marginicollis*, n. spp., India; FAIRMAIRE, p. 17, Ann. Soc. ent. Belgique, xl.
- Pœciltoides*, n. g., near *Derosphærus*, for *P. alternans*, n. sp., Madagascar; FAIRMAIRE, p. 352, Ann. Soc. ent. Belgique, xl.
- Praogena tibialis*, p. 699, *subviridis*, p. 700, E. Africa, LINELL, P. U. S. Mus. xviii, n. spp.
- Promethis harmandi*, Sikkim, ALLARD, p. 318, Bull. Soc. ent. France, 1896, n. sp.
- Prosodes laticauda*, Transcaspian, REITTER, p. 38, Deutsche ent. Zeitschr. 1896, n. sp.
- Psammocryptus rugiceps*, Turkestan, REITTER, p. 311, Deutsche ent. Zeitschr. 1896, n. sp.
- Pseudoblaps andrewesii*, p. 14, *ramosus*, p. 15, E. India, FAIRMAIRE, Ann. Soc. ent. Belgique, xl, n. spp.
- Pseudethas*, n. g., near *Ethas*, for *P. quadraticeps*, n. sp., Simla; FAIRMAIRE, p. 57, Ann. Soc. ent. Belgique, xl.
- Pseudolypros ampliocollis*, India, FAIRMAIRE, p. 29, Ann. Soc. ent. Belgique, xl, n. sp.
- Pseudonautes resplendens*, Java, FAIRMAIRE, p. 108, Notes Leyden Mus. xviii, n. sp.
- Pterohelæus bagotensis*, Centr. Australia, BLACKBURN, p. 274, Horn Exped. pt. ii; *P. darwini*, p. 284, *broadhursti*, p. 285, *abdominalis*, p. 286, *tristis*, p. 287, Australia, LEA, P. Linn. Soc. N. S. Wales, 1896: n. spp.
- Ptilonix entomogonoides*, Sikkim, ALLARD, p. 319, Bull. Soc. ent. France, 1896, n. sp.
- Pycnochilus advenus* = (*Delognatha insignis*, Dohrn); FAIRMAIRE, p. 99, Notes Leyden Mus. xviii.
- Pycnuloma*, n. g., p. 99, near *Uloma*, for *P. raffrayi*, n. sp., Singapore, p. 100; FAIRMAIRE, Notes Leyden Mus. xviii.
- Rhopalobates*, n. g., p. 230, near *Nyctobates*, for *R. villardi*, n. sp., Sikkim, p. 231; FAIRMAIRE, Notes Leyden Mus. xviii.
- Rhytinota pubens*, *impolita*, p. 8, *insidiosa*, *tentyrioides*, *substriata*, p. 9, *ovipennis*, p. 10, E. India, FAIRMAIRE, Ann. Soc. ent. Belgique, xl, n. spp.
- Saragus addendus*, Centr. Australia, BLACKBURN, p. 275, Horn Exped. pt. ii, n. sp.
- Scaptus ciliatus*, St. Vincent, CHAMPION, p. 9, Tr. ent. Soc. London, 1896, n. sp.
- Schanicus brunneus*, p. 4, *antillarum*, p. 5, West Indies, CHAMPION, Tr. ent. Soc. London, 1896, n. spp.
- Scleron granulipenne*, India, FAIRMAIRE, p. 16, Ann. Soc. ent. Belgique, xl, n. sp.
- Scleropatrum infimum*, N. India, FAIRMAIRE, p. 57, Ann. Soc. ent. Belgique, xl, n. sp.
- Scolytocaulus*, n. g., p. 98, near *Pycna*, for *S. bouchardi*, n. sp., Sumatra, p. 99; FAIRMAIRE, Notes Leyden Mus. xviii.

- Scotæus xestothorax*, Celebes, HELLER, p. 16, Abh. Mus. Dresden, 1896-97, n. sp.
- Scotinus antavarus*, referred to *Scotinesthes*; ALLUAUD, p. 34, Bull. Soc. ent. France, 1896.
- Scythodonta*, n. g., *Tentyrini*, for *Scythis humeridens*, Reitt.; REITTER, p. 300, Deutsche ent. Zeitschr. 1896.
- Sipirocus*, n. g., p. 103, near *Prioscelis*, for *S. ritsemæ*, n. sp., Sumatra, p. 104; FAIRMAIRE, Notes Leyden Mus. xviii.
- Spiloscapa thalloides*, Pasc., sub *Platydema* = (*crassicornis*, Bates); BLACKBURN, p. 36, Tr. R. Soc. S. Austral. xx.
- Stalagmoptera ruginota*, Transcaspien, REITTER, p. 39, Deutsche ent. Zeitschr. 1896, n. sp.
- Stenosis semicostata*, E. India, FAIRMAIRE, p. 12, Ann. Soc. ent. Belgique, xl, n. sp.
- Steneucyrtus*, n. g., near *Eucyrtus*, for *S. pexicollis*, n. sp., India; FAIRMAIRE, p. 31, Ann. Soc. ent. Belgique, xl.
- Strepsius*, n. g., near *Tenebrio*, for *S. spretulus*, n. sp., Madagascar; FAIRMAIRE, p. 352, Ann. Soc. ent. Belgique, xl.
- Strougylium mirabile*, Somaliland, LINELL, p. 699, P. U. S. Mus. xviii; *S. junkeri*, p. 359, *roseomicans*, p. 360, *adoneum*, *floridum*, p. 361, *rufulum*, *arboricola*, p. 362, *latericium*, p. 363, *sulcicolle*, p. 364, Africa eq., KOLBE, Ent. Zeit. Stettin, lvi; *S. aratum*, *duricolle*, *dorsatum*, India, FAIRMAIRE, p. 35, Ann. Soc. ent. Belgique, xl; *S. cariosipenne*, Pedong, *castanescens*, Kurseong, p. 112, *sulcicolle*, p. 113, *picticolle*, p. 114, Sumatra, FAIRMAIRE, Notes Leyden Mus. xviii; *S. viridi-æneum*, *fossium*, Sikkim, ALLARD, p. 321, Bull. Soc. ent. France, 1896; *S. pictipes*, Celebes, HELLER, p. 16, fig. 15, Abh. Mus. Dresden, 1896-97: n. spp.
- Sympetes acutifrons*, p. 290, *undulatus*, p. 291, W. Australia, LEA, P. Linn. Soc. N. S. Wales, 1896, n. spp.
- Tagonoides somers-smithii*, p. 54, *zabiriformis*, p. 55, N. India, FAIRMAIRE, Ann. Soc. ent. France, 1896; *T. asperula*, Simla, FAIRMAIRE, p. 95, Notes Leyden Mus. xviii: n. spp.
- Talanus ferrugineus*, p. 31, *lævicollis*, p. 32, Antilles, CHAMPION, Tr. ent. Soc. London, 1896, n. spp.
- Tenebrio molitor*, larval metamorphosis; HEYMONS (503), metamorphosis, RENGEL (965).
- Tentyria sommieri*, n. var., *angustata*; KRAATZ, p. 103, Natural. Sicil. (n.s.) i.
- Toxicum tenue*, India, FAIRMAIRE, p. 26, Ann. Soc. ent. Belgique, xl, n. sp.
- Tribolium*: *Tenebrio ferrugineus*, the type is *Cucujid*; WATERHOUSE, p. 230, Ann. Nat. Hist. (6) xvii. *T. ferrugineum*, nomenclature; CHAMPION, p. 82, Ent. Mag. xxxii.
- Tynteria*, n. g., *Tentyrini*, for *Pachychila humerosa*, Fairm.; REITTER, p. 301, Deutsche ent. Zeitschr. 1896.
- Udebra*, n. g., *Opatrinides*, for *U. hauseri*, n. sp., Turkestan; REITTER, p. 236, pl. iii, fig. 6, Wien. ent. Zeit. xv.
- Uloma ruficornis*, Sikkim, ALLARD, p. 319, Bull. Soc. ent. France, 1896; *U. sulcata*, p. 21, pl. i, fig. 4, *antillarum*, p. 22, *grenadensis*, *parvula*, p. 23, Antilles, CHAMPION, Tr. ent. Soc. London, 1896: n. spp.
- Vieta clypeata*, Aden, GAHAN, p. 454, Ann. Nat. Hist. (6) xviii, n. sp.
- Zialas*, Fairm., referred to *Rhysopaussidae*, and figured; WASMANN, p. 149, Ann. Mus. Genova, xxxvii.

## CISTELIDÆ.

- [*Cf.* BLACKBURN (85), CHAMPION (150), FAIRMAIRE (307, 314, 315), PIC (876), REITTER (937), SEIDLITZ (1060), and for omitted title, *Tenebrionidæ*, FAIRMAIRE (306A).]

- Classification of the family ; SEIDLITZ, Ins. Deutschl. v, 2, pp. 1-30.
- Allecula subsulcata*, larva ; FROGGATT, p. 80, P. Linn. Soc. N. S. Wales, 1895.
- A. satsumæ*, Japan, FAIRMAIRE, p. 116, Notes Leyden Mus. xviii ; *A. semicaligata*, *arthritica*, p. 36, *filicornis*, *arcuatipes*, *basitibialis*, p. 37, *brachydera*, *ellipsodes*, p. 38, *diluta*, p. 39, India, FAIRMAIRE, Ann. Soc. ent. Belgique, xl ; *A. estriata*, Kulek, p. 37, *umbilicata*, China, p. 38, SEIDLITZ, Ins. Deutschl. v, 2 ; *A. cuneipennis*, Sumatra, FAIRMAIRE, p. 235, Notes Leyden Mus. xviii : n. spp.
- Alleculopsis*, n. g., p. 361, for *A. deserticola*, n. sp., Transcaspian region, p. 362, and including *Allecula macrophthalma*, Gebl. ; SEMENOW, Mel. biol. xiii.
- Anthracula*, n. g., near *Allecula*, for *A. latifrons*, n. sp., Simla ; FAIRMAIRE, p. 236, Notes Leyden Mus. xviii.
- Apalmia*, n. g., near *Allecula*, for *A. cerambycina*, *villosipes*, p. 60, *crenulata*, p. 61, n. spp., Burma ; FAIRMAIRE, Ann. Soc. ent. Belgique, xl.
- Bolbostetha*, n. g., near *Allecula*, for *B. soleata*, *quadricollis*, n. spp., Singapore ; FAIRMAIRE, p. 117, Notes Leyden Mus. xviii.
- Caulostena*, n. g., near *Mycetochares*, for *C. foveicollis*, n. sp., Madagascar ; FAIRMAIRE, Ann. Soc. ent. Belgique, xl, p. 355.
- Cistelina*, n. g., for *davidis*, Fairm., and *C. sulphurea*, n. sp., Tze-Tchuan ; SEIDLITZ, p. 195, Ins. Deutschl. v, 2.
- Cistelomorpha annuligera*, p. 118, Simla, *densestriata*, Sikkim, p. 119, FAIRMAIRE, Notes Leyden Mus. xviii ; *C. andrewesii*, E. India, FAIRMAIRE, p. 58, Ann. Soc. ent. Belgique, xl : n. spp.
- Cistelopsis*, n. g., for *C. rufina*, p. 39, *validicornis*, p. 40, n. spp., E. India ; FAIRMAIRE, Ann. Soc. ent. Belgique, xl.
- Copistethus*, n. g., for *spadix*, Kies. ; SEIDLITZ, p. 85, Ins. Deutschl. v, 2.
- Cteniopinus*, n. g., p. 200, for part of *Cteniopus*, with *C. koreanus*, n. sp., Korea, p. 203 ; SEIDLITZ, Ins. Deutschl. v, 2.
- Cteniopus intrusus*, Cyprus, SEIDLITZ, p. 210, Ins. Deutschl. v, 2, n. sp.
- Dioxycula*, n. g., near *Dictopsis*, for *D. aranea*, n. sp., Java ; FAIRMAIRE, Notes Leyden Mus. xviii, p. 116.
- Eryx ater*, larva ; KOLBE, p. 5, Zeitschr. Ent. Breslau, xxi.
- Heliotaurus crassidactylus*, *tenuipes*, Spain, p. 228, *subpilosus*, Tunis, p. 232, SEIDLITZ, Ins. Deutschl. v, 2 ; *H. tournieri*, Tangier, PIC, p. 61, Echange, xii : n. spp.
- Hymenalia reticulata*, Mesopotamia, p. 77, *græca*, p. 80, SEIDLITZ, Ins. Deutschl. v, 2, n. spp.
- Hymenorus rufipes*, Lec., systematic position ; HAMILTON, p. 293, Ent. News Philad. vii. *H. obscurus*, larva ; WICKHAM, p. 121, pl. v, fig. 3, J. N. York Ent. Soc. iv.
- H. baudii*, Cyprus, SEIDLITZ, Ins. Deutschl. v, 2 ; *H. indicus*, Chamba, FAIRMAIRE, p. 58, Ann. Soc. ent. Belgique, xl : n. spp.
- Isomira atriceps*, Caucasus, REITTER, p. 75, Wien. ent. Zeit. xv ; *I. ophthalmica*, Central Asia, *intrusa*, Caucasus, SEIDLITZ, p. 107, Ins. Deutschl. v, 2 : n. spp.
- Lobopoda insularis*, p. 33, pl. i, fig. 10, *ebenina*, p. 34, pl. i, fig. 11, Antilles, CHAMPION, Tr. ent. Soc. London, 1896, n. spp.
- Lystronychus tuberculifer*, p. 34, *rufonotatus*, p. 35, Antilles, CHAMPION, Tr. ent. Soc. London, 1896, n. spp.
- Metistete incognita*, Central Australia, BLACKBURN, p. 280, Horn Exped. pt. ii, n. sp.
- Mycetochara (Ernocharis) straussii*, Austrian Alps, SEIDLITZ, p. 166, Ins. Deutschl. v, 2 ; *M. (Ernocharis) koltzei*, E. Siberia, p. 75, *zolutareffi*, Caucasus, *sulcipennis*, Hungary, p. 76, REITTER, Wien. ent. Zeit. xv : n. spp.

- Nesotaurus*, n. g., p. 354, near *Heliotaurus*, for *N. sericans*, n. sp., Madagascar, p. 355; FAIRMAIRE, Ann. Soc. ent. Belgique, xl.
- Odontomophlus*, n. subg., cf. *Omophlus*.
- Omophlus* (*Odontomophlus*) *rosine*, Spain, *forficula*, *laciniatus*, Asia Minor, *crinifer*, Central Asia, *sulcipleuris*, Crete, *compressus*, Greece, p. 263, *furca*, Syria, *furcula*, *pilifer*, Amasia, *foveola*, Greece, *luciolus*, Caucasus, *hirsutus*, Aintab, *O. coriaceus*, Caspian, p. 264, *rugipennis*, *somcheticus*, Caucasus, *laevigatus*, Armenia, *hirtipennis*, Taurus, *excavatus*, *nitidicollis*, Persia, *irrasus*, Asia Minor?, *curtellus*, Syria, *hirtus*, Crete, p. 265, SEIDLITZ, Ins. Deutschl. v, 2, n. spp.
- Podonta brevicornis*, Gallipoli, *soror*, Angora, p. 189, *græca*, Greece, *frater*, Asia Minor, *simplex*, Eubœa, *patagiata*, Amasia, *korbi*, Tarsus, p. 190, SEIDLITZ, Ins. Deutschl. v, 2, n. spp.
- Podontinus*, n. g. for *punctatissimus*, Kies.; SEIDLITZ, p. 197, Ins. Deutschl. v, 2.
- Prionychus cisteloides*, Cyprus, SEIDLITZ, p. 60, Ins. Deutschl. v, 2, n. sp.
- Proctenius* (*Steneryx*) *hauseri*, Central Asia, SEIDLITZ, p. 205, Ins. Deutschl. v, 2, n. sp.
- Pterna*, n. subg. of *Mycetochara*, for *retowskii*, *auricoma*, Reitt.; SEIDLITZ, p. 137, Ins. Deutschl. v, 2.
- Steneryx* and *Balassogloa*, distinguished; SEMENOW, p. 361, Mel. biol. xiii.

## PETRIIDÆ.

- Petriidæ*, n. fam., p. 359, for *Petria*, n. g., p. 363, with *P. tachyptera*, p. 365, *antennata*, p. 366, n. spp., Transcaspian region; SEMENOW, Mel. biol. xiii. *P. nitidicollis*, Transcaspian region; SEMENOW, Annuaire Mus. St. Petersb. 1896, p. 25, n. sp.

## PYTHIDÆ.

- Lissodema cloueti*, Algeria, GUILLEBEAU, p. 245, Bull. Soc. ent. France, 1896, n. sp.
- Sosthenes parvulus*, Grenada, CHAMPION, p. 38, Tr. ent. Soc. London, 1896, n. sp.
- Trichosalpingus* = (*Tellias*), but the systematic position is in *Melandryidæ*; CHAMPION, p. 447, Tr. ent. Soc. London, 1896.

## MELANDRYIDÆ.

- [Cf. ABEILLE (6), FAIRMAIRE (307, 314), REITTER (934).]
- Abulia*, n. g., *Melandryides*, for *A. semitestacea*, n. sp., Madagascar, FAIRMAIRE, p. 459, Ann. Soc. ent. Belgique, xl.
- Alcestoma*, n. g. for *A. serropalpoides*, n. sp., Madagascar; FAIRMAIRE, p. 356, Ann. Soc. ent. Belgique, xl.
- Dircæa lignivora*, characters; LEA, p. 294, P. Linn. Soc. N. S. Wales, 1896.
- Dircæomorpha*, n. g., p. 122, for *D. clavicornis*, n. sp., Pedong, p. 123, FAIRMAIRE, Notes Leyden Mus. xviii.
- Eustrophus punctolineatus*, Madagascar, p. 356, *cuneatus*, Congo, p. 357, FAIRMAIRE, Ann. Soc. ent. Belgique, xl, n. spp.
- Orchesia austrina*, Champ., = (*saltatoria*, Lea); CHAMPION, p. 448, Tr. ent. Soc. London, 1896. *O. picea* and *Abdera affinis*, larvæ; KOLBE, p. 7, Zeitschr. Ent. Breslau, xxi.
- Osphyia cylindromorpha*, Syria, ABEILLE, p. 283, Bull. Soc. ent. France, 1896, n. sp.
- Penthe sumatrensis*, Sumatra, FAIRMAIRE, p. 110, Notes Leyden Mus. xviii, n. sp.

- Talayra elongata*, Macl., = (*orchesioides*, Champ.) ; CHAMPION, p. 447, Tr. ent. Soc. London, 1896.  
*Tetratoma pictipennis*, E. Siberia, REITTER, p. 237, pl. iii, fig. 7, Wien. ent. Zeit. xv, n. sp.

## LAGRIIDÆ.

- [Cf. BLACKBURN (85), CHAMPION (150), FAIRMAIRE (306, 307, 314), LEWIS (709).]  
*Casnonidea brevicollis*, India, FAIRMAIRE, p. 43, Ann. Soc. ent. Belgique, xl ; *C. semisuturata*, New Guinea, FAIRMAIRE, p. 122, Notes Leyden Mus. xviii : n. spp.  
*Heterogria*, n. g. for *H. punctatissima*, *oculata*, *quadraticollis*, p. 42, *sternalis*, p. 43, n. spp., India ; FAIRMAIRE, Ann. Soc. ent. Belgique, xl.  
*Lagria notabilis*, Oshima, LEWIS, p. 341, Ann. Nat. Hist. (6) xvii ; *L. bimarginata*, India, FAIRMAIRE, p. 40, Ann. Soc. ent. Belgique, xl ; *L. subcostata*, India, FAIRMAIRE, p. 59, t. c. : n. spp.  
*Lagriocera*, n. g. for *L. cavicornis*, n. sp., India ; FAIRMAIRE, p. 41, Ann. Soc. ent. Belgique, xl.  
*Lixionica*, n. g., p. 280, for *L. costatipennis*, n. sp., Central Australia, p. 281 ; BLACKBURN, Horn Exped. pt. ii.  
*Lophophyllus maculicollis*, Madagascar, FAIRMAIRE, p. 358, Ann. Soc. ent. Belgique, xl, n. sp.  
*Macrolagria rugipennis*, Oshima, LEWIS, p. 341, Ann. Nat. Hist. (6) xvii, n. sp.  
*Nemostira* = (*Macrolagria*, Lew.) ; FAIRMAIRE, p. 121, Notes Leyden Mus. xviii.  
*N. cremulipennis*, Simla, *nucea*, p. 120, *stictica*, p. 121, Java, FAIRMAIRE, Notes Leyden Mus. xviii, n. spp.  
*Physolagria*, n. g. for *P. mollerii*, n. sp., St. Thomas, W. Africa, FAIRMAIRE (306) p. 5.  
*Staius*, n. g., near *Lophophyllus*, for *S. miricornis*, n. sp., Madagascar ; FAIRMAIRE, p. 359, Ann. Soc. ent. Belgique, xl.  
*Statira antillarum*, p. 36, *vittata*, p. 37, pl. i, fig. 9, Antilles, CHAMPION, Tr. ent. Soc. London, 1896, n. spp.

## ANTHICIDÆ, PEDILIDÆ.

- [Cf. BLACKBURN (85), CHAMPION (150), CHOBAUT (165), PIC (870, 872, 886-899).]  
List of recently described *Xylophilidæ* ; PIC, p. 52, Bull. Soc. zool. France, xxi.  
*Anthicus ovipennis*, Lea = (*inflatus*, Champ.) ; *A. australis* (*Formicomus*) = (*walkeri*, Champ.) ; *A. rarus* = (*australis*, Champ.), *excavatus* = (*triangularis*, Lea), *paululus* = (*delicatulus*, Lea) ; CHAMPION, p. 448, Tr. ent. Soc. London, 1896. *A. binominatus*, n. n. for *mollis*, Casey ; *caseyi*, n. n. for *parallelus*, Casey ; *subtilissimus*, n. n. for *subtilis*, Casey ; *thomasi*, n. n. for *sodalis*, Casey ; PIC, p. 31, Bull. Soc. ent. France, 1896. *A. rubriceps*, n. n. for *exiguus*, Lea ; LEA, p. 295, P. Linn. Soc. N. S. Wales, 1896. *A. exsanguis*, n. n. for *pallidus*, Mac-Lay ; *indicus*, n. n. for *funerarius*, Frm. ; PIC, p. 73, Bull. Soc. ent. France, 1896. *A. saharensis*, note on ; PIC, p. 402, t. c. *A. heroicus*, or *haldemani*, habits ; HOWARD, p. 310, P. ent. Soc. Washington, iii.  
*A. validus*, Spain, p. 179, *kaifensis*, *rubriceps*, Syria, *emaciatus*, Suda Bay, p. 180, PIC, Feuille Natural. xxvi ; *A. abeillei*, pp. 17 & 52, Algeria, *angustulus*, Russia, *fortepunctatus*, *reitteri*, Caucasus, p. 18, *algerinus*,

- Algeria, p. 25, *barnevillei*, Aranjuez, *nigrolineatus*, Egypt, p. 26, PIC, *Miscell. ent.* i ; *A. hammani*, p. 43, *beloni*, *trotommideus*, p. 44, Algeria, PIC, *t. c.* ; *A. theryi*, p. 53, Algeria, PIC, *t. c.* ; *A. sareptanus*, *semicupreus*, S. Russia, *jacqueti*, Tiflis, PIC, p. 126, *t. c.* ; *A. akbesianus*, *tenebricosus*, Syria, PIC, p. 5, *op. cit.* iv ; *A. kabylianus*, p. 167, *major*, p. 168, Algeria, PIC, *Rev. Sci. Bourbonnais*, ix (? n. spp.) ; *A. sericeus*, Algeria, p. 39, *superbus* (? n. sp.), p. 40, PIC, *t. c.* ; *A. longus*, Algeria, PIC, p. 422, *Bull. Soc. ent. France*, 1896 ; *A. saharensis*, p. 375, *A. (Aulacoderus) mecheriensis*, p. 376, Algeria, CHOBOUT, *t. c.* ; *A. obscuripes*, Algeria, PIC, p. 132, *Echange*, xii ; *A. dentatipes*, p. 105, *grandis*, *A. (Aulacoderus) amplus*, *simoni*, p. 106, S. Africa, PIC, *Miscell. ent.* iii ; *A. donckieri*, Congo, *achillei*, p. 42, *rotundipennis*, *brevipennis*, *maximus*, p. 43, Cape, PIC, *t. c.* ; *A. grossepunctatus*, p. 46, *trabeatus*, *communiimacula*, p. 47, *apicatus*, *lictor*, p. 48, *postoculatus*, *semirufus*, p. 49, *funerarius*, p. 50, India, FAIRMAIRE, *Ann. Soc. ent. Belgique*, xl ; *A. sulcipennis*, p. 46, *grenadensis*, p. 48, Antilles, CHAMPION, *Tr. ent. Soc. London*, 1896 ; *A. gibbithorax*, Texas, p. 21, *mexicanus*, Mexico, p. 2, PIC, *Miscell. ent.* ii ; *A. laticornis*, Brazil, PIC, p. 42, *op. cit.* iv : n. spp.
- Copobæus bicolor*, Brazil, PIC, p. 68, *Bull. Soc. ent. France*, 1896, n. sp.
- Egestria sulcicollis*, Centr. Australia, BLACKBURN, p. 281, *Horn. Exped. pt. ii*, n. sp.
- Formicomus minutus*, Cape, PIC, p. 42, *Miscell. ent.* iii ; *F. rufopiceus*, India, FAIRMAIRE, p. 45, *Ann. Soc. ent. Belgique*, xl ; *F. paviei*, Cambodia, PIC, p. 250, *Bull. Mus. Paris*, 1896 ; *F. theresæ*, p. 170, *niger*, p. 171, PIC, *Naturaliste*, 1896 : n. spp.
- Macratrìa* : catalogue of the species ; PIC, pp. 120–122, *Echange*, xii.
- M. diversipes*, p. 43, *infima*, p. 44, India, FAIRMAIRE, *Ann. Soc. ent. Belgique*, xl ; *M. maculata*, Sumbawa, p. 158, *forticornis*, *grandis*, New Guinea, *vicina*, Perak, *pallidiceps*, *banghausi*, Australia, PIC, *Naturaliste*, 1896 ; *M. femoralis*, St. Vincent, CHAMPION, p. 45, pl. i, fig. 16, *Tr. ent. Soc. London*, 1896 : n. spp.
- Mecynotarsus dorsovarius*, India, FAIRMAIRE, p. 46, *Ann. Soc. ent. Belgique*, xl, n. sp.
- Micranthicus pulcher*, King = (*brachypterus*, Champ.) : CHAMPION, p. 448, *Tr. ent. Soc. London*, 1896.
- Notoxus monoceros*, attracted by *Meloë* ; TRAZET, p. 104, *Bull. Soc. ent. France*, 1896.
- Ochtenomus elongatus*, Cape, PIC, p. 44, *Miscell. ent.* iii, n. sp.
- Scraptiã punctata*, Cape, PIC, p. 184, *Naturaliste*, 1896 ; *S. pulicaria*, India, FAIRMAIRE, p. 45, *Ann. Soc. ent. Belgique*, xl : n. spp.
- Tomoderus fasciatus*, Cape, PIC, p. 42, *Miscell. ent.* iii ; *T. sulcifer*, *javanus*, Java, PIC, p. 126, *Miscell. ent.* i : n. spp.
- Walesius*, n. g., near *Anthicus*, for *W. theresæ*, n. sp., Australia, PIC, p. 184, *Naturaliste*, 1896.
- Xylophilus* (? *Anidorus*) *syriacus*, Syria, PIC, p. 51, *Bull. Soc. zool. France*, xxi ; *X. (Eugenes) kabylianus*, Algeria, PIC, p. 38, *Rev. Sci. Bourbonnais*, ix (n. sp. ?) ; *X. (Olotelus) longipennis*, Cape, PIC, p. 41, *Miscell. ent.* iii ; *X. armipes*, *scapularis*, p. 44, *rufinus*, p. 45, India, FAIRMAIRE, *Ann. Soc. ent. Belgique*, xl ; *X. nigricollis*, p. 43, pl. i, fig. 14, *guttatus*, fig. 15, p. 44, Antilles, CHAMPION, *Tr. ent. Soc. London*, 1896 : n. spp.

## PYROCHROIDÆ.

- Dendroides cyanipennis*, Akbés, PIC, p. 141, *Miscell. ent.* iv, n. sp.
- Pyrochrou coccinea*, larva ; KOLBE, p. 7, *Zeitschr. Ent. Breslau*, xxi.

MORDELLIDÆ.

- [*Cf.* CHAMPION (150), CHOBAUT (164), XAMBEU (161).]  
*Anaspis vaulogeri*, Algeria, CHOBAUT, p. 200, Bull. Soc. ent. France, 1896, n. sp.  
*Conalia ebenina*, p. 49, *fulvoplagiata*, p. 50, Antilles, CHAMPION, Tr. ent. Soc. London, 1896, n. spp.  
*Mordella fasciata*, metamorphoses; XAMBEU, p. 89, Mœurs, vi. *M. caroli*, n. n. for *waterhousei*, Lea; LEA, p. 295, P. Linn. Soc. N. S. Wales, 1896. *M. graphiptera*, Ch., = (*fasciata*, Lea), *pygmæa*, Ch., = (*uniformis*, Lea), *fulvonotata*, Ch., = (*distincta*, Lea); CHAMPION, p. 448, Tr. ent. Soc. London, 1896. *M. aterrima*, Macl., referred to *Tomoxia*; CHAMPION, p. 449, t. c.  
*M. sexguttata*, St. Vincent, CHAMPION, p. 48, Tr. ent. Soc. London, 1896, n. sp.  
*Mordellistena stenidea*, metamorphoses; XAMBEU, p. 131, Ann. Soc. Linn. Lyon, xliii. *M. austrina*, Champ. = (*Mordella setipes*, Lea); CHAMPION, p. 448, Tr. ent. Soc. London, 1896.  
*M. pallida*, St. Vincent, CHAMPION, p. 50, Tr. ent. Soc. London, 1896, n. sp.

RHIPIDOPHORIDÆ.

- Pelecotoides simplicicornis*, Madagascar, FAIRMAIRE, p. 359, Ann. Soc. ent. Belgique, xl, n. sp.  
*Rhipidophorus (Myodes) sancti-vicentis*, Antilles, CHAMPION, p. 51, Tr. ent. Soc. London, 1896, n. sp.  
*Rhipiphorus caffer* at Aden, note on; GAHAN, p. 456, Ann. Nat. Hist. (6) xviii.

CANTHARIDÆ.

- [*Cf.* CHAMPION (150), ESCHERICH (300, 301, 302), FAIRMAIRE (310, 314), GAHAN (394), HORN (518), LINELL (718), PIC (875, 876), REITTER (936), SEMENOW (1069), WICKHAM (1243).]  
*Calenas ornaticollis, semenowi*, Persia, ESCHERICH, p. 122, Wien. ent. Zeit. xv, n. spp.  
*Cantharis vesicatoria*, larva and larval history; KOLBE, pp. 9-12, Zeitschr. ent. Breslau, xxi.  
*C. holocyanea*, Djibouti, FAIRMAIRE, p. 225, Bull. Soc. ent. France, 1896; *C. ardosia, semitestacea*, p. 51, *incompleta*, p. 52, *usta*, p. 54, India, FAIRMAIRE, Ann. Soc. ent. Belgique, xl; *C. subvittata*, Rangoon, FAIRMAIRE, p. 62, t. c. : n. spp.  
*Cephaloon piceum*, p. 380, *bicolor*, p. 381, N. America, HORN, P. Calif. Ac. (2) vi, n. spp.  
*Cerocoma prochaskana*, Akbés, REITTER, p. 267, Wien. ent. Zeit. xv, n. sp.  
*Ceroctis yerburyi*, Aden, GAHAN, p. 456, Ann. Nat. Hist. (6) xviii, n. sp.  
*Coryna bleusei*, Algeria, CHOBAUT, p. 376, Bull. Soc. ent. France, 1896, n. sp.  
*Ctenopus sinuatipennis*, Fairm. = (*oxyanus*, Sem., and *hauseri*, Reitt.); REITTER, p. 283, Wien. ent. Zeit. xv.  
*C. carinifer*, p. 380, *angeri*, p. 381, Transcaspian, SEMENOW, Annuaire Mus. St. Petersb. 1896, n. spp.  
*Cylindrothorax*, n. n. for *Sagitta*, Esch.; ESCHERICH, p. 28, Wien. ent. Zeit. xv.  
*Hapalus cinctus*, Algeria, PIC, p. 140, Miscell. ent. iv, n. sp.

- Leptopalpus quadrimaculatus*, Lahej, GAHAN, p. 457, Ann. Nat. Hist. (6) xviii, n. sp.
- Lydulus*: characters and position; SEMENOW, p. 55, Annuaire Mus. St. Petersb. 1896.
- L. granulidorsis*, Kuldsha, SEMENOW, Annuaire Mus. St. Petersb. p. 59, n. sp.
- Lydus*: revision of the genus; ESCHERICH, pp. 193–236, Deutsche ent. Zeitschr. 1896.
- L. (Hulosimus) castaneus*, Caucasus, ESCHERICH, p. 27, Wien. ent. Zeit. xv; *L. gibbiger*, Asia Minor, *europæus*, Greece, p. 208, *halbhuberi*, East Mediterranean, p. 210, *L. (Alos.) longicollis*, Persia, p. 213, *abeillei*, Asia Minor, p. 215, ESCHERICH, Deutsche ent. Zeitschr. 1896: n. spp.
- Lytta vesicatoria*, n. var. *leodi*; ESCHERICH, p. 28, Wien. ent. Zeit. xv.
- Meloidæ* of Canada; WICKHAM, pp. 31–35, Canad. Ent. xxviii.
- Meloë*: synonymy of palæarctic; ESCHERICH, pp. 28–30, Wien. ent. Zeit. xv.
- M. potelii*, Kiangsi, FAIRMAIRE, p. 123, Notes Leyden Mus. xviii, n. sp.
- Mylabris atricornis, uncinata*, Somaliland, LINELL, p. 700, P. U. S. Mus. xviii, n. spp.
- Negalius marmoratus*, note; HORN, p. 379, P. Calif. Ac. (2) vi.
- Zonabris wartmanni*, Algeria, PIC, p. 62, Echange, xii, n. sp.
- Zonitis (Euzonitis) bombycina*, Asia Minor, ESCHERICH, p. 27, Wien. ent. Zeit. xv; *Z. (Euzonitis) angeriana*, Transcaspian, SEMENOW, p. 379, Annuaire Mus. St. Petersb. 1896; *Z. lineata*, Grenada, CHAMPION, p. 53, Tr. ent. Soc. London, 1896: n. spp.

#### ÆDEMERIDÆ.

- [*Cf.* ABEILLE (6), CHAMPION (150), FAIRMAIRE (310, 314, 315), G. H. HORN (518), REITTER (938), XAMBEU (1261).]
- Revision of N. American; HORN, P. Calif. Ac. (2) vi, pp. 382–421.
- Ananca longipennis*, Himalaya, p. 124, *nervulata*, Borneo, *nigricauda*, Sumatra, p. 125, FAIRMAIRE, Notes Leyden Mus. xviii, n. spp.
- Alloxacis*, n. g., p. 395, with *A. floridana*, Florida, *nitidula*, Lower California, p. 396, n. spp., and *Nacerdes dorsalis* and *Probosca pleuralis*, Lec.; HORN, P. Calif. Ac. (2) vi.
- Asclera tenietensis*, Algeria, ABEILLE, p. 283, Bull. Soc. ent. France, 1896; *A. nigricans*, Simla, FAIRMAIRE, p. 238, Notes Leyden Mus. xviii: n. spp.
- Culopus serraticornis*, metamorphoses; XAMBEU, p. 135, Ann. Soc. Linn. Lyon, xliii.
- Ohitona martini*, referred to *Ananca*; GAHAN, p. 457, Ann. Nat. Hist. (6) xviii.
- C. martini*, Arabia, FAIRMAIRE, p. 224, Bull. Soc. ent. France, 1896, n. sp.
- Chrysanthia repanda*, N. America, HORN, p. 408, P. Calif. Ac. (2) vi, n. sp.
- Copidita suturalis*, p. 401, *mimetica*, p. 402, N. America, HORN, P. Calif. Ac. (2) vi; *C. costata*, p. 40, *quadrilineata*, p. 41, pl. i, fig. 12, *frontalis*, fig. 13, *grenadensis*, p. 42, Antilles, CHAMPION, Tr. ent. Soc. London, 1895: n. spp.
- Dryops bomfordii*, Simla, FAIRMAIRE, p. 237, Notes Leyden Mus. xviii, n. sp.
- Nerdanus*, n. g., near *Pseudolytus*, for *N. cæruleus*, n. sp., Celebes; FAIRMAIRE, p. 239, Notes Leyden Mus. xviii.
- Ædemera nasalis*, with var. *rostrifera*, Thian-Schan, REITTER, p. 290, Wien. ent. Zeit. xv, n. sp.
- Oncomera acutiventris*, hab. ? *stylifera*, Greece, ABEILLE, p. 284, Bull. Soc. ent. France, 1896, n. spp.



- Oxaxis lævicollis*, p. 412, *fragilis*, p. 413, *sororia*, p. 414, *floridana*, *grisea*, p. 415, *dubiosa*, p. 418, *subfusca*, p. 419, *debilis*, p. 420, N. America, HORN, P. Calif. Ac. (2) vi; *O. antillarum*, St. Vincent, CHAMPION, p. 39, Tr. ent. Soc. London, 1896 : n. spp.
- Schistopsclaphus*, n. g., near *Ananca*, p. 126, for *S. apicatus*, n. sp., Sumatra, p. 127, FAIRMAIRE, Notes Leyden Mus. xviii.
- Sessinia atkinsoni* and *sublineata* have not previously been recorded; CHAMPION, p. 448, Tr. ent. Soc. London, 1896.
- Xanthochroa testacea*, p. 393, *marina*, p. 394, *centralis*, p. 395, N. America, HORN, P. Calif. Ac. (2) vi, n. spp.

#### STREPSIPTERA.

- Natural history, with special reference to Nasonoff's recent work; MEINERT (774).  
Morphology of female; MEINERT (775).

#### CURCULIONIDÆ.

- [The following memoirs relate to *Curculionidæ*, viz., APFELBECK (25), BLACKBURN (85), CROISSANDEAU (226), DESBROCHERS (241, 242, 243), FAIRMAIRE (307, 309, 310), FAUST (316-320), GARBASSO (399), GOZIS (418), HAMILTON (468), HARTMANN (480), HELLER (485, 486, 489), LEA (697), LINELL (718), MACDOUGALL (728), MEYER (790, 791), PÉRINGUEY (862), PETRI (865), PIC (872-874, 900, 901), REITTER (934, 937, 938, 939, 963, 964), SCHNEIDER (1035), SCHULTZE (1042, 1043), SHARP (1076), STIERLIN (1128, 1129), WICKHAM (1242), XAMBEU (1261).]
- Acalles*: synonymy of palæarctic; MEYER, p. 16, Wien. ent. Zeit. xv.  
*A. humerosus*, metamorphoses; XAMBEU, p. 162, Ann. Soc. Linn. Lyon, xliii. *A. punctaticollis*, metamorphoses; XAMBEU, p. 115, Mœurs, vi.
- A. uncatius*, Algeria, DESBROCHERS, p. 47, Frelon, v; *A. reitteri*, Caucasus, *merkli*, Constantinople, p. 13, *lederi*, Caucasus, *globulus*, Tangier, p. 14, *affinis*, Sardinia, *aptus*, Algeria, p. 15, MEYER, Wien. ent. Zeit. xv; *A. fausti*, S. Europe, MEYER, p. 214, t. c. : n. spp.
- Acamptus rigidus*, larva; WICKHAM, p. 123, pl. v, fig. 5, J. N. York Ent. Soc. iv.
- Acantholophus marshami*, habits; FROGGATT, p. 77, P. Linn. Soc. N. S. Wales, 1895.
- A. tatei*, *simplex*, Central Australia, BLACKBURN, p. 292, Horn Exped. pt. ii, n. spp.
- Acicnemis dumalis*, p. 151, *ibis*, p. 152, Java, FAUST, Ent. Zeit. Stettin, lvii, n. spp.
- Acnemiscelis*, n. g., *Hydronomides*, p. 104, for *A. araneipes*, n. sp., Hamburg, p. 104 bis; DESBROCHERS, Frelon, v.
- Adorhabdotus*, n. g., *Oosomini*, for *Peribrotus bilincellus* (sic), Chev.; FAUST, p. 133, Deutsche ent. Zeitschr. 1896.
- Agametis miniata*, Celebes, HELLER, p. 19, fig. 8, Abh. Mus. Dresden, 1896-97, No. 3, n. sp.
- Alaocyba*: revision, with synonymy; CROISSANDEAU, Natural. Sicil. (n.s.) i, pp. 21-40.
- Alcides perturbatus*, p. 149, *dejeani*, p. 150, Java, FAUST, Ent. Zeit. Stettin, lvii, n. spp.
- Anomoederus interstitialis*, E. Africa, FAUST, Deutsche ent. Zeitschr. 1896, p. 135, n. sp.
- Anomoemerus*, n. g., p. 71, *Cryptorhynchini*, for *A. tristis*, n. sp., Venezuela, p. 72; FAUST, Ent. Zeit. Stettin, lvii.

- Apion aeneum*, metamorphoses ; XAMBEU, p. 125, Mœurs, vi.  
*A. cylindricum*, Central Europe, p. 6, *obtusiusculum*, Tunis, p. 9, *dilatipes*, Caucasus, *humerosum*, S. Russia, p. 10, *obtusipenne*, S. Europe, p. 11, *angustipenne*, Spain, p. 12, *gribodoi*, Italy, p. 78, *armeniicum*, Armenia, *strictum*, Caucasus, p. 85, *gracilitubus*, Algeria, p. 107, *dubium*, Spain, p. 128, *cyanelum*, Caucasus, p. 138, *impressidorsum*, Asia Minor, p. 140, *externestriatum*, Caucasus, p. 145, *lucidithorax*, Sardinia, p. 156, *antennale*, Sicily, p. 157, DESBROCHERS, Frelon, v, n. spp.  
*Apoderus humeralis*, habits ; FLEUTIAUX, p. 398, Bull. Soc. ent. France, 1896.  
*A. gentilis*, Zambezi, PÉRINGUEY, p. 189, Tr. ent. Soc. London, 1896, n. sp.  
*Apteromechus*, n. g., *Cryptorhynchini*, for *A. suffrago*, n. sp., Venezuela ; FAUST, p. 82, Ent. Zeit. Stettin, lvii.  
*Arammichnus lurinoides*, Ordubad, REITTER, p. 237, pl. iii, fig. 8, Wien. ent. Zeit. xv, n. sp.  
*Asphalmus*, n. g., *Otiorhynchides*, for *A. japonicus*, n. sp. ; SHARP, p. 95, Tr. ent. Soc. London, 1896.  
*Athesapenta scutellaris*, E. Africa, FAUST, p. 145, Deutsche ent. Zeitschr. 1896, n. sp.  
*Atoporhynchus periteloides*, Algeria, DESBROCHERS, p. 20, Frelon, v, n. sp.  
*Attactagenus similis*, *modestus*, Spain, PIC, p. 94, Miscell. ent. iv, n. spp.  
*Attelabus carneolus*, Natal, PÉRINGUEY, p. 188, Tr. ent. Soc. London, 1896, n. sp.  
*Atychoria rudis*, Central Australia, BLACKBURN, p. 294, Horn Exped. pt. ii, n. sp.  
*Bagous elongatus*, Oran, PIC, p. 114, Miscell. ent. iv ; *B. semilunatus*, Algeria, p. 97, *subcostulatus*, Spain, *guttatus*, p. 98, *gracilentus*, Algeria, p. 99, *rudicollis*, Tangier, p. 100, *tenietensis*, *inermis*, p. 101, Algeria, *pilipes*, Hungary, p. 102, *egyptiacus*, Egypt, p. 103, DESBROCHERS, Frelon, v : n. spp.  
*Balaninus dentipes* = (*hilgendorfi*, Har.) ; LEWIS, p. 341, Ann. Nat. Hist. (6) xvii.  
*Baris morio*, var. = (*lethierryi*, Desbr.) ; REITTER, p. 17, Wien. ent. Zeit. xv. *B. hochuthi* is a valid species, not a var. of *semistriata* ; FAUST, Deutsche ent. Zeitschr. 1896, p. 146.  
*Baridius squamulatus*, PIC, p. 115, Miscell. ent. iv ; *B. nobilis*, Algeria, DESBROCHERS, p. 105 bis [follows 104 bis], Frelon, v ; *B. utibilis*, Java, FAUST, p. 156, Ent. Zeit. Stettin, lvii : n. spp.  
*Barypithes antoni*, referred to *Brachysomus* ; REITTER, p. 282, Wien. ent. Zeit. xv. *B. campanyoi*, metamorphoses ; XAMBEU, p. 147, Ann. Soc. Linn. Lyon, xliii.  
*Blosyrus japonicus*, Japan, SHARP, p. 88, Tr. ent. Soc. London, 1896, n. sp.  
*Boscarius*, n. g., near *Sophrorhinus*, for *B. fuscinasus*, n. sp., Madagascar ; FAIRMAIRE, p. 475, Ann. Soc. ent. Belgique, xv.  
*Bothrobatys venosus*, p. 66, Venezuela ; FAUST, Ent. Zeit. Stettin, p. 67.  
*Brachybaris aeneopicea*, Venezuela, FAUST, p. 106, Ent. Zeit. Stettin, lvii, n. sp.  
*Brachycerus hofmanni*, E. Africa, FAUST, p. 72, Ann. Soc. ent. Belgique, xl ; *B. indutus*, *divergens*, p. 187, *effertus*, p. 188, Zambezi, PÉRINGUEY, Tr. ent. Soc. London, 1896 : n. spp.  
*Brachycyrtus cicur*, Madagascar, FAUST, p. 321, Ent. Zeit. Stettin, lvi, n. sp.  
*Brachyderes albicans*, Algeria, DESBROCHERS, p. 36, Frelon, v, n. sp.

- Casidermus*, n. g., near *Euderes*, for *C. plicicollis*, n. sp., Madagascar; FAIRMAIRE, p. 474, Ann. Soc. ent. Belgique, xl.
- Catapionus obscurus*, Japan, SHARP, p. 90, Tr. ent. Soc. London, 1896, n. sp.
- Catasarcus farinosus*, Centr. Australia, BLACKBURN, p. 288, Horn Exped. pt. ii, n. sp.
- Cathormiocerus angustulus*, Algeria, PIC, p. 115, Miscell. ent. iv; *C. cordatus*, Algeria, p. 27, *fuentei*, Spain, p. 28, *brevithorax*, Pyrenees, p. 29, *stierlini*, Algeria, p. 30, *hircus*, Sardinia, p. 31, *pici*, Algeria, p. 32, *moraguesi*, Majorca, p. 33, DESBROCHERS, Frelon, v : n. spp.
- Catolethrus interstitialis*, Venezuela, FAUST, p. 132, Ent. Zeit. Stettin, lvii, n. sp.
- Caulostrophus vaulgeri*, Algeria, PIC, p. 101, Rev. Sci. Bourbonnais, ix, n. sp.
- Centrinopsis comparabilis*, Java, FAUST, p. 158, Ent. Zeit. Stettin, lvii, n. sp.
- Centrinus tolerans*, p. 113, *colonus*, p. 115, *venezolanus*, p. 116, *lentus*, *solatus*, p. 117, *albosignatus*, p. 119, *alienus*, p. 120, *astutus*, p. 121, *gratiosus*, p. 122, *graphicus*, p. 123, *juvenilis*, p. 124, Venezuela, FAUST, Ent. Zeit. Stettin, lvii, n. spp.
- Ceratocrates haroldi*, E. Africa, FAUST, p. 126, Deutsche ent. Zeitschr. 1896, n. sp.
- Ceuthorrhynchidius nigro-terminatus* and *mixtus* : characters; CHAMPION, p. 30, Ent. Mag. xxxii.
- C. baldensis*, Monte Baldo, p. 263, *carniolicus*, Carinthia, p. 287, *pygmaeus*, Algeria, p. 288, SCHULTZE, Deutsche ent. Zeitschr. 1896, n. spp.
- Ceuthorrhynchus* and *Ceuthorrhynchidius* : numerous synonymical and faunistic notes; SCHULTZE, pp. 257-260 and 289-291, Deutsche ent. Zeitschr. 1896. *Ceuthorrhynchus pervicax* and *suturellus*, *querceti* and *consputus*, *leprieuri* and *obesulus* distinguished, *erysimi* = (*cærulescens*, Gyll.); WEISE, p. 183, Deutsche ent. Zeitschr. 1896. *C. terminatus*, habits; DOUGÉ, p. 40, Bull. Soc. ent. France, 1896.
- C. (Allodactylus) olceseii*, Tangier, *C. (Nedyus) rudis*, Oran, p. 95, *C. (Hypurus) sphaeroides*, Tiaret, p. 96, PIC, Miscell. ent. iv; *C. tenietensis*, p. 48, *caroli*, p. 49, Algeria, DESBROCHERS, Frelon, v; *C. fallaciosus*, Tangier, p. 55, *adversus*, *mus*, p. 56, *insidiator*, p. 57, Algeria, *angustifauces*, Isère, p. 58, *letourneuxi*, Egypt, p. 59, *annibal*, Algeria, p. 60, DESBROCHERS, t. c.; *C. amplipennis*, Hungary, p. 263, *kænigi*, Caucasus, p. 265, *larvatus*, Europe and Siberia, *pulchellus*, Transcaucasus, p. 266, *angulicollis*, p. 268, *millefolii*, p. 269, *edentulus*, p. 271, Central Europe, *maculaquadra*, Asturias, p. 272, *tubulatus*, Algeria, p. 273, *brevicollis*, Transcaucasus, *cingulatus*, S. Europe, p. 274, *gibbicollis*, p. 275, *aratridens*, p. 276, *piriformis*, p. 277, S. Europe, *cyanescens*, Algeria, p. 278, *biplagiatus*, Araxes Valley, p. 279, *rubiginosus*, Spain, p. 280, *breviusculus*, Sicily, p. 281, *bicollaris*, Banat, p. 282, *inhumeralis*, N. Spain, p. 283, *micros*, Carinthia, p. 284, *quadrangularis*, Araxes Valley, p. 285, *nigritulus*, Hungary, *nigritarsis*, Tiflis, p. 286, SCHULTZE, Deutsche ent. Zeitschr. 1896; *C. pauper*, p. 44, *mendicus*, p. 46, Araxes Valley, FAUST, t. c. : n. spp.
- Chalcocybebus* : synonymy, table of forms, n. varr.; HELLER, pp. 19-24, Notes Leyden Mus. xviii.
- Charactocnemus*, n. g., *Ambatini*, p. 185, for *C. hintzi*, n. sp., E. Africa, p. 187, pl. i, figg. 1a-g; HARTMANN, Deutsche ent. Zeitschr. 1896.
- Chaunoderus brevicollis*, p. 117, *subglaber*, p. 118, *marginalis*, p. 119, E. Africa, FAUST, Deutsche ent. Zeitschr. 1896, n. spp.
- Chiloneus murinus*, Tunis, DESBROCHERS, p. 41, Frelon, v, n. sp.
- Chlorophanus* : sexual characters, p. 110, *C. grandis*, n. varr. *lugubris*, *metallescens*, p. 111; SHARP, Tr. ent. Soc. London, 1896.

- C. planus*, Japan, SHARP, p. 111, Tr. ent. Soc. London, 1896, n. sp.
- Cimbus mesopotamicus*, Mesopotamia, *sitonoides*, Jeddah, PIC, p. 42, Miscell. ent. iv; *C. cribrosus*, Djibouti, FAIRMAIRE, p. 225, Bull. Soc. ent. France, 1896; *C. viridulus*, Zambezi, PÉRINGUEY, p. 185, Tr. ent. Soc. London, 1896 : n. spp.
- Cionus goricus*, Transcaucasus, SCHULTZE, p. 292, Deutsche ent. Zeitschr. 1896, n. sp.
- Cleonus nossibianus*, Nossi-Bé, FAIRMAIRE, p. 468, Ann. Soc. ent. Belgique, xl, n. sp.
- Codiosoma spadix*, metamorphoses; XAMBEU, p. 167, Ann. Soc. Linn. Lyon, xliii.
- Codmius*, n. g., *Campyloscelini*, for *C. hildebrandti*, n. sp., Madagascar; FAUST, p. 327, Ent. Zeit. Stettin, lvi.
- Cæliodes*, cf. *Cælogaster*.
- C. plagiatus*, Asia Minor, p. 50, *edoughensis*, *bicoloratus*, p. 51, *C. (Oxyonyx) monticola*, Pyrenees, p. 52, *faustinus*, Caucasus, *C. (Stenocharus) litura-alba*, Tokat, p. 53, DESBROCHERS, Frelon, v; *C. pallidulus*, Turkey, SCHULTZE, p. 261, Deutsche ent. Zeitschr. 1896 : n. spp.
- Cælogaster*, n. subg. of *Cæliodes*, for *C. caviventris*, n. sp., Algeria; SCHULTZE, p. 262, Deutsche ent. Zeitschr. 1896.
- Cælomerus aenescens*, Venezuela, FAUST, p. 104, Ent. Zeit. Stettin, lvii, n. sp.
- Cælosternus molestus*, p. 86, *clientellus*, p. 88, Venezuela, FAUST, Ent. Zeit. Stettin, lvii, n. spp.
- Cænopsimorphus*, n. g. for *C. porculus*, n. sp., Tunis; DESBROCHERS, p. 175, Frelon, v.
- Cænopsis brevisetis*, Spain, DESBROCHERS, p. 26, Frelon, v; *C. pici*, Algeria, DESBROCHERS, p. 175, t. c. : n. spp.
- Corigetus brevirostris*, Java, FAUST, p. 140, Ent. Zeit. Stettin, lvii, n. sp.
- Cossonus biseriatus*, *ignavus*, Java, FAUST, p. 163, Ent. Zeit. Stettin, lvii; *C. integricollis*, p. 317, *impressifrons*, p. 318, Australia, LEA, P. Linn. Soc. N. S. Wales, 1896; *C. segnis*, p. 134, *cognatus*, p. 135, Venezuela, FAUST, Ent. Zeit. Stettin, lvii : n. spp.
- Cratopus viridisparus*, Aldabra, FAIRMAIRE, p. 222, Bull. Soc. ent. France, 1896, n. sp.
- Cryptometopus*, n. g., *Cryptorhynchini*, for *C. personatus*, n. sp., Venezuela; FAUST, p. 73, Ent. Zeit. Stettin, lvii.
- Cubicorhynchus dilatiticeps*, Central Australia, BLACKBURN, Horn Exped. pt. ii, n. sp.
- Cyclomaurus conicirostris*, Tiaret, PIC, p. 114, Miscell. ent. iv; *C. squamans*, Tunis, p. 20, *bogarhiensis*, p. 21, *kabylianus*, *tenuitarsis*, p. 22, Algeria, DESBROCHERS, Frelon, v; *C. oblitus*, p. 173, *persimilis*, p. 174, Algeria, DESBROCHERS, t. c. : n. spp.
- Cydmaea fumosa*, Central Australia, BLACKBURN, p. 297, Horn Exped. pt. ii, n. sp.
- Cyllophorus imitator*, W. Africa, FAUST, p. 312, Ent. Zeit. Stettin, lvi, n. sp.
- Cyphoides*, n. g., *Cyphides*, for *C. impressifrons*, p. 701, *foveicollis*, p. 702, n. spp., Somaliland; LINELL, P. U. S. Mus. xviii.
- Cyrionyx*, n. g., p. 97, *Pantotelini*, for *C. biplagiatus*, p. 98, *rufofemoratus*, p. 99, n. spp., Venezuela; FAUST, Ent. Zeit. Stettin, lvii.
- Cyrtolepus caroli*, *dilatipes*, Algeria, PIC, p. 43, Miscell. ent. iv; *C. biskrensis*, p. 23, *angustirostris*, p. 24, *assimilis*, p. 25, Algeria, DESBROCHERS, Frelon, v; *C. opacus*, Algeria, DESBROCHERS, p. 172, t. c. n. spp.
- Derelomus antigæ*, distinguished; REITTER, p. 272, Wien. ent. Zeit. xv.

- Dermatodes perlatus*, Java, FAUST, p. 137, Ent. Zeit. Stettin, lvii; *D. candidus*, Celebes, HELLER, p. 17, fig. 7, Abh. Mus. Dresden, 1896-97, No. 3 : n. spp.
- Desmidophorus rousiographis*, p. 476, *cineritius*, *grisescens*, *vinosus*, p. 477, *præustus*, *ænobarbus*, p. 478, *fulvidus*, p. 479, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique, xl, n. spp.
- Dialeptopus echinatus*, p. 295, *longipes*, p. 296, *sordidus*, p. 297, W. Australia, LEA, P. Linn. Soc. N. S. Wales, 1896, n. spp.
- Diallobius*, n. g., near *Phyllobius*, for *D. inornatus*, *mundus*, p. 104, *lewisi*, p. 105, n. spp., Japan; SHARP, Tr. ent. Soc. London, 1896.
- Dichotrachelus verrucosus*, metamorphoses; XAMBEU, p. 155, Ann. Soc. Linn. Lyon, xlii.
- Dorytomus vorax*, metamorphoses; XAMBEU, p. 119, Mœurs, vi.
- Dyscerus jordani*, Java, FAUST, p. 145, Ent. Zeit. Stettin, lvii, n. sp.
- Echinonotus*, n. g., *Cryptorhynchini*, for *E. rudis*, n. sp., Venezuela; FAUST, p. 58, Ent. Zeit. Stettin, lvii.
- Ectyrsus pustulatus*, p. 33, *albohirtus*, p. 34, Venezuela, FAUST, Ent. Zeit. Stettin, lvii, n. spp.
- Ellimenistes bellus*, E. Africa, FAUST, p. 121, Deutsche ent. Zeitschr. 1896, n. sp.
- Elytrodon cloueti*, Algeria, DESBROCHERS, p. 63, Frelon, v, n. sp.
- Embrithes plagiatus*, p. 70, *miser*, p. 71, E. Africa, FAUST, Ann. Soc. ent. Belgique, xl; *E. concinnus*, E. Africa, FAUST, p. 120, Deutsche ent. Zeitschr. 1896 : n. spp.
- Emplesis ænigmatica*, Central Australia, BLACKBURN, Horn Exped. pt. ii, n. sp.
- Entimus* : colour of scales; GARBASSO (399).
- Epiphylax murina*, Madagascar, FAIRMAIRE, p. 473, Ann. Soc. ent. Belgique, xl, n. sp.
- Episomus mundus*, Japan, SHARP, p. 93, Tr. ent. Soc. London, 1896, n. sp.
- Eubulomus*, n. g., p. 84, *Cryptorhynchini*, for *E. sticticus*, n. sp., Venezuela; FAUST, p. 85, Ent. Zeit. Stettin, lvii.
- Eugallus*, n. g., near *Stigmatrachelus* and *Desmidophorus*, for *E. lacteocinctus*, n. sp., Madagascar; FAIRMAIRE, p. 464, Ann. Soc. ent. Belgique, xl.
- Eugithopus isabellinus*, Malang, *lugubris*, Java, FAUST, p. 160, Ent. Zeit. Stettin, lvii, n. spp.
- Eugnathus* : systematic position; SHARP, p. 112, Tr. ent. Soc. London, 1896.
- Eugnoristus arciferus*, Madagascar, FAIRMAIRE, p. 480, Ann. Soc. ent. Belgique, xl, n. sp.
- Eulechriops erythroleucus*, p. 91, *trifasciatus*, p. 92, *gracilis*, p. 93, *perplexus*, p. 94, Venezuela; FAUST, Ent. Zeit. Stettin, lvii.
- Eumyllocerus*, n. g., *Otiorhynchides*, for *E. gratiosus*, n. sp., Japan; SHARP, p. 109, Tr. ent. Soc. London, 1896.
- Euretus*, n. g., *Brachycerides*, for *E. aurivillii*, n. sp., Cape Colony; PÉRIN-GUEY, p. 186, Tr. ent. Soc. London, 1896.
- Euscepes bicolor*, p. 45, *fasciatus*, p. 47, Venezuela, FAUST, Ent. Zeit. Stettin, lvii, n. spp.
- Eutinobothrus*, n. g., for *Cryptorhynchus pilosellus*, Boh.; FAUST, p. 84, Ent. Zeit. Stettin, lvii.
- Eutoxus nigrocinctus*, Venezuela, FAUST, p. 130, Ent. Zeit. Stettin, lvii, n. sp.
- Euxenus*, n. g., *Tylodini*, for *E. posticus*, p. 47, *apicalis*, p. 48, n. spp., Venezuela; FAUST, Ent. Zeit. Stettin, lvii.
- Evadodes*, n. g., *Otiorhynchidarum*, p. 282, for *E. decorum*, n. sp., Centr. Australia, p. 283; BLACKBURN, Horn Exped. pt. ii.

- Evadomorpha*, n. g. for *Evas everardensis*, Blk. ; BLACKBURN, p. 284, Horn Exped. pt. ii.
- Geræus simoni*, Venezuela, FAUST, p. 125, Ent. Zeit. Stettin, lvii, n. sp.
- Gymnetron villosulus*, habits, galls ; DECAUX, pp. 88-90, Bull. Soc. ent. France, 1896.
- Heterobothrus*, n. g., *Cryptorhynchini*, for *H. bipustulatus*, n. sp., Venezuela ; FAUST, Ent. Zeit. Stettin, lvii, p. 80.
- Heteroptochus insularis*, Java, FAUST, p. 141, Ent. Zeit. Stettin, lvii, n. sp.
- Heterostylus argenteolus*, E. Africa, FAUST, p. 117, Deutsche ent. Zeitschr. 1896, n. sp.
- Hexarthroides*, n. g., *Cossonides*, for *H. punctulatum*, n. sp., Australia ; LEA, p. 314, P. Linn. Soc. N. S. Wales, 1896.
- Holcorhinus arabicus*, Jeddah, PIC, p. 95, Miscell. ent. iv, n. sp.
- Homaleptops*, recharacterized ; FAUST, p. 322, Ent. Zeit. Stettin, lvi.
- H. fuscatus*, Madagascar, FAUST, t. c., n. sp.
- Homæostethus*, n. g., *Cryptorhynchini*, for *H. triangularis*, n. sp., Venezuela ; FAUST, p. 68, Ent. Zeit. Stettin, lvii.
- Hypera (Phytonomus) libanotidis*, Austria, p. 238, pl. iii, fig. 9, zebra, Samarcand, p. 239, fig. 10, REITTER, Wien. ent. Zeit. xv ; *H. johanni*, Mongolia, REITTER, Deutsche ent. Zeitschr. 1896 : n. spp.
- Hypoceliodes*, n. g., p. 100, *Ceuthorhynchini*, for *H. coronatus*, p. 101, *pleurostigma*, p. 103, n. spp., Venezuela ; FAUST, Ent. Zeit. Stettin, lvii.
- Hypurus luctuosus*, Spain, *continuatus*, Algeria, DESBROCHERS, p. 54, Frelon, v, n. spp.
- Iphisomus viridanus*, p. 136, *mysticus*, p. 137, E. Africa, FAUST, Deutsche ent. Zeitschr. 1896, n. spp.
- Isaniris acuticollis*, E. Africa, *trapezicollis*, Abyssinia, FAUST, p. 124, Deutsche ent. Zeitschr. 1896, n. spp.
- Isotrachelus*, n. g., p. 94, *Isorhynchini*, for *I. brunneus*, p. 95, *uniseriatus*, *gracilipes*, p. 96, n. spp., Venezuela ; FAUST, Ent. Zeit. Stettin, lvii.
- Ithycerus noveboracensis*, habitat ; HARRINGTON, p. 109, Canad. Ent. xxviii.
- Ithyporus aridus*, Abyssinia, FAUST, p. 305, Ent. Zeit. Stettin, lvi, n. sp.
- Kurilonus*, n. g., p. 113, ? near *Liophlæus*, for *K. insolitus*, n. sp., Kurile Is., p. 114 ; SHARP, Tr. ent. Soc. London, 1896.
- Lamosaccus argenteus*, p. 298, *pascoei*, *carinicollis*, p. 299, *crucicollis*, p. 300, *dubius*, p. 301, *cossonoides*, p. 302, *compactus*, *festivus*, p. 303, *obscurus*, p. 304, *ater*, p. 305, *variabilis*, *ventralis*, p. 306, *rufipennis*, p. 307, *instabilis*, p. 308, *rufipes*, p. 309, Australia, LEA, P. Linn. Soc. N. S. Wales, 1896, n. spp.
- Lampommatus*, n. g., p. 20, near *Ommatolampus*, for *L. cephalotes*, n. sp., Celebes, p. 21, fig. 14 ; HELLER, Abh. Mus. Dresden, 1896-97, No. 3.
- Laodia bilineata*, Java, FAUST, p. 157, Ent. Zeit. Stettin, lvii, n. sp.
- Larinus senilis*, metamorphoses ; XAMBEU, p. 158, Ann. Soc. Linn. Lyon, xliii. *L. sturnus*, metamorphoses ; XAMBEU, p. 102, Mœurs, vi. *L. vulpes*, oviposition, &c. ; NICOLAS, p. 89, Miscell. ent. iii. *L. ursus*, metamorphoses ; NICOLAS, t. c. p. 137. *L. conspersus*, NICOLAS, op. cit. iv, p. 3.
- L. anceps*, Ordubad, REITTER, p. 42, Deutsche ent. Zeitschr. 1896 ; *L. obesulus*, p. 64, S. Europe, *sacer*, Asia Minor, p. 65, *hierolosymæ* (sic), *cribricollis*, Syria, p. 66, DESBROCHERS, Frelon, v, n. spp.
- Lechriops turtur*, p. 89, *sodalis*, p. 90, Venezuela, FAUST, Ent. Zeit. Stettin, lvii, n. spp.
- Lepidophorus setiger*, Pennsylvania, HAMILTON, p. 348, Tr. Amer. ent. Soc. xxii, n. sp.

- Leptops sculptus*, p. 285, *tempeensis*, p. 286, *palmensis*, *horni*, p. 287, Centr. Australia, BLACKBURN, Horn Exped. pt. ii, n. spp.
- Lepyryus*: the N. American synonymy; HAMILTON, pp. 122-127, Canad. Ent. xxviii. Notes on N. American; HAMILTON, p. 184, t. c. *L. herbichi* = (*asperatus*, Schauf. = *rugicollis*, Desbr., *infra*); REITTER, p. 283, Wien. ent. Zeit. xv.
- L. rugicollis*, Roumania; DESBROCHERS, p. 37, Frelon, v, n. sp.
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- P. philippinensis*, Philippines, p. 193, *biuncus*, Sumatra, p. 194, BLANDFORD, Tr. ent. Soc. London, 1896; *P. umbonatus*, p. 97, pl. iv, fig. 4, *exaratus*, fig. 5, p. 98, Central America, *fortis*, Colombia, p. 98, *obliteratus*, fig. 6, *liratus*, fig. 7, p. 99, *imporcatus*, fig. 8, p. 100, *discolor*, fig. 9, *godmani*, fig. 10, p. 101, *dolabratus*, fig. 12, p. 102, *salvini*, fig. 14, p. 103, *vicinus*, fig. 15, p. 104, *porosus*, fig. 16, p. 105, *cribricollis*, fig. 18, p. 108, *biprorus*, fig. 19, p. 109, *marcidus*, fig. 21, p. 110, *pallidipennis*, fig. 22, p. 111, *concinulus*, fig. 23, p. 111, *frontalis*, fig. 25, p. 113, Central America, BLANDFORD, Biol. Centr.-Amer. Col. iv, pt. 6 : n. spp.
- Progenius*, n. g., p. 20, near *Xyleborus*, for *P. fleutiauxi*, *læviusculus*, n. spp., Indo-China, p. 21; BLANDFORD, Ann. Soc. ent. France, 1896.
- Scolytoplatypus* (*Tæniocerus*) *eutomoides*, Celebes, BLANDFORD, p. 196, Tr. ent. Soc. London, 1896, n. sp.
- Scolytopsis*, n. g., near *Scolytus*, for *S. puncticollis*, n. sp., Guatemala, p. 123, pl. v, fig. 10; BLANDFORD, Biol. Centr.-Amer. Col. iv, pt. 6.
- Scolytus propinquus*, Mexico, BLANDFORD, p. 121, Biol. Centr.-Amer. Col. iv, pt. 6, n. sp.
- Styracopterus*, n. g., *Tomicides*, p. 323, for *S. murex*, n. sp., p. 324, Bechuanaland; BLANDFORD, Ann. Nat. Hist. (6) xvii.
- Tesserocerus belti*, figured and noticed; BLANDFORD, p. 117, pl. v, figg. 4 & 5, Biol. Centr.-Amer. Col. iv, pt. 6.

- T. ericius*, pl. v, figg. 1 & 2, p. 115, *spinax*, fig. 3, p. 116, Central America, BLANDFORD, Biol. Centr.-Amer. Col. iv, pt. 6, n. spp.
- Tomicus perexiguus*, Damma Is., BLANDFORD, p. 201, Tr. ent. Soc. London, 1896, n. sp.
- Xyleborus xylographus*, habits; HUBBARD, p. 318, P. ent. Soc. Washington, iii. *X. celsus*, ♂; HOPKINS, p. 249, Canad. Ent. xxviii. *X. perforans* and *Bostrichus dupouti*, note on; BLANDFORD, p. 243, Ann. Soc. ent. Belgique, xl.
- X. colossus*, p. 207, *globus*, p. 208, *papuanus*, p. 209, New Guinea, *semirudis*, Borneo, p. 210, *semigranosus*, Sumatra, p. 211, *fraternus*, Ceylon, p. 212, *pruinosis*, p. 214, *puberulus*, p. 215, *scabripennis*, p. 216, Borneo, *arcticollis*, Sumatra, p. 217, *spatulatus*, Borneo, p. 218, *wallacei*, New Guinea, p. 220, *destruens*, Gilolo, p. 221, *andamanensis*, Andaman Is., p. 222, *submarginatus*, E. India, &c, p. 223, *subribosus*, Singapore, p. 224, *dolosus*, Borneo, p. 225, *laticollis*, p. 226, *andrewesi*, p. 227, India, BLANDFORD, Tr. ent. Soc. London, 1896; *X. cognatus*, Indo-China, BLANDFORD, p. 19, Bull. Soc. ent. France, 1896; *X. nanus*, New Caledonia, BLANDFORD, p. 242, Ann. Soc. ent. Belgique, xl : n. spp.

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- [Cf. BLACKBURN (83), SENNA (1073, 1074).]
- Cerobates*: table of species; SENNA, pp. 212-215, Notes Leyden Mus. xvii.
- C. usambaricus*, E. Africa, p. 216, *complanatus*, Cameroons, p. 217, *levipennis*, Sangi Is., p. 219, *andamanicus*, Andaman Is., SENNA, Notes Leyden Mus. xvii, n. spp.
- Hormocerus fossulatus*, Queensland, BLACKBURN, Tr. R. Soc. S. Austral. xx, n. sp.
- Hyperephanus* = (*Homæolizus*, Sharp); SENNA, p. 211, Notes Leyden Mus. xvii.
- Mesetia*, n. g., near *Ithystenus*, for *M. amœna*, n. sp., N. S. Wales, BLACKBURN, p. 37, Tr. R. Soc. S. Austral. xx.
- Stereodermiæ*: table of the genera; SENNA, p. 211, Notes Leyden Mus. xvii.
- Ulocerus*: revision; SENNA, pp. 190-223, Ann. Soc. ent. Belgique, xl.
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- [Cf. FAIRMAIRE (306, 307), JORDAN (586).]
- Acorynus clidus*, p. 378, *disclusus*, p. 379, Perak, *pardus*, p. 380, Philippines, JORDAN, Ent. Zeit. Stettin, lvi, n. spp.
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- Basitropis pardalis*, Philippines, JORDAN, p. 393, Ent. Zeit. Stettin, lvi, n. sp.
- Caranistes opilio*, p. 394, *rufipes*, p. 395, *plagiatus*, p. 396, Madagascar, JORDAN, Ent. Zeit. Stettin, lvi, n. spp.
- Cedus verrucosus*, Madagascar, JORDAN, p. 387, Ent. Zeit. Stettin, lvi; *C. subscutellatus*, p. 362, *longior*, *lateralis*, *maculicollis*, p. 363, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique, xl : n. spp.
- Cercomorphus*, notes on; PIC, p. 29, Bull. Soc. ent. France, 1896.
- C. abbreviatus*, Spain, REITTER, p. 234, pl. iii, fig. 2, Wien. ent. Zeit. xv, n. sp.

- Cratoparis leuconotus*, Madagascar, FAIRMAIRE, p. 365, Ann. Soc. ent. Belgique, xl, n. sp.
- Deropygus hæmorrhoidalis*, p. 397, *analis*, p. 399, Perak, *maculatus*, Borneo, p. 398, JORDAN, Ent. Zeit. Stettin, lvi, n. spp.
- Directarius subplagiatus*, Perak, JORDAN, p. 388, Ent. Zeit. Stettin, lvi, n. sp.
- Doticus subplanatus*, Tenimber Is., p. 399, *alternatus*, Sumatra, p. 400, JORDAN, Ent. Zeit. Stettin, lvi, n. spp.
- Dynos ceylonicus*, Ceylon, p. 400, *subglaber*, Perak, p. 401, JORDAN, Ent. Zeit. Stettin, lvi, n. spp.
- Entaphioides*, n. g., near *Xenocerus*, for *E. lacrymans*, n. sp., Madagascar, FAIRMAIRE, p. 364, Ann. Soc. ent. Belgique, xl.
- Eugigas harmandi*, n. var. *tessellatus*, JORDAN, p. 369, Ent. Zeit. Stettin, lvi.
- Hucus eurous*, New Guinea, JORDAN, p. 386, Ent. Zeit. Stettin, lvi, n. sp.
- Hypseus axillaris*, Perak, JORDAN, p. 391, Ent. Zeit. Stettin, lvi, n. sp.
- Ischnocerus æneus*, Paraguay, p. 372, *impressicollis*, Mexico, p. 373, JORDAN, Ent. Zeit. Stettin, lvi, n. spp.
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- Phaulimia priva*, Perak, *alternata*, Philippines, JORDAN, p. 392, Ent. Zeit. Stettin, lvi, n. spp.
- Phlæobius penicillus*, Madagascar, FAIRMAIRE, p. 365, Ann. Soc. ent. Belgique, xl, n. sp.
- Phlæotragus cylindripennis*, Guinea, JORDAN, p. 369, Ent. Zeit. Stettin, lvi, n. sp.
- Sintor suturalis*, Assam, p. 374, *superciliaris*, Philippines, p. 375, JORDAN, Ent. Zeit. Stettin, lvi, n. spp.
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- Tophoderes sinuatocollis*, Madagascar, JORDAN, p. 376, Ent. Zeit. Stettin, lvi; *T. marmoreus*, *compactus*, p. 360, *leucomelus*, p. 361, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique, xl : n. spp.
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- Bruchus mimosæ*, metamorphoses; XAMBEU, p. 139, Ann. Soc. Linn. Lyon, xliii.
- Caryoborus angeri*, Transcaspian, SEMENOW, p. 383, Annuaire Mus. St. Petersb. 1896, n. sp.

## CERAMBYCIDÆ.

[The following memoirs relate to *Cerambycidæ*, viz., BELON (59, 60, 61), BLACKBURN (83, 84, 85), CHITTENDEN & LINELL (161), FAIRMAIRE (307, 314, 315), GAHAN (394), HAMILTON (469), HELLER (485), JORDAN (585), KOLBE (658), KRAATZ (675), LENG (701), LINELL (718, 720), MAYET (767), PÉRINGUEY (862), REITTER (939), RITSEMA (921, 981), SEMENOW (1072), SHARP (1077), SOKOLOW (1118), THÉRY (1146), WANDOLLECK (1202), XAMBEU (1261).]

- Synopsis of the *Lamiinæ* of N. America ; LENG & HAMILTON (701).  
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 J. N. York Ent. Soc. iv.
- Acanthoderes wickhami*, Arizona, LENG, p. 114, Tr. Amer. ent. Soc. xxiii,  
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- Acrogenius*, n. g., *Tillomorphides*, for *A. tinctus*, n. sp., Queensland ;  
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- Egosoma scabricorne*, habits ; VITURAT, p. 424, Bull. Soc. Autun, viii.
- Alophia*, n. g., near *Praonetha*, for *A. aculeata*, n. sp., Madagascar ; FAIR-  
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- Alphitopola chanleri*, Somaliland, LINELL, p. 694, P. U. S. Mus. xviii,  
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- Alsiosus*, n. g., near *Stenosoma*, for *A. villosicornis*, n. sp., Madagascar ;  
 FAIRMAIRE, p. 395, Ann. Soc. ent. Belgique, xl.
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- Amphionycha amana*, Texas, HAMILTON, p. 161, Tr. Amer. ent. Soc. xxiii ;  
*A. suturalis*, Texas, LINELL, p. 398, P. U. S. Mus. xix : n. spp.
- Anatisis muelleri*, Queensland, BLACKBURN, p. 259, Tr. R. Soc. S. Austral.  
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- Anomoderus tubericollis*, Madagascar, FAIRMAIRE, p. 376, Ann. Soc. ent.  
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- Aporataxia*, n. g., near *Ataxia*, for *A. lineata*, n. sp., Texas ; HAMILTON,  
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- Ariastes*, n. g., near *Icariotis*, for *A. monostigma*, n. sp., Madagascar ;  
 FAIRMAIRE, p. 379, Ann. Soc. ent. Belgique, xl.
- Artelida scutellaris*, Madagascar, FAIRMAIRE, p. 378, Ann. Soc. ent.  
 Belgique, xl, n. sp.
- Auxa striolata*, Madagascar, FAIRMAIRE, p. 382, Ann. Soc. ent. Belgique,  
 xl, n. sp.
- Baryssinus leguminicola*, Paraguay, LINELL, p. 43, P. ent. Soc. Washing-  
 ton, iv, n. sp.
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- Brachytatus bigibbus*, Madagascar, FAIRMAIRE, p. 388, Ann. Soc. ent.  
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- Brimus pascoei*, Transvaal, PÉRINGUEY, p. 180, Tr. ent. Soc. London,  
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- Callithmysus*, n. g. for *Clytarlus microgaster* ; SHARP, p. 238, Ent.  
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- Carterica soror*, Bolivia, BELON, p. 253, Ann. Soc. Linn. Lyon, xliii, n. sp.
- Cerambyx* : construction of the pupal diaphragm, &c. ; MAYET, p. 122,  
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- Cereopsius lukuanus*, Celebes, HELLER, p. 23, fig. 18, Abh. Mus. Dresden,  
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- Ceroplesis manicana*, *fallax*, Zambezi, PÉRINGUEY, p. 184, Tr. ent. Soc.  
 London, 1896, n. spp.
- Cometes argodi*, Bolivia, BELON, p. 128, Bull. Soc. ent. France, 1896, and  
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- Coniozonnia compacta* = (*rufobrunnea*, Heyd.) ; REITTER, p. 17, Wien. ent. Zeit. xv.
- Closterus denticollis*, Madagascar, FAIRMAIRE, p. 366, Ann. Soc. ent. Belgique, xl, n. sp.
- Clytarlus* : limited, redefined ; SHARP, p. 238, Ent. Mag. xxxii.
- Clytus tropicus*, 12 generations in confinement, oviposition, &c. ; DECAUX, p. 287, Bull. Soc. ent. France, 1896.
- C. validus*, Tibet, FAIRMAIRE, p. 128, Notes Leyden Mus. xviii, n. sp.
- Crossotus arabicus*, Lahej, *phillipsi*, Somaliland, GAHAN, p. 458, Ann. Nat. Hist. (6) xviii, n. spp.
- Cyrtocerus*, n. g., near *Polyarthron*, for *C. mirabilis*, n. sp., E. Africa ; KRAATZ, p. 155, cut, p. 154, Deutsche ent. Zeitschr. 1896.
- Diadelia cinerascens*, p. 389, *costipennis*, p. 390, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique, xl, n. spp.
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- Dorcadion lameeri*, Asia Minor, THÉRY, p. 110, Bull. Soc. ent. France, 1896, n. sp.
- Ecyrus fasciatus*, Texas, HAMILTON, p. 137, Tr. Amer. ent. Soc. xxiii, n. sp.
- Elaphidion albofasciatum*, Los Angeles, LINELL, p. 393, P. U. S. Mus. xix, n. sp.
- Epirochroa*, n. g., near *Leucographus*, for *E. griseovaria*, n. sp., Madagascar ; FAIRMAIRE, p. 385, Ann. Soc. ent. Belgique, xl.
- Euglenea*, n. subg., cf. *Glenea*.
- Eugrapheus*, n. g., near *Gyaritus*, for *E. lineellus*, n. sp., Madagascar, FAIRMAIRE, p. 387, Ann. Soc. ent. Belgique, xl.
- Eumimetes rufonubilus*, *attenuatus*, Madagascar ; FAIRMAIRE, p. 386, Ann. Soc. ent. Belgique, xl, n. spp.
- Eupalelius*, n. g., near *Nethinius*, for *E. scapulatus*, n. sp., Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique, xl.
- Eupromera tuberosa*, Bolivia, p. 247, *ochropyga*, p. 249, *costulata*, p. 251, Bolivia, BELON, Ann. Soc. Linn. Lyon, xliii, n. spp.
- Eurynassa australis*, variation ; BLACKBURN, p. 299, Horn Exped. pt. ii.
- Exocentrus reticulatus*, Madagascar, FAIRMAIRE, p. 382, Ann. Soc. ent. Belgique, xl, n. sp.
- Fimbria*, n. g., p. 387, *Niphonides*, for *F. boliviana*, n. sp., S. America, p. 388, BELON, Bull. Soc. ent. France, 1896.
- Glaucytes metallicus*, Madagascar, FAIRMAIRE, p. 381, Ann. Soc. ent. Belgique, xl, n. sp.
- Glenea imparilis*, W. Africa, JORDAN, p. 368, Ent. Zeit. Stettin, lvi ; *G. (Euglenea)* n. subg. *sarasinorum*, Celebes, HELLER, p. 24, fig. 9, Abh. Mus. Dresden, 1896-97, No. 3 : n. spp.
- Goephanes pictus*, Madagascar, FAIRMAIRE, p. 383, Ann. Soc. ent. Belgique, xl, n. sp.
- Heterachthes tricolor*, Bolivia, BELON, p. 244, Ann. Soc. Linn. Lyon, xliii, n. sp.
- Hexamitodera*, n. g., near *Pachyteria*, for *H. semivelutina*, n. sp., Celebes, fig. 17 ; HELLER, p. 22, Abh. Mus. Dresden, 1896-97, No. 3.
- Hoplomelas*, n. g., near *Goephanes*, for *H. albolineellus*, p. 383, *ruficornis*, p. 384, n. spp., Madagascar ; FAIRMAIRE, Ann. Soc. ent. Belgique, xl.
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- Ibidion townsendi*, Texas, LINELL, p. 395, P. U. S. Mus. xix, n. sp.
- Icariotis pallidocinctus*, Madagascar, FAIRMAIRE, p. 397, Ann. Soc. ent. Belgique, xl, n. sp.
- Isotrium*, n. g., near *Anisarthron*, for *I. lutosum*, n. sp., Madagascar, FAIRMAIRE, p. 375, Ann. Soc. ent. Belgique, xl.



- Leiopus bedeli*, larva, XAMBEU, p. 220, Bull. Soc. ent. France, 1896, n. sp.  
*Leptura melanura*, metamorphoses; XAMBEU, p. 169, Ann. Soc. Linn. Lyon, xliii. *L. quadrifasciata*, larva, KOLBE, p. 9, Zeitschr. Ent. Breslau, xxi. *L. fontenayi*, variation; CHOBOUT, p. 201, Bull. Soc. ent. France, 1896.  
*L. kabyliana*, Algeria, PIC, p. 103, Rev. Sci. Bourbonnais, ix; *L. (Strangalia) hecate*, Samarcand, REITTER, Deutsche ent. Zeitschr. 1896; *L. pernigra*, p. 397, *coquilletti*, p. 398, Los Angeles, LINELL, P. U. S. Mus. xix: n. spp.  
*Lepturges megalops*, Florida, LENG, p. 127, Tr. Amer. ent. Soc. xxiii, n. sp.  
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*Nemophas tricolor*, Celebes, HELLER, p. 23, fig. 13, Abh. Mus. Dresden, 1896-97, No. 3, n. sp.  
*Nethinius anticipes*, Madagascar, FAIRMAIRE, p. 369, Ann. Soc. ent. Belgique, xl, n. sp.  
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*Opepharus*, Pasc. = (*Lophoptera*, Perr.), *O. tridentatus*, Chev. = (*signator*, Pasc.); ALLUAUD, p. 34, Bull. Soc. ent. France, 1896.  
*Opsumates pustulosus*, Madagascar, FAIRMAIRE, p. 368, Ann. Soc. ent. Belgique, xl, n. sp.  
*Opsidota æstuosa*, Queensland, BLACKBURN, p. 37, Tr. R. Soc. S. Austral. xx, n. sp.  
*Ouphalacra*, n. g., near *Onocephala*, for *O. coquerelii*, n. sp., Nossi-Bé; FAIRMAIRE, p. 393, Ann. Soc. ent. Belgique, xl.  
*Pachyteria bouvieri*, Siam, RITSEMA, p. 330, Bull. Mus. Paris, 1896, n. sp.  
*Paphræcia brevicollis*, Madagascar, FAIRMAIRE, p. 394, Ann. Soc. ent. Belgique, xl, n. sp.  
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*Phæbe suballaria*, Bolivia, BELON, p. 254, Ann. Soc. Linn. Lyon, xliii, n. sp.  
*Physocnemum violaceipenne*, Pennsylvania, HAMILTON, p. 286, Ent. News Philad. vii, n. sp.  
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- Plagithmysides* : new group ; SHARP, p. 237, Ent. Mag. xxxii.
- Plagithmysus vitticollis*, *newelli*, p. 240, *concolor*, *solitarius*, *cuneatus*, p. 241, *bishopi*, p. 242, *vicinus*, *bilineatus*, p. 243, *lanaiensis*, *perkinsi*, p. 244, *varians*, p. 245, *darwinianus*, *sulphurescens*, p. 271, *speculifer*, *æstivus*, p. 272, *funebri*, *æqualis*, p. 273, *arachnipes*, p. 274, Hawaiian Is., SHARP, Ent. Mag. xxxii, n. spp.
- Pæcilobrium rugosipenne*, California, LINELL, p. 395, P. U. S. Mus. xix, n. sp.
- Polyarthron ægyptiacum* is ♂, *unipectinatum*, White, is ♀, of one species; REITZER, Wien. ent. Zeit. xv, p. 18. *P. jolyi*, ♀, CHOBAUT, p. 350, Bull. Soc. ent. France, 1896. *P. moissoni*, habitat; CHOBAUT, t. c. p. 351. *P. moissoni*, habits; CHOBAUT, t. c. p. 390.
- P. margelanicum*, Turkestan, THÉRY, p. 108, Bull. Soc. ent. France, 1896, n. sp.
- Praonetha crassiuscula*, p. 390, *truncata*, *cristulata*, p. 391, *dorsata*, p. 392, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique, xl, n. spp.
- Prionacus*, n. g., near *Prionus*, for *P. strigicornis*, n. sp., Kiangsi; FAIRMAIRE, Notes Leyden Mus. xviii, p. 127.
- Prosopocera hochneli*, Somaliland, LINELL, p. 693, P. U. S. Mus. xviii, n. sp.
- Ptilotocærus*, n. g., p. 396, near *Spalacopsis*, for *P. visendus*, n. sp., Madagascar, p. 397; FAIRMAIRE, Ann. Soc. ent. Belgique, xl.
- Rhamnusium bicolor*, new artificial var.; DECAUX, p. 287, Bull. Soc. ent. France, 1896.
- R. algericum*, Algeria, PIC, p. 102, Rev. Sci. Bourbonnais, ix, n. sp.
- Sagridola spinicrus*, *scalabrii*, Madagascar, FAIRMAIRE, p. 378, Ann. Soc. ent. Belgique, xl, n. spp.
- Scopanta expansitarsis*, *lævipennis*, Madagascar, FAIRMAIRE, p. 380, Ann. Soc. ent. Belgique, xl, n. spp.
- Spalacopsis suturalis*, Florida, HAMILTON, p. 145, Tr. Amer. ent. Soc. xxiii, n. sp.
- Stenosoma interruptum*, Madagascar, FAIRMAIRE, p. 395, Ann. Soc. ent. Belgique, xl, n. sp.
- Stenoxotus*, n. g., near *Mastodera*, for *S. ochreoruber*, n. sp., Madagascar; FAIRMAIRE, p. 377, Ann. Soc. ent. Belgique, xl.
- Sternotomis mozambica*, Africa, PÉRINGUEY, p. 181, Tr. ent. Soc. London, 1896; *S. coronata*, W. Africa, JORDAN, p. 367, Ent. Zeit. Stettin, lvi : n. spp.
- Strangalia fruinii*, Sikkim, FAIRMAIRE, p. 239, Notes Leyden Mus. xviii; *S. argodi*, China, THÉRY, p. 109, Bull. Soc. ent. France, 1896 : n. spp.
- Symphyletes deserti*, Central Australia, BLACKBURN, p. 301, Horn Exped. pt. ii, n. sp.
- Tetranodus*, n. g., near *Euderces*, for *T. niveicollis*, n. sp., Texas; LINELL, P. U. S. Mus. xix.
- Thermonotus nigripennis*, Borneo, p. 205, *oberthuri*, Sumatra, p. 206, RITSEMA, Notes Leyden Mus. xviii, n. spp.
- Timoreticus*, n. g., near *Zographus*, for *T. armaticeps*, n. sp., S. Africa; PÉRINGUEY, p. 181, Tr. ent. Soc. London, 1896.
- Tragocephala rikatlæ*, S. Africa, PÉRINGUEY, p. 182, Tr. ent. Soc. London, 1896, n. sp.
- Trimeroderus*, n. g., p. 372, near *Ibidion*, for *T. raffrayi*, n. sp., Madagascar, p. 373; FAIRMAIRE, Ann. Soc. ent. Belgique, xl.
- Xystrocera viridipicta*, Madagascar, FAIRMAIRE, p. 367, Ann. Soc. ent. Belgique, xl, n. sp.
- Zygocera albavirgulata* referred to *Orica*; FAIRMAIRE, p. 388, Ann. Soc. ent. Belgique, xl.

## CHRYSEMELIDÆ.

- [The following memoirs relate to *Chrysemelidæ*, viz., ABAILLE (3), BLACKBURN (83, 85), CHOBOUT (162, 166), DEMAISON (240), FAIRMAIRE (306), GAHAN (394), GESTRO (403, 405), G. H. HORN (518), JACOBSON (560, 561), JACOBY (562-567), KOLBE (658), LAMPA (692), LÉCAILLON (689, 699), LEWIS (709), LINELL (716, 718), PIC (871, 875, 902), REITTER (936), WEISE (1230-1232), WICKHAM (1243), XAMBEU (1261).]
- Life-histories of injurious *Halticidæ* in Sweden ; LAMPA (692).  
*Galerucides* and *Halticides* of Australia, revision ; BLACKBURN, pp. 39-102, Tr. R. Soc. S. Austral. xx.
- Chrysemelidæ* of Canada ; WICKHAM, pp. 67, &c., &c., Canad. Ent. xxviii.
- Acrocrypta basalis*, Sumatra, JACOBY, p. 420, Ann. Mus. Genova, xxxvi ;  
*A. obscuripennis*, p. 134, *duvivieri*, p. 135, *fraterna*, p. 136, Mentawai I., JACOBY, *op. cit.* xxxvii : n. spp.
- Acroxena indica*, Kanara, JACOBY, p. 288, Ann. Soc. ent. Belgique, xl, n. sp.
- Adimonia tanaceti*, metamorphoses ; XAMBEU, p. 131, Mœurs, vi.
- A. lugens*, p. 86, *mastersi*, *richmondensis*, p. 87, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xx, n. spp.
- Ævidea costatipennis*, Sumatra, JACOBY, p. 496, Ann. Mus. Genova, xxxvi ;  
*Æ. violaceipennis*, *truncatipennis*, p. 284, *pilicornis*, p. 285, *pallida*, p. 286, *rufofulva*, *dilaticornis*, p. 287, *modesta*, p. 288, E. India, JACOBY, Ann. Soc. ent. Belgique, xl : n. spp.
- Agelopsis*, n. g., near *Konbirella*, for *A. cæruleus*, n. sp., Bengal ; JACOBY, p. 301, Ann. Soc. ent. Belgique, xl.
- Allomorpha glabrata*, Sumatra, JACOBY, p. 457, Ann. Mus. Genova, xxxvi, n. sp.
- Amphimela australis*, var. ? *piceicornis* ; BLACKBURN, p. 42, Tr. R. Soc. S. Austral. xx.
- Andosia*, n. g., near *Ischyromus*, for *A. reitteri*, n. sp., E. Siberia ; WEISE, p. 79, Wien. ent. Zeit. xv.
- Anthipha inclusa*, *similis*, p. 475, *cruciata*, p. 476, *tenuimarginata*, p. 477, *apicipes*, *latefusiata*, p. 478, Sumatra, JACOBY, Ann. Mus. Genova, xxxvi ; *A. castanea*, Mentawai Is., JACOBY, p. 145, *op. cit.* xxxvii : n. spp.
- Anthiphula modesta*, Sumatra, JACOBY, p. 479, Ann. Mus. Genova, xxxvi, n. sp.
- Aphthona beckeri*, S. Russia, JACOBSON, p. 108, Horæ Soc. ent. Ross. xxx ;  
*A. kanaraensis*, p. 255, *andrewesi*, *azurca*, p. 256, E. India, JACOBY, Ann. Soc. ent. Belgique, xl ; *A. cowleyi*, N. Australia, BLACKBURN, p. 76, Tr. R. Soc. S. Austral. xx : n. spp.
- Apolepis balyi*, Sumatra, JACOBY, p. 408, Ann. Mus. Genova, xxxvi, n. sp.
- Argopistes levigata*, E. India, JACOBY, p. 264, Ann. Soc. ent. Belgique, xl ; *A. flavicornis*, p. 453, *beccarii*, p. 454, Sumatra, JACOBY, Ann. Mus. Genova, xxxvi ; *A. fulvoplagiatus*, Mentawai Is., JACOBY, p. 132, *op. cit.* xxxvii : n. spp.
- Arnobiopsis*, n. g., *Eumolpides*, p. 388, for *A. bicolor*, n. sp., Sumatra, p. 389 ; JACOBY, Ann. Mus. Genova, xxxvi.
- Arsipoda leviceps*, *languida*, *concolor*, p. 46, *jocosa*, *æneofulva*, p. 47, *consanguinea*, *spectabilis*, p. 48, *detersa*, *striatipennis*, p. 49, *deceptrix*, *pallidicornis*, p. 50, *terminalis*, *paradoxa*, p. 51, *podontoides*, *ænescens*, p. 52, *fossipennis*, *jugularis*, p. 53, *hepatica*, *collaris*, p. 54, *picturata*, *variabilis*, p. 55, *laticollis*, p. 56, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xx, n. spp.
- Aspidolopha sumatrana*, Sumatra, JACOBY, p. 380, Ann. Mus. Genova, xxxvi, n. sp.

- Aspidomorpha*: the sexes in several cases are described as distinct species, synonymy; WEISE, pp. 16 & 17, Deutsche ent. Zeitschr. 1896. *A. confinis* = (*Cassida subeuropæa*, Thoms.) p. 19; *nigromaculata*, Hbst. = (*mutabilis*, Kl. = *nigroguttata*, Thoms.) p. 20; *fenestrata*, Ol. = (*bioculata*, Wag.) p. 21; *virididorsata* and *chlorina*, Boh., are sexes of one, p. 22; WEISE, t. c.
- A. maculicollis*, E. Africa, LINELL, p. 696, P. U. S. Mus. xviii; *A. pilifera*, Congo, p. 17, *angolensis*, Quango, *argillacea*, Dar-es-Salaam, *nigricornis*, Butembo, p. 18, *sternalis*, Ruanda, p. 20, *sellata*, p. 21, *striata*, p. 23, Cameroons, WEISE, Deutsche ent. Zeitschr. 1896; *A. usambica*, *tetraspilota*, Africa eq., KOLBE, p. 91, Ent. Nachr. xxii; *A. planipennis*, p. 107, *lauta*, p. 108, N. Australia, BLACKBURN, Tr. R. Soc. S. Austral. xx : n. spp
- Astena* (?) *nigromaculata*, Bombay, JACOBY, p. 275, Ann. Soc. ent. Belgique, xl, n. sp.
- Atysa* (?) *frontalis*, p. 468, *A. dimidiatipennis*, p. 469, *imitans*, p. 470, Sumatra, JACOBY, Ann. Mus. Genova, xxxvi, n. spp.
- Aulacia flavifrons*, p. 418, *ornata*, p. 419, Sumatra, JACOBY, Ann. Mus. Genova, xxxvi, n. spp.
- Aulacophora hilaris*, injurious habits; FULLER, p. 88, Agric. Gaz. N.S.W. vii. *A. cucullata*, habitat is N. Queensland; BLACKBURN, p. 259, Tr. R. Soc. S. Austral. xx.
- A. denticornis*, p. 137, *apicipes*, p. 138, Mentawai Is., JACOBY, Ann. Mus. Genova, xxxvii; *A. denticornis*, *cucullata*, Australia, BLACKBURN, p. 83, Tr. R. Soc. S. Austral. xx : n. spp.
- Aulexis sumatrana*, *wallacei*, Sumatra, JACOBY, p. 404, Ann. Mus. Genova, xxxvi, n. spp.
- Bia*, n. g. for part of *Dolichotoma*; WEISE, p. 31, Deutsche ent. Zeitschr. 1896.
- Bucharis minutus*, p. 381, *oculatus*, p. 382, *constricticollis*, p. 383, Sumatra, JACOBY, Ann. Mus. Genova, xxxvi, n. spp.
- Calligrapha*: note on colour and punctuation; JACOBY, p. 224, P. Zool. Soc. London, 1896.
- Callispa pusilla*, Mentawai Is., GESTRO, p. 328, Ann. Mus. Genova, xxxvi; *C. cribrata*, Natuna Is., GESTRO, p. 202, Notes Leyden Mus. xviii : n. spp.
- Calomela lauta*, Central Australia, BLACKBURN, Horn Exped. pt. ii, p. 302, n. sp.
- Candezea bimaculata* = (*sculpta*, Black.) ; BLACKBURN, p. 89, Tr. R. Soc. S. Austral. xx.
- C. multipunctata*, p. 289, *fuscipennis*, p. 290, *pilosa*, p. 291, India, JACOBY, Ann. Soc. ent. Belgique, xl; *C. thoracica*, p. 487, *impressicollis*, p. 488, Sumatra, JACOBY, Ann. Mus. Genova, xxxvi; *C. mentawaiensis*, p. 143, *nigrita*, p. 144, Mentawai Is., JACOBY, op. cit. xxxvii : n. spp.
- Cassida berlinensis*, n. var. *pectoralis*; WEISE, p. 81, Wien. ent. Zeit. xv.
- C. velaris*, E. Siberia, p. 28, *soror*, E. Africa, p. 29, WEISE, Deutsche ent. Zeitschr. 1896; *C. adelaidæ*, p. 106, *prothoracica*, p. 107, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xx : n. spp.
- Cerophysa nigricornis*, p. 274, *nigricollis*, p. 275, India, JACOBY, Ann. Soc. ent. Belgique, xl; *C. gestroi*, Sumatra, JACOBY, p. 465, Ann. Mus. Genova, xxxvi : n. spp.
- Chatocnema sycophanta*, Algeria, ABEILLE, p. 54, Bull. Soc. ent. France, 1896; *C. syriaca*, Akbès, DEMAISON, p. 13, t. c.; *C. geniculata*, p. 270, *minuta*, p. 271, India, JACOBY, Ann. Soc. ent. Belgique, xl; *C. modiglianii*, p. 438, *granulicollis*, p. 439, *sumatrana*, p. 440, *placida*, p. 441, Sumatra, JACOBY, Ann. Mus. Genova, xxxvi : n. spp.
- Chalcæus ceneipennis*, p. 432, *capitatus*, p. 434, Sumatra, JACOBY, Ann. Mus. Genova, xxxvi, n. spp.

- Charidotella*, n. g. for *Coptocyclus zona*, Boh. ; WEISE, pp. 13 & 14, Deutsche ent. Zeitschr. 1896.
- Cheiloxena insignis*, Australia, BLACKBURN, p. 39, Tr. R. Soc. S. Austral. xx, n. sp.
- Chirida ariadne*, p. 25, *insignis*, p. 26, *circe*, p. 27, W. Africa, WEISE, Deutsche ent. Zeitschr. 1896 ; *C. muticolor*, p. 103, *maxima*, p. 104, *C. ? lacunata*, p. 105, *C. simplaria*, p. 106, Queensland, BLACKBURN, Tr. R. Soc. S. Austral. xx : n. spp.
- Chlamys geniculata*, Loo-choo Is., JACOBY, p. 6, Entomologist, 1896, n. sp.
- Chrysomela* and allies, the N. American species ; LINELL, pp. 195-200, J. N. York Ent. Soc. iv. *C. bella*, queried as *C. cœrulans*, *bonvoulorii*, redescribed ; JACOBY, pp. 250 & 251, Ann. Soc. ent. Belgique, xl. *C. besserii*, description ; JACOBSON, p. 118, Horæ Soc. ent. Ross. xxx. *C. polita*, habits, p. 173, *marginata*, metamorphoses, p. 175 ; XAMBEU, Ann. Soc. Linn. Lyon, xliii. *C. pyrenaica*, metamorphoses ; XAMBEU, p. 121, Mœurs, vi.
- C. latecincta*, France, *bruneli*, Syria, DEMAISON, Bull. Soc. ent. France, 1896, p. 12 ; *C. roddi*, p. 432, *porctzkyi*, p. 434, Orenburg, *kuznetzovi*, Transvaal, p. 434, JACOBSON, Horæ Soc. ent. Ross. xxx ; *C. linoides*, *latimargo*, Siberia, WEISE, p. 80, Wien. ent. Zeit. xv ; *C. scutellaris*, E. Africa, LINELL, p. 695, P. U. S. Mus. xviii ; *C. malayana*, Sumatra, JACOBY, p. 420, Ann. Mus. Genova, xxxvi : n. spp.
- Cleonica quadriplagiata*, characters ; JACOBY, p. 501, Ann. Mus. Genova, xxxvi.
- Cleorina ornata*, p. 411, *nigrita*, p. 412, *malayana*, p. 413, *gestroi*, p. 414, *modiglianii*, p. 415, JACOBY, Ann. Mus. Genova, xxxvi, n. spp.
- Clythra quadripunctata*, construction of egg and larval cases ; LÉCAILLON (698, 699).
- Clytraxeloma nigropunctata*, Syria, PIC, p. 36, Miscell. ent. iv, n. sp.
- Cneorane varipes*, India, JACOBY, p. 299, Ann. Soc. ent. Belgique, xl, n. sp.
- Cneorides*, n. g., p. 281, near *Nadrana*, for *C. flaviventris*, n. sp., India, p. 282, JACOBY, Ann. Soc. ent. Belgique, xl.
- Colaspoides inconspicua*, Sumatra, JACOBY, p. 147, Ann. Mus. Genova, xxxvii ; *C. modiglianii*, Sumatra, JACOBY, p. 417, *op. cit.* xxxvi ; *C. iridipennis*, Mentawai Is., JACOBY, p. 130, *op. cit.* xxxvii : n. spp.
- Colasposoma oberthuri*, Loo-choo Is., JACOBY, p. 6, Entomologist, 1896 ; *C. prosternale*, India, JACOBY, p. 303, Ann. Soc. ent. Belgique, xl : n. spp.
- Coptocyclus* and allies, characters ; WEISE, pp. 11-15, Deutsche ent. Zeitschr. 1896.
- C. venustula*, Margelan, WEISE, p. 28, Deutsche ent. Zeitschr. 1896, n. sp.
- Corynodes japonicus*, Loo-choo Is., JACOBY, p. 7, Entomologist, 1896 ; *C. brevipennis*, Sumatra, JACOBY, p. 416, Ann. Mus. Genova, xxxvi ; *C. mentaweiensis*, Sipora, JACOBY, p. 130, *op. cit.* xxxvii : n. spp.
- Crepidodera minuta*, Sumatra, JACOBY, p. 422, Ann. Mus. Genova, xxxvi ; *C. indicica*, *crassior*, Queensland, BLACKBURN, p. 67, Tr. R. Soc. S. Austral. xx : n. spp.
- Crioceris 12-punctata* = (*abeillei*, Pic) ; WEISE, p. 293, Deutsche ent. Zeitschr. 1896.
- Crosita jakowlewi* and *faldermanni*, note on ; WEISE, p. 82, Wien. ent. Zeit. xv.
- Cryptocephalus singularis*, p. 385, *gemmingeri*, p. 386, Sumatra, JACOBY, Ann. Mus. Genova, xxxvi, n. spp.
- Cteisella*, n. g., for part of *Ctenochira* ; WEISE, p. 15, Deutsche ent. Zeitschr. 1896.
- Cynorta flavilabris*, Bombay, JACOBY, p. 300, Ann. Soc. ent. Belgique, xl ; *C. monstrosa*, Sumatra, JACOBY, p. 474, Ann. Mus. Genova, xxxvi ; *C. balyi*, Mentawai Is., JACOBY, p. 141, *op. cit.* xxxvii : n. spp.

- Demolina sumatrana*, Sumatra, JACOBY, p. 405, Ann. Mus. Genova, xxxvi, n. sp.
- Diabrotica*, origin of N. American; WEBSTER, p. 67, J. N. York Ent. Soc. iv.
- Diacantha?* *dubia*, Lahej, GAHAN, p. 460, Ann. Nat. Hist. (6) xviii, n. sp.
- Dibolia rufofemorata*, Akbés, REITTER, p. 267, Wien. ent. Zeit. xv, n. sp.
- Diorhabda octocostata*, Aden, GAHAN, p. 460, Ann. Nat. Hist. (6) xviii, n. sp.
- Distolaca podagrica*, p. 333, *insularis*, p. 334, Mentawai Is., GESTRO, Ann. Mus. Genova, xxxvi, n. spp.
- Dolichotoma satanas*, Brazil, WEISE, p. 30, Deutsche ent. Zeitschr. 1896, n. sp.
- Donacia aquatica*, to be maintained; WEISE, p. 296, Deutsche ent. Zeitschr. 1896.
- D. delagrangi*, Anatolia, PIC, p. 35, Miscell. ent. iv, n. sp.
- Dorydea costatipennis*, Mentawai, JACOBY, p. 141, Ann. Mus. Genova, xxxvii, n. sp.
- Doryscus*: structural characters; JACOBY, p. 300, Ann. Soc. ent. Belgique, xl.
- Emathea subrugosa*, p. 480, *balyi*, *fulvicornis*, p. 481, Sumatra, JACOBY, Ann. Mus. Genova, xxxvi, n. spp.
- Enneamera nigra*, Mentawai Is., JACOBY, p. 137, Ann. Mus. Genova, xxxvii, n. sp.
- Entomoscelis adonidis*, n. var. *spuria*; JACOBSON, p. 107, Horæ Soc. ent. Ross. xxx.
- Epistictia quadripunctata*, E. Africa, LINELL, p. 696, P. U. S. Mus. xviii, n. sp.
- Erystus* (?) *indicus*, Bombay, JACOBY, p. 265, Ann. Soc. ent. Belgique, xl, n. sp.
- Eucycla nigrofasciata*, p. 450, *limbatipennis*, p. 451, *elegantula*, p. 452, Sumatra, JACOBY, Ann. Mus. Genova, xxxvi; *E. fraterna*, Mentawai Is., JACOBY, p. 133, *op. cit.* xxxvii: n. spp.
- Euryope discoidalis*, Somaliland, JACOBY, p. 336, Ann. Mus. Genova, xxxvii, n. sp.
- Galeruca rustica*, metamorphoses; XAMBEU, p. 182, Ann. Soc. Linn. Lyon, xliii.
- G. himalayensis*, Dalhousie, JACOBY, p. 283, Ann. Soc. ent. Belgique, xl, n. sp.
- Galerucella sumatrana*, Sumatra, JACOBY, p. 467, Ann. Mus. Genova, xxxvi, n. sp.
- Galereucesthis*, n. g. for *Auchenia thalassina*, Fald.; WEISE, p. 296, Deutsche ent. Zeitschr. 1896.
- Goniochenia*, n. g. for part of *Mesomphalia*, Boh.; WEISE, p. 10, Deutsche ent. Zeitschr. 1896.
- G. virgo*, Brazil, p. 15, *parvula*, Cayenne, p. 32, WEISE, Deutsche ent. Zeitschr. 1896, n. spp.
- Gonophora ritsemæ*, Natuna Is.; GESTRO, p. 203, Notes Leyden Mus. xviii; *G. incerta*, Mentawai Is., GESTRO, p. 332, Ann. Mus. Genova, xxxvi: n. spp.
- Gynandrophthalma judaica* = (*vaulogeri*, Pic); WEISE, p. 293, Deutsche ent. Zeitschr. 1896. *G. judaica* = (*vaulogeri*, Pic); DEMAISON, p. 13, Bull. Soc. ent. France, 1896.
- G. chobauti*, Algeria, PIC, p. 142, Miscell. ent. iv; *G. quadratomaculata*, Loo-choo Is., JACOBY, p. 5, Entomologist, 1896; *G. orientalis*, India, JACOBY, p. 302, Ann. Soc. ent. Belgique, xl: n. spp.
- Haltica pagana*, p. 74, *gravida*, p. 75, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xx; *H. birmanensis*, Burma, JACOBY, p. 254, Ann. Soc. ent. Belgique, xl: n. spp.

- Halticodes*, n. g., p. 69, near *Haltica*, for *H. disparipes*, n. sp., Victoria, p. 70; BLACKBURN, Tr. R. Soc. S. Austral. xx.
- Haplosoma abdominalis, simplieipennis*, p. 272, *costatipennis*, p. 273, India, JACOBY, Ann. Soc. ent. Belgique, xl, n. spp.
- Haplosomyx indicus*, Bombay, JACOBY, p. 279, Ann. Soc. ent. Belgique, xl; *H. basalis*, Sumatra, JACOBY, p. 473, Ann. Mus. Genova, xxxvi; *H. ornatipennis*, Mentawai Is., JACOBY, p. 139, *op. cit.* xxxvii, n. spp.
- Hatita*, n. g., intermediate to *Aulacophorites* and *Phyllobroticites*, for *H. limbata*, n. sp., St. Thomas, W. Africa; FAIRMAIRE (306), p. 7.
- Hemygascelis*, n. g., p. 277, near *Phyllobrotica*, for *H. longicollis*, n. sp., Bombay, p. 278, JACOBY, Ann. Soc. ent. Belgique, xl.
- Heteraspis speciosa*, Sumatra, JACOBY, p. 407, Ann. Mus. Genova, xxxvi, n. sp.
- Hispa higonica*, Japan, LEWIS, p. 342, Ann. Nat. Hist. (6) xvii, n. sp.
- Hispopria modiglianii*, Mentawai Is., GESTRO, p. 330, Ann. Mus. Genova, xxxvi, n. sp.
- Hoplasoma frontalis*, Sumatra, JACOBY, p. 461, Ann. Mus. Genova, xxxvi, n. sp.
- Hymenesia limbata*, Burma, JACOBY, p. 297, Ann. Soc. ent. Belgique, xl, n. sp.
- Hyphania obscuripennis*, India, JACOBY, p. 298, Ann. Soc. ent. Belgique, xl; *H. apicicornis*, Sumatra, JACOBY, p. 493, Ann. Mus. Genova, xxxvi : n. spp.
- Hyphaltica*, n. g., p. 70, near *Haltica*, for *H. lauta*, *H. ? anomala*, p. 71, *occidentalis*, *H. mediocris*, p. 72, *adelaidæ*, p. 73, Australia, n. spp.; BLACKBURN, Tr. R. Soc. S. Austral. xx.
- Hyphasis diseoidalis, tenuilimbatus, thoracica*, Bombay, JACOBY, p. 262, Ann. Soc. ent. Belgique, xl; *H. nigripennis*, Sumatra, JACOBY, p. 435, Ann. Mus. Genova, xxxvi : n. spp.
- Kanarella*, n. g., p. 279, *Scelidina*, for *K. unicolor*, n. sp., India, p. 280, JACOBY, Ann. Soc. ent. Belgique, xl.
- Labidostomis elegans* = (*reitteri*, Weise); DEMAISON, p. 13, Bull. Soc. ent. France, 1896.
- L. glyeyrrhiza*, Becker, description, JACOBSON, p. 104, Horæ Soc. ent. Ross. xxx, ? n. sp.
- Laccoptera angulata*, Cameroons, WEISE, p. 21, Deutsche ent. Zeitschr. 1896; *L. ferruginea*, E. Africa, LINELL, p. 696, P. U. S. Mus. xviii : n. spp.
- Lactica transversicollis*, Sumatra, JACOBY, p. 424, Ann. Mus. Genova, xxxvi, n. sp.
- Lahejia*, n. g., *Eumolpinorum*, for *L. cinerascens*, n. sp., Lahej; GAHAN, p. 459, Ann. Nat. Hist. (6) xviii.
- Lamprosoma modiglianii*, Sumatra, JACOBY, p. 387, Ann. Mus. Genova, xxxvi, n. sp.
- Lema capitata*, p. 378, *occulta*, p. 379, Sumatra, JACOBY, Ann. Mus. Genova, xxxvi, n. spp.
- Leprotoides*, n. g., near *Leprotus*, for *L. flavipes*, n. sp., Sumatra, JACOBY, p. 406, Ann. Mus. Genova, xxxvi.
- Liroëtes apicicornis*, Bombay, JACOBY, p. 282, Ann. Soc. ent. Belgique, xl, n. sp.
- Longitarsus* : synonymy of *L. nigriceps* and some other critical European forms; WEISE, pp. 293 & 294, Deutsche ent. Zeitschr. 1896. *L. metallescens* and allies, characters and synonymy; ABEILLE, p. 52, Bull. Soc. ent. France, 1896.
- L. scaphidioides*, Algeria, ABEILLE, p. 53, Bull. Soc. ent. France, 1896; *L. madurensis*, p. 258, *nigronotatus*, p. 259, *rufipennis, belgaumensis*, p. 260, India, JACOBY, Ann. Soc. ent. Belgique, xl; *L. gestroi, sumatrensis*, p. 425, *annulicornis*, p. 426, *balyi*, p. 427, Sumatra, JACOBY, Ann. Mus. Genova, xxxvi; *L. victoriensis*, Australia, BLACKBURN, p. 76, Tr. R. Soc. S. Austral. xx : n. spp.

- Luperus circumfusus*, metamorphoses ; XAMBEU, p. 179, Ann. Soc. Linn. Lyon, xliii.
- L. severini*, p. 276, *puncticollis*, p. 277, India, JACOBY, Ann. Soc. ent. Belgique, xl ; *L. sumatranus*, Sumatra, JACOBY, p. 466, Ann. Mus. Genova, xxxvi : n. spp.
- Macrima costatipennis*, Sumatra, JACOBY, p. 490, Ann. Mus. Genova, xxxvi, n. sp.
- Madurasia*, n. g., p. 280, near *Medythia*, for *M. obscurella*, n. sp., Madras, p. 281 ; JACOBY, Ann. Soc. ent. Belgique, xl.
- Malaxia elongata*, Loo-choo Is., JACOBY, p. 8, Entomologist, 1896 ; *M. weisei*, Sumatra, JACOBY, p. 467, Ann. Mus. Genova, xxxvi : n. spp.
- Manobia dorsalis*, Madras, JACOBY, p. 266, Ann. Soc. ent. Belgique, xl ; *M. dimidiaticornis*, Sumatra, JACOBY, p. 423, Ann. Mus. Genova, xxxvi ; *M. abdominalis*, Mentawai Is., JACOBY, p. 136, *op. cit.* xxxvii : n. spp.
- Mantura indica*, Bombay, JACOBY, p. 269, Ann. Soc. ent. Belgique, xl, n. sp.
- Melixanthus immaculatus*, Somaliland, LINELL, p. 694, P. U. S. Mus. xviii ; *M. aterrimus*, Sumatra, JACOBY, p. 384, Ann. Mus. Genova, xxxvi : n. spp.
- Menippus elegans*, 4-notatus, referred to *Adimonia* ; BLACKBURN, p. 90, Tr. R. Soc. S. Austral. xx.
- Mesomphalia lucordairei*, *subrugosa*, united ; WEISE, p. 16, Deutsche ent. Zeitschr. 1896.
- Metellus costatipennis*, Sumatra, JACOBY, p. 498, Ann. Mus. Genova, xxxvi, n. sp.
- Metriona*, n. g., for numerous species of *Coptocycla*, WEISE, pp. 13 & 14, Deutsche ent. Zeitschr. 1896.
- M. invenusta*, Amazons ; WEISE, Deutsche ent. Zeitschr. 1896, p. 32, n. sp.
- Micrantipha*, n. g., p. 88, *Antiphites*, but aberrant, for *M. paradoxa*, n. sp., S. Australia, p. 89 ; BLACKBURN, Tr. R. Soc. S. Austral. xx.
- Microlepta fulvicollis*, Sumatra, JACOBY, p. 462, Ann. Mus. Genova, xxxvi ; *M. annulicornis*, Mentawai Is., JACOBY, p. 144, *op. cit.* xxxvii : n. spp.
- Mimastra alternata*, India, JACOBY, p. 273, Ann. Soc. ent. Belgique, xl ; *M. pallida*, Borneo, &c., JACOBY, p. 139, Ann. Mus. Genova, xxxvii : n. spp.
- Miopristis somalensis*, Somaliland, JACOBY, p. 337, Ann. Mus. Genova, xxxvii, n. sp.
- Momæa eximia*, Queensland, BLACKBURN, p. 84, Tr. R. Soc. S. Austral. xx, n. sp.
- Monolepta* : table of Australian species ; BLACKBURN, pp. 100–102, Tr. R. Soc. S. Austral. xx.
- M. fulvifrons*, p. 291, *picturata*, p. 292, *kuarensis*, *andrewesi*, p. 293, *piceo-maculata*, *trifasciata*, p. 295, *indica*, p. 296, *longitarsis*, p. 297, India, JACOBY, Ann. Soc. ent. Belgique, xl ; *M. modiglianii*, p. 482, *approximans*, *latefasciata*, p. 483, *militaris*, p. 484, *marginicollis*, p. 485, *obtusa*, *nigromarginata*, p. 486, *melanocephala*, p. 487, Sumatra, JACOBY, Ann. Mus. Genova, xxxvi ; *M. dilutior*, *implicata*, p. 91, *fumaticornis*, *sparsipennis*, p. 92, *elytrura*, *brevior*, p. 93, *cognata*, *biguttigera*, *variiegata*, p. 94, *subsuturalis*, *eyrensis*, *tricolor*, p. 95, *sordidula*, *intertincta*, p. 96, *melancholica*, *ordinaria*, *pictifrons*, p. 97, *picticollis*, *debilis*, p. 98, *albotincta*, *M. ? tarsalis*, p. 99, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xx : n. spp.
- Morphosphæra cærulea*, Loo-choo I., JACOBY, p. 8, Entomologist, 1896, n. sp.
- Neculla thoracica*, Mentawai Is., JACOBY, p. 127, Ann. Mus. Genova, xxxvii, n. sp.



- Neolepta multicolorata*, Sumatra, JACOBY, p. 490, Ann. Mus. Genova, xxxvi, n. sp.
- Neorupilia ornata*, Victoria, BLACKBURN, p. 85, Tr. R. Soc. S. Austral. xx, n. sp.
- Nisotra madurensis*, India, JACOBY, p. 267, Ann. Soc. ent. Belgique, xl, n. sp.
- Nodina fulvitarsis*, p. 400, *brevicostata*, p. 401, *nigripes*, *sumatrana*, p. 402, *balyi*, p. 403, Sumatra, JACOBY, Ann. Mus. Genova, xxxvi; *N. apicipes*, Mentawai Is., JACOBY, p. 128, Ann. Mus. Genova, xxxvii : n. spp.
- Nodostoma brunneum*, India, JACOBY, p. 302, Ann. Soc. ent. Belgique, xl; *N. atripes*, p. 389, *lateripunctatum*, p. 390, *nigrosuturatum*, p. 391, *nigroviride*, p. 392, *viridissimum*, p. 393, *bipartitum*, p. 394, *parvulum*, *chapuisi*, p. 395, *semicostatum*, p. 396, *modiglianii*, *rotundicolle*, p. 397, *nigromarginatum*, p. 398, *varipenne*, p. 399, Sumatra, JACOBY, Ann. Mus. Genova, xxxvi; *N. dimidiaticorne*, Mentawai Is., JACOBY, p. 129, *op. cit.* xxxvii : n. spp.
- Ædionychis inornata*, Bombay, JACOBY, p. 261, Ann. Soc. ent. Belgique, xl; *Æ. padangensis*, Sumatra, JACOBY, p. 436, Ann. Mus. Genova, xxxvi : n. spp.
- Oides tigrina*, habitat is N. Queensland; BLACKBURN, p. 259, Tr. R. Soc. S. Austral. xx.
- O. insignipennis*, p. 79, *ocularis*, *ignota*, p. 80, *tigrina*, p. 81, *velata*, *plantarum*, p. 82, Queensland, BLACKBURN, Tr. R. Soc. S. Austral. xx : n. spp.
- Oomorphus nigratum*, Sumatra, JACOBY, p. 387, Ann. Mus. Genova, xxxvi, n. sp.
- Opisthopygme*, n. g., p. 67, *Monoplatites*, for *O. jacobyi*, n. sp., Queensland, p. 68; BLACKBURN, Tr. R. Soc. S. Austral. xx.
- Oreomela koltzei*, Issik-Kul, WEISE, p. 81, Wien. ent. Zeit. xv, n. sp.
- Orina cacalia*, n. var. *lissahorensis*; WEISE, p. 110, Deutsche ent. Zeitschr. 1896.
- Orsodacna lineola*, var. = (*ruficollis*, Pic); WEISE, p. 293, Deutsche ent. Zeitschr. 1896: the European species; WEISE, *t. c.* p. 295.
- Ozomena longicollis*, Mentawai Is., JACOBY, p. 146, Ann. Mus. Genova, xxxvii, n. sp.
- Pachybrachis theryi*, Algeria; CHOBOUT, p. 151, Bull. Soc. ent. France, 1896.
- P. (Pachistylus) sulcithorax*, Algeria, PIC, p. 204, Bull. Soc. ent. France, 1896; *P. (Chloropachys) pici*, Algeria, CHOBOUT, p. 389, *t. c.* : n. spp.
- Paropsis deserti*, p. 303, *conjungens*, p. 304, *palmensis*, p. 305, *posticalis*, *funerea*, p. 306, Central Australia, BLACKBURN, Horn Exped. pt. ii, n. spp.
- Pedrillia sumatrana*, Sumatra, JACOBY, p. 380, Ann. Mus. Genova, xxxvi, n. sp.
- Phyllecthrus schwarzi*, Texas, HORN, p. 377, P. Calif. Ac. (2) vi, n. sp.
- Phyllobrotica elegantula*, Sumatra, JACOBY, p. 459, Ann. Mus. Genova, xxxvi; *P. sororia*, Texas, HORN, p. 378, P. Calif. Ac. (2) vi : n. spp.
- Phyllotreta nemorum*, metamorphoses; LAMPA, p. 45, pl. i, Ent. Tidskr. xvii.
- P. flaviventris*, *bombayensis*, India, JACOBY, p. 257, Ann. Soc. ent. Belgique, xl, n. spp.
- Plateumaris affinis* and *abdominalis*, synonymy; WEISE, p. 296, Deutsche ent. Zeitschr. 1896.
- Platyacantha submetallica*, p. 494, *multicostata*, p. 495, Sumatra, JACOBY, Ann. Mus. Genova, xxxvi; *P. quadraticollis*, Mentawai Is., JACOBY, p. 146, *op. cit.* xxxvii : n. spp.

- Plectroscelis calida*, *longior*, *noxia*, p. 59, *varipes*, p. 61, *minutalis*, *crebra*, p. 62, *tumbyensis*, *hypocrita*, *aciculata*, p. 63, *impressipennis*, p. 64, *cyrensis*, *quadraticollis*, *pallidior*, p. 65, *crassipennis*, *meyricki*, p. 66, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xx, n. spp.
- Podagricina rotundata*, Sumatra, JACOBY, p. 421, Ann. Mus. Genova, xxxvi; *P. (Nisotra) striatipennis*, India, JACOBY, p. 268, Ann. Soc. ent. Belgique, xl : n. spp.
- Potaninia assamensis* = (*polita*, Weise); JACOBY, p. 253, Ann. Soc. ent. Belgique, xl.
- Prasyptera mastersi*, N. Queensland, BLACKBURN, p. 84, Tr. R. Soc. S. Austral. xx, n. sp.
- Pseudocolaspis discoidalis*, India, JACOBY, p. 304, Ann. Soc. ent. Belgique, xl, n. sp.
- Pseudocophora sumatrana*, Sumatra, JACOBY, p. 459, Ann. Mus. Genova, xxxvi, n. sp.
- Pseudodera metallica*, Madras, JACOBY, p. 267, Ann. Soc. ent. Belgique, xl, n. sp.
- Pseudolina*, n. g., p. 252, for *P. indica*, n. sp., N.-W. India, p. 253; JACOBY, Ann. Soc. ent. Belgique, xl.
- Pseudomacetes*, n. g., *Pseudocolaspites*, for *P. ceneus*, n. sp., Somaliland; LINELL, p. 695, P. U. S. Mus. xviii.
- Pseudoscelida apicicornis*, Sumatra, JACOBY, p. 463, Ann. Mus. Genova, xxxvi, n. sp.
- Psylliodes tenebrosus*, India, JACOBY, p. 269, Ann. Soc. ent. Belgique, xl; *P. cerulipes*, p. 454, *fulvipes*, p. 455, *baligheensis*, p. 456, *nigroænea*, p. 457, Sumatra, JACOBY, Ann. Mus. Genova, xxxvi; *P. lubricata*, Victoria, BLACKBURN, p. 78, Tr. R. Soc. S. Austral. xx : n. spp.
- Rupilia excelsa*, Queensland, BLACKBURN, p. 85, Tr. R. Soc. S. Austral. xx; *R. brevipennis*, Centr. Australia, BLACKBURN, p. 307, Horn Exped. pt. ii : n. spp.
- Sastra costatipennis*, n. var. *obscuricornis*; BLACKBURN, p. 84, Tr. R. Soc. S. Austral. xx.
- S. sulcicollis*, Sumatra, JACOBY, Ann. Mus. Genova, xxxvi, n. sp.
- Sebæthe flavolimbata*, Loochoo Is., JACOBY, p. 7, Entomologist, 1896; *S. melanocephala*, p. 437, *bifasciata*, p. 438, Sumatra, JACOBY, Ann. Mus. Genova, xxxvi : n. spp.
- Sermyleoides bicolor*, Mentawai Is., JACOBY, p. 142, Ann. Mus. Genova, xxxvii; *S. scutellatus*, Sumatra, JACOBY, p. 499, *op. cit.* xxxvi : n. spp.
- Solenia robusta*, Sumatra, JACOBY, p. 500, Ann. Mus. Genova, xxxvi; *S. cowleyi*, Queensland, JACOBY, p. 88, Tr. R. Soc. S. Austral. xx : n. spp.
- Sosibiella*, n. g., near *Haplosomoides*, for *S. cæruleipennis*, n. sp., Sumatra; JACOBY, p. 461, Ann. Mus. Genova, xxxvi.
- Sphaeroderma flavoplagiata*, India, JACOBY, p. 265, Ann. Soc. ent. Belgique, xl; *S. tristis*, Mentawai Is., JACOBY, p. 131, Ann. Mus. Genova, xxxvii; *S. limbatipennis*, p. 442, *wallacei*, p. 443, *flavoplagiata*, p. 444, *nigromaculata*, p. 445, *javanensis*, p. 446, *affinis*, *sumatrana*, p. 447, *modiglianii*, *rafflesi*, p. 448, *tibialis*, p. 449, Sumatra, JACOBY, *op. cit.* xxxvi : *S. baldiensis*, Victoria, BLACKBURN, p. 77, Tr. R. Soc. S. Austral. xx : n. spp.
- Sphaerometopa sexmaculata*, *imitans*, p. 428, *obsoleta*, *nigropicta*, p. 430, *fruhstorferi*, p. 431, *pallidipennis*, p. 432, Sumatra, JACOBY, Ann. Mus. Genova, xxxvi, n. spp.
- Sutrea quadrimaculata*, Sumatra, JACOBY, p. 435, Ann. Mus. Genova, xxxvi; *S. mastersi*, p. 68, *speciosa*, p. 69, Queensland, BLACKBURN, Tr. R. Soc. S. Austral. xx : n. spp.
- Syoplia pygidialis*, Sumatra, JACOBY, p. 497, Ann. Mus. Genova, xxxvi, n. sp.

- Theopea modiglianii*, p. 491, *clypeata*, p. 492, Sumatra, JACOBY, Ann. Mus. Genova, xxxvi, n. spp.
- Timarcha punctella*, metamorphoses; XAMBEU, p. 136, Mœurs, vi.
- Tricliona sulcatipennis*, p. 409, *nigrofasciata*, p. 410, Sumatra, JACOBY, Ann. Mus. Genova, xxxvi, n. spp.
- Wallacea apicalis*, p. 329, *marginata*, p. 330, Mentawai Is., GESTRO, Ann. Mus. Genova, xxxvi, n. spp.
- Xenidia picticornis*, p. 42, *bizonata*, *melancholica*, p. 43, Queensland, BLACKBURN, Tr. R. Soc. S. Austral. xx, n. spp.
- Xenoda pallida*, p. 471, *nigricollis*, *abdominalis*, p. 472, Sumatra, JACOBY, Ann. Mus. Genova, xxxvi; *X. modiglianii*, Mentawai Is., JACOBY, p. 140, Ann. Mus. Genova, xxxvii : n. spp.
- Xuthea? formosa*, N. Queensland, BLACKBURN, p. 77, Tr. R. Soc. S. Austral. xx, n. sp.
- Zygogramma heterothecæ*, Texas, LINELL, p. 197, J. N. York Ent. Soc. iv, n. sp.

EROTYLIDÆ (incl. LANGURIIDÆ and *Helota*).

[Cf. GORHAM (416), KOLBE (660), RITSEMA (920).]

- Amblyopus substriatus*, Burma, GORHAM, p. 281, Ann. Mus. Genova, xxxvi, n. sp.
- Anadastus wiedemanni*, *athoides*, p. 271, *capitatus*, *karenicus*, p. 272, *ventralis*, p. 273, *gratus*, p. 274, *nigriventris*, *lugens*, p. 275, Burma, GORHAM, Ann. Mus. Genova, xxxvi, n. spp.
- Aulacochilus tricoloratus*, Burma, GORHAM, p. 280, Ann. Mus. Genova, xxxvi : n. sp.
- Cænolanguria constricta*, p. 266, *C. ? depressa*, p. 267, Burma, GORHAM, Ann. Mus. Genova, xxxvi, n. spp.
- Callilanguria cribricollis*, Burma, GORHAM, p. 260, Ann. Mus. Genova, xxxvi, n. sp.
- Coptolanguria*, n. g., p. 261, near *Oxylanguria*, for *C. dilatipes*, p. 262, *speciosa*, p. 263, n. spp., GORHAM, Ann. Mus. Genova, xxxvi.
- Cyrtomorphus corallipennis*, p. 283, *curtus*, p. 284, *craticularis*, *pardalinus*, p. 285, *connexus*, p. 286, Burma, GORHAM, Ann. Mus. Genova, xxxvi, n. spp.
- Cyrtotriplax*, forms; REITTER, p. 265, Wien. ent. Zeit. xv.
- C. cebana*, p. 286, *duodecimnotata*, p. 287, Burma, *C. ? oppositipunctata*, Tenasserim, p. 288, *prævia*, Burma, *C. ? obscura*, p. 289, *diaperina*, p. 290, Tenasserim, GORHAM, Ann. Mus. Genova, xxxvi, n. spp.
- Dacne optabilis*, Tenasserim, GORHAM, p. 280, Ann. Mus. Genova, xxxvi, n. sp.
- Doubledaya*: the species united; GORHAM, p. 263, Ann. Mus. Genova, xxxvi.
- Encaustes birmanica*, Burma, GORHAM, p. 276, Ann. Mus. Genova, xxxvi, n. sp.
- Episcapha tuberculicollis*, *stridulans*, Tenasserim, GORHAM, p. 278, Ann. Mus. Genova, xxxvi, n. spp.
- Helota bouchardi*, Sumatra, RITSEMA, p. 131, Notes Leyden Mus. xviii, n. sp.
- Linodesmus stuhlmanni*, Africa eq., KOLBE, p. 352, Ent. Zeit. Stettin, lvi, n. sp.
- Megalodacne subseriata*, E. Africa, KOLBE, p. 352, Ent. Zeit. Stettin, lvi, n. sp.
- Petaloscelis*, n. g., p. 282, near *Amblyopus*, for *P. instabilis*, n. sp., Burma, p. 283, GORHAM, Ann. Mus. Genova, xxxvi.
- Stenodastus piceus*, p. 268, *lugubris*, p. 269, Burma, GORHAM, Ann. Mus. Genova, xxxvi, n. spp.
- Tetralanguria*: species queried; GORHAM, p. 259, Ann. Mus. Genova, xxxvi.

## ENDOMYCHIDÆ.

- Amphisternus pustulifer*, Burma, GORHAM, p. 291, Ann. Mus. Genova, xxxvi, n. sp.  
*Asymbius*, n. g., near *Symbiotes*, for *A. crinipes*, n. sp., Burma; GORHAM, p. 299, Ann. Mus. Genova, xxxvi.  
*Dapsa sculpturata*, p. 299, *trogositoides*, p. 300, Burma, GORHAM, Ann. Mus. Genova, xxxvi, n. spp.  
*Engonius opimus*, Burma, GORHAM, p. 293, Ann. Mus. Genova, xxxvi, n. sp.  
*Stenotarsus peguensis*, Pegu, p. 296, *fuscicornis*, Tenasserim, *birmanicus*, p. 297, *quadrisignatus*, *contractus*, Tenasserim, p. 298, Burma, GORHAM, Ann. Mus. Genova, xxxvi, n. spp.  
*Trochoideus fecæ*, Burma, GORHAM, p. 301, Ann. Mus. Genova, xxxvi, n. sp.

## COCCINELLIDÆ.

- [*Cf.* BLACKBURN (83), LEWIS (707), WEISE (1233).]  
*Coccinellidæ* of Japan; LEWIS (707).  
 Notes on and figures of some ♂ genitalia; WEISE, p. 368, pl. i, figg. 1–12, Deutsche ent. Zeitschr. 1896.  
 Popular views about "Lady-birds"; Ent. News Philad. vii, pp. 77–80.  
*Amida*, n. g. for *Scymnus tricolor*, Har.; LEWIS, p. 34, Ann. Nat. Hist. (6) xvii.  
*Anatis halonis*, Japan, LEWIS, p. 28, Ann. Nat. Hist. (6) xvii, n. sp.  
*Anisosticta kobensis*, Japan, LEWIS, p. 25, Ann. Nat. Hist. (6) xvii, n. sp.  
*Chilocorus mikado*, Japan, LEWIS, p. 32, Ann. Nat. Hist. (6) xvii, n. sp.  
*Coccinella ainu*, *ronina*, Japan, LEWIS, p. 27, Ann. Nat. Hist. (6) xvii, n. spp.  
*Epilachna niponica*, Japan, LEWIS, p. 23, Ann. Nat. Hist. (6) xvii, n. sp.  
*Harmonia doublieri*, metamorphoses; XAMBEU, p. 101, Mœurs, vi.  
*Hyperaspis asiatica*, Japan, LEWIS, p. 33, Ann. Nat. Hist. (6) xvii, n. sp.  
*Pentilia (Smilia) misella*, habits; HOWARD & MARLATT, Bull. Dep. Agric. Ent. No. 3, p. 52.  
*Plotina*, n. g., near *Scymnus*, for *P. versicolor*, n. sp., Japan; LEWIS, p. 35, Ann. Nat. Hist. (6) xvii.  
*Poria violacea*, Venezuela, WEISE, p. 368, Deutsche ent. Zeitschr. 1896, n. sp.  
*Rhizobius secessus*, Victoria, BLACKBURN, p. 108, Tr. R. Soc. S. Austral. xx, n. sp.  
*Rodolia naræ*, *rufocincta*, Japan, LEWIS, p. 40, Ann. Nat. Hist. (6) xvii, n. spp.  
*Scymnus pilicrepus*, *sylvaticus*, p. 36, *phosphorus*, *niponicus*, p. 37, *paganus*, *fortunatus*, p. 38, *patugiatus*, p. 39, Japan, LEWIS, Ann. Nat. Hist. (6) xvii, n. spp.  
*Sticholotis pictipennis*, Japan, LEWIS, p. 32, Ann. Nat. Hist. (6) xvii, n. sp.  
*Vibidia 12-guttata*, metamorphoses; XAMBEU, p. 118, Mœurs, vi.

## CORYLOPHIDÆ.

- Sacium hemipterum*, Lower California, HORN, p. 373, P. Calif. Ac. (2) vi, n. sp.

(B.) *HYMENOPTERA.*

Phylogeny and classification ; ASHMEAD (27).

Summary of Bordas [last year (133)] on ♂ structures, by V. ADELUNG in Zool. Centralbl. iv, pp. 111 & 112 ; and of Kluge [last year] on ♂ organs of *Vespa*, *t. c.* pp. 254-258. Summary of Bordas' paper [last year (127)] on anatomy, by V. ADELUNG, *t. c.* pp. 105-111.

*ACULEATA.*

[The following memoirs relate to *Aculeata*, viz., ANDRÉ (17-23), ASHMEAD (28, 30, 32, 234), BAKER (40, 41), BINGHAM (80, 81, 82), CAMERON (138, 214), CAMPBELL (139), COCKERELL (184-200), COCKERELL & BAKER (214), DAVIDSON (234, 235, 236), DOMINIQUE (254), DUNNING (267, 268), FERTON (329, 330, 331), FOX (363-366), FREKE (369), FRIESE (370-375), GRIBODO (293, 429, 430, 431), HOFFER (505), ILLERING (554, 555), KENYON (604, 605), KIRBY (639), KOHL (657), MARCHAL (739, 740), MOCSÁRY (797), MORAWITZ (805, 806), PACKARD (851), PROVANCHER (914), PUTON (919), ROBERTSON (992), E. A. SCHWARZ (1047), SEMENOW (1069), TOSI (1153), TUCK (1168), XAMBEU (1262) ; also *cf. Formicidae*, p. 191.]

Structure of hairs ; FOX, p. 94, Ent. News Philad. vii.

List of the *Hymenoptera Aculeata* of Ceylon ; BINGHAM, P. Zool. Soc. London, 1896, pp. 401-453, pl. xv.

Dalla Torre, Catalogue of bees ; review by COCKERELL, Psyche, vii, pp. 386, 387.

Insects found in nests of *Vespa* and *Bombus* ; TUCK (1168).

Classification according to valve of *Cardia* ; TOSI (1153) p. 57.

Bees, &c., sleeping gregariously on trees ; SCHWARZ (1047).

*APIDÆ.*

*Alcidamex producta*, nesting habits, parasites ; DAVIDSON, p. 216, Ent. News Philad. vii.

*Allodape affinissima*, Mozambique, GRIBODO, p. 54, Mem. Acc. Bologna (5) iv, n. sp.

*Ammobates robustus*, Algeria ; FRIESE, p. 279, Termes. Fuzetek, xix, n. sp.

*Andrena platyparia*, n. var. *occidentalis* ; COCKERELL, p. 87, Ann. Nat. Hist. (6) xviii.

*A. rothneyi*, p. 112, *maligna*, p. 114, *reticulata*, *savissima*, p. 115, *mephistophelica*, p. 117, *gracillima*, p. 118, pl. iv, fig. 19, *morosa*, p. 119, *phædra*, p. 120, *sodalis*, p. 121, *anonyma*, p. 122, India, CAMERON, Mem. Manchester Soc. xli, No. 4 ; *A. cerasifolii*, New Mexico, COCKERELL, p. 220, Ent. Mag. xxxii ; *A. trifoliata*, New Mexico, *maurula*, Texas, p. 179, *heteromorpha*, p. 180, *monilicornis*, p. 181, *capricornis*, p. 182, *primulifrons*, p. 183, New Mexico, COCKERELL & CASAD, Canad. Ent. xxviii ; *A. prima*, *specodina*, p. 78, *jessicæ*, p. 79, *argemonis*, p. 80, *prunorum*, p. 81, *casadae*, *nigerrima*, p. 83, *fracta*, p. 84, *mexicanorum* (Juarez, Mexico), p. 85, *asclepiadis*, p. 86, *aureocincta*, p. 88, *electrica*, p. 89, *mesillæ*, p. 90, New Mexico, COCKERELL & CASAD, Ann. Nat. Hist. (6) xviii : n. spp.

- Anthidium oblongatum*, 7-dentatum, metamorphoses, habits; XAMBEU, pp. 328–331, Bull. Soc. ent. France, 1896. *A. collectum*, n. n. for *A. compactum*, Prov.; HUARD, p. 124, Natural. Canad. xxiii.
- A. æquabile*, Transcaucasus, p. 161, *nitens*, Transcaspian, p. 162, *comatum*, Siberia, p. 164, *gratum*, Transcaspian, p. 166, MORAWITZ, Horæ Soc. ent. Ross. xxx; *A. flaviventre*, Poona, CAMERON, p. 124, Mem. Manchester Soc. xli, No. 4; *A. compactum*, p. 9, 3-cuspidum, p. 10, California, PROVANCHER, Natural. Canad. xxiii; *A. cousimile*, California (habits by DAVIDSON, pp. 22–24), ASHMEAD, p. 25, Ent. News Philad. vii : n. spp.
- Anthophora deiopea*, p. 127, *rothneyi*, p. 142, India, CAMERON, Mem. Manchester Soc. xli, No. 4; *A. vegeta*, p. 195, pl. i, fig. 1, *amymone*, p. 196, fig. 2, Sumatra, BINGHAM, J. Bombay Soc. x : n. spp.
- Anthrena schlettereri*, Istria, p. 283, *seminuda*, Slavonia, p. 284, FRIESE, Termes. Fuzetek, xix, n. spp.
- Bombus*: introduced into Australia; FLETCHER, p. 537, P. Linn. Soc. N. S. Wales, 1895; their enemies in New Zealand; SMITH, p. 210, Entomologist, 1896. *B.* produces wax, like the honey-bee; SUNDVIK, p. 64, Medd. Soc. Faun. Fenn. xxi. *B. smithianus* and *cognatus*, variation, specific identity; SAUNDERS, p. 275, Ent. Mag. xxxii. *B. rufo-fasciatus*, description, p. 196, pl. i, fig. 3; BINGHAM, J. Bombay Soc. x.
- B. mollerii*, Sikkim, BINGHAM, p. 197, pl. i, fig. 4, J. Bombay Soc. x, n. sp.
- Calliopsis bakeri*, p. 221, *innuptus*, *renimaculatus*, p. 222, Colorado, COCKERELL, Ent. News Philad. vii; *C. semirufus*, New Mexico, COCKERELL, p. 219, Ent. Mag. xxxii; *C. meliloti*, *hirsutifrons*, p. 158, *fraterculus*, p. 159, *perlavis*, p. 160, *boylei*, p. 161, New Mexico, COCKERELL, Canad. Ent. xxviii; *C. bidentis*, Mexico, COCKERELL, p. 283, Ann. Nat. Hist. (6) xviii : n. spp.
- Camptopcerum ligusticum*, Liguria, GRIBODO, p. 12, Miscell. ent. iv, n. sp.
- Centris mariae*, p. 6, pl. i, fig. 6, *fulviventris*, p. 7, Peru, *atri ventris*, Brazil, fig. 7, p. 7, MOCSÁRY, Termes. Fuzetek, xix, n. spp.
- Ceratina*: monograph of palæarctic; FRIESE, Termes. Fuzetek, xix, pp. 34–65.
- C. dalletorreana*, Mediterranean, p. 50, *mocsaryi*, Algeria, p. 56, *acuta*, Hungary, p. 57, *mandibularis*, Algeria, p. 61, FRIESE, Termes. Fuzetek, xix; *C. fastigiata*, Somaliland, FOX, p. 556, P. Ac. Philad. 1896; *C. propinqua*, India, p. 137, pl. iv, fig. 20, *taprobanæ*, p. 138, *beata*, Ceylon, *moderata*, p. 139, *ornatifera*, p. 141, India, CAMERON, Mem. Manchester Soc. xli, No. 4 : n. spp.
- Chalicodoma muraria*, insects found in nests of; NICOLAS, pp. 19–22, Miscell. ent. iv. *C. muraria*, var. *batica*, *C. sicula* and n. var. *hiendlmayrii*, notes; FRIESE, p. 281, Termes. Fuzetek, xix. *C. sicula*, habits; DE STEFANI, Natural. Sicil. (n.s.) i. p. 59.
- Cælioxys*: habits; FERTON, pp. 247–249, Act. Soc. Bordeaux, xlvi. *C. rufiventris*, characters; FRIESE, p. 280, Termes. Fuzetek, xix.
- C. sexmaculata*, India, CAMERON, p. 126, Mem. Manchester Soc. xli, No. 4, n. sp.
- Dasypoda crassicornis*, Portugal, FRIESE, p. 282, Termes. Fuzetek, xix, n. sp.
- Diadasia albovestita*, California, p. 27, *D. tricineta*, Los Angeles, p. 28, PROVANCHER, Natural. Canad. xxiii, n. spp.
- Eucera*, of European and neighbouring regions; FRIESE, Bienen Europa's, ii: sexes and varr. of numerous species; FRIESE, pp. 202–209, Termes. Fuzetek, xviii.
- E. albofasciata*, S. Europe, p. 202, *digitata*, Sicily, p. 204, *parvula*, Istria, p. 205, *hungarica*, Hungary, *mediterranea*, S. Europe, p. 206, *persica*, Asia Minor, p. 207, FRIESE, Termes. Fuzetek, xviii, n. spp.

- Euglossa mariana*, Bolivia, p. 4, *purpurata*, pl. i, fig. 5, Peru, *anciventris*, Brazil, p. 5, MOCSÁRY, Termes. Fuzetek, xix, n. spp.
- Eulema ornata*, Brazil, MOCSÁRY, p. 3, Termes. Fuzetek, xix, n. sp.
- Exomalopsis solani*, New Mexico, COCKERELL, p. 25, Canad. Ent. xxviii, n. sp.
- Halictus wroughtoni*, p. 93, *decorus*, p. 94, *dissimilandus*, p. 95, *invidus*, p. 96, *serenus*, p. 97, *grandiceps*, p. 98, *alexis*, p. 99, *discursus*, p. 100, *sepulchralis*, p. 101, *picipes*, p. 102, *tardus*, p. 103, pl. iv, fig. 18, *funebri*, p. 104, *ciris*, p. 105, *vishnu*, *salutatrix*, p. 106, *buddha*, p. 107, *alphenus*, p. 108, *garrulus*, p. 109, *pulchriventris*, p. 110, India, *taprobanae*, Ceylon, p. 111, CAMERON, Mem. Manchester Soc. xli, No. 4; *H. amœnus*, Ceylon, BINGHAM, p. 451, P. Zool. Soc. London, 1896; *H. townsendi*, p. 293, *pseudotegularis*, p. 294, *pseudopectoralis*, p. 295, Mexico, COCKERELL, Ann. Nat. Hist. (6) xviii; *H. albitarsatus*, Cuba, ASHMEAD, p. 29, Bull. Lab. Iowa, 1896 : n. spp.
- Lestis bombiliformis*, metamorphoses; FROGGATT, p. 81, P. Linn. Soc. N. S. Wales, 1895.
- Megachile ericetorum*, &c., habits; FERTON, pp. 243-247, Act. Soc. Bordeaux, xlvi.
- M. colorata*, p. 557, *crenulata*, p. 558, Somaliland, FOX, P. Ac. Philad. 1896; *M. samson*, p. 128, *hornei*, p. 130, *sycophanta*, p. 131, *implicator*, India, *albolineata*, Ceylon, p. 132, *maligna*, p. 133, *pulchripes*, p. 134, *parvula*, p. 135, *chrysogaster*, p. 136, India, CAMERON, Mem. Manchester Soc. xli, No. 4; *M. steloides*, Sikkim, p. 198, pl. i, fig. 5, *miniata*, p. 199, fig. 6, BINGHAM, J. Bombay Soc. x; *M. ceylonica*, Ceylon, BINGHAM, p. 453, pl. xv, fig. 9, P. Zool. Soc. London, 1896; *M. chrysophila*, p. 284, *veræcrucis*, p. 285, *perpunctata*, p. 286, *rhodopus*, p. 287, *bidentis*, p. 288, Mexico, COCKERELL, Ann. Nat. Hist. (6) xviii : n. spp.
- Melissodes sphaeralcea*, *townsendi*, p. 304, *ruidosensis*, p. 305, *pallidicincta*, *gilensis*, p. 306, New Mexico, COCKERELL, Entomologist, 1896; *M. pernigra*, p. 289, *floris*, p. 290, *labiatarum*, p. 291, *raphaelis*, p. 292, Mexico, *luteicornis*, p. 293, New Mexico, COCKERELL, Ann. Nat. Hist. (6) xviii : n. spp.
- Meliturga* : species of Europe; FRIESE, Bienen Eur. ii.
- Monumetha imperfecta*, Los Angeles, PROVANCHER, p. 9, Natural. Canad. xxiii, n. sp.
- Nomada ceylonica*, Ceylon, CAMERON, p. 123, Mem. Manchester Soc. xli, No. 4; *N. rubrica*, Los Angeles, PROVANCHER, p. 8, Natural. Canad. xxiii; *N. gutierreziae*, New Mexico, COCKERELL, p. 284, Canad. Ent. xxviii : n. spp.
- Nomia wickhamii*, Bahamas, ASHMEAD, p. 28, Bull. Lab. Iowa, 1896, n. sp.
- Osmia* and *Andrena*, in Styria; HOFFER (505). *O. perezi*, habits; FERTON, p. 241, Act. Soc. Bordeaux, xlvi.
- Pachymelus soror*, Madagascar, MOCSÁRY, p. 8, pl. i, fig. 8, Termes. Fuzetek, xix, n. sp.
- Parasphecodes californica*, Los Angeles, PROVANCHER, p. 8, Natural. Canad. xxiii, n. sp.
- Perdita ignota*, New Mexico, COCKERELL, p. 220, Ent. Mag. xxxii; *P. maculigera*, New Mexico, COCKERELL, p. 255, Ent. News Philad. vii; *P. townsendi*, p. 204, *stottleri*, p. 205, *chrysophila*, p. 206, New Mexico, COCKERELL, J. N. York Ent. Soc. iv; *P. latior*, p. 53, New Mexico, *mexicanorum*, Mexico, p. 56, *nevadensis*, p. 58, *mentzeliae*, p. 60, *pallidior*, p. 61, *larreae*, *marcialis*, *pulchrior*, p. 62, *larrearum*, p. 63, *semicærulea*, *crotonis*, p. 64, *chamæsarachæ*, p. 65, *sphaeralcea*, p. 66, *bakeræ*, p. 69, *rectangulata*, p. 72, *snowii*, p. 73, *luteiceps*, p. 74, *dubia*, p. 75, *trisignata*, p. 76, *hirsuta*, p. 79, *salicis*, p. 80, *cladothricis*, p. 82, *pectidis*, p. 83, *biparticeps*, p. 84, *gutierreziae*, *tarda*, p. 85, *bigeloviae*,

- maculipes*, p. 87, *pellucida*, p. 88, *fallax*, p. 90, *ceneifrons*, p. 91, *nuda*, *asteris*, p. 93, *senecionis*, p. 94, *vespertilio*, p. 95, *grandiceps*, p. 96, *crassiceps*, p. 97, *laticeps*, p. 98, *beata*, *perpulchra*, p. 99, *vagans*, p. 101, *verbesinæ*, p. 102, *lepachidis*, *utahensis*, p. 108, N. America, COCKERELL, P. Ac. Philad. 1896 : n. spp.
- Phileremulus*, *Neolarra* and allies, characters; BAKER, pp. 20-23, P. ent. Loc. Washington, iv.
- Podalirius*: the 250 species of Europe and adjoining regions; FRIESE, Bienen Eur. iii.
- P. albosignatus*, S. Europe, p. 265, *balearicus*, Mallorca, p. 266, *cinereus*, Sarepta, p. 267, *nigropilosus*, Algeria, p. 268, FRIESE, Termes. Fuzetek, xix; *P. cleomis*, p. 193, *alamosanus*, *vallorum*, p. 195, New Mexico, COCKERELL, Canad. Ent. xxviii : n. spp.
- Prosapis*, n. n. for *Prosopis*, p. 26; *P. asinina* and *bipes* are ♂ and ♀ of one species; *rudbeckia*, varr., p. 30; COCKERELL, Psyche, vii, Supp.
- P. bakeri*, *wootoni*, p. 26, *citrinifrons*, *tridentulus*, p. 27, *rugosulus*, *tridens*, p. 28, *divergens*, *episcopalis*, p. 29, *coloradensis*, *digitatus*, p. 30, *triangularis*, p. 31, *suffusa*, *nevadensis*, p. 32, N. America, COCKERELL, Psyche, vii, Supp.; *P. labiatifrons*, p. 437, *georgica*, *saniculæ*, p. 438, *coquilletii*, *pennsylvanica*, p. 439, N. America, COCKERELL, Psyche, vii; *P. schwarzii*, Florida, COCKERELL, p. 218, Ent. Mag. xxxii : n. spp.
- Prosopis mesillæ*, n. n. for *subtilis*, Cock.; COCKERELL, p. 42, Canad. Ent. xxviii. *P. affinis*, *modesta*, sexes; ROBERTSON, p. 136, t. c.
- P. striatifrons*, India, p. 89, *leucotarsis*, p. 90, Ceylon, *strenua*, p. 91, *absoluta*, *bellicosa*, p. 92, India, CAMERON, Mem. Manchester Soc. xli, No. 4; *P. saniculæ*, p. 137, *illinoisensis*, p. 138, N. America, ROBERTSON, Canad. Ent. xxviii : n. spp.
- Protandrena*, n. g. for *Andrena mexicanorum*, *asclepiadis*, &c.; COCKERELL, p. 91, Ann. Nat. Hist. (6) xviii. *Protandrena*, n. g. for *Andrena asclepiadis*, *mexicanorum*, *trifoliata*, *maurula*, *heteromorpha*; COCKERELL, p. 184, Canad. Ent. xxviii.
- Schmiedeknechtia*, n. g., near *Phiarus*, for *S. oraniensis*, n. sp., Algeria; FRIESE, p. 277, Termes. Fuzetek, xix.
- Stelis parvula*, India, CAMERON, p. 125, Mem. Manchester Soc. xli, No. 4; *S. 6-maculata*, California, ASHMEAD, p. 218, Ent. News Philad. vii : n. spp.
- Synhalonia albicans*, Los Angeles, PROVANCHER, p. 27, Natural. Canad. xxiii, n. sp.
- Systropha pici*, Algeria, PÉREZ, p. 177, Rev. Sci. Bourbonnais, viii [in "Corrigenda" last year], n. sp.
- Trigona bengalensis*, India, CAMERON, p. 143, Mem. Manchester Soc. xli, No. 4, n. sp.
- Xenoglossa patricia*, p. 191, *cucurbitarum*, p. 192, New Mexico, COCKERELL, Canad. Ent. xxviii, n. spp.
- Xylocopa flavobicincta*, Mozambique, GRIBODO, p. 53, Mem. Acc. Bologna (5) iv, n. sp.

VESPIDÆ, EUMENIDÆ, MASARIDÆ.—DIPLOPTERA.

Natural history of social wasps (*Vespa*), production of caste and of males; MARCHAL (739).

Habits of social wasps in Brazil; VON IHERING (554, 555).

Length of absence of wasps from their nests; EDGEWORTH, Rep. Brit. Ass. 1896, p. 836.



- Eumenes baeri*, note ; MORAWITZ, p. 160, Horæ Soc. ent. Ross, xxx. *E. pomiformis, arbustorum*, habits ; CHRÉTIEN, p. 410, Bull. Soc. ent. France, 1896. *E. pomiformis* and *mediterraneus*, one species ; DUSMET, p. 33, Act. Soc. Espan. xxv.
- E. decipiens*, Ogové, KIRBY, p. 265, pl. xii, fig. 1, Ann. Nat. Hist. (6) xviii ; *E. buddha*, p. 86, *advena*, p. 87, India, CAMERON, Mem. Manchester Soc. xli, No. 4 : n. spp.
- Icuria ambigua*, Mozambique, GRIBODO, p. 58, Mem. Acc. Bologna (5) iv ; *I. duchaussoyi*, New Caledonia, GRIBODO, p. 13, Miscell. ent. iv : n. spp.
- Odynerus*: the habits and instincts of species in Provence ; FERTON (329). *O. spiricornis*, habits ; CHRÉTIEN, p. 411, Bull. Soc. ent. France, 1896. *O. albophaleratus*, metamorphoses ; PACKARD, p. 163, J. N. York Ent. Soc. iv.
- O. (Epipona) carreti*, p. 12, *punicus*, p. 13, N. Africa, GRIBODO, Miscell. ent. iv ; *O. macrocephalus*, Mozambique, GRIBODO, p. 60, Mem. Acc. Bologna (5) iv ; *O. rufobasilaris*, California, ASHMEAD, p. 335, Psyche, vii : n. spp.
- Paramiscocytharus buyssoni*, Senegal, GRIBODO, p. 13, Miscell. ent. iv, n. sp.
- Polistes gallicus*, habits ; MARCHAL (740).
- Polybia*; habits and natural history of several Brazilian species ; IHERING, pp. 159-162, Bull. Soc. zool. France, xxi.
- Rhynchium basimacula*, India, CAMERON, p. 85, pl. iv, fig. 17, Mem. Manchester Soc. xli, No. 4 ; *R. ? venustum*, Transcaspian, SEMENOW, p. 385, Annuaire Mus. St. Petersb. 1896 : n. spp.
- Tatua decorata*, Pebas, GRIBODO, p. 13, Miscell. ent. iv, n. sp.
- Vespa orientalis*, nest ; DE STEFANI, Natural. Sicil. (n.s.) i, p. 60.

HYMENOPTERA FOSSORIA (*Sphegidæ, Crabronidæ, Mutillidæ, &c., &c.*).

- Fossoria of the Loire-inférieure, 128 spp., DOMINIQUE (254).  
Faculty of finding nests ; PUTON, pp. 234 & 235, Rev. Ent. franc. xv.  
The genera of *Sphegidæ* defined, illustrated, historically discussed, and arranged in definite groups ; KOHL, pp. 233-516, pls. v-xi, Ann! Hofmus. Wien. xi.
- Ammophila ebenina*, habits ; VACHAL, p. 74, Bull. Soc. ent. France, 1896.
- Ampulex fasciata* = (*europæa*, Gir.) ; MORICE, p. 255, Ent. Mag. xxxii.
- A. cyclostoma*, Mozambique, GRIBODO, p. 73, Mem. Acc. Bologna (5) iv, n. sp.
- Aphilanthops bakeri*, Colorado, DUNNING, p. 203, Canad. Ent. xxviii ; *A. concinnulus*, New Mexico, COCKERELL, p. 221, t. c. : n. spp.
- Astata tarda*, Ceylon, CAMERON, p. 80, Mem. Manchester Soc. xli, No. 4, n. sp.
- Agenia architecta*, nests ; HARRINGTON, Canad. Ent. xxviii.
- A. rostrata*, Mozambique, GRIBODO, p. 75, Mem. Acc. Bologna (5) iv, n. sp.
- Bembex dilatata*, p. 152, *kirgisica*, p. 153 : characters ; MORAWITZ, Horæ Soc. ent. Ross. xxx.
- B. parvula*, Transcaspian, MORAWITZ, p. 155, Horæ Soc. ent. Ross. xxx ; *B. expansa*, Abyssinia, GRIBODO, p. 22, Miscell. ent. ii ; *B. melanosoma*, Mozambique, GRIBODO, p. 66, Mem. Acc. Bologna (5) iv : n. spp.
- Brachycistis tysias*, p. 396, *dubitatus, vigilax*, p. 397, *fulvilabris*, p. 399, *sciron*, p. 400, Mexico, CAMERON, Biol. Centr.-Amer. Hym. ii, n. spp.
- Cemonus inornatus* : metamorphoses ; PACKARD, p. 159, J. N. York Ent. Soc. iv.

- C. fuscipennis*, Missouri, CAMERON, p. 83, pl. iv, fig. 16, Mem. Manchester Soc. xli, No. 4, n. sp.
- Cerceris teterrima*, Algeria, GRIBODO, p. 22, Miscell. ent. ii; *C. emeryana*, Mozambique, GRIBODO, p. 63, Mem. Acc. Bologna (5) iv : n. spp.
- Ceropales fraterna*, noticed; HARRINGTON, p. 80, Canad. Ent. xxviii.
- C. pernix*, Tenasserim, BINGHAM, p. 425, J. Linn. Soc. xxv; *C. albo-variegata*, Ceylon, CAMERON, p. 84, Mem. Manchester Soc. xli, No. 4 : n. spp.
- Chalybion cæruleum*, metamorphoses; PACKARD, p. 156, J. N. York Ent. Soc. iv.
- Chyphotes elevatus*, characters corrected; COCKERELL, p. 168, Canad. Ent. xxviii.
- C. mirabilis*, New Mexico, COCKERELL, p. 285, Canad. Ent. xxviii, n. sp.
- Coloptera theryi*, Algeria, GRIBODO, p. 3, Miscell. ent. ii, n. sp.
- Cosila donaldsoni*, Somaliland, FOX, p. 549, P. Ac. Philad. 1896, n. sp.
- Crabro*: notes on N. American; FOX, pp. 78-80, Tr. Amer. ent. Soc. xxiii. *C. jaroschewskyi*, characters; MORAWITZ, p. 169, Horæ Soc. ent. Ross. xxx.
- C. (Anothyreus) numidicus*, *C. (Ectemnius) hannonis*, N. Africa, GRIBODO, p. 13, Miscell. ent. iv; *C. (Blepharipus) herinaceus*, Algeria, GRIBODO, p. 23, Miscell. ent. ii; *C. (Lindenius) ocliferius*, Transcaspian, MORAWITZ, p. 158, Horæ Soc. ent. Ross. xxx; *C. palitans*, Ceylon, BINGHAM, p. 446, pl. xv, fig. 6, P. Zool. Soc. London, 1896; *C. alacer*, Sumatra, p. 443, *C. (Rhopalum) brookii*, N. India, p. 444, BINGHAM, J. Linn. Soc. xxv; *C. snowii*, Kansas, FOX, Tr. Amer. ent. Soc. xxiii : n. spp.
- Cystomutilla*, n. subg. of *Mutilla*, for *M. ruficeps*, Sm.; ANDRÉ, p. 263, Mem. Soc. zool. France, ix.
- Diodontus crassicornis*, *punicus*, Algeria, GRIBODO, p. 23, Miscell. ent. ii, n. spp.
- Discolia albociliata*, Transcaspian, MORAWITZ, p. 145, Horæ Soc. ent. Ross. xxx, n. sp.
- Dolichurus bipunctatus*, Burma, BINGHAM, p. 439, J. Linn. Soc. xxv, n. sp.
- Elis (Dielis) angulata*, Santarem, p. 302, *auripilis*, Chapada, p. 303, *smithii*, Corumbá, p. 304, *aureohirta*, Chapada, p. 305, FOX, P. Ac. Philad. 1896, n. spp.
- Fertonius formicarius*, ? Algeria, FERTON, p. 268, Act. Soc. Bordeaux, xlviii, n. sp.
- Gorytes greenii*, Ceylon, BINGHAM, p. 444, pl. xv, fig. 8, P. Zool. Soc. London, 1896, n. sp.
- Handlirschia*, n. g. for *Specius æthiops*, Kohl; KOHL, p. 425, Ann. Hofmus. Wien, xi.
- Hemipepsis vindex*, n. var. *subintegra*; GRIBODO, p. 80, Mem. Acc. Bologna (5) iv.
- H. tugala*, Philippines, GRIBODO, p. 2, Miscell. ent. ii, n. sp.
- Hoplisus emeryi*, Mozambique, GRIBODO, p. 64, Mem. Acc. Bologna (5) iv, n. sp.
- Isodontia (Sphex) philadelphica*, habits; HUBBARD, p. 314, P. ent. Soc. Washington, iii.
- Larra jugurthæ*, Algeria, GRIBODO, p. 22, Miscell. ent. ii, n. sp.
- Leianthrena*, n. g. for *L. kohlii*, n. sp. (Bingham), N.-W. India; BINGHAM, Ann. Hofmus. Wien, xi, p. 381.
- Leptochilus jacinthæ*, New Guinea, GRIBODO, p. 23, Miscell. ent. ii, n. sp.
- Liris atropos*, Mozambique, GRIBODO, p. 68, Mem. Acc. Bologna (5) iv, n. sp.
- Macromeris castaneus*, Java, BINGHAM, p. 438, J. Linn. Soc. xxv, n. sp.
- Meria flavicollis*, Transcaspian, MORAWITZ, p. 144, Horæ Soc. ent. Ross. xxx, n. sp.

- Methoca nigra*, Ceylon, BINGHAM, p. 427, pl. xv, fig. 4, P. Zool. Soc. London, 1896; *M. bicolor*, India, pl. iv, fig. 12, *rugosa*, Ceylon, fig. 11, CAMERON, Mem. Manchester Soc. xli, No. 4, p. 52 : n. spp.
- Miscophoides*, n. g., near *Sphex*, for *M. handlirschii*, n. sp., not described; BRAUNS, p. 448, Ann. Hofmus. Wien, xi.
- Miscophus* : habits; FERTON, p. 266, Act. Soc. Bordeaux, xlvi.
- M. rubriventris*, Bonifacio, p. 261, *nicolai*, Marseilles, p. 263, *bonifaciensis*, Corsica, p. 264, FERTON, Act. Soc. Bordeaux, xlvi; *M. similis*, Transcaspian, MORAWITZ, p. 149, Horæ Soc. ent. Ross. xxx : n. spp.
- Motes*, n. g. for *Notogonia odontophora* and *cyphononyx*, Kohl; KOHL, p. 351, Ann. Hofmus. Wien, xi.
- Mutillida* : table of N. American tribes and genera; ASHMEAD, pp. 179 & 180, Tr. Amer. ent. Soc. xxiii.
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## FORMICIDÆ.

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- Rogeria procera*, Pará, EMERY, p. 92, pl. i, fig. 19, Bull. Soc. ent. Ital. xxviii, n. sp.
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- Tomognathus sublævis*, habits, ♂, ♀, and worker; ADLERZ (10). *T. sublævis*, forms, with receptaculum seminis; ADLERZ, pp. 135-141, Ent. Tidskr. xvii.
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- Moansa*, n. g., p. 344, near *Xylonomus*, for *M. præstans*, n. sp., Caffraria, p. 345, TOSQUINET, Mem. Soc. ent. Belgique, v.
- Monoblastus lateralis*, Belgium, KRIECHBAUMER, p. 368, Ent. Nachr. xxii, n. sp.
- Nadia*, n. g., near *Meniscus*, for *N. fuscipennis*, p. 337, *cyanea*, p. 340, *formosa*, p. 342, n. spp., W. Africa, TOSQUINET, Mem. Soc. ent. Belgique, v.
- Nemeritis gracilens*, Cape Good Hope, TOSQUINET, p. 414, Mem. Soc. ent. Belgique, v, n. sp.
- Neuratelus americanus, ulmicola, liri dendri*, N. America, ASHMEAD, p. 203, Tr. Amer. ent. Soc. xxiii, n. spp.
- Obba*, n. g., near *Ortezia*, p. 105, for *O. calatus*, n. sp., Senegambia, p. 106, TOSQUINET, Mem. Soc. ent. Belgique, v.
- Ophion lutipenne*, Ogové, KIRBY, p. 263, pl. xii, fig. 6, Ann. Nat. Hist. (6) xviii; *O. nubilicarpus*, Cape Good Hope, p. 370, *leucocolis*, p. 372, S. Africa, *O. (Allocamptus) infuscatus*, p. 373, *senescens*, p. 375, Togoland, *O. (Enicospilus) bipartitus*, S. Africa, p. 377, *rubens*, Togoland, p. 382, *sericatus*, Scioa, p. 384, *expeditus*, p. 385, Togoland, *vecors*, Cape Good Hope, p. 387, *dolosus*, Egypt, p. 389, *dubius*, p. 390, *anceps*, p. 392, *leionotus*, p. 393, *trimaculatus*, Togoland, p. 395, TOSQUINET, Mem. Soc. ent. Belgique, v : n. spp.
- Oronotus albomaculatus*, Texas, ASHMEAD, p. 205, Tr. Amer. ent. Soc. xxiii, n. sp.
- Orthocentrus californicus* referred to *Tapinops*; ASHMEAD, p. 204, Tr. Amer. ent. Soc. xxiii.
- Osprynchotus gigas*, Mozambique, GRIBODO, p. 86, Mem. Acc. Bologna (5) iv, n. sp.
- Otacustes orgyia*, p. 209, *periliti*, p. 210, N. America, ASHMEAD, Tr. Amer. ent. Soc. xxiii, n. spp.
- Paniscus (Parabatus) luteolus*, Togoland, p. 401, *errans*, Galla, p. 402, *planipes*, Scioa, p. 404, *pallidus*, Togoland, p. 406, *rufescens*, Marocco, p. 409, *albipictus*, Delagoa Bay, p. 410, TOSQUINET, Mem. Soc. ent. Belgique, v; *P. ceylonicus*, Trincomali, CAMERON, p. 31, Mem. Manchester Soc. xli, No. 4 : n. spp.
- Perilissus buccatus*, Hungary, KRIECHBAUMER, p. 133, Termes. Fuzetek, xix; *P. bellatorius*, Oran, TOSQUINET, p. 348, Mem. Soc. ent. Belgique, v; *P. southwicki*, p. 196, *paniscoides*, p. 197, New York, ASHMEAD, Tr. Amer. ent. Soc. xxiii; n. spp.
- Pezomachus* and *Hemiteles*, relations; HARRINGTON, p. 76, Canad. Ent. xxviii. *P. ottawaensis*, Canada; HARRINGTON, p. 77, t. c.
- P. canaliculatus*, Hungary, KRIECHBAUMER, p. 129, Termes. Fuzetek, xix, n. sp.
- Phæogenes walshice*, Illinois, ASHMEAD, p. 205, Tr. Amer. ent. Soc. xxiii, n. sp.

- Phygadeuon solidus*, p. 225, *bicolor*, p. 227, Greenland, LUNDBECK, Vid. Medd. 1896; *P. heteropus*, Sweden, THOMSON, p. 2387, Opusc. ent. xxi; *P. leucocephalus*, Guinea, TOSQUINET, p. 121, Mem. Soc. ent. Belgique, v; *P. phryganidicæ*, California, ASHMEAD, p. 207, Tr. Amer. ent. Soc. xxiii : n. spp.
- Pimpla conchyliata*, Scioa, p. 288, *properata*; p. 293, *limbata*, p. 295, S. Africa, *cognata*, Togo, p. 299, *crocata*, p. 301, *divisa*, p. 302, Cape Good Hope, *diversipes*, Togoland, p. 304, *accurata*, E. Africa, p. 306, *blattifera*, Marocco, p. 310, *atriceps*, Cape Good Hope, p. 312, *suada*, Scioa, p. 313, *tuberata*, Cape Good Hope, p. 315, *producta*, Togoland, p. 317, *maculosa*, Guinea, p. 319, *fusconotata*, p. 321, *luteola*, p. 326, Delagoa Bay, *vitellina*, Cape Good Hope, p. 325, TOSQUINET, Mem. Soc. ent. Belgique, v; *P. nigricornis*, Ogové, KIRBY, p. 263, pl. xii, fig. 2, Ann. Nat. Hist. (6) xviii; *P. pulchrimaculata*, p. 20, *taprobancæ*, p. 21, Ceylon, *laothoe*, p. 22, *nepe*, pl. iii, fig. 4, p. 23, Mussoori, CAMERON, Mem. Manchester Soc. xli, No. 4 : n. spp.
- Platylabus submarginatus*, Italy, from *Zonosoma punctaria*, MAGRETTI, p. 83, Atti Soc. Ligustica, xxxvi; *P. insperatus*, p. 108, *faustus*, p. 112, Togoland, *crococephalus*, Caffraria, p. 114, TOSQUINET, Mem. Soc. ent. Belgique, v : n. spp.
- Plectocryptus pectoralis*, Sweden, THOMSON, p. 2383, Opusc. ent. xxi, n. sp.
- Polysphincta ceylonica*, Punduloya, ASHMEAD, p. 645, P. U. S. Mus. xviii, n. sp.
- Polyblastus phygadeuontoides*, Belgium, KRIECHBAUMER, p. 367, Ent. Nachr. xxii; *P. pictipennis*, Delagoa Bay, p. 354, *cinclipes*, S. Africa, p. 356, TOSQUINET, Mem. Soc. ent. Belgique, v : n. spp.
- Prionopoda coloradensis*, *beginii*, *ruficornis*, N. America, ASHMEAD, p. 198, Tr. Amer. ent. Soc. xxiii, n. spp.
- Pristomerus graciosus*, Algeria, p. 419, *luteolus*, Gambia, p. 421, *cunctator*, Delagoa Bay, p. 422, TOSQUINET, Mem. Soc. ent. Belgique, v; *P. euryptychiæ*, N. America, ASHMEAD, p. 192, Tr. Amer. ent. Soc. xxiii : n. spp.
- Rhyssa clavata*, subsp. *ghiliani*, habits, times of appearance of sexes; GRIFFINI, pp. 9-12, Miscell. ent. iv.
- Rothneyia*, n. g., aberrant, for *R. wroughtoni*, n. sp., Mussoori, pl. iii, fig. 3; CAMERON, p. 19, Mem. Manchester Soc. xli, No. 4.
- Seleucus gillettei*, p. 206, *rufiventris*, p. 207, N. America, ASHMEAD, Tr. Amer. ent. Soc. xxiii, n. spp.
- Spanoctecnus caseyi*, Virginia, ASHMEAD, p. 196, Tr. Amer. ent. Soc. xxiii, n. sp.
- Spilocryptus nigricornis*, Hungary, KRIECHBAUMER, p. 128, Termes. Fuzetek, xix, n. sp.
- Strongylopsis*, n. g., *Exochidarum*, for *S. anomala*, n. sp., Hungary; BRAUNS, p. 274, Termes. Fuzetek, xix.
- Stenarcus crassifemur*, *dentifer*, Sweden, THOMSON, p. 2381, Opusc. ent. xxi, n. spp.
- Stylocryptus eurycerus*, Stockholm, THOMSON, p. 2386, Opusc. ent. xxi, n. sp.
- Sychnoleter americanus*, Florida, ASHMEAD, p. 196, Tr. Amer. ent. Soc. xxiii, n. sp.
- Thalessa flavonotata*, Norway, KRIECHBAUMER, p. 135, Termes. Fuzetek, xix, n. sp.
- Theronia lurida*, Delagoa Bay, TOSQUINET, p. 282, Mem. Soc. ent. Belgique, v, n. sp.
- Theroscopus americanus*, Virginia, ASHMEAD, p. 211, Tr. Amer. ent. Soc. xxiii, n. sp.
- Triclistus terminalis*, *thoracicus*, N. America, ASHMEAD, p. 201, Tr. Amer. ent. Soc. xxiii, n. spp.
- Trychosis tunicula-rubra*, Quebec, FYLES, p. 150, Canad. Ent. xxviii, n. sp.

## BRACONIDÆ.

- MARSHALL (751) has completed the second volume of the *Braconidæ* of Europe and Algeria, in André's series. A third volume is to complete the family.
- Apanteles areolatus*, p. 374; *specularis*, p. 375, *lucidus*, p. 376, Hungary, SZÉPLIGETI, Termes. Fuzetek, xix; *A. taprobanae*, Trincomali, CAMERON, p. 38, Mem. Manchester Soc. xli, No. 4; *A. pratapa*, *tivacholæ*, Ceylon, ASHMEAD, p. 647, P. U. S. Mus. xviii : n. spp.
- Aphrastobracon*, n. g., *Braconinae*? for *A. flavipennis*, n. sp., Ceylon; ASHMEAD, p. 646, P. U. S. Mus. xviii.
- Ascogaster rostratus*, Hungary, SZÉPLIGETI, p. 238, Termes. Fuzetek, xix, n. sp.
- Biosteres melanosoma*, *nitida*, Hungary, SZÉPLIGETI, p. 384, Termes. Fuzetek, xix, n. spp.
- Bracon* and *Vipio* of the European region, revision of; SCHMIEDEKNECHT (1034).
- Bracon sulphurator*, Hungary, SZÉPLIGETI, p. 231, Termes. Fuzetek, xix; *B. obscuricornis*, p. 361, *ruficoxis*, p. 362, *fulvus*, *ochrosus*, p. 363, *sulcatulus*, p. 364, *pallipes*, *collinus*, p. 366, *sabulosus*, p. 367, Hungary, SZÉPLIGETI, Termes. Fuzetek, xix; *B. plumosus*, Ogové, KIRBY, p. 262, pl. xii, fig. 3, Ann. Nat. Hist. (6) xviii; *B. greeni*, Ceylon, ASHMEAD, p. 645, P. U. S. Mus. xviii; *B. ceylonicus*, pl. iii, fig. 5, p. 32, *tricarinatus*, p. 33, *itea*, Ceylon, *agraensis*, fig. 6, p. 34, *ingratus*, p. 35, *rothneyi*, Agra, *yeburyi*, Ceylon, p. 36, CAMERON, Mem. Manchester Soc. xli, No. 4 : n. spp.
- Calyptus cingulatus*, Hungary, SZÉPLIGETI, p. 378, Termes. Fuzetek, xix, n. sp.
- Chelonus alboannulatus*, *pannonicus*, p. 234, *rufiscapus*, *bimaculatus*, p. 235, *curvisulcatus*, *rimatus*, p. 236, *hungaricus*, *flavipalpis*, p. 237, *scabrosus*, p. 238, Hungary, SZÉPLIGETI, Termes. Fuzetek, xix; *C. maculatus*, p. 370, *migrator*, p. 373, Hungary, SZÉPLIGETI, *t. c.* : n. spp.
- Cosmophorus hopkinsii*, Virginia, ASHMEAD, p. 216, Tr. Amer. ent. Soc. xxiii, n. sp.
- Diospilus ruficornis*, Hungary, SZÉPLIGETI, p. 379, Termes. Fuzetek, xix, n. sp.
- Discoletes similis*, Hungary, SZÉPLIGETI, p. 379, *t. c.* n. sp.
- Doryctes grandis*, Hungary, SZÉPLIGETI, p. 370, *t. c.* n. sp.
- Ecphyllus pallidus*, *hypothemini*, p. 215, *nigriceps*, p. 216, N. America, ASHMEAD, Tr. Amer. ent. Soc. xxiii, n. spp.
- Foersteria*, n. g., near *Polydegmon*, for *F. laeviuscula*, Istria, *flavipes*, Hungary, n. spp.; SZÉPLIGETI, Wien. ent. Zeit. xv.
- Heterospilus caryæ*, *texanus*, p. 214, *H. ? astigma*, p. 215, N. America, ASHMEAD, Tr. Amer. ent. Soc. xxiii, n. spp.
- Hormius similis*, Hungary, SZÉPLIGETI, p. 371, Termes. Fuzetek, xix, n. sp.
- Iphiaulax nigrifrons*, p. 87, *fornasini*, p. 88, Mozambique, GRIBODO, Mem. Acc. Bologna (5) iv, n. spp.
- Mesocrina ? microrhopalæ*, Virginia, ASHMEAD, p. 217, Tr. Amer. ent. Soc. xxiii, n. sp.
- Meteorus sulcatus*, Hungary, SZÉPLIGETI, p. 378, Termes. Fuzetek, xix, n. sp.
- Microgaster* : cocoons and pupation; RUDOW, Illustr. Wochenschr. i, p. 123.
- Microplitis coactus*, Greenland, LUNDBECK, p. 243, Vid. Medd. 1896; *M. ochraceus*, Hungary, SZÉPLIGETI, p. 376, Termes. Fuzetek, xix : n. spp.
- Odontoscopus*, n. g. for *O. varistigma*, n. sp., Mozambique; GRIBODO, p. 88, Mem. Acc. Bologna (5) iv.



- Opius varigatus* (sic), *fallax*, p. 381, *lucidus*, p. 382, *silvicola*, *hungaricus*, p. 383, Hungary, SZÉPLIGETI, Termes. Fuzetek, xix, n. spp.
- Orgilus hungaricus*, p. 240, *zonator*, *similis*, *ruficornis*, p. 241, Hungary, SZÉPLIGETI, Termes. Fuzetek, xix, n. spp.
- Polydegmon marshalli*, p. 145, *sinuatus*, *intermedius*, p. 147, Hungary, SZÉPLIGETI, Wien. ent. Zeit. xv, n. spp.
- Pseudovipio*, n. g. for *P. inscriptor*, Ns. ; SZÉPLIGETI, p. 230, Termes. Fuzetek, xix.
- P. biroi*, *hungaricus*, Hungary, SZÉPLIGETI, p. 360, Termes. Fuzetek, xix, n. spp.
- Spathius eleutheræ*, Bahamas, ASHMEAD, p. 32, Bull. Lab. Iowa, 1896, n. sp.
- Spinaria nigriceps*, Ceylon, CAMERON, p. 37, pl. iii, fig. 7, Mem. Manchester Soc. xli, No. 4, n. sp.
- Vipio intermedius*, p. 228, *brevicaudis*, *frivaldszkyi*, p. 229, Hungary, SZÉPLIGETI, Termes. Fuzetek, xix ; *V. filicaudis*, Hungary, SZÉPLIGETI, p. 359, t. c. ; *V. ocreatus*, Mozambique, GRIBODO, p. 89, Mem. Acc. Bologna (5) iv : n. spp.
- Xenarcha variabilis*, p. 368, *similis*, *ruficornis*, *major*, p. 369, Hungary, SZÉPLIGETI, Termes. Fuzetek, xix, n. spp.

## EVANIIDÆ, PELECINIDÆ, TRIGONALIDÆ.

- Evania desjardinsii*, habits ; BORDAGE, C.R. Ac. Sci. cxxiii, pp. 610-613.
- Pelecinus polyturator*, habits ; FORBES, pp. 124 & 134, Rep. Ins. Illinois, xviii.
- Trigonalys rufiventris*, p. 311, *dubia*, p. 313, Burma, MAGRETTI, Ann. Mus. Genova, xxxvii ; *T. canadensis*, Victoria, B. C., HARRINGTON, p. 108, Canad. Ent. xxviii : n. spp.

## CHALCIDIDÆ (inclusive of MYMARIDÆ).

- Mymaridæ* to be a family with subfam. *Mymarinae* and *Gonatocerinae* ; HOWARD, p. 642, P. U. S. Mus. xviii.
- Ablerus aureonotus*, Grenada, HOWARD, p. 157, J. Linn. Soc. xxvi, n. sp.
- Acroclisus carolinensis*, N. America, ASHMEAD, p. 228, Tr. Amer. ent. Soc. xxiii, n. sp.
- Ætroxys callidii*, Virginia, ASHMEAD, p. 223, Tr. Amer. ent. Soc. xxiii, n. sp.
- Anagyrus*, n. g., p. 638, *Encyrtinae*, for *A. greeni*, p. 639, n. sp., Ceylon ; HOWARD, P. U. S. Mus. xviii.
- Anastatus tachardiæ*, Ceylon, HOWARD, p. 641, P. U. S. Mus. xviii, n. sp.
- Aneristus*, n. g., p. 17, near *Coccophagus*, for *A. ceroplastæ*, n. sp., Jamaica, p. 18 ; HOWARD, Psyche, vii, Supp.
- Anicetus*, n. g., *Encyrtinae*, for *A. ceylonensis*, n. sp., Ceylon ; HOWARD, p. 639, P. U. S. Mus. xviii.
- Anthemus*, n. g., *Mymarinae*, for *A. chionaspidis*, n. sp., Ceylon ; HOWARD, p. 643, P. U. S. Mus. xviii.
- Anysis*, n. g., subfam. ?, for *A. australiensis*, n. sp., W. Australia ; HOWARD, p. 167, Canad. Ent. xxviii.
- Aphobetus*, n. g., subfam. ?, for *A. maskelli*, n. sp., New Zealand, on *Coccidæ* ; HOWARD, p. 166, Canad. Ent. xxviii.
- Aphycus lichtensiaæ*, Ceylon, HOWARD, p. 640, P. U. S. Mus. xviii ; *A. amœnus*, Grenada, HOWARD, J. Linn. Soc. xxvi : n. spp.
- Arachnophaga*, n. g. for *Eupelmus piceus*, Riley ; ASHMEAD, p. 18, P. ent. Soc. Washington, iv.
- Aratus*, n. g., p. 155, *Encyrtinae*, for *A. scutellatus*, n. sp., p. 156, Grenada ; HOWARD, J. Linn. Soc. xxvi.

- Archinus*, n. g., p. 154, *Encyrtine*, for *A. occupatus*, n. sp., Grenada, p. 155; HOWARD, J. Linn. Soc. xxvi.
- Ardalus*, n. g., p. 161, *Elachistine*, for *A. aciculatus*, *politus*, p. 162, *levigatus*, p. 163, n. spp., Grenada; HOWARD, J. Linn. Soc. xxvi.
- Astichus ciliatus*, Grenada, HOWARD, p. 167, J. Linn. Soc. xxvi, n. sp.
- Ashmeadia collaris*, Grenada, HOWARD, p. 136, J. Linn. Soc. xxvi, n. sp.
- Belonura*, n. g., *Pteromalinae*, p. 224, for *B. singularis*, n. sp., N. America, p. 225; ASHMEAD, Tr. Amer. ent. Soc. xxiii.
- Blastothrix insolitus*, Grenada, HOWARD, p. 150, J. Linn. Soc. xxvi, n. sp.
- Bothriothorax insularis*, Grenada, HOWARD, p. 147, J. Linn. Soc. xxvi, n. sp.
- Calosoter longiventris*, California, ASHMEAD, p. 12, P. ent. Soc. Washington, iv, n. sp.
- Catolaccus celioidis*, Virginia, ASHMEAD, p. 226, Tr. Amer. ent. Soc. xxiii; *C. carinatus*, Grenada, HOWARD, p. 145, J. Linn. Soc. xxvi: n. spp.
- Cerambycobius*, n. g. for *Eupelmus cleri*, Ashm.; ASHMEAD, p. 17, P. ent. Soc. Washington, iv.
- Chalcis bengalensis*, pl. iii, fig. 9, *eccentrica*, India, CAMERON, p. 40, Mem. Manchester Soc. xli, No. 4, n. spp.
- Charitopus schwarzii*, Florida, ASHMEAD, p. 11, P. ent. Soc. Washington, iv, n. sp.
- Chiloneurus funiculus*, *nigrescens*, Grenada, HOWARD, p. 148, J. Linn. Soc. xxvi, n. spp.
- Chirolophus kæbelei*, Australia, ASHMEAD, p. 13, P. ent. Soc. Washington, iv, n. sp.
- Chrysocharis fulgens*, Grenada, HOWARD, p. 167, J. Linn. Soc. xxvi, n. sp.
- Closterocerus niger*, Illinois, ASHMEAD, p. 232, Tr. Amer. ent. Soc. xxiii, n. sp.
- Coccophagus orientalis*, p. 633, *flavescens*, p. 634, Ceylon, HOWARD, P. U. S. Mus. xviii, n. spp.
- Colyastichus flavus*, Grenada, HOWARD, p. 135, J. Linn. Soc. xxvi, n. sp.
- Cryptoprymnus illinoensis*, N. America, ASHMEAD, p. 228, Tr. Amer. ent. Soc. xxiii, n. sp.
- Cyrtogaster citripes*, *occidentalis*, N. America, ASHMEAD, p. 230, Tr. Amer. ent. Soc. xxiii, n. spp.
- Decatomidea cooki*, California, HOWARD, p. 23, Bull. Dep. Agric. ent. Tech. ii; *D. compactum*, Grenada, HOWARD, p. 137, J. Linn. Soc. xxvi: n. spp.
- Derostenus (Closterocercus) violaceus*, Grenada, HOWARD, p. 166, J. Linn. Soc. xxvi, n. sp.
- Elachistus metallicus*, Grenada, HOWARD, p. 161, J. Linn. Soc. xxvi, n. sp.
- Elasmus flavoscutellatus*, p. 157, *cellulatus*, p. 158, Grenada, HOWARD, J. Linn. Soc. xxvi, n. spp.
- Elatus sisymbrii*, New Mexico, ASHMEAD, p. 218, Tr. Amer. ent. Soc. xxiii, n. sp.
- Encarsia planchoniae*, p. 635, *aonidiæ*, p. 636, Ceylon, HOWARD, P. U. S. Mus. xviii, n. spp.
- [*E. luteola*, *coquilletti*, fig. 9, p. 29, *angelica*, p. 30, N. America, HOWARD, Bull. Dep. Agric. ent. Tech. i, n. spp.; placed by error in *Coccidæ* in Zool. Rec. xxxii.]
- Encyrtus elpis*, habits; DALE, Entomologist, 1896, p. 163.
- E. lichtensiæ*, p. 636, *chionaspidis*, *planchoniae*, *tachardiæ*, p. 637, *solidus*, p. 638, Ceylon, ASHMEAD, P. U. S. Mus. xviii; *E. mesograptæ*, Florida, ASHMEAD, p. 232, Tr. Amer. ent. Soc. xxiii; *E. submetallicus*, p. 151, *moderatus*, *conformis*, p. 152, *convexus*, *sordidus*, p. 153, *rotundiformis*, p. 154, Grenada, HOWARD, J. Linn. Soc. xxvi: n. spp.

- Endomychobius*, n. g., *Pteromalinae*, for *E. flavipes*, n. sp., N. America ;  
ASHMEAD, p. 227, Tr. Amer. ent. Soc. xxiii.
- Eniaca texana*, Texas, ASHMEAD, p. 217, Tr. Amer. ent. Soc. xxiii, n. sp.
- Entedon pulcher*, Grenada, HOWARD, p. 168, J. Linn. Soc. xxvi, n. sp.
- Epistenia odyneri*, California, ASHMEAD, p. 336, Psyche, vii, n. sp.
- Euchrysia hyalinipennis*, p. 231, *maculipennis*, p. 232, California, ASHMEAD, Tr. Amer. ent. Soc. xxiii, n. spp.
- Eupelminæ*, table of genera ; ASHMEAD, pp. 6-10, P. ent. Soc. Washington, iv.
- Eupelmus reticulatus*, Grenada, HOWARD, p. 146, J. Linn. Soc. xxvi, n. sp.
- Euplectrus ceylonensis*, Punduloya, HOWARD, p. 641, P. U. S. Mus. xviii, n. sp.
- Eurytoma tylodermatis*, Virginia, ASHMEAD, p. 218, Tr. Amer. ent. Soc. xxiii ; *E. cressoni*, p. 138, *walshi*, *mayri*, p. 139, Grenada, HOWARD, J. Linn. Soc. xxvi : n. spp.
- Eurytomocharis eragrostidis*, *triodiae*, N. America, HOWARD, p. 21, Bull. Dep. Agric. ent. Tech. n. spp.
- Evoxysoma vitis*, description and figure ; HOWARD, p. 22, Bull. Dep. Agric. ent. Tech. ii.
- E. vittatum*, Grenada, HOWARD, p. 137, J. Linn. Soc. xxvi, n. sp.
- Gyrolasia flava*, Grenada, HOWARD, p. 174, J. Linn. Soc. xxvi, n. sp.
- Habrocytus rhodocani*, *languriae*, N. America, ASHMEAD, p. 220, Tr. Amer. ent. Soc. xxiii, n. spp.
- Halizoia rufipes*, California, ASHMEAD, p. 225, Tr. Amer. ent. Soc. xxiii, n. sp.
- Halticella erythropus*, Agra, CAMERON, p. 41, Mem. Manchester Soc. xli, No. 4, n. sp.
- Halticoptera subpetiolata*, Grenada, HOWARD, p. 143, J. Linn. Soc. xxvi, n. sp.
- Hoplocrepis grenadensis*, Antilles, HOWARD, p. 158, t. c. n. sp.
- Idoleupelmus*, n. g., *Eupelminæ*, for *I. annulicornis*, n. sp., St. Vincent, ASHMEAD, p. 13, P. ent. Soc. Washington, iv.
- Ischnopsis*, n. g., *Eupelminæ*, for *I. ophthalmica*, n. sp., St. Vincent ; ASHMEAD, p. 16, P. ent. Soc. Washington, iv.
- Isosoma* and *Philachyra*, distinctions queried ; HOWARD, p. 8, Bull. Dep. Agric. ent. Tech. ii.
- I. californicum*, p. 10, *bromi*, p. 11, *hageni*, *agrotidis*, p. 12, *captivum*, p. 13, *maculatum*, *websteri*, p. 15, *hirtifrons*, *bromicola*, p. 16, *fitchi*, p. 20, N. America, HOWARD, Bull. Dep. Agric. ent. Tech. ii ; *I. abnorme*, N. America, ASHMEAD, p. 219, Tr. Amer. ent. Soc. xxiii : n. spp.
- Isosomorpha muhlenbergiae*, N. America, HOWARD, p. 20, Bull. Dep. Agric. ent. Tech. ii, n. sp.
- [*Leucodesmia*, n. g., near *Stenomesium*, p. 403, for *L. typica*, n. sp., N. America, p. 404 ; HOWARD, Insect Life, vii ; in "Corrigenda," last year].
- Lecaniobius*, n. g., *Eupelminæ*, for *L. cockerellii*, n. sp., Antigua ; ASHMEAD, p. 17, P. ent. Soc. Washington, iv.
- Litus enocki*, Ceylon, HOWARD, p. 643, P. U. S. Mus. xviii, n. sp.
- Lophyroceræ nigriceps*, Florida, ASHMEAD, p. 214, Tr. Amer. ent. Soc. xxiii, n. sp.
- Macreupelmus*, n. g., *Eupelminæ*, for *M. brasiliensis*, n. sp., Santarem ; ASHMEAD, p. 14, P. ent. Soc. Washington, iv.
- Mastocharis wilderi*, habits ; HARRINGTON, p. 78, Canad. Ent. xxviii.
- Meraporus dubius*, N. America, ASHMEAD, p. 219, Tr. Amer. ent. Soc. xxiii, n. sp.
- Metapon rufipes*, *californicum*, N. America, ASHMEAD, p. 229, Tr. Amer. ent. Soc. xxiii, n. spp.
- Miotropis gibbosus*, Grenada, HOWARD, p. 160, J. Linn. Soc. xxvi, n. sp.

- Monodontomerus montivagus*, ♂, COCKERELL, p. 127, *Canad. Ent.* xxviii.  
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- Dryophanta ilicis*, Spain, KIEFFER, p. 371, Bull. Soc. ent. France, 1896 ;  
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- Account of *Tenthredinidæ* living on conifers in Denmark; BORRIES, Ent. Meddel. v, pp. 201-283.
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- The *Nematineæ* of North America, revision; MARLATT, Bull. Dep. Agric. ent. Tech. No. 3.
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- Pristiphora tibialis*, larva noticed ; DYAR, p. 238, Canad. Ent. xxviii.
- P. oblita*, Sardinia, COSTA, p. 35, pl. i, fig. 3, Atti Acc. Napoli (2) vii ; *P. nigra*, p. 114, *siskiyonensis*, p. 116, *murtfeldtiæ*, *banksi*, p. 117, *dyari*, p. 118, *hoodi*, *kochelei*, p. 119, *carolinensis*, p. 120, *occidentalis*, *coloradensis*, p. 121, N. America, MARLATT, Bull. Dep. Agric. ent. Tech. No. 3 : n. spp.
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- R. insignis*, Irkutsk, KONOW, Ent. Nachr. xxii, p. 165, n. sp.
- Schizocera obscuripes*, Algeciras, KONOW, p. 49, Wien. ent. Zeit. xv, n. sp.
- Selandria brunnea* (Magr.), Lombardy, p. 83, COSTA, pl. i, fig. 8, Atti Acc. Napoli (2) vii, n. sp.
- Taxonus lacteilabris*, Turin, COSTA, p. 109, Atti Acc. Napoli (2) vii ; *T. gaullei*, *braunsi*, p. 314, *gabonensis*, W. Africa, *gribodoi*, Borneo, p. 315, KONOW, Ent. Nachr. xxii : n. spp.
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(c.) *LEPIDOPTERA.*

- Handbook for collecting and rearing ; discussion of variation, origin of species, &c. ; STANDFUSS (1120).  
 New classification of *Lepidoptera* ; PACKARD, pp. 56-83, Mem. Ac. Washington, vii.  
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 Taxonomic value of the organs of copulation ; JORDAN, pp. 501-505, Nov. Zool. iii.  
 Histology of silk-glands of caterpillars ; KORSCHOLT (668, 669), MEVES (788).  
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 Formation of wing-scales and their colour ; MAYER (764).  
 Variation in ecdyses and in distinctness of larval and pupal instars ; CHAPMAN (152).  
 Production of a second annual generation by aid of temperature ; UFFELN (1179).  
 Experiments with birds, lizards, and butterflies, as to warning colours and mimicry ; FINN (334, 335).  
 List of superfamilies and families found in N. America, and their types ; GROTE (448).  
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*RHOPALOCERA.*

- [The following memoirs relate to *Rhopalocera*, viz., AURIVILLIUS (34, 35), BERG (64), BÖNNINGHAUSEN (98), BUTLER (120-131), CALBERLA (135), CROWLEY (228), DAVIDSON, BELL, & AITKEN (238), DIXEY (248), H. H. DRUCE (262, 263, 264), DUDGEON (265), EIMER (282), FINN (334, 335), FRUHSTORFER (380-383), GODMAN & SALVIN (413, 414), HAGEN (465, 466), HELLER (488), HERON (495), HOLLAND (508-512), HOLMGREN (515), IZQUIERDO (557), A. JANET (572), JORDAN (584), KARSCH (589), KHEIL (613, 614), KIRBY (635), LANZ (694), MARSHALL (747, 748), MARTIN (755), MOORE (804), NICÉVILLE (821-823), NICÉVILLE & MARTIN (824), NICHOLSON (825), OBERTHUR (829-833), PACKARD (850), PAGENSTECHE (854, 855), PIEPERS (903), PIEPERS & SNELLEN (904), POLL (910), E. REUTER (966), RICKARD (974, 975), RIPPON (977), RÖBER (986A-990), ROTHSCHILD (997, 998, 999, 1001, 1003), SEELDRAYERS (1059), SHARPE (1081-1084), SKINNER (1089, 1090), SMITH (1101-1103), SMITH & KIRBY (1104), SNELLEN (1114), STANDFUSS (1120), STAUDINGER (1122, 1123, 1126), STEFANELLI (1127), SWINHÖE (1135, 1136), TUTT (1172), URECH (1181), WATSON, E. Y. (1226, 1227), WATSON, J. (1228), WEYMER (1235).]

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- List of the butterflies of Sumatra (756 species), with various notes and observations ; DE NICÉVILLE & MARTIN (824).
- The *Rhopalocera* of Sumba and Sambawa, with notes on peculiarities ; PAGENSTECHER (855).
- For observations on the habits, dates, &c., of numerous East Indian butterflies, see DAVIDSON, BELL & AITKEN, J. Bombay Soc. x.
- Rhopalocera* of St. Vincent and Grenada, W. I. ; GODMAN & SALVIN, P. Zool. Soc. London, 1896, p. 513.
- Physiology of colour-changes induced by temperature in wings of *Vanessa* ; and phyletic repetition of the coloration in ontogeny ; URECH (1181).
- Experiments as to value of nauseousness and colours as protection against lizards and birds ; FINN (334, 335).
- KIRBY completes his account of butterflies (635).
- Stages of hibernation of British butterflies ; TUTT (1172).
- The distinction of species by ♂ structures ; DÖNITZ, Berlin. ent. Zeitschr. 1896, SB., pp. 11-14.
- Variation in secondary sexual characters (androconia) ; J. WATSON (1228).
- Discussion of the variation of N. American *Rhopalocera* and its causes ; SKINNER (1089).

## PAPILIONIDÆ.

- Papilionidæ* and *Pieridæ* are distinct families, but form together the gens *Papiliones* ; E. REUTER, p. 255, Acta Soc. Sci. Fenn. xxii.
- Notes on variation in *Papilionidæ* ; CH. OBERTHUR, Etudes Ent. xx, pp. 1-3.
- Ornithoptera* : *Schoenbergia tithonus*, pl. v, *Pompeoptera vaudepolli*, pl. 32, var. *honrathiana*, pl. 33, *pompeus*, pl. 56, figured ; RIPPON, Icones Ornithopt.
- Papilio* : list of palæarctic ; SEITZ, p. 65, Soc. Ent. xi : numerous notes on his last year's revision, &c. ; ROTHSCHILD, pp. 63-68, Nov. Zool. iii : numerous Malayan new subspp. ; ROTHSCHILD, pp. 322-324, t. c. *P. phorcas*, n. subspp. ; ROTHSCHILD, pp. 324 & 325, t. c. New subspp. from the extreme East and Malay Archipelago ; ROTHSCHILD, pp. 421-425, t. c. *P. canopus*, n. subsp. *sumbanus* ; ROTHSCHILD, p. 231, t. c. : figure, pl. xv, fig. 41, t. c. *P. canopus*, n. var. *tenimberensis* ; ROTHSCHILD, p. 65, t. c. *P. adamantius*, characters ; SUFFERT, p. 289, Berlin. ent. Zeitschr. 1896. *P. adamantius*, n. var. *insulicola*, p. 91 ; *P. antiphates*, n. var. *kalaoensis* ; *P. eurypilus*, n. var. *insularius*, p. 92 ; ROTHSCHILD, Nov. Zool. iii. *P. adamastor* and allies, characters ; SEELDRAYERS, p. 503, Ann. Soc. ent. Belgique, xl. *P. memnon* and *polites*, evolution, tables ; Congr. Zool. iii, p. 476 : evolution of allied forms of *Papilio* ; EIMER (282) : variation of the genitalia in numerous species ; JORDAN, pp. 461-497, Nov. Zool. iii. *P. neumogeni*, ♀, synonymy ; PAGENSTECHER, pp. 151-153, Ent. Nachr. xxii. *P. ucalegonides*, *carchedonius*, variation ; AURIVILLIUS, pp. 71-74, cuts, Ent. Tidskr. xvii. *P. polytes*, varietal note ; ROTHSCHILD, p. 65, Nov. Zool. iii. *P. paradoxus*, varietal note ; ROTHSCHILD, p. 67, t. c. *P. sarpedon*, var. ; NICÉVILLE, pl. t, fig. 46, p. 186, J. Bombay Soc. x. *P. hector*, variety of duration of pupal stage ; PRALL, p. 697, J. Bombay Soc. x. *P. machaon*, life-history ; BACOT, p. 240, Ent. Rec. viii. *P. antiphates*, p. 579, pl. vi, figg. 1 & 1a, *daksha*, p. 580, figg. 3 & 3a, *buddha*, figg. 2 & 2a, p. 581, larvæ and pupæ ; DAVIDSON, BELL & AITKEN, J. Bombay Soc. x.
- P. aurivilliusi*, Congo, SEELDRAYERS, p. 499, Ann. Soc. ent. Belgique, xl ; *P. donaldsoni*, Lake Rudolf, SHARPE, p. 537, P. Zool. Soc.

- London, 1896; *P. (Byasa) polla*, Shan States, NICÉVILLE, p. 633, J. Bombay Soc. x; *P. doddsi*, Tonkin, A. JANET, p. 215, Bull. Soc. ent. France, 1896; *P. wahnesi*, New Guinea, RÖBER, p. 292, Ent. Nachr. xxii : n. spp.
- Troides oblongomaculatus*, notes on varieties; ROTHSCHILD, p. 63, Nov. Zool. iii. *T. haliphron*, n. var. *pistor*; ROTHSCHILD, p. 91, t. c.
- T. (Ornithoptera) schonbergi*, New Guinea, RÖBER, p. 289, Ent. Nachr. xxii, n. sp.
- Parnassius apollo*, nomenclature of European varr.; HARCOURT-BATH, p. 331, Entomologist, 1896, and ELWES, p. 356, t. c. *P. tartarus*, ♂; AUSTAUT, Naturaliste, 1896, p. 74.

## PIERIDÆ.

- Notes on variation in *Pieridæ*; CH. OBERTHUR, pp. 3-8, pls. i, &c, Etudes Ent. xx.
- Phylogeny of pattern of wing, with reference to mimetic forms; DIXEY (248).
- Appias montanus*, Philippines, ROTHSCHILD, p. 325, Nov. Zool. iii, n. sp.
- Callidryas florella*, androconia, RICKARD, p. 302, Entomologist, 1896.
- Callosune evanthides*, Aldabra I., HOLLAND, p. 268, P. U. S. Mus. xviii, n. sp.
- Catantia sinapina*, *strigosa*, Peru, *reducta*, with var. *boliviana*, Ecuador and Bolivia, p. 54, *straminea*, hab.?, p. 55, BUTLER, Ann. Nat. Hist. (6) xvii, n. spp.
- Colias edusa* and *hyale*, varr. in England and Switzerland; WILKINSON, p. 102, J. Oxford Club, ii. *C. edusa*, ? hibernation; TUTT, pp. 250-253, Ent. Rec. vii. *C. hyale*, hibernation of larva; FROHAWK, p. 163, Entomologist, 1896. *C. philodice*, varr.; BRAINERD, p. 305, Canad. Ent. xxviii. *C. casonia*, note and cut; t. c. pp. 190 & 218.
- Daptomera*: synonymy of numerous species; BUTLER, pp. 349 & 350, Ann. Nat. Hist. (6) xvii.
- D. hubneri*, Brazil, *inequalis*, Peru, p. 347, *latilimbata*, Ecuador, *harti*, Trinidad, BUTLER, p. 349, Ann. Nat. Hist. (6) xvii, n. spp.
- Delias funerea*, figg. 1 & 2, *georgiana*, figg. 3 & 4, *sacha*, figg. 5 & 6, figured; SMITH & KIRBY, Rhop. exot. Pierinæ, Delias, vi.
- D. battana*, Celebes, FRUHSORFER, p. 9, Soc. ent. xi; *D. totila*, p. 177, *narses*, p. 178, New Britain, HELLER, Ent. Nachr. xxii : n. spp.
- Dismorphiinae*: discussed, *Leucophasia* referred thereto; E. REUTER, p. 249, Acta Soc. Sci. Fenn. xxii.
- Dismorphia cubana*, figg. 1-3, *medorilla*, figg. 4-6, *mirandola*, figg. 7 & 8, *medorina*, figg. 9-11, figured; SMITH & KIRBY, Rhop. exot. Pierinæ, Dismorphia, i.
- D. nella*, *discrepans*, Granada, p. 26, *rhomboidea*, Nauta, p. 27, BUTLER, Entomologist, 1896, n. spp.
- Euantia acutipennis*, Trinidad, BUTLER, p. 26, Entomologist, 1896, n. sp.
- Eriocolias* is a subgenus of *Colias*; WATSON, p. 351, Entomologist, 1896.
- Eurymus kirbyi*, n. n., (= *Colias hyale* auct.) ; KIRBY (635) ii, p. 215.
- Heliochroma leucothea*, metamorphoses: IZQUIERDO, Notas, &c., pp. 21-24, pl. iii.
- Huphina lanassa*, complex synonymy, dry-season forms; BUTLER, p. 231, Ann. Nat. Hist. (6) xvii.
- Mylothris*, relations of Old and New-World forms; BUTLER, p. 42, Ann. Nat. Hist. (6) xviii. *M. narcissus*, n. var. *dentatus*; BUTLER, p. 124, pl. vi, fig. 3, P. Zool. Soc. London, 1896.

- M. neumanni*, E. Africa, SHARPE, p. 125, Ann. Nat. Hist. (6) xvii; *M. crawshayi*, Nyasaland, BUTLER, p. 124, pl. vi, fig. 4, P. Zool. Soc. London, 1896; *M. yulei*, Nyasaland, BUTLER, p. 853, pl. xliii, fig. 2, t. c.; *M. rosenbergi*, *sulphuralis*, Colombia, BUTLER, p. 43, Ann. Nat. Hist. (6) xviii: n. spp.
- Nepheronia pingasa*, larva and pupa; DAVIDSON, BELL & AITKEN, p. 573, pl. vi, figg. 4 & 4a, J. Bombay Soc. x.
- Parura*, n. n. for *Metura*, Butl. nec Walk.; KIRBY (635) ii, p. 229.
- Phrissura nyasana*, Africa, BUTLER, p. 853, pl. xliii, fig. 3, P. Zool. Soc. London, 1896, n. sp.
- Pieris kicaha*, note on; BUTLER, p. 43, Ann. Nat. Hist. (6) xviii. *P. rapæ*, in California; WRIGHT, p. 102, Canad. Ent. xxviii. *P. brassicæ*, n. var. *catoleuca*; RÖBER, p. 81, Ent. Nachr. xxii. *P. pigea*, n. var. *rubrobasalis*; LANZ, pp. 116-120, Deutsche ent. Zeitschr. Lep. ix.
- P. mahoboides*, p. 757, *agrippinides*, p. 758, E. Africa, HOLLAND, P. U. S. Mus. xviii, n. spp.
- Pseudopontia* to be a separate subfamily; E. REUTER, p. 228, Acta Soc. Sci. Fenn. xxii.
- Schatzia*, n. n. for *Eucheira*, Westwood nec Dej.; KIRBY (635) p. 162.
- Tachyris euryxantha*, figures; SMITH & KIRBY, Rhop. exot. Pierinæ, Delias, vi, figg. 7 & 8.
- T. maculata*, New Britain, SMITH, p. 374, Ann. Nat. Hist. (6) xvii; *T. janeira*, Rio de Janeiro, BÖNNINGHAUSEN, p. 30, Verh. Ver. Hamburg, ix: n. spp.
- Teracolus*: notes on larvæ and pupæ at Aden; NURSE, pp. 245-247, pl. x, figg. 13, 18, 17, 14, P. Zool. Soc. London, 1896; YERBURY, t. c. p. 256: notes on Central African; BUTLER, pp. 834-839, t. c. *T. venosus*, ♀; HOLLAND, p. 759, P. U. S. Mus. xviii.
- T. aldabrensis*, Aldabra I., HOLLAND, p. 269, pl. viii, figg. 7 & 8, P. U. S. Mus. xviii; *T. metagone*, E. Africa, HOLLAND, p. 760, t. c.; *T. lorti*, Somaliland, SHARPE, p. 527, P. Zool. Soc. London, 1896; *T. infumatus*, Nyasaland, BUTLER, p. 128, pl. vi, figg. 5 & 6, t. c.: n. spp.
- Terias sari* = (*sodalis*, Moore), *hecabe* = (*contubernalis*, *merguiana*, *kana*, Moore); WATSON, p. 283, J. Bombay Soc. x. *T. brigitta* and *zoë*, reared; MARSHALL, p. 363, Tr. ent. Soc. London, 1896. *T. hecabe*, p. 570, pl. vi, figg. 5 & 5a, *silhetana*, p. 571, figg. 6 & 6a, larvæ and pupæ; DAVIDSON, BELL & AITKEN, J. Bombay Soc. x.
- T. toba*, p. 496, *tecmessa*, p. 498, Sumatra, NICÉVILLE, J. Asiat. Soc. Bengal, lxiv; *T. mandarinulus*, E. Africa, p. 242, pl. vii, fig. 5, P. U. S. Mus. xviii, but cf. Entomologist, 1892: n. spp.

## DANAIDÆ.

- Classification; *Clothilda* referred to it; E. REUTER, Acta Soc. Sci. Fenn. xxii, pp. 301-330: the gens *Danaidæ*, pp. 330-335.
- Amauris ansorgei*, Uganda, SHARPE, p. 158, Ann. Nat. Hist. (6) xviii; *A. crawshayi*, Lake Nyasa, BUTLER, p. 821, pl. xli, fig. 1, P. Zool. Soc. London, 1896: n. spp.
- Asthipa melusine*, figg. 1-3, *kirbyi*, figg. 4-6, figured; SMITH & KIRBY, Rhop. exot. Danaidæ, *Asthipa*, ii.
- Danaïdæ archippus*, nomenclature discussed; DE NICÉVILLE, p. 366, J. Asiat. Soc. Bengal, lxiv. *Danaus plexippus* of Linn. is the *Papilio genutia* of Cramer; KIRBY, p. 188, Entomologist, 1896. *D. cleona*, var. *talautica*; PIEPERS & SNELLEN, p. 43, pl. i, fig. 2, Tijdschr. Ent. xxxix.
- D. kukenthali*, Celebes, PAGENSTECHE, p. 49, Ent. Nachr. xxii, n. sp.
- Euplœa swainsonii*, var. *talautensis*; PIEPERS & SNELLEN, p. 42, pl. i, fig. 1, Tijdschr. Ent. xxxix. *E. klugii*, varr.; WATSON, p. 638, J. Bombay Soc. x. *E. coreta*, larva and pupa; DAVIDSON, BELL & AITKEN, p. 241, pl. i, fig. 1, J. Bombay Soc. x.

- E. pagenstecheri*, Bawean, HAGEN, p. 182, Jahrb. nassau. Ver. xlix ; *E.* (*Crastia*) *atossa*, Sumbawa, PAGENSTECHEER, p. 132, *t. c.* : n. spp.  
*Hestia leuconoë*, n. var. *javana* ; FRUHSTORFER, p. 65, Ent. Nachr. xxii.  
*Ravadeba philo*, ♀, figured ; SMITH & KIRBY, Rhop. exot. Danainæ, Asthipa, ii, figg. 7 & 8.

## ACRÆIDÆ and HELICONIDÆ.

- Acræa* : variation and seasonal dimorphism of numerous species in S. Africa ; MARSHALL, pp. 551-556 & 564, Tr. ent. Soc. London, 1896.  
*A. apecida*, n. var. *flavomaculatus* ; LANZ, p. 130, Deutsche ent. Zeitschr. Lep. ix. *A. johnstoni*, varr. and synonymy ; BUTLER, p. 113, P. Zool. Soc. London, 1896.  
*A. pharsaloides*, pl. vii, fig. 3, *minima*, p. 232, *abbottii*, fig. 1, p. 233, E. Africa, HOLLAND, P. U. S. Mus. xviii, but *cf.* Entomologist, 1892\* ;  
*A. hochneeli*, E. Africa, HOLLAND, p. 746, *t. c.* ; *A. burni*, S. Africa, BUTLER, p. 467, Ann. Nat. Hist. (6) xviii ; *A. parce*, Sula Is., p. 192, pl. i, fig. 8, *penelope*, Congo, p. 195, *leona*, W. Africa, p. 199, with var. *parrhoppidia*, p. 201, *præponina*, Kuilu, p. 202, *supponina*, *viviana*, p. 204, W. Africa, *A. (Planema) epitellus*, p. 207, E. Africa, *aurivillii*, pl. ii, fig. 2, Cameroons, *dewitzi*, fig. 5, Niam-niam, p. 209, STAUDINGER, Deutsche ent. Zeitschr. Lep. ix : n. spp.  
*Alæna*, *cf.* *Lycanidæ*.  
*Heliconius* : STAUDINGER describes numerous varieties, figuring the following, *holcophorus*, p. 285, pl. vi, fig. 3, *epicydnides*, p. 289, pl. vi, fig. 5, *penelope*, pl. vii, fig. 1, *penelamanda*, fig. 3, *pluto*, fig. 4, *cybele*, var. *cybelina*, fig. 2, p. 304, *thelxiope*, var. *aglaopeia*, pl. vii, fig. 5, p. 305, *erato*, synonymy, pp. 315 & 316, Deutsche ent. Zeitschr. Lep. ix.  
*H. weymeri*, Colombia, p. 287, pl. vi, figg. 1 & 5, *pseudorhea*, Amazons, p. 291, *aphrodyte*, Bolivia, p. 299, pl. vi, fig. 4, *melior*, Chanchamayo, p. 307, *demeter*, Upper Amazons, p. 310, fig. 6, STAUDINGER, Deutsche ent. Zeitschr. Lep. ix ; *H. tyndarus*, Bolivia, WEYMER, p. 317, pl. vi, fig. 6, *t. c.* : n. spp.  
*Pareba vestita*, Sumatra, NICÉVILLE, p. 397, J. Asiat. Soc. Bengal, lxiv, n. sp.  
*Planema chanleri*, E. Africa, HOLLAND, p. 748, P. U. S. Mus. xviii ; *P. scalivittata*, Nyasaland, BUTLER, p. 159, Ann. Nat. Hist. (6) xviii : figure, pl. xli, fig. 3, P. Zool. Soc. London, 1896 : n. spp.

## NYMPHALIDÆ.

- Classification ; E. REUTER, pp. 422-525, gens *Nymphales*, pp. 525-530, Acta Soc. Sci. Fenn. xxii.  
Variation in *Nymphalidæ* ; OBERTHUR, pp. 29-31, pls. ix & x, Etudes Ent. xx.  
*Agraulis vanillæ*, in California ; WRIGHT, p. 102, Canad. Ent. xxviii.  
*Apatura ilia*, var. ; POUJADE, p. 202, Bull. Soc. ent. France, 1896.  
*Argynnis cybele*, life-history ; LYMAN, pp. 143-148, Canad. Ent. xxviii.  
*A.*, in Utah, 7,000 feet ; SNYDER, p. 105, *t. c.* *A. lathonia*, n. var. *saturata*, p. 81, *aglaia*, n. var. *ottomana*, *niobe*, n. var. (an n. sp. ?), *taura*, p. 82, *paphia*, n. var. *delila*, p. 83 ; RÖBER, Ent. Nachr. xxii.  
*A. hanningtoni*, figure ; HOLLAND, pl. vii, fig. 2, p. 235, P. U. S. Mus. xviii. *A. smaragdifera*, egg ; BUTLER, p. 826, P. Zool. Soc. London, 1896.  
*Atella seychellarum*, Seychelles, HOLLAND, p. 266, P. U. S. Mus. xviii, n. sp.

\* A foot-note on p. 239 of this memoir intimates that the species described as new in this paper were previously diagnosed in Entomologist, Sept., 1892.

- Athyma mahesa*, larva and pupa ; DAVIDSON, BELL & AITKEN, p. 254, pl. ii, figg. 4 & 4a, J. Bombay Soc. x.
- Byblia vulgaris*, variation ; BUTLER, p. 73, Ann. Nat. Hist. (6) xviii. *B. ilythia*, variation ; dimorphism of larva and pupa ; MARSHALL, pp. 333-340, t. c.
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- Charaxes* : catalogue ; BUTLER, J. Linn. Soc. xxv, pp. 348-404. *C. fabius*, figures ; MOORE, Lep. Ind. pl. 183, figg. 1-1d. *C. kadenii*, var. *sulthan* ; HAGEN, p. 184, Deutsche ent. Zeitschr. Lep. ix. *C. ephyra*, n. var. *phaecacus* ; STAUDINGER, p. 217, t. c. *C. ephyra*, great variation of ♀ ; STAUDINGER, p. 363, t. c.
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- Eulepis*: figures and descriptions of E. Indian species ; MOORE, pp. 252-262, pls. 184-188, Lep. Ind. ii.
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- Herona marathus, andamana*, figures, pl. 195 ; MOORE, Lep. Ind. iii.
- Hestina nama*, figures, pl. 200, figg. 1–1*b* ; MOORE, Lep. Ind. iii.
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- Murwareda*, n. g., type *Charaxes dolon*, Westw., with figures, pl. 189, MOORE, p. 263, Lep. Ind. ii.
- Narsenga*, n. g., type *Apatura parvata*, Moore, fig., pl. 194, 1 & 1*a* ; MOORE, p. 15, Lep. Ind. iii.
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- Sasakia*, n. g., type *Diadema charonda*, Hew. ; MOORE, p. 39, Lep. Ind. iii.
- Sephisa dichroa*, with larva and pupa, *dichandra*, figures, pl. 197 & 198 ; MOORE, Lep. Ind. iii.
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*Barbicornis acroleuca*, Paraguay, BERG, An. Mus. Buenos Aires, v, p. 1, n. sp.  
*Dodona durga* var. ; OBERTHUR, p. 29, pl. ix, fig. 166, Etudes Ent. xx.  
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*Elymnias glaucopis*, figg. 1-3, *paradoxa*, figg. 4 & 5, *holophernes*, figg. 6 & 7, figured ; SMITH & KIRBY, Rhop. exot. Nymphalidæ, Elymniinæ, i. *E. casiphone* and *kamara*, variation and characters ; FRUHSTORFER, Berlin. ent. Zeitschr. 1896, SB., p. 6.  
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## LYCÆNIDÆ.

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*Amblypodia anita*, larva and pupa ; DAVIDSON, BELL & AITKEN, p. 380, pl. iv, figg. 5 & 5a, J. Bombay Soc. x.  
*Aphnæus lohita*, larva and pupa ; DAVIDSON, BELL & AITKEN, p. 386, pl. v, figg. 3 & 3a, J. Bombay Soc. x.  
*Argiolaus silas*, n. var. *lalos* ; H. H. DRUCE, p. 286, Ann. Nat. Hist. (6) xvii.  
*Arhopala centaurus*, larva and pupa, pl. iv, figg. 8 & 8a, *amantes*, larva, fig. 9 ; DAVIDSON, BELL & AITKEN, J. Bombay Soc. x. *A. ganesa*, figured, pl. A, fig. 6, p. 663, WATSON, *t. c.*  
*A. tameanga*, p. 658, pl. xxix, fig. 7, *semperi*, p. 659, figg. 9 & 10, *dajagaka*, p. 660, figg. 11 & 12, *drucei*, p. 661, pl. xxx, figg. 1 & 2, *kounga*, p. 662, figg. 3 & 4, *bella*, p. 664, figg. 6 & 7, *haviglandi*, p. 665, figg. 8 & 9, *borneensis*, p. 666, fig. 5, *labuana*, p. 667, figg. 12 & 13, *waterstradti*, p. 668, figg. 10 & 11, *moorei*, pl. xxxi, fig. 1, *deva*, pl. xxx, fig. 3, p. 669, *sandakani*, p. 670, pl. xxxi, fig. 2, Borneo, BETHUNE-BAKER, P. Zool. Soc. London, 1896 ; *A. auzea*, Java, p. 169, pl. s, figg. 29 & 30, *azinis*, Sumatra, p. 171, pl. t, fig. 31, *azata*, p. 172, figg. 32 & 33, *anila*, p. 174, Perak, *avatha*, p. 174, fig. 34, Sumatra, NICÉVILLE, J. Bombay Soc. x : n. spp.

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- Gerydus improbus*, Borneo, H. H. DRUCE, p. 651, pl. xxix, figg. 1 & 2, P. Zool. Soc. London, 1896, n. sp.
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*Thrix gama*, figured, pl. xxxi, fig. 13, noticed, p. 678; H. H. DRUCE, P. Zool. Soc. London, 1896.  
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*T. plateni*, Waigiou, p. 40, figg. 5 & 6, *manto*, New Guinea, p. 42, figg. 11 & 12, *stephani*, p. 43, figg. 1 & 2, *plotinus*, p. 44, figg. 5 & 7, SMITH & KIRBY, Rhop. exot. Oriental Lycænidæ, Thysonotis, iii & iv, n. spp.  
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*Waigeum thauma*, figg. 1-3, *ribbei*, figg. 6-8, *miraculum*, figg. 11 & 12, figured; SMITH & KIRBY, Rhop. exot. Oriental Lycænidæ, vi, *Waigeum*, i.  
*W. subcæruleum*, figg. 4 & 5, p. 35, *simplex*, p. 37, figg. 9 & 10, Waigiou, SMITH & KIRBY, Rhop. exot. Oriental Lycænidæ, vi, *Waigeum*, i, n. spp.  
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*Zesius chrysomallus*, larva and pupa; DAVIDSON, BELL & HEWITSON, p. 383, pl. iv, figg. 10 & 10a, J. Bombay Soc. x.

#### HESPERIIDÆ.

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*Aclerus ploetzi*, pl. ii, fig. 7, *placidus*, fig. 19, figures; HOLLAND, P. Zool. Soc. London, 1896.  
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*A. ehlersi*, Kilimanjaro, KARSCH, p. 376, Ent. Nachr. xxii, n. sp.  
*Aubertia*, n. g. near *Curterocephalus*, for *A. dulcis*, n. sp., Ta-t sien-lu, pl. ix, fig. 162, and *C. niveomaculatus*, *flavomaculatus*, *micio*, and *demea* = (*P. gemmatus*, Leech); CH. OBERTHUR, Etudes Ent. xx, p. 40.

- Baoris ilias*, pl. v, fig. 17, *xylos*, pl. ii, fig. 13, *arela*, fig. 20, figures ; HOLLAND, P. Zool. Soc. London, 1896.
- B. alberti*, p. 67, pl. ii, fig. 21, *statirides*, pl. v, fig. 6, p. 69, Africa, HOLLAND, P. Zool. Soc. London, 1896, n. spp.
- Cænides*, n. g., p. 85, with *C. kangvensis*, n. sp., p. 87, pl. i, fig. 10 ; the following figured, *dacela*, pl. ii, fig. 2, pl. v, fig. 18, *soritia*, pl. i, fig. 9, *maracauda*, pl. i, fig. 4, *binoevatus*, pl. ii, fig. 1, *leonora*, pl. ii, fig. 5, *benga*, pl. i, fig. 13, *cylinda*, fig. 12, *lacida*, fig. 14, *zaremba*, pl. v, fig. 5, *balenge*, pl. i, fig. 3 ; HOLLAND, P. Zool. Soc. London, 1896. *C. luehderi*, ♀ figure ; AURIVILLIUS, p. 289, Ent. Tidskr. xvii.
- C. hidaroides*, Cameroons, AURIVILLIUS, p. 289, Ent. Tidskr. xvii, n. sp.
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- C. tisiias*, Central and S. America, GODMAN & SALVIN, Biol. Centr.-Amer. Rhop. ii, p. 423, pl. lxxxviii, fig. 16, n. sp.
- Caprona elwesii*, Burma, WATSON, p. 674, J. Bombay Soc. x, n. sp.
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- Cyclopides perexcellens*, Nyasaland, BUTLER, p. 161, Ann. Nat. Hist. (6) xviii ; figure, pl. xlii, fig. 1, P. Zool. Soc. London, 1896. *C. angolana*, Africa, KARSCH, p. 375, Ent. Nachr. xxii : n. spp.
- Dejeania*, n. g. near *Steropes*, for *D. bicolor*, n. sp., Ta-tsien-lu ; OBERTHUR, p. 40, pl. ix, fig. 163, Etudes Ent. xx.
- Diphoridas*, n. g. for *Achlyodes phalœnoides*, pl. lxxxviii, fig. 17, p. 423, and *Hesperia palpalis*, Latr., p. 424, figg. 18 & 19 ; GODMAN & SALVIN, Biol. Centr.-Amer. Rhop. ii.
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- Ebrietas*, n. g., p. 418, for some species of *Achlyodes*, the following figured and noticed, *osyris*, pl. lxxxviii, fig. 4, *anacreon*, figg. 5-7, p. 419, *ecliptica*, figg. 8-10, p. 420, *impressa*, figg. 11 & 12, p. 421, also including *Æthilla infanda*, Butl. ; GODMAN & SALVIN, Biol. Centr.-Amer. Rhop. ii.
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- Heteropterus decipiens*, Nyasaland, BUTLER, p. 130, pl. vi, fig. 7, P. Zool. Soc. London, 1896, n. sp.
- Hidari cœnira*, pl. ii, fig. 3, *laterculus*, pl. i, fig. 15, *iricolor*, fig. 5, figured; HOLLAND, P. Zool. Soc. London, 1896.
- Hylephila dictynna*, St. Vincent and Grenada, GODMAN & SALVIN, p. 520, P. Zool. Soc. London, 1896, n. sp.
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- Kedestes fenestratus*, figured, pl. ii, fig. 16; HOLLAND, *t. c.*
- K. ? lentiginosa*, Gaboon, p. 56, pl. iv, fig. 22, HOLLAND, *t. c.* n. sp.
- Koruthaialos kerala*, p. 188, pl. t, fig. 48, *kophene*, p. 189, figg. 49 & 50, Sumatra, NICÉVILLE, J. Bombay Soc. x, n. spp.
- Megathymus*: referred to *Hesperiidæ*, not to *Custniidæ*; E. REUTER, p. 200, Acta Soc. Sci. Fenn, xxii.
- Odina ortygia*, Burma, NICÉVILLE, p. 531, J. Asiat. Soc. Bengal, lxiv, n. sp.
- Ortholexis melichroptera*, synonymy; AURIVILLIUS, p. 288, Ent. Tidskr. xvii.
- Osmodes laronia*, pl. iv, figg. 1 & 2, *thora*, figg. 3 & 5, *adou*, figg. 13 & 15, *chrysaugæ*, fig. 7, *adosus*, fig. 10, *lux*, figg. 23 & 25, figured; HOLLAND, P. Zool. Soc. London, 1896.
- O. staudingeri*, pl. iii, fig. 20, *banghaasi*, pl. iv, fig. 9, p. 42, *distincta*, fig. 16, p. 42, *thops*, figg. 4 & 6, p. 43, Africa, HOLLAND, P. Zool. Soc. London, 1896; *O. costatus*, Cameroons, AURIVILLIUS, p. 284, Ent. Tidskr. xvii: n. spp.
- Ospiantes*, n. g., type *Plastingia ogowena*, Mab.; HOLLAND, p. 46, P. Zool. Soc. London, 1896.
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- P. howardi*, Florida, p. 187, *stigma*, N. Mexico, p. 188, SKINNER, Canad. Ent. xxviii, n. spp.
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- Pardaleodes reichenowi*, pl. iii, fig. 18, *xanthias*, fig. 7, *xanthopeplus*, figg. 9 & 16, *astrape*, pl. iv, fig. 12, *xanthioides*, fig. 14, figured; HOLLAND, P. Zool. Soc. London, 1896.
- P. bule*, pl. iii, fig. 21, p. 76, *sierræ*, pl. iv, fig. 19, p. 78, Africa; HOLLAND, P. Zool. Soc. London, 1896, n. spp.
- Parnara subochracea*, pl. iv, fig. 11, *micans*, pl. iii, fig. 19, p. 63, *P. ? ursula*, p. 64, pl. ii, fig. 4, Africa, HOLLAND, P. Zool. Soc. London, 1896, n. spp.
- Purosmodes*, n. g., type *morantii*, Trim.; HOLLAND, p. 45, P. Zool. Soc. London, 1896.
- Perichares albicornis*, p. 132, pl. vi, fig. 8, *telisignata*, p. 133, fig. 9, Nyasaland, BUTLER, P. Zool. Soc. London, 1896, n. spp.



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- Platylesches*, n. g., p. 72, type *Parnara picanini*, Holl. ; *P. galesa*, pl. i, fig. 7, *nigerrima*, pl. ii, fig. 12, *amadhu*, pl. v, fig. 11, figured; *P. nigricans*, W. Africa, p. 73, pl. ii, fig. 15, n. sp. ; HOLLAND, P. Zool. Soc. London, 1896.
- Plesioneura stellata*, Ta-tsien-lu, CH. OBERTHUR, p. 41, pl. ix, fig. 165, Etudes Ent. xx, n. sp.
- Ploetzia nobilior*, Congo, HOLLAND, p. 95, pl. v, fig. 2, P. Zool. Soc. London, 1896, n. sp.
- Prenes eugeon*, Grenada, &c. ; GODMAN & SALVIN, p. 520, P. Zool. Soc. London, 1896, n. sp.
- Prosopalpus*, n. g., p. 53, type *Cobalus duplex*, Mab., figured, pl. iii, fig. 17; HOLLAND, P. Zool. Soc. London, 1896.
- Pyrgus americanus*, metamorphoses ; IZQUIERDO, Notas, &c., pp. 24-28, pl. iii, figg. 7-10.
- Rhabdomantis*, n. g., type *galatia*, Hew., figured, pl. iii, figg. 8 & 15 ; HOLLAND, p. 44, P. Zool. Soc. London, 1896.
- Rhopalocampta forestan*, p. 290, *iphis*, p. 291, larvæ ; AURIVILLIUS, Ent. Tidskr. xvii.
- Sarangesa lugens*, pl. i, fig. 10, *astrigera*, fig. 8, *lucidella*, pl. ii, fig. 22, *thecla*, pl. v, fig. 14, figures ; HOLLAND, P. Zool. Soc. London, 1896.
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- Seantilla*, n. g., near *Staphylus* (*infra*), for *S. opites*, n. sp., Guatemala, pl. xc, figg. 3-5, p. 437 ; GODMAN & SALVIN, Biol. Centr.-Amer. Rhop. ii.
- Semalea*, n. g., p. 64, type *Hesperia pulvina*, Pl., figured, pl. ii, fig. 14 ; *S. nox*, figured, pl. iv, fig. 20 ; HOLLAND, P. Zool. Soc. London, 1896.
- Staphylus*, n. g., p. 429, for numerous species allied to *Helias ascalaphus*; the following figured and noticed, *cupreiceps*, p. 430, pl. lxxxix, figg. 4-6, *aurocapilla*, figg. 9-11, p. 431, *ceos*, figg. 7 & 8, *ascalaphus*, figg. 12-15, p. 432, *aztecus*, figg. 17 & 18, p. 433, *giselus*, figg. 24-26, p. 435, *unifascia*, pl. xc, figg. 1 & 2, p. 437 ; the following new from Central America, *S. cylindus*, p. 430, pl. lxxxix, figg. 1-3, *evippe*, figg. 19 & 20, p. 433, *orsines*, figg. 21 & 22, *brennus* (Mab.), fig. 23, p. 434, *imbras*, figg. 27-29, p. 435, *saletas*, fig. 30, *evemerus*, figg. 31 & 32, p. 436 ; GODMAN & SALVIN, Biol. Centr.-Amer. Rhop. ii : n. spp.
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- Taractrocera ziclea*, description and figure, p. 677, pl. A, fig. 8 ; WATSON, J. Bombay Soc. x.
- T. atropunctata*, Burma, China, WATSON, t. c. p. 676, fig. 9, n. sp.
- Telegonus anaasis*, St. Vincent, GODMAN & SALVIN, p. 519, P. Zool. Soc. London, 1896, n. sp.
- Thanaos icelus*, oviposition ; FOLSOM, p. 403, Psyche, vii. *T. juvenalis*, oviposition ; FOLSOM, p. 362, t. c.
- Theagenes*, n. g., for *Helias albiplaga* and *Antigonus ægides*, p. 428, figure (as *Eropus ægides*), pl. lxxxviii, figg. 27-29 ; GODMAN & SALVIN, Biol. Centr.-Amer. Rhop. ii.
- Timochares*, n. g., for *Antigonus trifasciatus*, figured, pl. lxxxviii, fig. 3, p. 417, and *raptifasciatus*, Plötz, figg. 1 & 2, p. 41 ; GODMAN & SALVIN, Biol. Centr.-Amer. Rhop. ii.

- Timochreon*, n. g., for *Helias satyrus*, Feld., figured, pl. xc, fig. G, p. 439; GODMAN & SALVIN, Biol. Centr.-Amer. Rhop. ii.  
*Trichosemeia subolivescens*, pl. v, fig. 15, *hereus*, pl. iv, fig. 21, figures; HOLLAND, P. Zool. Soc. London, 1896.  
*Zopyrion*, n. g., *Z. sandace*, n. sp., Central America, pl. xc, figg. 8-10, p. 440; GODMAN & SALVIN, Biol. Centr.-Amer. Rhop. ii.

#### HETEROCERA.

Correlated spiny areas on metathorax and anterior wings; COOLEY (215). Notes on types in the Neumoegen collection; OTTOLENGUI, Ent. News Philad. vii, pp. 227-230.

#### CASTNIDÆ.

[*Cf.* DRUCE (258, 261, 414), SCHAUS (1022).]

- Acentrocneme hesperiaris*, figure; DRUCE, p. 319, Biol. Centr.-Amer. Heter. ii.  
*Castnia*: affinities; E. REUTER, p. 201, Acta Soc. Sci. Fenn. xxii. *C. veraguana*, ♂; SCHAUS, p. 147, J. N. York Ent. Soc. iv.  
*C. staudingeri*, Chiriqui, DRUCE, p. 28, Ann. Nat. Hist. (6) xviii: figure, pl. lxviii, fig. 8, DRUCE, Biol. Centr.-Amer. Heter. ii; *C. laura*, Brazil, p. 216, *ahala*, Amazons, *sora*, *micha*, Paraguay, p. 217, *dodona*, Ecuador, p. 218, DRUCE, Ann. Nat. Hist. (6) xvii; *C. gramivora*, S. Brazil, *corrupta*, Colombia, SCHAUS, p. 147, J. N. York Ent. Soc. iv: n. spp.  
*Megathymus indecisus*, pl. lxix, figg. 1 & 2, *neumoegeni*, figg. 3 & 4, figures; DRUCE, Biol. Centr.-Amer. Heter. ii.  
*M. smithi*, Mexico, DRUCE, Biol. Centr.-Amer. Heter. ii, p. 320, pl. lxix, fig. 5, n. sp.

#### SPHINGIDÆ.

[*Cf.* BEUTENMÜLLER (75), DRUCE (414), HOLMGREN (515), ROTHSCHILD (1000, 1002), ROTHSCHILD & JORDAN (1004).]

- Aleuron tachasara*, pl. lxv, fig. 7, figure; DRUCE, Biol. Centr.-Amer. Heter. ii.  
*Ambulyx donysa*, figure; DRUCE, pl. lxvi, fig. 7, *t. c.*  
*Amphonyx walkeri* = (*Cocytius magnificus*, Rothschild), figure, pl. lxv, fig. 4; DRUCE, Biol. Centr.-Amer. Heter. ii.  
*Angonyx boisduvali*, figure, pl. xiv, fig. 14; ROTHSCHILD, Nov. Zool. iii.  
*Caliomma denticulatum*, pl. lxviii, fig. 2, *germen*, pl. lxvi, fig. 10, *zurcheri*, fig. 2, figures; DRUCE, Biol. Centr.-Amer. Heter. ii.  
*Cautethia grotei*, larva; DYAR, p. 385, Psyche, vii.  
*Cephanodes unicolor*, Queensland, ROTHSCHILD, p. 231, Nov. Zool. iii, n. sp.  
*Ceratomia undulosa*, metamorphoses; BEUTENMÜLLER, p. 296, Bull. Amer. Mus. viii.  
*Chærocampa damocrita*, pl. lxvi, fig. 8, *turbata*, fig. 6, *eumedon*, fig. 9, *jocasta*, pl. lxv, fig. 6, *potentia*, fig. 5, figures; DRUCE, Biol. Centr.-Amer. Heter. ii.  
*Degmaptera*, n. g., type *mirabilis*, Rothschild; HAMPSON, p. 452, Moths India, iv.  
*Deilephila lineata*, life-history; SOULE, p. 458, Psyche, vii.  
*Diludia brevimargo*, figure, pl. lxviii, fig. 1; DRUCE, Biol. Centr.-Amer. Heter. ii.

- Enyo riscus*, pl. lxvi, fig. 3, *tadium*, fig. 4, figures; DRUCE, Biol. Centr.-Amer. Heter. ii.
- Euryglottis dognini*, Loja, ROTHSCHILD, p. 325, Nov. Zool. iii, n. sp.
- Hyloicus haterius*, figure, pl. lxv, fig. 5; DRUCE, Biol. Centr.-Amer. Heter. ii.
- Isognathus inaltus*, pl. lxvii, fig. 1, *yucatanus*, pl. lxv, fig. 1, figures; DRUCE, Biol. Centr.-Amer. Heter. ii.
- Monarda*, n. g., near *Dolba*, for *M. oryx*, n. sp., Mexico, pl. lxviii, fig. 6, p. 317, DRUCE, Biol. Centr.-Amer. Heter. ii.
- Pachygonia coffææ* = (*ericea*, Druce), figure, synonymy, p. 299, pl. lxv, fig. 2; DRUCE, Biol. Centr.-Amer. Heter. ii.
- P. maxwelli*, Bolivia, ROTHSCHILD, p. 23, Nov. Zool. iii, n. sp.
- Panacra turneri* = (*mira*, Swinh.); ROTHSCHILD, p. 23, Nov. Zool. iii.
- P. lifuensis*, fig. 12, *griseola*, fig. 13, figures; ROTHSCHILD, pl. xiv, t. c.
- Pergesa mexicana*, figure; DRUCE, pl. lxviii, fig. 3, Biol. Centr.-Amer. Heter. ii.
- Perigonia tacita*, figure, pl. lxv, fig. 3; DRUCE, p. 299, t. c.
- Phlegethontius stuarti*, Bolivia; ROTHSCHILD, p. 22, Nov. Zool. iii, n. sp.
- Protoparce capsici*, pl. lxvii, fig. 4, *dilucida*, pl. lxviii, fig. 5, figures; DRUCE, Biol. Centr.-Amer. Heter. ii.
- Pseudosphinx crocata*, figure; DRUCE, pl. lxvii, fig. 5, t. c.
- Smerinthus pseudambulyx*, figure, pl. lxviii, fig. 4, Biol. Centr.-Amer. Heter. ii. *S. nyops*, metamorphoses; BEUTENMÜLLER, p. 297, Bull. Amer. Mus. viii. *S. cerisyi*, life-history; HARVEY, p. 331, Psyche, vii.
- Sphinx nerii*, at Danzig, BRISCHKE, p. 232, Schr. Ges. Danzig, ix. *S. perelegans*, figure; DRUCE, p. 319, pl. lxvii, fig. 3, Biol. Centr.-Amer. Heter. ii. *S. drupiferatum*, p. 291, *luscitiosa*, p. 292, *kalmiæ*, p. 293, *plebeius*, p. 295, metamorphoses; BEUTENMÜLLER, Bull. Amer. Mus. viii.
- Theretra obliterata*, figure; ROTHSCHILD, pl. xiv, fig. 1, Nov. Zool. iii.
- T. crossei*, Niger, ROTHSCHILD, p. 22, Nov. Zool. iii, n. sp.
- Triptogon modesta*, var. *occidentalis*, figure; DRUCE, pl. lxvii, fig. 2, Biol. Centr.-Amer. Heter. ii.
- Unzela pronœ*, figure, pl. lxvi, fig. 1; DRUCE, t. c.
- U. variegata*, Bolivia, ROTHSCHILD, p. 23, Nov. Zool. iii, n. sp.

## ÆGERIIDÆ.

- [Cf. BEUTENMÜLLER (74), BUTLER (120), DRUCE (414), HAMPSON (1201), SWINHÖE (1135).]
- Revision of N. American *Sessidæ*; BEUTENMÜLLER, pp. 111-148, Bull. Amer. Mus. viii.
- Adixoa cruentata*, Cherra Punji, SWINHÖE, p. 359, Ann. Nat. Hist. (6) xvii, n. sp.
- Ægeria mardia*, pl. lxix, fig. 7, *pallene*, fig. 8, *hippolyte*, fig. 9, *halmyris*, fig. 13, *hipsides*, fig. 14, *hela*, fig. 15, *helena*, fig. 10, *armasata*, fig. 11, *hermione*, fig. 12, *hades*, fig. 16, *ovinia*, pl. lxviii, fig. 9, figures; DRUCE, Biol. Centr.-Amer. Heter. ii.
- Crinipus*, n. g., for *C. leucozonipus*, n. sp., Aden, pl. x, fig. 21; HAMPSON, p. 277, P. Zool. Soc. London, 1896.
- Gaïa*, n. n. for *Larunda*, Edw.; BEUTENMÜLLER, p. 115, Bull. Amer. Mus. viii.
- Melittia smithi*, pl. lxix, fig. 17, *beckeri*, fig. 18, figures; DRUCE, Biol. Centr.-Amer. Heter. ii.

- M. aenescens*, Nyasaland, BUTLER, p. 134, pl. vi, fig. 10, P. Zool. Soc. London, 1896, n. sp.  
*Saminioidea*, n. g. for *S. exitiosa* and *opalescens*; BEUTENMÜLLER, p. 126, Bull. Amer. Mus. viii.  
*Sesia* (or *Hemaris*) *fuciformis*, *bombyliformis*, synonymy; KIRBY, pp. 39 & 40, PROUT, pp. 40 & 41, Entomologist, 1896. *S. fuciformis*, &c., synonymy; DALE, p. 80, Entomologist, 1896.  
*Sincara manilia*, pl. lxix, fig. 19, *maonia*, fig. 20, *manoba*, fig. 21, figures; DRUCE, Biol. Centr.-Amer. Heter. ii.  
*Tarsopoda marcia*, figure, pl. lxix, fig. 22; DRUCE, Biol. Centr.-Amer. Heter. ii.  
*Tirista praxila*, Mexico, DRUCE, p. 325, pl. lxviii, fig. 7, *t. c.* n. sp.  
*Trochilium bembeciforme*, oviposition; CHAPMAN, p. 136, Ent. Rec. viii: egg; TUTT, *t. c.* p. 184.

## BOMBYCES.

(s.l., including *Agaristidæ*, *Chalcosiidæ*, *Uraniidæ*, &c.)

- [*Cf.* BUTLER (122, 123, 131), DOGNIN (250, 252), DRUCE (259, 260, 261), DYAR (270–276), DYAR & MORTON (277), FERNALD (327), FORBUSH & FERNALD (357), FROGGATT (379), GROTE (441, 445, 446), HAMPSON (470, 1201), HOLLAND (510–513), HOLMGREN (515), INGENITZKY (175), IZQUIERDO (557), KARSCH (590, 592, 593), KIRBY (636), KORB (667), LOWER (722), OBERTHUR (829), OTTOLENGUI (847), PACKARD (850), PAGENSTECHE (854), RÖBER (991), ROTHSCHILD (999–1002), ROTHSCHILD & JORDAN (1004), SCHAUS (1021–1023), SNELLEN (1116), STAUDINGER (1121), SWINHOE (1135), TEICH (1137), WARDLE (1204), WARREN (1208, 1210), WEYMER (1234).]  
 Systematic review of the larval setæ; classification of the families; phylogeny of this division of *Lepidoptera*; DYAR (270).  
 Glandular hairs of *Ocneria* larva; INGENITZKY (175).  
 List of silk-producing *Lepidoptera*; WARDLE (1204). Notes on various silk-producing *Lepidoptera*; WAILLY, pp. 157, &c., Entomologist, 1896.  
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*Hollandiidæ*, n. fam. near *Arbelidæ*; KARSCH, p. 136, Ent. Nachr. xxii.  
*Acanthopsyche* (*Metisa*) *hypoleuca*, Ceylon, HAMPSON, p. 472, Moths India, iv, n. sp.  
*Acidon*, n. g., *Notodontidæ*, for *A. paradoxa*, n. sp., Bhután; HAMPSON, p. 462, Moths India, iv.  
*Aclytia terra*, Parana, SCHAUS, p. 133, J. N. York Ent. Soc. iv; *A. ? laudabilis*, Bolivia, DRUCE, p. 35, Ann. Nat. Hist. (6) xviii; n. spp.  
*Adelocephala acuta*, Venezuela, SCHAUS, p. 59, J. N. York Ent. Soc. iv, n. sp.  
*Ægocera* and allies, African forms, synonymy; JORDAN, pp. 42 & 43, Nov. Zool. iii.

- Æ. triplagiata*, fig., pl. xix, fig. 1, n. var. *dispar*, p. 377; KIRBY, Ann. Nat. Hist. (6) xviii.
- Æ. dispar*, E. Africa, ROTHSCHILD, p. 43, Nov. Zool. iii; figures, pl. xv, figg. 27 & 28, *t. c.*; *Æ. triplagiata*, p. 95, *coryndoni*, p. 96, Zambezi, ROTHSCHILD, *t. c.* : n. spp.
- Egoceropsis separata*, Tanga, WEYMER, p. 87, Berlin. ent. Zeitschr. 1896, n. sp.
- Æmene diffusifascia*, Shillong, SWINHOE, p. 362, Ann. Nat. Hist. (6) xvii, n. sp.
- Aganaidæ* = (*Hypsidae*), composition of the family. definition, the genera revised; JORDAN, Nov. Zool. iii, pp. 59-62 & 185-208.
- Aganais*: characters and composition; *A. borbonica* and *insularis* are ♂ and ♀ of one species; JORDAN, pp. 61 & 62, Nov. Zool. iii. *A. speciosa*, n. var. *unicolor*; ROTHSCHILD, pp. 62 & 185, *t. c.*
- Agape*: structure and characters; variation of *A. leonina*; JORDAN, p. 60, Nov. Zool. iii.
- Agaristidæ*: definition, confusion as to genera of, &c.; JORDAN, pp. 24-29, Nov. Zool. iii.
- Agarista*, limited to three species; JORDAN, p. 48, Nov. Zool. iii. *A. timorensis*, figure, pl. xv, fig. 32; *t. c.*
- Agkonis pega*, figure, pl. xi, fig. 15; DOGNIN, Lep. Loja.
- Aidos*, Hb., = (*Brachycodion*, Dyar); DYAR, p. 109, Canad. Ent. xxviii.
- A. castrensis*, Parana, SCHAUUS, p. 56, J. N. York Ent. Soc. iv, n. sp.
- Albara humerata*, Khasia Hills, WARREN, p. 335, Nov. Zool. iii, n. sp.
- Aletis alba*, Sierra Leone, *kedar*, E. Africa, DRUCE, p. 351, Ann. Nat. Hist. (6) xvii; *A. ethelinda*, p. 381, *erici*, p. 382, E. Africa, KIRBY, *op. cit.* xviii : n. spp.
- Alophogaster serraticornis*, India, HAMPSON, p. 471, Moths India, iv, n. sp.
- Alpemis trifasciata*, E. Africa, HOLLAND, p. 249, pl. vii, fig. 10, P. U. S. Mus. xviii, n. sp., but *cf.* Entomologist, 1892.
- Alypia disparata*, figure; DRUCE, pl. lxx, fig. 2, Biol. Centr.-Amer. Heter. ii.
- Alypioides walkeri*, figure; DRUCE, pl. lxx, fig. 1, *t. c.*
- Amaxia juvenis*, Mexico, *dyana*, S. Brazil, SCHAUUS, p. 135, J. N. York Ent. Soc. iv, n. spp.
- Anagnia* and *Peridrome* distinguished from *Asotia*, distinctions queried; JORDAN, pp. 185-188, Nov. Zool. iii.
- Animula limpia*, ♂ and case, figures, pl. xii, figg. 11 & 11a, Lep. Loja.
- Anisota consularis*, Florida, DYAR, p. 166, J. N. York Ent. Soc. iv, n. sp.
- Antheraea osiris*, E. Africa, DRUCE, p. 354, Ann. Nat. Hist. (6) xvii; *A. thyene*, p. 83, *sufferti*, p. 85, Africa, WEYMER, Berlin. ent. Zeitschr. 1896 : n. spp.
- Antiphella atrinotata*, Nyasaland, BUTLER, p. 854, pl. xliii, fig. 5, P. Zool. Soc. London, 1896, n. sp.
- Apatelodes velutina*, *corema*, *sericea*, S. Brazil, SCHAUUS, p. 53, J. N. York Ent. Soc. iv, n. spp.
- Arachnis*: notes on; OTTOLENGUI, pp. 124-128, pl. iv, Ent. News Philad. vii.
- A. maia*, New Mexico and Colorado, OTTOLENGUI, p. 125, *t. c.* n. sp.
- Arbelodes*, n. g., *Hollandiidae*, for *A. meridialis*, n. sp., Cape Colony; KARSCH, p. 141, Ent. Nachr. xxii.
- Archinola*, n. g., *Nolinae*, p. 258, for *A. pyralidia*, n. sp., Aden, p. 259, pl. x, fig. 23; HAMPSON, P. Zool. Soc. London, 1896.
- Archylus jasminatus*, figure, pl. xii, fig. 10; DOGNIN, Lep. Loja.
- Arctia caja*, var.; FROHAWK, p. 1, Entomologist, 1896.

- A. ornata*, Mongolia, STAUDINGER, p. 188, pl. iv, figg. 1 & 2, Deutsche ent. Zeitschr. Lep. ix, n. sp.
- Arctiopais*, n. g., *Agaristidae*, type *ambusta*, Mab.; JORDAN, p. 46, Nov. Zool. iii.
- Ardonea rosada*, figure, pl. xi, fig. 4; DOGNIN, Lep. Loja.
- Areva nevosa*, figure, pl. xi, fig. 18; DOGNIN, Lep. Loja.
- Argyroeides moza*, *A. ? faveria*, Chiriqui, *A. strigula*, *gyas*, South Brazil, DRUCE, p. 32, Ann. Nat. Hist. (6) xviii; *A. sanguinea*, Parana, SCHAUS, p. 132, J. N. York Ent. Soc. iv; n. spp.
- Argyrothripa olivana*, Shillong, SWINHOE, p. 362, Ann. Nat. Hist. (6) xvii, n. sp.
- Arou libyra*, p. 352, *tomisa*, E. Africa, *A. ? enos*, W. Africa, p. 353, DRUCE, Ann. Nat. Hist. (6) xvii; *A. bistigmigera*, Nyasaland, BUTLER, p. 847, pl. xlii, fig. 7, P. Zool. Soc. London, 1896: n. spp.
- Arpia*, n. g., *Agaristidae*, for *A. janeira*, n. sp., Rio Janeiro, SCHAUS, p. 148, J. N. York Ent. Soc. iv.
- Arrothia*, n. g., *Agaristidae*, JORDAN, for *A. bicolor*, n. sp., Madagascar, ROTHSCHILD, p. 46, Nov. Zool. iii; figured, ROTHSCHILD, pl. xiv, fig. 20, *t. c.*
- Artace nuera*, figure; DOGNIN, pl. xii, fig. 16, Lep. Loja.
- A. manoba*, Venezuela, SCHAUS, p. 145, J. N. York Ent. Soc. iv, n. sp.
- Artaxa pyroxantha*, Celebes, PAGENSTECHE, p. 51, Ent. Nachr. xxii, n. sp.
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- A. kinabaluensis*, Borneo, ROTHSCHILD, p. 602, pl. xv, fig. 42, Nov. Zool. iii, n. sp.
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- Automeris oweni*, Zamora, DOGNIN, p. 75, Naturaliste, 1896, n. sp.
- Automolis tegyra*, *salma*, Chiriqui, DRUCE, p. 36, Ann. Nat. Hist. (6) xviii, n. spp.
- Baria*, n. g., p. 267, *Limacodidae*, type, *elsa*, Druce; KARSCH, Ent. Nachr. xxii.
- Baroa*, n. g., *Arctiidae*, type, *punctivaga*, Wlk.; HAMPSON, p. 493, Moths India, iv.
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- Bombyx (Macrothylacia) psidii*: note on its silk; POUJADE, p. 94, Bull. Mus. Paris, 1896. *B. quercus* and *spartii*, characters noticed; WARBURG, p. xli, P. ent. Soc. London, 1896. *B. quercus* and *calluna*, habits; THOMPSON, pp. 125 & 158, Ent. Rec. viii; TUTT, *t. c.* p. 298.
- Brachartona anxia*, Lagos, *B. ? titaea*, S. Africa, DRUCE, p. 351, Ann. Nat. Hist. (6) xvii, n. spp.
- Brachia*, n. g., p. 267, *Limacodidae*, for *B. argyrogramma*, n. sp., Centr. Africa, p. 274; KARSCH, Ent. Nachr. xxii.
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- Burgena chalybeata, amœna*, New Britain, ROTHSCHILD, p. 39, Nov. Zool. iii, n. spp.
- Calligenia miniata*, n. var. *virginea*; DELAHAYE, p. 156, Bull. Soc. ent. France, 1896.
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- Callimorpha hera*, varr., figures, pl. xi, figg. 168-172, pp. 55 & 56; CH. OBERTHUR, Etudes Ent. xx.
- Calonotos cucadma*, Druce (sub *Cosmosoma*), figure; DRUCE, pl. lxx, fig. 22, Biol. Centr.-Amer. Heter. ii.
- Campylotes excelsa*, Sikkim, CH. OBERTHUR, p. 54, pl. x, fig. 178, Etudes Ent. xx (? var. of *excelsa*), n. sp.
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- Carnegia*, n. g., Saturniidae, for *C. mirabilis*, n. sp., Cameroons; HOLLAND, p. 134, pl. vi, Ent. News Philad. vii.
- Castrica*, n. g., affinities not stated, for *C. oweni*, n. sp., Venezuela and Costa Rica; SCHAUS, p. 136, J. N. York Ent. Soc. iv.
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- Ceratonema ferrugineum, rufibasale*, India, HAMPSON, p. 485, Moths India, iv, n. spp.
- Cerura occidentalis*, life-history; DYAR, p. 307, Canad. Ent. xxviii.
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- Chrysamma*, n. g., p. 266, *Limacodidae*, for *C. purpuripulcra*, n. sp., W. Africa, p. 269; KARSCH, Ent. Nachr. xxii.
- Chrysartona flavigula*, India, HAMPSON, p. 467, Moths India, iv, n. sp.
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- Comocrus*, n. g., *Agaristidae*, type *cortortus*, Wlk.; JORDAN, p. 40, Nov. Zool. iii.
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- Conventia*, n. g., affinities not stated, p. 88, for *C. sericaria*, n. sp., Central Africa, p. 89; WEYMER, Berlin. ent. Zeitschr. 1896.
- Corma laranja*, Hunan, DRUCE, p. 235, Ann. Nat. Hist. (6) xviii, n. sp.
- Coronis*: sexual peculiarities; GRIFFITHS, p. 65, P. Bristol Soc. (n.s.) viii.
- Cosmosoma auge*, preparatory stages; DYAR, p. 414, Psyche, vii.
- C. meres*, Chiriqui, DRUCE, p. 30, Ann. Nat. Hist. (6) xviii; *C. lucia*, St. Lucia, W. I., *durca*, S. Brazil, *dukinfieldia*, Parana, SCHAUS, p. 132, J. N. York Ent. Soc. iv : n. spp.

- Cossus ligniperda*, larval habits; THEOBALD, Entomologist, 1896, p. 194.
- C. araraticus*, Ararat, TEICH, p. 28, Ent. Zeit. Stettin, lvii, n. sp.
- Cosuma marginata*, E. Africa, HOLLAND, p. 251, pl. vii, fig. 11, P. U. S. Mus. xviii, n. sp., but cf. Entomologist, 1892.
- Crambidia parvita*, S. Brazil, SCHAU, p. 151, J. N. York Ent. Soc. iv, n. sp.
- Crambomorpha tobera*, fig. 11, *maasseni*, fig. 12, *umbrosa*, fig. 13, *hermanilla*, fig. 14, figures, pl. xi; DOGNIN, Lep. Loja.
- Crinala*, n. g., *Agaristidae*, JORDAN, p. 35, for *C. mimetica*, n. sp., Luzon, p. 36; figured, pl. xiv, fig. 24, ROTHSCHILD, Nov. Zool. iii.
- Crinocula*, n. g., *Agaristidae*, JORDAN, for *C. kinabaluensis*, n. sp., Borneo; ROTHSCHILD, p. 36, figure, pl. xiv, fig. 22, Nov. Zool. iii.
- Cropera pallida*, E. Africa, KIRBY, p. 384, pl. xix, fig. 6, Ann. Nat. Hist. (6) xviii, n. sp.
- Cruria*, n. g., *Agaristidae*, type *donowani*, Boisd., list of species; JORDAN, p. 39, Nov. Zool. iii.
- Ctenocompa*, n. g., p. 267, *Limacodidae*, type, *hilda*, Druce; KARSCH, Ent. Nachr. xxii.
- Ctenogyna lytaea*, W. Africa, DRUCE, p. 356, Ann. Nat. Hist. (6) xvii, n. sp.
- Ctenolita*, n. g., p. 267, *Limacodidae*, for *C. epargyra*, *cerdo*, p. 272, *anacompa*, *chrostisa*, p. 273, n. spp., W. Africa, and *hilda*, Druce; KARSCH, Ent. Nachr. xxii.
- Cyclara*, n. g., affinities not stated, for *C. ovata*, n. sp., S. Brazil; SCHAU, p. 57, J. N. York Ent. Soc. iv.
- Dalcera obscura*, Brazil, *citrina*, Trinidad, SCHAU, p. 57, J. N. York Ent. Soc. iv, n. sp.
- Darna maxima*, Bolivia, DRUCE, p. 41, Ann. Nat. Hist. (6) xviii, n. sp.
- Dasychira rossii*, larva; DYAR, p. 328, Psyche, vii.
- Datana gaveta*, figure, pl. xii, fig. 13; DOGNIN, Lep. Loja.
- Delorhachis*, n. g., p. 268, *Limacodidae*, for *D. viridiplaga*, p. 275, *nigri-venosa*, p. 276, n. spp., W. Africa; KARSCH, Ent. Nachr. xxii.
- Demas*: characters and systematic position; TUTT, p. 81, Canad. Ent. xxviii; DYAR, t. c. p. 103. *D. coryli*, affinities; TUTT, p. 224, Ent. Rec. vii.
- Dendrolimus howardi*, Arizona, DYAR, p. 22, J. N. York Ent. Soc. iv, n. sp.
- Diamuna*, amended characters; JORDAN, p. 53, Nov. Zool. iii.
- Dictenus*, n. g., near *Setinochroa*, for *D. inconstans*, n. sp., Nyasaland, pl. xlii, fig. 5; BUTLER, p. 846, P. Zool. Soc. London, 1896.
- Dirphia horca*, figure, pl. xii, fig. 15; DOGNIN, Lep. Loja.
- D. bertha*, Parana, *taglia*, S. Brazil, SCHAU, p. 60, J. N. York Ent. Soc. iv, n. spp.
- Doratiphora euchrysa*, p. 152, *eumela*, p. 153, Queensland, LOWER, Tr. R. Soc. S. Austral. xx, n. spp.
- Drapetodes interlineata*, *lunulata*, Java, WARREN, p. 336, Nov. Zool. iii, n. spp.
- Drepana fleximargo*, *sera*, Fergusson I., WARREN, p. 272, Nov. Zool. iii, n. spp.
- Drymonia pica*, early stages; IZQUIERDO, p. 32, Notas, &c.
- Duomitus kilimanjarensis*, E. Africa, HOLLAND, p. 252, pl. vii, fig. 8, P. U. S. Mus. xviii, n. sp., but cf. Entomologist, 1892.
- Dycladia ladan*, Chiriqui, DRUCE, p. 31, Ann. Nat. Hist. (6) xviii, n. sp.
- Eacles masoni*, Mexico, SCHAU, p. 154, J. N. York Ent. Soc. iv, n. sp.
- Edmondsia sypnoides*, larva; IZQUIERDO, Notas, &c., p. 43.
- Eligma*: table of species, p. 58, *E. narcissus*, new varieties, pp. 57 & 58; ROTHSCHILD, Nov. Zool. iii.



- E. malgassica*, Madagascar, ROTHSCHILD, Nov. Zool. iii, p. 57, n. sp.  
*Endromis versicolor*, early stages, affinities; BACOT, Ent. Rec. vii, pp. 227-230 & 246-248.  
*Enioche*, n. g., *Zyganidæ*, for *E. pitthea*, n. sp., Peru; DRUCE, p. 34, Ann. Nat. Hist. (6) xviii.  
*Ephialtias tryma*, Trinidad, SCHAUS, p. 154, J. N. York Ent. Soc. iv, n. sp.  
*Episteme heydeni*, Celebes, PAGENSTECHEK, p. 50, Ent. Nachr. xxii; *E. conspicua*, Borneo, ROTHSCHILD, p. 29, pl. xv, fig. 36, Nov. Zool. iii: n. spp.  
*Eremocossus proleuca*, Aden, HAMPSON, p. 276, pl. x, fig. 24, P. Zool. Soc. London, 1896, n. sp.  
*Erithales capsica*, S. Brazil, SCHAUS, p. 134, J. N. York Ent. Soc. iv, n. sp.  
*Eucereon demonis*, Chiriqui, DRUCE, p. 38, Ann. Nat. Hist. (6) xviii; *E. amadis*, Mexico, p. 133, *patrona*, Venezuela, *velutina*, S. Brazil, *cinctum*, Trinidad, p. 134, SCHAUS, J. N. York Ent. Soc. iv: n. spp.  
*Euchera absentimacula*, Java, WARREN, p. 337, Nov. Zool. iii, n. sp.  
*Euclea delphinii*, life-history of Florida form; DYAR, p. 125, pl. iv, figg. 1-13, J. N. York Ent. Soc. iv.  
*Eudule sombreata*, fig. 1, *neorina*, fig. 2, figures; DOGNIN, pl. xii, Lep. Loja.  
*E. leopardina*, *strigilis*, Bolivia, DRUCE, p. 41, Ann. Nat. Hist. (6) xviii, n. spp.  
*Euhalisidota sablona*, S. Brazil, SCHAUS, p. 140, J. N. York Ent. Soc. iv, n. sp.  
*Eulimacodes scapha*, life-history; DYAR, pp. 172-178, pl. vii, J. N. York Ent. Soc. iv.  
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*Euplocia*: characters; the varr. of *E. membliaris*; JORDAN, pp. 189-191, Nov. Zool. iii.  
*Eupoeya jamaicensis*, Jamaica, SCHAUS, p. 57, J. N. York Ent. Soc. iv, n. sp.  
*Eupterotidæ* and *Ptilodontæ*, list of N. American; GROTE (445).  
*Eupyra principalis*, p. lxx, fig. 27, *dama*, fig. 24, figures; DRUCE, Biol. Centr.-Amer. Heter. ii.  
*E. sehausi*, Mexico, p. 334, pl. lxx, fig. 21, DRUCE, Biol. Centr.-Amer. Heter. ii; *E. ferens*, Peru, *albicineta*, Ecuador, *sylva*, Rio Janeiro, SCHAUS, p. 131, J. N. York Ent. Soc. iv: n. spp.  
*Eurata helena*, Parana, *maritana*, S. Brazil, SCHAUS, p. 130, J. N. York Ent. Soc. iv, n. spp.  
*Euthisanotia sanctajohannis*, figure, pl. lxx, fig. 8; DRUCE, Biol. Centr.-Amer. Heter. ii.  
*E. cosyra*, Mexico, DRUCE, p. 328, pl. lxx, fig. 4, *t. c.* n. sp.  
*Eutrieha sophax*, E. Africa, DRUCE, p. 355, Ann. Nat. Hist. (6) xvii, n. sp.  
*Exotrocha hamaeta*, Sumatra, SNELLEN, p. 160, Tijdschr. Ent. xxxix, n. sp.  
*Exsula*, n. g., *Agaristidæ*, type *dentatrix*, Westw.; JORDAN, p. 35, Nov. Zool. iii.  
*Fentonia viridinota*, *canifusa*, E. India, HAMPSON, p. 459, Moths India, iv, n. spp.  
*Fleta*, n. g., *Agaristidæ*, type *belangeri*, Guer.; JORDAN, p. 34, Nov. Zool. iii.  
*Galleridia*, n. g., *Arctiidæ*, for *G. atrisigna*, *fuseizonea*, n. spp., Ceylon; HAMPSON, p. 499, Moths India, iv.  
*Gampola normalis*, India, HAMPSON, p. 496, Moths India, iv, n. sp.  
*Gargetta alborittata*, India, HAMPSON, p. 455, Moths India, iv, n. sp.

- Garudiniia biplagiata*, Bhután, HAMPSON, p. 498, Moths India, iv, n. sp.  
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*Godasa rufodiscalis*, Madagascar; ROTHSCHILD, p. 47, pl. xiv, fig. 23, Nov. Zool. iii.  
*Gonerda bretaudeaui*, Darjiling, CH. OBERTHUR, p. 55, pl. x, figg. 179 & 180, Etudes Ent. xx, n. sp.  
*Gonocilia*, n. g., *Drepanulidæ*, for *G. ocellata*, n. sp., Khasia Hills; WARREN, p. 337, Nov. Zool. iii.  
*Gorgopis abbotii*, E. Africa, HOLLAND, p. 253, pl. vii, fig. 9, P. U. S. Mus. xviii, n. sp., but *cf.* Entomologist, 1892.  
*Gynanisa ethra*, note on; KARSCH, p. 249, Ent. Nachr. xxii.  
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*Haplou*, species, varieties, and larvæ noticed; DYAR, p. 219, Ent. News Philad. vii.  
*Harpyja intermedia*, Ararat, TEICH, p. 27, Ent. Zeit. Stettin, lvii, n. sp.  
*Harrisina mexicana*, figure, pl. lxx, fig. 11; DRUCE, Biol. Centr.-Amer. Heter. ii.  
*H. cirama*, Guatemala, pl. lxx, fig. 12, *charax*, fig. 9, *elongata*, fig. 10, Mexico, DRUCE, p. 330, Biol. Centr.-Amer. Heter. ii, n. spp.  
*Heliconisa catherina*, S. Brazil, SCHAUUS, p. 60, J. N. York Ent. Soc. iv, n. sp.  
*Hecatesia*: characters and position, *H. fulcata*, Druce, generic characters; JORDAN, pp. 51 & 52, Nov. Zool. iii.  
*Hepialus nebulosus*, Alph. = (*luteus*, Gr.-Gr. = *varians*, Stgr.) ; STAUDINGER, p. 400, Deutsche ent. Zeitschr. Lep. ix. *H. humuli*, var. *hethlandica*, King; BRIGHT & REID, Ent. Mag. xxxii, p. 5. *H. argenteomaculatus*, var.; HEATH, p. 215, Canad. Ent. xxviii. *H. hyperboreus*, note on; DYAR, p. 175, *t. c.* *H. lupulinus*, larval habits; THEOBALD, p. 194, Entomologist, 1896.  
*H. kenia*, E. Africa, HOLLAND, p. 252, P. U. S. Mus. xviii, n. sp., but *cf.* Entomologist, 1892.  
*Herpa meeki*, Woodlark Is., ROTHSCHILD, p. 325, Nov. Zool. iii, n. sp.  
*Hespagarista echione*, n. var., *funebri*; ROTHSCHILD, p. 44, Nov. Zool. iii.  
*Hilbrides norax* = (*Anengya spiritalis*, Karsch); BUTLER, p. 162, Ann. Nat. Hist. (6) xviii.  
*H. crawshayi*, Nyasaland, BUTLER, p. 162, Ann. Nat. Hist. (6) xviii; *H. ansorgei*, pl. xix, fig. 7, *venosa*, fig. 4, East Africa, KIRBY, p. 388, Ann. Nat. Hist. (6) xviii: n. spp.  
*Hilipoda*, n. g., p. 266, *Limacodidæ*, for *H. gravidipes*, n. sp., W. Africa, p. 270; KARSCH, Ent. Nachr. xxii.  
*Histiæa maon*, Bolivia, DRUCE, p. 29, Ann. Nat. Hist. (6) xviii, n. sp.  
*Histiæa nivosa*, Borneo, ROTHSCHILD, p. 56, pl. xiv, fig. 16, Nov. Zool. iii, n. sp.  
*Hollandia*, n. g., *Hollandiidæ* [n. fam., olim *Arbelidarum* pars], p. 137, for *H. togoïca*, Africa, n. sp., p. 138; KARSCH, Ent. Nachr. xxii.  
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*Homœocera sahacon*, p. 29, *samina*, p. 30, Chiriqui, DRUCE, Ann. Nat. Hist. (6) xviii, n. sp.  
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- Hyperchiria*, monograph ; IZQUIERDO, Notas, &c., pp. 8-21, pls. i-iii.  
*H. microphthalma* (Phil.), Valdivia, IZQUIERDO, p. 16, pl. ii, fig. 4, n. sp.  
*Ichoria parthia*, figure; DRUCE, pl. lxx, fig. 23, Biol. Centr.-Amer. Heter. ii.  
*Icthyura strigosa*, life-history ; DYAR, p. 424, Psyche, vii.  
*Idalus villacresi*, figure, pl. i, fig. 2 ; DOGNIN, Lep. Loja.  
*Ilipa unxa*, Chiriqui, DRUCE, p. 31, Ann. Nat. Hist. (6) xviii, n. sp.  
*Illice subfulgens*, S. Brazil, SCHAUS, p. 151, J. N. York Ent. Soc. iv, n. sp.  
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*Ipana*, n. g., *Agaristidæ*, type *cornigera*, Butl. ; JORDAN, p. 54, Nov. Zool. iii.  
*Isbarta pandemia*, Borneo, ROTHSCHILD, p. 56, pl. xiv, fig. 15, Nov. Zool. iii, n. sp.  
*Læmocharis nox*, Honduras, *fenestrata*, South Brazil, DRUCE, p. 30, Ann. Nat. Hist. (6) xviii, n. spp.  
*Laquea*, n. g., *Agaristidæ*, type *argentata*, Druce ; JORDAN, p. 41, Nov. Zool. iii.  
*L. argentata*, figure, note, DRUCE, p. 329, pl. lxx, fig. 5, Biol. Centr.-Amer. Heter. ii; figure, fig. 35, larvæ, figg. 36-40, pl. xv, ROTHSCHILD, Nov. Zool. iii.  
*Lagoptera violetta*, Celebes, PAGENSTECHEER, p. 51, Ent. Nachr. xxii, n. sp.  
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*Ienodora pallidochrea*, India, HAMPSON, p. 487, Moths India, iv, n. sp.  
*Leonides*, n. n. for *Leiosoma*, Feld. (*Agaristidæ*) ; DRUCE, p. 328, Biol. Centr.-Amer. Heter. ii.  
*Lethocephala* (?) *callidesma*, Queensland, LOWER, p. 153, Tr. R. Soc. S. Austral. xx, n. sp.  
*Leucolopha*, n. g., *Notodontidæ*, for *L. undulifera*, n. sp., E. India, HAMPSON, p. 460, Moths India, iv.  
*Leucoma tavetensis*, E. Africa, HOLLAND, p. 250, P. U. S. Mus. xviii, n. sp., but cf. Entomologist, 1892.  
*Lichenopteryx conspersa*, East Africa, KIRBY, p. 389, Ann. Nat. Hist. (6) xviii, n. sp.  
*Limacodidæ* : structure of pupa ; CHAPMAN, p. 129, Tr. ent. Soc. London, 1896. Revision of African ; KARSCH, pp. 261-285, Ent. Nachr. xxii.  
*Lithosia sthenoptera*, India, HAMPSON, p. 495, Moths India, iv; *L. sadima*, Parana, SCHAUS, p. 151, J. N. York Ent. Soc. iv : n. spp.  
*Lobobasis*, n. g., *Arctiidæ*, for *L. niveimaculata*, n. sp., Bhutan ; HAMPSON, p. 498, Moths India, iv.  
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*Lophocampa striata*, pl. xi, fig. 1, *humosa*, fig. 3, figures ; DOGNIN, Lep. Loja.  
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*Lophopteryx siversi*, habits, life-history ; KENNEL, p. 40, SB. Ges. Dorpat, xi.  
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- L. basirei*, p. 331, pl. lxx, fig. 18, *semifulva*, fig. 19, p. 332, Mexico, DRUCE, Biol. Centr.-Amer. Heter. ii, n. spp.
- Lymantria bananae*, Nyasaland, BUTLER, p. 848, pl. xlii, fig. 9, P. Zool. Soc. London, 1896, n. sp.
- Macrobrochis semirufa*, India, HAMPSON, p. 493, Moths India, iv, n. sp.
- Macrocneme cyllarus*, Chiriqui, DRUCE, p. 29, Ann. Nat. Hist. (6) xviii : figure, DRUCE, pl. lxxi, fig. 2, Biol. Centr.-Amer. Heter. ii : n. sp.
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- Macromphalia arpia*, Buenos Ayres, SCHAUS, p. 145, J. N. York Ent. Soc. iv, n. sp.
- Macroplectra semiaurantia*, India, HAMPSON, p. 484, Moths India, iv n. sp.
- Macroptila crinada*, figure ; DOGNIN, pl. xi, figg. 16 & 17, Lep. Loja.
- Macrurocampa dorothea*, New Mexico, DYAR, p. 176, Canad. Ent. xxviii, n. sp.
- Mapha coresa*, S. Brazil, SCHAUS, p. 148, J. N. York Ent. Soc. iv, n. sp.
- Mardara ruficeps*, Bhutan, HAMPSON, p. 489, Moths India, iv, n. sp.
- Massaga delicia* and *demena*, referred to *Misa*; JORDAN, p. 31, Nov. Zool. iii.
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- Megalopyge lupena*, *trujillo*, Mexico, *fieldia*, *vipera*, S. Brazil, SCHAUS, p. 58, J. N. York Ent. Soc. iv, n. spp.
- Melalophidæ* : classification ; GROTE, p. 107, Ent. Rec. viii.
- Melanothris maonia*, W. Africa, DRUCE, p. 353, Ann. Nat. Hist. (6) xvii, n. sp.
- Melanothrix nicevillei*, Burma, HAMPSON, p. 450, Moths India, iv, n. sp.
- Metagarista ? rendalli*, Central Africa, ROTHSCHILD, p. 97, pl. xiv, fig. 21, Nov. Zool. iii, n. sp.
- Metajana*, n. g., p. 765, *Lasiocampidæ*, for *M. chanleri*, n. sp., E. Africa; HOLLAND, P. U. S. Mus. xviii.
- Metanastria rubra*, India, HAMPSON, p. 486, Moths India, iv, n. sp.
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- Metarctia inconspicua*, E. Africa, HOLLAND, p. 250, pl. viii, fig. 3, P. U. S. Mus. xviii, n. sp., but *cf.* Entomologist, 1892.
- Micragone* and *Cyrtogone* are sexes of one, *M. agathylla*, Westw., descriptive note ; KARSCH, pp. 254 & 255, Ent. Nachr. xxii.
- Micraphe*, n. g., p. 267, *Limacodidæ*, for *M. lateritia*, n. sp., W. Africa, p. 272; KARSCH, Ent. Nachr. xxii.
- Microlimax*, n. g., *Limacodidæ*, for *M. pallidipuncta*, n. sp., Ceylon; HAMPSON, p. 484, Moths India, iv.
- Milionia rawakensis*, n. subsp. *woodlarkiana*; ROTHSCHILD, p. 328, Nov. Zool. iii.
- M. flavotogata*, Batchian, PAGENSTECHE, p. 53, Ent. Nachr. xxii; *M. everetti*, Celebes, ROTHSCHILD, p. 98, Nov. Zool. iii; *M. dysphanioides*, Fergusson I., *flaviventris*, p. 327, *mediofasciata*, p. 328, New Guinea, ROTHSCHILD, Nov. Zool. iii : n. spp.
- Miltochrista umbrosa*, *nigriradiata*, India, HAMPSON, p. 501, Moths India, iv, n. spp.
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- Miresa canescens*, Ceylon, HAMPSON, p. 484, Moths India, iv, n. sp.
- Mithuna fuscivena*, Ceylon, HAMPSON, p. 495, Moths India, iv, n. sp.
- Monocreagra clareta*, fig. 8, *zarza*, fig. 9, figures, pl. xii; DOGNIN, Lep. Loja.

- Motada dukinfieldia*, *bergi*, *honora*, *paula*, *amaryllis*, Parana, p. 142, *variata*, S. Brazil, p. 143, SCHAUS, J. N. York Ent. Soc. iv, n. spp.
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- Neochera* and *Philona* discussed and united ; synonymy of species ; JORDAN, pp. 192-196, Nov. Zool. iii : new varieties of *N. eugenia* and *inops* ; ROTHSCHILD, pp. 196-201, t. c.
- Neotrichura*, n. g., near *Trichura*, for *N. penates*, n. sp., Chiriqui ; DRUCE, p. 33, Ann. Nat. Hist. (6) xviii.
- Neritos cotes*, p. 38, *tipolis*, *samos*, Central America, *sithnides*, Peru, *patura*, British Guiana, p. 39, *cutheans*, Colombia, p. 40, DRUCE, Ann. Nat. Hist. (6) xviii, n. spp.
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- Neurophana charax*, E. Africa, DRUCE, p. 352, Ann. Nat. Hist. (6) xvii, n. sp.
- Neuroxena*, n. g., *Nyctemeridae*, for *N. ansorgei*, n. sp., E. Africa, KIRBY, p. 382, pl. xix, fig. 2, Ann. Nat. Hist. (6) xviii.
- Nezula*, n. g., for *N. grisea*, n. sp., Venezuela ; SCHAUS, p. 137, J. N. York Ent. Soc. iv.
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## NOCTUIDÆ, CYMATOPHORIDÆ, DELTOIDIDÆ.

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- Alabama*, n. g., for *Aletia argillacea*; GROTE, p. 122, Abh. Ver. Bremen, xiv.

- Amphipyra frivaldszkyi*, Sturm., note and figure; MOCSÁRY, pp. 125 & 225, pl. iv, Termes. Fuzetek, xix.
- Anisoneura obscurata*, Sumba, PAGENSTECHEK, p. 160, pl. iii, fig. 4, Jahrb. nassau. Ver. xlix, n. sp.
- Apatelidæ*: definition, classification according to larvæ, list of species; GROTE, Mt. Mus. Hildesheim, No. 3, 18 pp., 2 pls.
- Apatela*: subgenera of; *Craniophora*, Snell., = (*Bisulcia*, Chap.), and is a genus; GROTE, pp. 294-296, Ent. Rec. vii; CHAPMAN, t. c. p. 296: notes on; GROTE, pp. 388-392, P. Amer. Phil. Soc. xxxiv: synonymical notes; GROTE, pp. 411-414, Psyche, vii: mimicry, distribution; GROTE, p. 81, J. N. York Ent. Soc. iv.
- Aræopterum fasciale*, Ceylon; HAMPSON, p. 543, Moths India, iv, n. sp.
- Audea hemihyala*, W. Africa, KARSCH, p. 230, Ent. Nachr. xxii, n. sp.
- Baileya*, n. n. for *Leptina*, Gn.; GROTE, p. 122, Abh. Ver. Bremen, xiv.
- Baniana pectinata*, India, HAMPSON, p. 533, Moths India, iv, n. sp.
- Barasa alopha, floccifera*, India, HAMPSON, p. 525, t. c. n. spp.
- Bendis* and allies, synonymy discussed; BUTLER, pp. 255-257, Entomologist, 1896.
- Blenina minor*, Ceylon, p. 525, *xantholopha, metalophota*, Khâsis, p. 526, HAMPSON, Moths India, iv, n. spp.
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- Calliodes pretiosissima*, E. Africa, HOLLAND, p. 254, pl. viii, fig. 2, P. U. S. Mus. xviii, n. sp., but cf. Entomologist, 1892.
- Callopietria guttulalis*, Ceylon, HAMPSON, p. 511, Moths India, iv, n. sp.
- Calpe sittaca*, W. Africa, KARSCH, p. 228, Ent. Nachr. xxii, n. sp.
- Capnodes caustiplaga*, Bhután, HAMPSON, p. 537, Moths India, iv, n. sp.
- Carea albirufa*, Ceylon, *rectimarginata*, Bhután; HAMPSON, p. 530, Moths India, iv.
- Catocala aspasia*, n. n. for *hetara*; STAUDINGER, p. 400, Deutsche ent. Zeitschr. Lep. ix. *C. nupta*, var.; CALAND, p. 163, pl. viii, fig. 1, Tijdschr. Ent. xxxix; OUDEMANS, t. c. p. 167, pl. ix. Popular notes; GLASER, pp. 92-96, Ent. Nachr. xxii.
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- Cerocala calata*, Togoland, KARSCH, p. 235, Ent. Nachr. xxii, n. sp.
- Churia viridipicta*, India, HAMPSON, p. 530, Moths India, iv, n. sp.
- Chusaris aurantilineata*, Ceylon, HAMPSON, p. 546, Moths India, iv, n. sp.
- Conservula minor*, E. Africa, HOLLAND, p. 253, pl. viii, fig. 1, P. U. S. Mus. xviii, n. sp., but cf. Entomologist, 1892.
- Corgatha castanea, castaneiceps*, Ceylon, HAMPSON, p. 519, Moths India, iv, n. spp.
- Cteipolia*, n. g. (? part of *Dasypolia*), for *C. sacelli*, n. sp., Issyk-kul; STAUDINGER, pp. 191 & 371, pl. iv, fig. 13, Deutsche ent. Zeitschr. Lep. ix.
- Cucullia eumorpha*, var. ? *dimorpha*; STAUDINGER, p. 268, t. c.
- C. alpherakyi*, Mongolia, STAUDINGER, p. 371, t. c. n. sp.
- Dasypolia*?, var. ? *lama*; STAUDINGER, p. 266, t. c.
- D. exprimata*, Issyk-kul, STAUDINGER, pp. 190 & 371, pl. iv, fig. 15, Deutsche ent. Zeitschr. Lep. ix, n. sp.
- Dendrothripa*, n. g., for *D. rufipuncta*, p. 527, Kangra, *atrifasciata*, Ceylon, p. 528, n. spp.; HAMPSON, Moths India, iv.
- Deva purpurigera*, larva; DYAR, p. 145, J. N. York Ent. Soc. iv.
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- Dianthæcia*: notes on British, Ent. Rec. viii, pp. 7-10. *D. proxima*, referred to *Mamestra*, larva; PÜNGELER, p. 226, Ent. Zeit. Stettin, lvii.

- D.* (or *Mamestra*) *incerta*, Mongolia, STAUDINGER, p. 260, Deutsche ent. Zeitschr. Lep. ix, n. sp.
- Drasteria livida*, California, LETCHER, p. 223, Ent. News Philad. vii, n. sp.
- Dyschorista suspecta*, food-plants; PROUT, p. 89, Ent. Rec. viii.
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- Eicomorpha argillacea* = (*Agrotis decolor*, Stgr.); STAUDINGER, p. 401, Deutsche ent. Zeitschr. Lep. ix.
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- E. distigmata*, *picta*, India, HAMPSON, p. 514, Moths India, iv, n. spp.
- Eublemma seminivea*, pl. x, fig. 19, *ecthæmata*, fig. 6, Arabia, HAMPSON, p. 262, P. Zool. Soc. London, 1896; *E. reticulata*, *coccidiphaga*, p. 516, *acrapex*, p. 517, Ceylon, HAMPSON, Moths India, iv : n. spp.
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- Eurois chalcochlora*, Sikhim, HAMPSON, p. 510, Moths India, iv, n. sp.
- Eutelia picticolor*, Ceylon, HAMPSON, p. 528, Moths India, iv, n. sp.
- Euthermesia*, n. g., = *Antiblemma*, Grote, nec Hb.; BUTLER, p. 280, Entomologist, 1896.
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- Fodina johnstoni*, Nyasaland, BUTLER, p. 854, pl. xliii, fig. 6, P. Zool. Soc. London, 1896; *F. discrepans*, p. 232, *attathoides*, p. 233, Africa eq., KARSCH, Ent. Nachr. xxii : n. spp.
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- H. subornata*, Mongolia, STAUDINGER, p. 262, Deutsche ent. Zeitschr. Lep. ix; *H. agrotiformis*, Ceylon, HAMPSON, p. 508, Moths India, iv; *H. (Xylophasia) versuta*, p. 27, *contradicta*, pl. xv, fig. 3, Calgary, SMITH, Ent. News Philad. vii : n. spp.
- Hæmatosticta*, n. g., for *H. sanguiguttata*, n. sp., Ceylon; HAMPSON, p. 542, Moths India, iv.
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- L. favicolor*, England, BARRETT, p. 100, Ent. Mag. xxxii, n. sp.
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- Lyncestis metaleuca*, Cutch, HAMPSON, p. 532, Moths India, iv, n. sp.
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- M. magdalene*, Vernet-les-bains, CH. OBERTHUR, p. 68, pl. ix, fig. 157, Etudes Ent., xx, n. sp.
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- Mecodina ferrugineiceps*, Bhután, HAMPSON, p. 536, Moths India, iv, n. sp.
- Melipotis melanodonta*, Aden, HAMPSON, p. 263, P. Zool. Soc. London, 1896; *M. heliothidia*, Cutch, HAMPSON, p. 532, Moths India, iv : n. spp.
- Metachrostis atribasalis*, Aden, HAMPSON, p. 201, pl. x, fig. 11, P. Zool. Soc. London, 1896; *M. metallica*, Ceylon, *albimarginata*, Cutch, HAMPSON, p. 515, Moths India, iv : n. spp.
- Metaptya*, n. g., p. 522, for *M. sericea*, n. sp., Ceylon, p. 523, HAMPSON, Moths India, iv.
- Micræschus albinellus*, Ceylon, HAMPSON, p. 521, Moths India, iv, n. sp.
- Mimorufa rosealis*, Bhután, HAMPSON, p. 520, Moths India, iv, n. sp.
- Nagadeba pictalis*, Bhután, HAMPSON, p. 539, Moths India, iv, n. sp.
- Neuronina*: this name is preoccupied in *Trichoptera*; MCLACHLAN, p. 175, Ent. Mag. xxxii.
- Nodaria erythropoda*, Bhután, HAMPSON, p. 541, Moths India, iv, n. sp.
- Nyctipao gemmans*, Gn., ♂ = (*ophristigmaris*, Hamps.); SWINHOE, p. 363, Ann. Nat. Hist. (6) xvii.
- N. jaintiana*, India, SWINHOE, p. 362, Ann. Nat. Hist. (6) xvii, n. sp.
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- Oncocnemis exacta*, var. *mongolica*; STAUDINGER, p. 260, Deutsche ent. Zeitschr. Lep. ix.
- Ophioderes materna*, geographical distribution; BERG, p. 23, An. Mus. Buenos Aires, v.
- Perciana rectilineata*, Sikhim, HAMPSON, p. 512, Moths India, iv, n. sp.
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- P. insolita*, Calgary, SMITH, p. 30, pl. xv, fig. 17, Ent. News Philad. vii, n. sp.
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*Progonia*, n. g., for *P. reniferalis*, n. sp., Ceylon; HAMPSON, p. 538, *t. c.*  
*Prolophota*, n. g., p. 546, for *P. trigonijera*, n. sp., Ceylon, p. 547 ; HAMPSON, Moths India, iv.  
*Pseudaglossa fumosa*, Aden, HAMPSON, p. 266, pl. x, fig. 26, P. Zool. Soc. London, 1896, n. sp.  
*Pseudobendis*, n. g., = *Itonia*, Gn., *nec* Hb.; BUTLER, p. 254, Entomologist, 1896.  
*Pseudophia ochribasalis*, Aden, HAMPSON, p. 264, pl. x, fig. 31, P. Zool. Soc. London, 1896, n. sp.  
*Ptisciana niphea*, Ceylon, *lichenosa*, Khásis, HAMPSON, p. 527, Moths India, iv, n. spp.  
*Pyramarista*, n. g., *Hypopyridæ*, for *P. rufescens*, n. sp., E. Africa, KIRBY, p. 391, Ann. Nat. Hist. (6) xv. n. sp.  
*Raparna uncifera*, Ceylon, p. 537, *crenulata*, Bhután, &c., p. 538, HAMPSON, Moths India, iv, n. spp.  
*Rhizogramma detersina*, Saisan, STAUDINGER, p. 369, pl. iv, fig. 11, Deutsche ent. Zeitschr. Lep. ix ; *R. mongolica*, Uliassutai, STAUDINGER, p. 263, *t. c.* : n. spp.  
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*Sthenistis*, n. g., for *S. gyrtoniformis*, n. sp., Ceylon ; HAMPSON, p. 541, Moths India, iv.  
*Tæniocampa gothica*, varr.; DELAHAYE, p. 279, Bull. Soc. ent. France, 1896 : variations ; GIARD, p. 347, *t. c.*  
*Tarache eulepidea*, *nigritula*, Ceylon, HAMPSON, p. 514, Moths India, iv, n. spp.  
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*Thyatira achatina*, Central Africa, WEYMER, p. 90, Berlin. ent. Zeitschr. 1896, n. sp.  
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*Trichanarta*, n. g., type *ladakensis*, Feld. ; HAMPSON, p. 507, Moths India, iv.  
*Triæna tridens* and *psi*, distinctions ; RIDING, p. 109, Ent. Rec. viii.  
*Trigonia*, Gn., = (*claterna*, Wlk.); BUTLER, p. 252, Entomologist, 1896.  
*Triphæna comes*, variation ; ADKIN, pp. 93-99, P. S. London Soc. 1896.  
*Trisula dudgeoni*, Bhután, HAMPSON, p. 530, Moths India, iv, n. sp.  
*Trogacontia*, n. g., type *albifrontata*, Moore ; HAMPSON, p. 520, Moths India, iv.  
*Xanthia* : application of the name ; GROTE & TUTT, pp. 16 & 17, Ent. Rec. viii. *X. aurago*, food-plant ; HOLLAND, p. 261, Ent. Mag. xxxii.  
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*Xanthoptera semicrocea* and *ridingsii*, note on ; HUBBARD, p. 314, P. ent. Soc. Washington, iii.

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*Zethes apicinota*, India, &c., HAMPSON, p. 536, Moths India, iv, n. sp.  
*Zurobata fissifascia*, Ceylon, *plagiostola*, Bhután, HAMPSON, p. 518, Moths India, iv, n. spp.

## GEOMETRIDÆ, EPIPLEMIDÆ.

- [Cf. BRABANT (108), BUCKLER (117), BUTLER (131), DOGNIN (251), GROTE (444), GUMPPENBERG (463), HAMPSON (470, 1201), HOLLAND (510), HOLMGREN (515), HULST (547), KIRBY (636), KNAUTH (651), LOWER (722), OBERTHUR (829), PAGENSTECHEER (854), STAUDINGER (1124, 1125), THIERRY-MIEG (1147), WARREN (1205, 1207-1210).]  
 Completion of GUMPPENBERG'S work on the *Geometridæ* of the North temperate region (463).  
 Criticism of nomenclature, with reference to Meyrick's 1892 paper; GROTE, P. ent. Soc. London, 1896, pp. x-xv; MEYRICK, t. c. p. xxviii.  
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*Abraxas grossulariata*, 155 figures of varieties; CH. OBERTHUR, Etudes Ent. xx, pls. xix-xxiv, pp. 72-74.  
*A. unisinuata*, Java, WARREN, p. 130, Nov. Zool. iii; *A. nigriclathrata*, Java, WARREN, p. 394, t. c. : n. spp.  
*Acadra acutaria*, n. var. *olivata*, WARREN, p. 407, Nov. Zool. iii, n. sp.  
*Acanthophora*, n. g., *Ennominae*, for *A. graefii*, n. sp., Texas; HULST, p. 365, Tr. Amer. ent. Soc. xxiii.  
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*Acidalia*: eggs; TURR, pp. 177 & 178, Ent. Rec. viii. *A. dilutaria*, note; GRIFFITHS, p. 193, op. cit. vii. *A. calmetaria*, var. *vulesiaria*, larva; PÜNGELER, p. 230, Ent. Zeit. Stettin, lvii.  
*A. permutata*, Mongolia, STAUDINGER, p. 272, Deutsche ent. Zeitschr. Lep. ix; *A. phœnicoptera*, *gemmaria*, Ceylon, HAMPSON, p. 562, Moths India, iv; *A. niveata*, Celebes, PAGENSTECHEER, p. 52, Ent. Nachr. xxii; *A. zoma*, Loja, DOGNIN, p. 145, Ann. Soc. ent. Belgique, xl : n. spp.  
*Acidaliastis*, n. g., *Larentiinae*, for *A. micra*, n. sp., Aden, pl. x, fig. 20; HAMPSON, p. 267, P. Zool. Soc. London, 1896.  
*Acrortha*, n. g., *Geometrinae*, for *A. flexicosta*, n. sp., Ceylon; WARREN, p. 361, Nov. Zool. iii.  
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*Actenochroma discolor*, New Guinea, p. 359, *ochrea*, Queensland, p. 360, WARREN, Nov. Zool. iii; *A. ? casia*, *prasina* (with var. *suffusa*), Fergusson I., WARREN, p. 282, t. c. : n. spp.  
*Æthalodes*, n. g., *Ennominae*, type *packardaria*, Hulst; HULST, p. 354, Tr. Amer. ent. Soc. xxiii.  
*Æthaloptera*, n. g., *Ennominae*, type *intertextata*, Walk.; HULST, p. 358, Tr. Amer. ent. Soc. xxiii.

- Aëtheolepsis*, n. g., *Tephroclystinae*, for *A. papillosa*, n. sp., Khasia Hills ; WARREN, p. 124, Nov. Zool. iii.
- Æthyctera*, n. g., *Ennominae*, for *Æ. electa*, n. sp., California ; HULST, p. 339, Tr. Amer. ent. Soc. xxiii.
- Agathia subdeleta*, Sikkim, WARREN, p. 102, Nov. Zool. iii ; *A. cinerea*, *diversilinea*, p. 284, *subcarnea*, p. 285, Fergusson I., WARREN, t. c. ; *A. disconnecta*, Queensland, *rubrilineata*, Borneo, WARREN, p. 362, t. c. : n. spp.
- Agathiopsis*, n. g., *Geometrinae*, for *A. basipuncta*, p. 285, *maculata*, p. 286, Fergusson I., n. spp. ; WARREN, Nov. Zool. iii.
- Agia*, n. g., *Hydriominae*, p. 259, for *A. eborata*, n. sp., N. America, p. 260 ; HULST, Tr. Amer. ent. Soc. xxiii.
- Agrapha*, n. g. for *Lithostege farinata*, Hufn. ; GUMPPENBERG, p. 228, Acta Ac. German. lxv.
- Alcippe*, n. g. for *Macaria castigataria*, Brem. ; GUMPPENBERG, p. 217, Acta Ac. German. lxv.
- Alcis dissonaria*, *spododea*, *dejecta*, p. 345, *latipennis*, *luridula*, p. 346, N. America, HULST, Tr. Amer. ent. Soc. xxiii ; *A. orbifer*, *squamosa*, Khasia Hills, *A. ? fuscibrunnea*, Jamaica, WARREN, p. 131, Nov. Zool. iii : n. spp.
- Amphidasys prodromaria*, larva, and its variation ; TUTT, pp. 210-212, Ent. Rec. viii.
- Angerona prunaria*, eggs ; TUTT, p. 187, Ent. Rec. viii.
- Anisephyra*, n. g., *Sterrhinae*, p. 369, for *A. rufaria*, n. sp., Ajmere, and *albiannularia*, Wlk., with n. subsp. *incorrupta* ; WARREN, p. 370, Nov. Zool. iii.
- Anisodes zorra*, Loja, DOGNIN, p. 144, Ann. Soc. ent. Belgique, xl, n. sp.
- Anisogamia*, n. g., *Geometrinae*, p. 286, for *A. absona*, n. sp., Fergusson I., p. 287 ; WARREN, Nov. Zool. iii.
- Anoplosceles*, n. g., *Geometrinae*, for *A. nigripunctata*, n. sp., W. Java ; WARREN, p. 363, Nov. Zool. iii.
- Anthelia*, n. g., *Ennominae*, for *A. taylorata*, n. sp., British Columbia ; HULST, p. 337, Tr. Amer. ent. Soc. xxiii.
- Antibadistes*, n. g., *Semiothisinae*, for *A. subcinerea*, n. sp., Malay Archipelago ; WARREN, p. 143, Nov. Zool. iii.
- Anticlea canaliculata*, Sikkim, WARREN, p. 384, Nov. Zool. iii, n. sp.
- Antitrygodes parvimacula*, Fergusson I., WARREN, p. 293, Nov. Zool. iii, n. sp.
- Apæcasia*, n. g., *Ennominae*, type *detersata*, Guen. ; HULST, p. 340, Tr. Amer. ent. Soc. xxiii.
- Aphantoloba*, n. g., *Trichopteryginae*, for *A. nigrinotata*, n. sp., Khasia Hills ; WARREN, p. 117, Nov. Zool. iii.
- Apicia valdiviana*, larva ; IZQUIERDO, Notas, &c., p. 34.
- A. bonita*, Loja, DOGNIN, p. 140, Ann. Soc. ent. Belgique, xl, n. sp.
- Aplochloa subflava*, New Guinea, WARREN, p. 392, Nov. Zool. iii, n. sp.
- Apocheima rachelæ*, Colorado, HULST, p. 362, Tr. Amer. ent. Soc. xxiii, n. sp.
- Apolema*, n. g., *Ennominae*, type *carata*, Hulst ; HULST, p. 336, Tr. Amer. ent. Soc. xxiii.
- Arhostia ? persimilis*, Khasia Hills, WARREN, p. 109, Nov. Zool. iii, n. sp.
- Asmate*, n. g. for *rippertaria*, Dup. ; GUMPPENBERG, p. 232, Acta Ac. German. lxv.
- Asthenia porphyretica*, Queensland, LOWER, p. 152, Tr. R. Soc. S. Austral. xx, n. sp.
- Autallacta livida*, Khasia Hills, WARREN, p. 116, Nov. Zool. iii, n. sp.
- Azata subcinerea*, Khasia Hills, WARREN, p. 139, Nov. Zool. iii ; *A. variegata*, Fergusson I., WARREN, p. 302, t. c. : n. spp.



- Azelinopsis*, n. g., *Ennominae*, p. 143, for *A. externa*, n. sp., Queensland, p. 144; WARREN, Nov. Zool. iii.
- Bapta lucens*, Java, WARREN, p. 392, Nov. Zool. iii, n. sp.
- Bardanes flavata*, Java, *nigricosta*, New Guinea, WARREN, p. 382, Nov. Zool. iii, n. spp.
- Berta olivescens*, Fergusson I., WARREN, p. 287, Nov. Zool. iii, n. sp.
- Blepharoctenucha albescens*, Java, WARREN, p. 400, Nov. Zool. iii, n. sp.
- Boarmia cinctaria*, var.; FROHAWK, p. 145, Entomologist, 1896.
- B. coremiaria*, *leucodontata*, Ceylon, HAMPSON, p. 555, Moths India, iv, n. spp.
- Bociraza latiflava*, New Guinea, WARREN, p. 356, Nov. Zool. iii, n. sp.
- Borbacha pardaria*, n. subsp., *parviscripta*; WARREN, p. 130, Nov. Zool. iii. *B.* (sub *Onychodes*) *euchrysa*, Lower, = (*parviscripta*, Warren, *infra*); WARREN, p. 306, Nov. Zool. iii.
- B. lineata*, Java, WARREN, p. 392, Nov. Zool. iii, n. sp.
- Bordeta tricolor*, New Guinea, WARREN, p. 130, Nov. Zool. iii, n. sp.
- Bulonga subcinerea*, n. subsp., *distans*, WARREN, p. 408, Nov. Zool. iii.
- Bursada bistrigata*, Tenimber Is., p. 396, *hyaloplaga*, *oppositata*, p. 397, *pyrifera*, p. 398, New Guinea, WARREN, Nov. Zool. iii; *B. alboguttata*, Celebes, PAGENSTECHER, p. 53, Ent. Nachr. xxii : n. spp.
- Buzura pustulata*, Perak, WARREN, p. 401, Nov. Zool. iii, n. sp.
- Calicha* ? *minima*, Khasia Hills, WARREN, p. 132, Nov. Zool. iii, n. sp.
- Callerimys marginata*, Nias I., WARREN, p. 407, Nov. Zool. iii, n. sp.
- Calletara angulata*, Khasia Hills, WARREN, p. 139, Nov. Zool. iii; *C. sordida*, Fergusson I., WARREN, p. 303, *t. c.* : n. spp.
- Camptogramma bilineata*, melanism in Ireland; KANE, Irish Natural. v, pp. 74-80.
- Camptolophia*, n. g., *Geometrinae*, for *C. marmorata*, n. sp., Khasia Hills; WARREN, p. 102, Nov. Zool. iii.
- Capasa viridifascia*, New Guinea, WARREN, p. 415, Nov. Zool. iii, n. sp.
- Carecomotis*, n. g., near *Chogada*, for *C. perfumosa*, n. sp., Cooktown; WARREN, p. 492, Nov. Zool. iii.
- Caripeta ida*, Colorado, HULST, p. 341, Tr. Amer. ent. Soc. xxiii, n. sp.
- Catascia colaria*, n. var. *fuscobrunnea*; WARREN, p. 318, Nov. Zool. iii.
- Catoclothis*, n. g., *Hydriominae*, type *frondaria*, Grt.; HULST, p. 275, Tr. Amer. ent. Soc. xxiii.
- Catopyrrha coloraria*, n. var. *perolivata*; HULST, p. 340, Tr. Amer. ent. Soc. xxiii.
- Catoria camelaria*, n. subsp., *carbonata*; WARREN, p. 402, Nov. Zool. iii.
- Celerena cana*, *griseo-fusa*, Fergusson I., WARREN, p. 281, Nov. Zool. iii; *C. triflava*, New Guinea, WARREN, p. 356, *t. c.* : n. spp.
- Chaetocerus*, n. g., *Epiplemidæ*, for *C. simplex*, n. sp., Amboina; WARREN, p. 344, Nov. Zool. iii.
- Chaetopyga*, n. g., *Epiplemidæ*, p. 344, for *C. horrida*, n. sp., Queensland, p. 345; WARREN, Nov. Zool. iii.
- Charommatæa*, n. g., *Sterrhinae*, for *C. ella* (with var. *ellatina*), Texas, n. sp.; HULST, p. 302, Tr. Amer. ent. Soc. xxiii.
- Chesiadodes*, n. g., *Ennominae*, for *C. morosata*, n. sp., California; HULST, p. 354, Tr. Amer. ent. Soc. xxiii.
- Chiasmia maculata*, Khasia Hills, WARREN, p. 137, Nov. Zool. iii, n. sp.
- Chiasmiodes*, n. g., for *C. variolinea*, n. sp., Khasia Hills; WARREN, p. 138, Nov. Zool. iii.
- Chlorochlamys*, n. g., *Geometrinae*, type *chloroleucaria*, Gn.; HULST, p. 312, Tr. Amer. ent. Soc. xxiii.
- Chloroclystis nigroviridata*, Khasia Hills, WARREN, p. 124, Nov. Zool. iii; *C. leucopygata*, Khasia Hills, *semivinosa*, Java, WARREN, p. 389, *t. c.*; *C. nigrilineata*, Ceylon, HAMPSON, p. 559, Moths India, iv; *C. inconspicua*, California, HULST, p. 264, Tr. Amer. ent. Soc. xxxiii : n. spp.

- Chlorochromodes*, n. g., *Geometrinæ*, for *C. tenera*, n. sp., Khasia Hills ; WARREN, p. 103, Nov. Zool. iii.
- Chloromianta*, n. g., *Geometrinæ*, for *C. ferruginata*, n. sp., Khasia Hills ; WARREN, p. 104, Nov. Zool. iii.
- Chloromma*, n. g., *Geometrinæ*, p. 104, for *C. mimica*, Khasia Hills, p. 105 ; WARREN, Nov. Zool. iii.
- Chloropteryx*, n. g., *Geometrinæ*, type *tepperaria*, Hulst ; HULST, p. 314, Tr. Amer. ent. Soc. xxiii, p. 314.
- Chogada epistictis*, variation and new varr. ; WARREN, pp. 298 & 299, Nov. Zool. iii : n. var. *albibasis* ; WARREN, p. 403, *t. c.*
- Chrysochloroma*, n. g., for *C. meeki*, n. sp., Trobriand Is. ; WARREN, p. 288, Nov. Zool. iii.
- C. electrica*, New Guinea, p. 363, *subalbida*, Queensland, with subsp. *rubritincta*, New Guinea, p. 364 ; WARREN, Nov. Zool. iii.
- Chrysoclystis*, n. g., near *Chloroclystis*, for *C. perornata*, n. sp., New Guinea ; WARREN, p. 390, Nov. Zool. iii.
- Chrysocraspeda perpicta*, p. 109, *sanguinea*, *subangulata*, p. 110, Khasia Hills, WARREN, Nov. Zool. iii ; *C. croceomarginata*, Java, *gibbosa*, Assam, WARREN, p. 370, *t. c.* : n. spp.
- Chrysomphe*, n. g., *Geometrinæ*, p. 364, for *C. venusta*, n. sp., Queensland, p. 365, WARREN, Nov. Zool. iii.
- Cidaria ignotata*, n. n. for *ignorata*, Stgr., 1895 ; STAUDINGER, p. 400, Deutsche ent. Zeitschr. Lep. ix. *C. semenovi* = (*lugubris*, Stgr.) ; STAUDINGER, p. 401, *t. c.* *C. flavicinctata*, *nobiliaria*, and others, larvæ noticed ; PÜNGELER, pp. 237–239, Ent. Zeit. Stettin, lvii. *C. ibericata*, var. ? *mongoliata*, p. 278, *unangulata*, var. *subangulata*, p. 279 ; STAUDINGER, Deutsche ent. Zeitschr. Lep. ix.
- C. lamata*, Mongolia, STAUDINGER, p. 277, Deutsche ent. Zeitschr. Lep. ix ; *C. subcanescens*, Khasia Hills, WARREN, p. 121, Nov. Zool. iii ; *C. kirschoides*, Loja, DOGNIN, p. 147, Ann. Soc. ent. Belgique, xl ; *C. ? desiderata*, Kuldja, STAUDINGER, p. 376, pl. iv, fig. 16, Deutsche ent. Zeitschr. Lep. ix : n. spp.
- Cinglis albidula*, Florida, HULST, p. 301, Tr. Amer. ent. Soc. xxiii, n. sp.
- Cladara*, n. g., type *atroliturata*, Wlk. ; HULST, p. 251, Tr. Amer. ent. Soc. xxiii.
- Cleogene peletieriana*, early stages ; CHRÉTIEN, pp. 112–116, Bull. Soc. ent. France, 1896.
- Cleora formosata*, California, HULST, p. 357, Tr. Amer. ent. Soc. xxiii, n. sp.
- Cleptocosmia*, n. g., *Astheninæ*, for *C. mutabilis*, n. sp., Cooktown ; WARREN, p. 383, Nov. Zool. iii.
- Cænocalpe alaskæ*, p. 287, *polygrammata*, *oxygramma*, p. 288, N. America, HULST, Tr. Amer. ent. Soc. xxiii ; *C. ? legalis*, Lifu, WARREN, p. 384, Nov. Zool. iii : n. spp.
- Cænocharis*, n. g., *Ennominae*, type *interruptaria*, Grt., with *C. elongata*, n. sp., Texas ; HULST, p. 353, Tr. Amer. ent. Soc. xxiii.
- Collix multifilata*, Cooktown, *subligata*, Lifu, WARREN, p. 385, Nov. Zool. iii, n. spp.
- Comostola flavicincta*, Fergusson I., WARREN, p. 288, Nov. Zool. iii, n. sp. (but, p. 306, this is said to be *neseidaria*, Snell.).
- C. albifimbria*, *mundata*, Khasia Hills, WARREN, p. 105, Nov. Zool. iii, n. spp.
- Comostolodes*, n. g., *Geometrinæ*, p. 308, for *C. albicatena*, n. sp., Khasia Hills ; WARREN, p. 309, Nov. Zool. iii.
- Comostolodes deliciosa*, Natuna Is., WARREN, p. 365, *t. c.*, n. sp.
- Coniodes*, n. g., *Ennominae*, type *plumigeraria*, Hulst ; HULST, p. 353, Tr. Amer. ent. Soc. xxiii.

- Coptogonia*, n. g., p. 380, *Trichopteryginæ*, for *C. turpipennis*, n. sp., Batchian, p. 381, WARREN, Nov. Zool. iii.
- Coremia munitata*, habits; MORTON, Ent. Mag. xxxii, p. 39.
- Corymica arnearia*, n. var. *brunnea*; WARREN, p. 144, Nov. Zool. iii.
- C. oblongimacula*, Fergusson I., WARREN, p. 305, t. c. n. sp.
- Coryphista*, n. g., *Hydriominæ*, type *meadii*, Pack.; HULST, p. 275, Tr. Amer. ent. Soc. xxiii.
- Craspedia hyphenophora*, *nigridentata*, Khasia Hills, WARREN, p. 310, Nov. Zool. iii; *C. æquidistans*, Timor, *nigristellata*, Batchian, *subdecorata*, Borneo, p. 371, *subtincta*, Tenimber Is., p. 372, WARREN, t. c. : n. spp.
- Craspediopsis inæquata*, Khasia Hills, WARREN, p. 109, Nov. Zool. iii, n. sp.
- Craspedosis semiplaga*, *uniplaga*, *funnebris*, Fergusson I., WARREN, p. 297, Nov. Zool. iii; *C. ? bicolorata*, Amboina, *leucosticta*, Cooktown, p. 398, *ovalis*, *schistacina*, *semilugens*, New Guinea, p. 399, WARREN, t. c. : n. spp.
- Cusiola semiumbrata*, Fergusson I., WARREN, p. 298, Nov. Zool. iii; *C. fessa*, Adonara, *semialbida*, Batchian, WARREN, p. 401, t. c. : n. spp.
- Cysteopteryx*, n. g., type *viridata*, Grt.; HULST, p. 250, Tr. Amer. ent. Soc. xxiii.
- Deilinia borealis*, p. 327, *fumosa*, p. 328, HULST, Tr. Amer. ent. Soc. xxiii, n. spp.
- Deptalia*, n. g., *Sterrhinæ*, type *insularia*, Guen.; HULST, p. 299, Tr. Amer. ent. Soc. xxiii.
- Devara pizarra*, figure, pl. xii, fig. 3; DOGNIN, Lep. Loja.
- Diastictis ella*, *denticulodes*, *speciosa*, *helenæ*, p. 332, *decorata*, *rectifascia*, *crassata*, *subalbaria*, *minuta*, *florida*, *deceptata*, *pallidula*, p. 334, *subacuta*, *cinereola*, *fasta*, *subfalcata*, p. 335, N. America, HULST, Tr. Amer. ent. Soc. xxiii; *D. ? latefasciata*, Mongolia, STAUDINGER, p. 275, Deutsche ent. Zeitschr. Lep. ix : n. spp.
- Digrammia*, n. g., for some N. American *Phasianæ*; GUMPPENBERG, p. 291, Acta Ac. German. lxxv.
- Diplodesma*, n. g., type *celataria*, Wlk., = (*Idiochlora contracta*, Warr.); WARREN, p. 289, Nov. Zool. iii.
- Diplurodes*, n. g., near *Alcis*, for *D. vestita*, n. sp., Khasia Hills; WARREN, p. 132, Nov. Zool. iii.
- Dirades annulifer*, Trobriand Is., WARREN, p. 274, Nov. Zool. iii; *D. hepaticata*, Khasia Hills, *latibrunnea*, Lifu, p. 346, *seminigra*, Queensland, p. 347, WARREN, t. c.; *D. ? ambigua*, Khasia Hills, WARREN, p. 230, Ann. Nat. Hist. (6) xviii : n. spp.
- Discoglypha*, n. g., p. 110, *Sterrhinæ*, for *D. aureifloris*, *inflammata*, p. 111, n. spp., Khasia Hills; WARREN, Nov. Zool. iii.
- D. variostigma*, Khasia Hills, WARREN, p. 311, Nov. Zool. iii, n. sp.
- Dizuga*, n. g., *Sterrhinæ*, for *D. parva*, n. sp., Queensland; WARREN, p. 372, Nov. Zool. iii.
- Drepanopsis*, n. g., *Ennominæ*, p. 144, for *D. ferrugata*, n. sp., Khasia Hills, WARREN, p. 145, Nov. Zool. iii.
- Dryocætis cineracea*, n. var. *subalbida*; WARREN, p. 403, Nov. Zool. iii.
- Dysethia pallescens*, Japan, WARREN, p. 118, Nov. Zool. iii, n. sp.
- Dysrhombia*, n. g., *Epiplemidæ*, for *D. longipennis*, n. sp., Queensland; WARREN, p. 346, Nov. Zool. iii.
- Ectropis dentilineata*, n. var. *pulverosa*; WARREN, p. 403, Nov. Zool. iii.
- E. serratilinea*, Khasia Hills, WARREN, p. 318, Nov. Zool. iii, n. sp.
- Elphos subrubida*, Fergusson I., WARREN, p. 300, Nov. Zool. iii, n. sp.
- Emmesomia*, n. g., *Trichopteryginæ*, for *E. bilineata*, n. sp., Khasia Hills; WARREN, p. 118, Nov. Zool. iii.

- Emmiltis nigrescens*, Aden, HAMPSON, p. 267, pl. x, fig. 2, P. Zool. Soc. London, 1896, n. sp.
- Enantiodes*, n. g., near *Alcis*, for *E. stellifera*, n. sp., Khasia Hills; WARREN, p. 133, Nov. Zool. iii.
- Enchoria*, n. g., *Hydriominae*, for *E. osculata*, n. sp., California; HULST, Tr. Amer. ent. Soc. xxiii.
- Enypia*, n. g., *Ennominae*, type *venata*, Grt., with *E. perangulata*, n. sp., Colorado; HULST, p. 343, Tr. Amer. ent. Soc. xxiii.
- Eois flavisinuata*, p. 111, *rubridentata*, p. 112, Khasia Hills, WARREN, Nov. Zool. iii; *E. costiguttata*, *E. maculata*, Khasia Hills, WARREN, p. 311, t. c.; *E. flavescens*, p. 304, *microphysa*, *delicata*, *nimbicolor*, *lanceolata*, *rufescens*, p. 305, *pallida*, *australis*, p. 306, N. America, HULST, Tr. Amer. ent. Soc. xxiii : n. spp.
- Epelis*, n. g., *Ennominae*, type *truncataria*, Wlk.; HULST, p. 324, Tr. Amer. ent. Soc. xxiii.
- Ephemerophila costistrigata*, *serpentinaria*, Khasia Hills, WARREN, p. 134, Nov. Zool. iii, n. spp.
- Ephyra rufistrigata*, Aden, HAMPSON; p. 267, pl. x, fig. 3, P. Zool. Soc. London, 1896, n. sp.
- Epilema quadricaudata*, n. var. *supproximans*; WARREN, p. 277, Nov. Zool. iii.
- E. argentisparsa*, Bhután, p. 548, *scopocera*, Ceylon, *nigrifrons*, Burma, *pectinicornis*, Sikkim, p. 549, HAMPSON, Moths India, iv; *E. angulata* (with var. *illiturata*), *cæruleodisca*, p. 275, *lacteata*, Fergusson I., *denigrata*, *grisea*, Trobriand Is., p. 276, *particolor*, p. 277, *sordida*, *undulata*, p. 278, Fergusson I., WARREN, Nov. Zool. iii; *E. arcuata*, p. 307, *fulvata*, pp. 307 & 348, Khasia Hills, WARREN, t. c.; *E. ambusta*, Banda, *clathrata*, Khasia Hills, p. 347, *curvilinea*, Amboina, *fuscifrons*, Sikkim, *nana*, Tenimber Is., p. 348, *oculifera*, Timor, *perpolita*, Banda, *rufimargo*, Sikkim, p. 349, *unangulata*, Batchian, p. 350, WARREN, t. c.; *E. albipunctata*, Khasia Hills, p. 212, *cæruleotincta*, Queensland, p. 213, *inhians*, *lituralis*, p. 214, *ochreofumosa*, Khasia Hills, p. 215, WARREN, Ann. Nat. Hist. (6) xvii; *E. castanea*, *flavigutta*, Khasia Hills, WARREN, p. 231, op. cit. xviii : n. spp.
- Epirrhoe* ? *contortilinea*, Khasia Hills, WARREN, p. 121, Nov. Zool. iii, n. sp.
- Episemasia*, n. g., *Ennominae*, type *cervinaria*, Pack., with *E. morbosa*, n. sp., Florida; HULST, p. 328, Tr. Amer. ent. Soc. xxiii.
- Episothalma obscurata*, Fergusson I.; WARREN, p. 289, Nov. Zool. iii.
- Erannis colorodata*, America, HULST, p. 363, Tr. Amer. ent. Soc. xxiii, n. sp.
- Eriopithec*, n. g., near *Chloroclystis*, for *E. lanaris*, n. sp., Khasia Hills; WARREN, p. 390, Nov. Zool. iii.
- Erosia hendida*, Loja, DOGNIN, p. 134, Ann. Soc. ent. Belgique, xl, n. sp.
- Ersephila*, n. g., *Hydriominae*, for *E. grandipennis*, n. sp., Colorado; HULST, p. 291, Tr. Amer. ent. Soc. xxiii.
- Eubolia ratona*, Loja, DOGNIN, p. 148, Ann. Soc. ent. Belgique, xl, n. sp.
- Euchloris rectifasciata*, Ceylon, HAMPSON, p. 566, Moths India, iv, n. sp.
- Eucrostis viridipennata*, Colorado, HULST, p. 314, Tr. Amer. ent. Soc. xxiii, n. sp.
- Eucymatoge graefii*, *grandis*, Washington, HULST, p. 273, Tr. Amer. ent. Soc. xxiii, n. spp.
- Euemera*, n. g., *Ennominae*, type *juturnaria*, Guen.; HULST, p. 340, Tr. Amer. ent. Soc. xxiii.
- Eumelea* : numerous n. subspp.; WARREN, pp. 356-358, Nov. Zool. iii.  
*E. aureliata*, n. subsp., *sanguinifusa*; WARREN, p. 281, t. c.

- E. unipuncta*, Fergusson I., WARREN, p. 281, Nov. Zool. iii; *E. præusta*, Batchian, WARREN, p. 353, t. c. : n. spp.
- Eupithecia stevensata*, note; WEBB, p. 10, Ent. Rec. viii.
- E. uliata*, p. 281, *nephelata*, p. 282, Mongolia, STAUDINGER, Deutsche ent. Zeitschr. Lep. ix, n. spp.
- Eurytaphria pallidula*, Darjiling, WARREN, p. 321, Nov. Zool. iii; *E. xanthoperata*, Ceylon, *pachyceras*, India, HAMPSON, p. 552, Moths India, iv : n. spp.
- Euschema cyanoptera*, Batchian, PAGENSTECHE, p. 54, Ent. Nachr. xxii, n. sp.
- Euxena*, n. g., p. 365, near *Chlorodontopera*, for *E. crypsichroma*, n. sp., Borneo, p. 366; WARREN, Nov. Zool. iii.
- Evarzia deformis*, Batchian, WARREN, p. 408, Nov. Zool. iii, n. sp.
- Eversmannia diversipennis*, Amboina, WARREN, p. 350, Nov. Zool. iii, n. sp.
- Fernaldellinae*, n. subf. for the following :
- Fernaldella*, n. g., type *finetaria*, Grt.; HULST, p. 318, Tr. Amer. ent. Soc. xxiii.
- Fidonia albigrisea*, Java, WARREN, p. 407, Nov. Zool. iii, n. sp.
- Fascellina fuscoviridis*, E. India, WARREN, p. 320, Nov. Zool. iii, n. sp.
- Gathynia fumicosta*, Khasia Hills, WARREN, p. 215, Ann. Nat. Hist. (6) xvii; *G. albibasis*, p. 278, *nigrescens*, p. 279, Fergusson I., WARREN, Nov. Zool. iii; *G. pernigrata*, Khasia Hills, p. 350, *vinosa*, p. 351, Timor, WARREN, t. c. : n. spp.
- Glaucina*, n. g., *Ennominae*, type *escaria*, Grt.; HULST, p. 352, Tr. Amer. ent. Soc. xxiii.
- Glena*, n. g., *Ennominae*, type *cognataria*, Hübn.; HULST, p. 358, Tr. Amer. ent. Soc. xxiii.
- Gonanticlea multistriata*, Java, WARREN, p. 386, Nov. Zool. iii, n. sp.
- Gonodela kilimanjarensis*, pl. viii, fig. 4, *rhabdophora*, fig. 5, E. Africa, HOLLAND, p. 256, P. U. S. Mus. xviii, but cf. Entomologist, 1892; *G. ruptifascia*, Khasia Hills, WARREN, p. 139, Nov. Zool. iii; *G. olivescens*, Ceylon, p. 408, *perconfusa*, Timor, p. 409, WARREN, t. c. : n. spp.
- Gonodontis barnesii*, p. 374, *formosa*, p. 375, Colorado, HULST, Tr. Amer. ent. Soc. xxiii, n. spp.
- Gubaria albimedia*, Java, p. 409, *niveostriga*, *amplata*, p. 410, Timor, WARREN, Nov. Zool. iii, n. spp.
- Gymnocelis inferior*, *desperata*, p. 264, *minuta*, p. 265, N. America, HULST, Tr. Amer. ent. Soc. xxiii, n. spp.
- Gymnopera*, n. g., p. 126, near *Chloroclystis*, for *G. rubroviridis*, n. sp., Khasia Hills, p. 127, WARREN, Nov. Zool. iii.
- Hæmatorithra*, n. g., near *Omiza*, for *H. rubrifasciata*, n. sp., Nyasaland; BUTLER, p. 162, Ann. Nat. Hist. (6) xviii.
- Halterophora*, n. g., *Geometrince*, p. 289, for *H. bicolor*, n. sp., Fergusson I., p. 290; WARREN, Nov. Zool. iii.
- Helicopage*, n. g., *Geometrince*, for *H. hirundinalus*, n. sp., Khasia Hills; WARREN, p. 106, Nov. Zool. iii.
- Helminthoceras*, n. g., near *Remodes*, for *H. sinuaticornis*, n. sp., New Guinea; WARREN, p. 381, Nov. Zool. iii.
- Hemerophila trilineata*, Khasia Hills, WARREN, p. 135, Nov. Zool. iii, n. sp.
- Hemistola rectilinea*, Khasia Hills, WARREN, p. 309, Nov. Zool. iii, n. sp.
- Hemithea subflavida*, n. subsp., *reducta*, WARREN, p. 367, Nov. Zool. iii.
- H. pictifimbria*, *subflavida*, Fergusson I., WARREN, p. 290, Nov. Zool. iii; *H. ? anomala*, Masuri, WARREN, p. 106, t. c.; *H. ornata*, Adonara, *H. ? punctifimbria*, Bombay, p. 366, *H. quadripunctata*, Oinanisa, p. 367, WARREN, t. c. : n. spp.

- Herbita niebla*, Loja, DOGNIN, p. 139, Ann. Soc. ent. Belgique, xl, n. sp.  
*Heterodisca*, n. g., *Ennominae*, for *H. scardamiata*, n. sp., New Guinea ;  
 WARREN, p. 415, Nov. Zool. iii.  
*Heterostegania denticulosa*, Khasia Hills, WARREN, p. 128, Nov. Zool.  
 iii, n. sp.  
*Holochroa*, n. g., type *dissociaria*, Hulst ; HULST, p. 352, Tr. Amer. ent.  
 Soc. xxiii.  
*Homochlodes*, n. g., *Ennominae*, type *fritillaria*, Guen. ; HULST, p. 339, Tr.  
 Amer. ent. Soc. xxiii.  
*Hybernia leucophæaria*, n. var. *ebenica* ; DELAHAYE, p. 156, Bull. Soc. ent.  
 France, 1896.  
*Hydrelia rufinota*, *cingulata*, p. 560, *crocearia*, *sanguiflua*, p. 561, Sikkim,  
 HAMPSON, Moths India, iv ; *H. pallidula*, Java, WARREN, p. 383,  
 Nov. Zool. iii : n. spp.  
*Hydriomena similaris*, *ablata*, p. 284, *sparsimacula*, *neomexicana*, *her-*  
*bicolata*, p. 285, *curvilinea*, *costiguttata*, p. 286, N. America, HULST,  
 Tr. Amer. ent. Soc. xxiii, n. spp.  
*Hygrochroa albipuncta*, p. 145, *amethystina*, p. 146, Khasia Hills,  
 WARREN, Nov. Zool. iii, n. spp.  
*Hypochroma edmondsii*, larva ; IZQUIERDO, Notas, &c., p. 47.  
*H. subrubescens*, Queensland, WARREN, p. 101, Nov. Zool. iii ; *H. sul-*  
*ornata*, Queensland, WARREN, p. 360, *t. c.* : n. spp.  
*Hypochrosis annulata*, Celebes, PAGENSTECHE, p. 52, Ent. Nachr. xxii,  
 n. sp.  
*Hypocometa*, n. g., *Trichopteryginae*, for *H. clauda*, n. sp., Khasia Hills ;  
 WARREN, p. 119, Nov. Zool. iii.  
*Hypephyra subangulata*, Sikkim, WARREN, p. 319, Nov. Zool. iii, n. sp.  
*Hyperythra rufifimbria*, Khasia Hills, WARREN, p. 140, Nov. Zool. iii,  
 n. sp.  
*Hyposidra maculipennis*, Solomon Is., *nigricosta*, Batchian, WARREN,  
 p. 416, Nov. Zool. iii ; *H. schistacea*, p. 305, *variabilis*, p. 306, Fer-  
 gusson I., WARREN, *t. c.* : n. spp.  
*Hyria angusta*, Nyasaland, BUTLER, p. 850, P. Zool. Soc. London, 1896,  
 n. sp.  
*Idiochlora contracta*, Khasia Hills, WARREN, p. 107, Nov. Zool. iii,  
 n. sp.  
*I. contracta*, cf. *Diplodesma*, n. g.  
*Iodis annulifera*, *cæruleata*, *inumbata*, p. 107, *iridescens*, p. 108, Khasia  
 Hills, WARREN, Nov. Zool. iii ; *I. delicatula*, Khasia Hills, WARREN,  
 p. 308, *t. c.* : n. spp.  
*Ischalis* : characters and synonymy ; WARREN, p. 417, Nov. Zool. iii.  
*Ixala*, n. g., *Ennominae*, type *desperaria*, Hulst ; HULST, p. 349, Tr. Amer.  
 ent. Soc. xxiii.  
*Janarda ruptifascia*, Khasia Hills, WARREN, p. 112, Nov. Zool. iii, n. sp.  
*Laciniodes denigrata*, Shillong, WARREN, p. 316, Nov. Zool. iii, n. sp.  
*Lassaba tephrosiaria*, Khasia Hills, WARREN, p. 135, Nov. Zool. iii ; *L.*  
*indentata*, Java, WARREN, p. 403, *t. c.* : n. spp.  
*Leptomeris roseotincta*, *æmulata*, Florida, HULST, p. 303, Tr. Amer. ent.  
 Soc. xxxiii ; *L. ? uniformis*, Queensland, WARREN, p. 373, Nov. Zool.  
 iii : n. spp.  
*Lithostege pallescens*, Mongolia, STAUDINGER, p. 276, Deutsche ent.  
 Zeitschr. Lep. ix, n. sp.  
*Lobogethes*, n. g., *Epiplemidæ*, p. 351, for *L. interrupta*, n. sp., Queensland,  
 p. 352 ; WARREN, Nov. Zool. iii.  
*Lobogonia olivata*, Khasia Hills, WARREN, p. 119, Nov. Zool. iii, n. sp.  
*Lobophora sabinata*, larva ; PÜNGELER, p. 235, Ent. Zeit. Stettin, lvii.  
*Lophosis*, n. g., *Sterrhinae*, type *laberculata*, Hulst ; HULST, p. 308, Tr.  
 Amer. ent. Soc. xxiii.

- Luxiaria calida*, p. 410, *punctata*, p. 411, Java, WARREN, Nov. Zool. iii ;  
*L. ? straminea*, Fergusson I., WARREN, p. 303, t. c. : n. spp.  
*L. straminea*, referred to *Nadagarodes* ; WARREN, Nov. Zool. iii, p. 411.  
*Lycauges mollis*, Khasia Hills, WARREN, p. 373, Nov. Zool. iii, n. sp.  
*Lymanopoda ignilineata*, Loja, DOGNIN, p. 134, Ann. Soc. ent. Belgique, xl, n. sp.  
*Lytrosis*, n. g., *Ennominae*, type *unitaria*, H. Sch. ; HULST, p. 348, Tr. Amer. ent. Soc. xxiii.  
*Macaria arenisca*, p. 145, *areniscoides*, p. 146, Loja, DOGNIN, Ann. Soc. ent. Belgique, xl, n. spp.  
*Macrostylodes*, n. g., *Epiplemidæ*, for *M. deformis*, n. sp., New Guinea ; WARREN, p. 352, Nov. Zool. iii.  
*Marmarea*, n. g., *Ennominae*, for *M. occidentalis*, n. sp., California ; HULST, p. 380, Tr. Amer. ent. Soc. xxiii.  
*Marmopteryx odontata*, Colorado, HULST, p. 289, Tr. Amer. ent. Soc. xxiii, n. sp.  
*Megalochlora convallata*, Khasia Hills, WARREN, p. 108, Nov. Zool. iii, n. sp.  
*Melanippe fluctuata*, notes ; PROUT, pp. 54-57, 102 & 103, Ent. Rec. viii.  
*Melanolophia*, n. g., type *Tephrosia canadaria*, Guen. ; HULST, p. 357, Tr. Amer. ent. Soc. xxiii.  
*Melemæa*, n. g., *Ennominae*, for *M. magdalena*, n. sp., Colorado ; HULST, p. 368, Tr. Amer. ent. Soc. xxiii.  
*Meriscisca*, n. g., *Ennominae*, for *M. gracea*, n. sp., Colorado ; HULST, p. 356, Tr. Amer. ent. Soc. xxiii.  
*Meris*, n. g., *Ennominae*, for *M. alticola*, n. sp., Colorado ; HULST, p. 348, Tr. Amer. ent. Soc. xxiii.  
*Mesoleuca ethela*, California, HULST, p. 283, Tr. Amer. ent. Soc. xxiii, n. sp.  
*Metallochlora*, n. g., near *Hemithea*, p. 290, for *M. lineata*, *meeki*, p. 291, n. spp., Fergusson I. ; WARREN, Nov. Zool. iii.  
*M. dotata*, *flavifimbria*, Queensland, p. 367, *tenuilinea*, New Guinea, p. 368, WARREN, Nov. Zool. iii, n. spp.  
*Meticulodes pala*, Loja, DOGNIN, p. 142, Ann. Soc. ent. Belgique, xl, n. sp.  
*Micrulia*, n. g., near *Chloroclystis*, for *M. tenuilinea*, n. sp., Khasia Hills ; WARREN, p. 391, Nov. Zool. iii.  
*Milionia*, cf. *Bombyces*.  
*Mimochroa lugens*, n. var., *castanea* ; WARREN, p. 320, Nov. Zool. iii.  
*Mycterophora*, n. g., *Sterrhinae*, p. 298, for *M. monticola*, *longipalpata*, n. spp., California, p. 299 ; HULST, Tr. Amer. ent. Soc. xxiii.  
*Myrioblephara picta*, Java, WARREN, p. 404, Nov. Zool. iii, n. sp.  
*Nacophora*, n. g., *Ennominae*, type *quernaria*, A. & S., with *N. minima*, Colorado, p. 360, *carlotta*, Florida, p. 361, n. spp. ; HULST, Tr. Amer. ent. Soc. xxiii.  
*Nadagara diversilineata*, Khasia Hills, WARREN, p. 143, Nov. Zool. iii, n. sp.  
*Nadagarodes subfasciata*, Khasia Hills, WARREN, p. 143, Nov. Zool. iii, n. sp.  
*Nannia*, n. g., *Hydriominae*, type *refusata*, Walk., with *N. morensata*, n. sp., Wisconsin ; HULST, p. 262, Tr. Amer. ent. Soc. xxiii.  
*Nemoria pulvereisparsa*, Aden, HAMPSON, p. 268, pl. x, fig. 27, P. Zool. Soc. London, 1896, n. sp.  
*Neolexia*, n. g., *Hydriominae*, for *N. xyliua*, p. 278, *speciosa*, p. 279, n. spp., N. America ; HULST, Tr. Amer. ent. Soc. xxiii.  
*Neoterpes*, n. g., *Ennominae*, type *ephelidaria*, Hulst ; HULST, p. 369, Tr. Amer. ent. Soc. xxiii.  
*Nepytia*, n. g., type *semiclusaria*, Walk. ; HULST, p. 344, Tr. Amer. Ent. Soc. xxiii.

- Nipteria musarana*, Loja, DOGNIN, p. 146, Ann. Soc. ent. Belgique, xl, n. sp.
- Nobilia strigata*, Borneo, WARREN, p. 112, Nov. Zool. iii, n. sp.
- Nycterosea*, n. g., *Hydriominae*, for *N. brunneipennis*, n. sp., California; HULST, p. 263, Tr. Amer. ent. Soc. xxiii.
- Nyctiphanta*, n. g., *Euominae*, for *N. lactula*, n. sp., Arizona; HULST, p. 336, Tr. Amer. ent. Soc. xxiii.
- Nyctobia*, n. g., type *limitata*, Wlk.; HULST, p. 251, Tr. Amer. ent. Soc. xxiii.
- Ochyria inconspicua*, Khasia Hills, WARREN, p. 122, Nov. Zool. iii, n. sp.
- Ocælophora maculifera*, Khasia Hills, WARREN, p. 146, Nov. Zool. iii, n. sp.
- Ænochlora*, n. g., *Ænochrominae*, p. 353, for *Æ. imperialis*, *decolorata*, n. spp., Queensland, p. 354; WARREN, Nov. Zool. iii.
- Ænospila floresaria*, Wlk., noticed; WARREN, p. 292, Nov. Zool. iii.
- Æ. stellata*, Fergusson I., WARREN, p. 292, Nov. Zool. iii, n. sp.
- Omiza cinerea*, Shillong, WARREN, p. 320, Nov. Zool. iii; *O. columbaris*, Java, p. 417, *subaurantiaca*, Timor, p. 418, WARREN, *t. c.* : n. spp.
- Omphax gnoma*, larva; IZQUIERDO, p. 33, Notas, &c.
- Onagrodes*, n. g., near *Tephroclystia*, for *O. obscurata*, n. sp., Khasia Hills; WARREN, p. 125, Nov. Zool. iii.
- Ophthalmophora pepita*, Loja, DOGNIN, p. 144, Ann. Soc. ent. Belgique, xl, n. sp.
- Opistheloce*, n. g., p. 391, near *Mariaba*, for *O. cinerea*, n. sp., Batchian; WARREN, p. 392, Nov. Zool. iii.
- Oporabia filigrammaria*, variation, life-history, &c.; CLARK, pp. 289–292, Ent. Rec. vii.
- Organopoda sanguinata*, Khasia Hills, WARREN, p. 113, Nov. Zool. iii; *O. olivescens*, Queensland, WARREN, p. 374, *t. c.* : n. spp.
- Orthobrachia latifasciata*, n. var., *flavidior*, WARREN, p. 128, Nov. Zool. iii.
- O. particolor*, Khasia Hills, WARREN, p. 128, Nov. Zool. iii, n. sp.
- Orthoserica*, n. g., *Sterrhinae*, for *O. rufigrisea*, n. sp., Khasia Hills; WARREN, p. 113, Nov. Zool. iii.
- Orthotmeta*, n. g., near *Luxiaria*, p. 303, for *O. dentata*, n. sp., Fergusson I., p. 304; WARREN, Nov. Zool. iii.
- Ourapteryx modesta*, Java, WARREN, p. 127, Nov. Zool. iii, n. sp.
- Ozola marginata*, New Guinea, &c.; WARREN, p. 358, Nov. Zool. iii.
- Pachyplocia*, n. g., *Ascotinae*, for *P. griseata*, n. sp., Cooktown; WARREN, p. 404, Nov. Zool. iii.
- Panethia flexilinea*, *obsoleta*, p. 297, *atrimargo*, p. 298, Fergusson I.; WARREN, Nov. Zool. iii, n. spp.
- Paota*, n. g., *Monocteniinae*, type *fultaria*, Grt.; HULST, p. 295, Tr. Amer. ent. Soc. xxiii.
- Paradirades*, n. g., *Epiplemidæ*, for *P. assimilis*, n. sp., Queensland; WARREN, p. 353, Nov. Zool. iii.
- Paræumelea conspersata*, E. Africa, KIRBY, p. 395, Ann. Nat. Hist. (6) xviii, n. sp.
- Paradromulia*, n. g., *Ascotinae*, p. 300, for *P. ambigua*, n. sp., Fergusson I., with varr. *maculata*, *rufigrisea*; WARREN, Nov. Zool. iii.
- Paralcis rufaria*, *subochrea*, Khasia Hills, WARREN, p. 136, Nov. Zool. iii, n. spp.
- Paraptera*, n. g., near *Opheroptera*, for *P. danbyi*, n. sp., Brit. Columbia; HULST, p. 252, Tr. Amer. ent. Soc. xxiii.
- Parasynegia atomaria*, Khasia Hills, WARREN, p. 129, Nov. Zool. iii; *P. ? rufinervis*, Khasia Hills, WARREN, p. 317, *t. c.*; *P. borbachodes*, *nigrifasciata*, Java, WARREN, p. 393, *t. c.* : n. spp.



- Pardodes*, n. g., *Sterrhinæ*, p. 294, for *P. flavimaculata*, n. sp., Fergusson I.; WARREN, p. 295, Nov. Zool. iii.
- Percnia albinigrata*, Japan, WARREN, p. 395, Nov. Zool. iii, n. sp.
- Percnoptilota*, n. g., *Hydriominæ*, type *fluviata*, Hüb.; HULST, p. 282, Tr. Amer. ent. Soc. xxiii.
- Perixera nephelospila* referred to *Mesostrophe*, variation, ♂ described; WARREN, p. 373, Nov. Zool. iii.
- P. mediusta*, Khasia Hills, WARREN, p. 114, Nov. Zool. iii; *P. flavispila*, *rufidorsata*, Khasia Hills, WARREN, p. 312, t. c.; *P. confiniscripta*, Tenimber Is., *P. ? rubescens*, Borneo, p. 374, *flavirubra*, Queensland, *P. furcata*, New Guinea, p. 375, *roseofusa*, Borneo, p. 376, t. c. : n. spp.
- Perizoma quadrinotata*, p. 122, *semifusca*, *tenuifascia*, *triplagiata*, Khasia Hills, WARREN, p. 123, Nov. Zool. iii; *P. rubridisca*, Sikkim, WARREN, p. 386, t. c. : n. spp.
- Perusia paja*, Loja, DOGNIN, p. 143, Ann. Soc. ent. Belgique, xl, n. sp.
- Petelia ? inconspicua*, Queensland, WARREN, p. 400, Nov. Zool. iii, n. sp.
- Petrodava sordida*, New Guinea, WARREN, p. 413, Nov. Zool. iii, n. sp.
- Phæoura*, n. g., *Ennominae*, type *mexicanaria*, Grt., with *P. cristifera*, n. sp., Colorado; HULST, p. 539, Tr. Amer. ent. Soc. xxiii.
- Phanauta*, n. g., near *Dissoplaga*, for *E. eburnivena*, n. sp., Khasia Hills; WARREN, p. 147, Nov. Zool. iii.
- Phengommatæa*, n. g., *Ennominae*, p. 341, type *edwardsata*, Hulst, with *P. gertruda*, n. sp., Colorado, p. 342; HULST, Tr. Amer. ent. Soc. xxiii.
- Pherne*, n. g., *Ennominae*, type *parallelaria*, Pack.; HULST, p. 377, Tr. Amer. ent. Soc. xxiii.
- Phibalapteryx edna*, metamorphoses; IZQUIERDO, p. 36, Notas, &c.
- P. corteza*, p. 146, *coneja*, p. 147, Loja, DOGNIN, Ann. Soc. ent. Belgique, xl, n. spp.
- Philagraula*, n. g., *Strophidiinæ*, for *P. slossoniæ*, n. sp., Florida; HULST, p. 310, Tr. Amer. ent. Soc. xxiii.
- Philereme formosa*, Colorado, HULST, p. 276, Tr. Amer. ent. Soc. xxiii, n. sp.
- Philopsia*, n. g., type *nivigerata*, Wlk.; HULST, p. 259, Tr. Amer. ent. Soc. xxiii.
- Philedia*, n. g., *Ennominae*, type *punctomacularia*, Hulst; HULST, Tr. Amer. ent. Soc. xxiii.
- Philtræa*, n. g., *Ennominae*, type *elegantaria*, Edw.; HULST, p. 364, Tr. Amer. ent. Soc. xxiii.
- Phrissosceles*, n. g., near *Anisodes*, for *P. argyromma*, n. sp., Khasia Hills, WARREN, p. 114, Nov. Zool. iii.
- Phthonandria ? conjunctiva*, Khasia Hills, WARREN, p. 136, Nov. Zool. iii, n. sp.
- Phylace*, n. g., near *Eustroma*, for *P. luteolata*, n. sp., Colorado; HULST, p. 277, Tr. Amer. ent. Soc. xxiii.
- Physetostege*, n. g., *Ænochrominae*, for *P. miranda*, n. sp., New Guinea; WARREN, p. 99, Nov. Zool. iii.
- P. miranda*, n. subsp., *rufata*; WARREN, p. 355, Nov. Zool. iii.
- Pingasa angulifera*, Fergusson I., WARREN, p. 283, Nov. Zool. iii; *P. subviridis*, E. India, WARREN, p. 308, t. c. : n. spp.
- Pisoraca sordidata*, New Guinea, WARREN, p. 376, Nov. Zool. iii, n. sp.
- Platæa diva*, California, HULST, p. 343, Tr. Amer. ent. Soc. xxiii, n. sp.
- Platerosia*, n. g., *Epiplemidæ*, p. 279, for *P. rotundipennis*, n. sp., Fergusson I., p. 280, WARREN, Nov. Zool. iii.
- Platisodes ? jocosa*, Khasia Hills, WARREN, p. 114, Nov. Zool. iii, n. sp.
- Plectoneura*, n. g., near *Leucetæra*, for *P. albida*, n. sp., New Guinea; WARREN, p. 394, Nov. Zool. iii.

- Plemyria georgii*, N. America, HULST, p. 280, Tr. Amer. ent. Soc. xxiii, n. sp.
- Plocucha*, n. g., p. 376, near *Perixera*, for *P. irregularis*, n. sp., New Guinea, p. 377; WARREN, Nov. Zool. iii.
- Plutodes signifera*, Fergusson I., WARREN, p. 296, Nov. Zool. iii, n. sp.
- Pacilalcis semiclarata*, n. var. *albilinea*, *fasciata*; WARREN, p. 405, Nov. Zool. iii.
- P. ? deceptrix*, Sikkim, WARREN, p. 319, Nov. Zool. iii, n. sp.
- Polyacme*, n. g., *Ennominae*, for *P. dentata*, n. sp., Lifu; WARREN, p. 418, Nov. Zool. iii.
- Polycrasta*, n. g., near *Petelia*, p. 301, for *P. ocellata*, n. sp., Trobriand Is., p. 302; WARREN, Nov. Zool. iii.
- Polylophodes*, n. g., *Ascotinae*, p. 405, for *P. triangularis*, n. sp., Java, p. 406; WARREN, Nov. Zool. iii.
- Polyphasia dentifera*, Darjiling, WARREN, p. 387, Nov. Zool. iii, n. sp.
- Polyscia*, n. g., *Ennominae*, p. 147, for *P. ochrilinea*, n. sp., Khasia Hills, p. 148; WARREN, Nov. Zool. iii.
- Potera flavimacula*, Queensland, p. 395, *intervacuata*, Borneo, p. 396, WARREN, Nov. Zool. iii, n. spp.
- Prionia excavata*, Nias, WARREN, p. 419, Nov. Zool. iii, n. sp.
- Problepsis digammata* = (*Argyris latonaria* var., Wlk.); KIRBY, p. 396, Ann. Nat. Hist. (6) xviii.
- P. margaritata*, Brisbane, WARREN, p. 377, Nov. Zool. iii, n. sp.
- Proboloscles*, n. g., p. 368, type *biplaga*, Wlk., and some *Nemoria* and *Comibena*, also *P. attenuata*, n. sp., Borneo, p. 369; WARREN, Nov. Zool. iii.
- Proömphe*, n. g., *Trichopteryginae*, for *P. lobata*, n. sp., Sikkim; WARREN, p. 316, Nov. Zool. iii.
- Pseudocoremia flava*, New Zealand, WARREN, p. 406, Nov. Zool. iii, n. sp.
- Pseudoschista bicolor*, *nigrifusalis*, Khasia Hills, WARREN, p. 120, Nov. Zool. iii, n. spp.
- Psilocambogia semirubra*, New Guinea, WARREN, p. 384, Nov. Zool. iii, n. sp.
- Ptenopoda*, n. g., *Sterrhinae*, for *P. miranda*, n. sp., Texas; HULST, p. 307, Tr. Amer. ent. Soc. xxiii.
- Pterotea*, n. g., *Ennominae*, type *P. cariosa*, n. sp., California; HULST, p. 349, Tr. Amer. ent. Soc. xxiii.
- Ptochophyle*, n. g., *Sterrhinae*, p. 293, for *P. notata*, n. sp., Fergusson I., and *volutaria* = (*tristicula*, Swinh.), p. 294; WARREN, Nov. Zool. iii.
- P. inornata*, Tenimber Is., p. 377, *lineata*, Timor, p. 378, WARREN, Nov. Zool. iii, n. spp.
- Ptychopoda luteata*, *obliquilinea*, *rubellata*, Khasia Hills, WARREN, p. 115, Nov. Zool. iii; *P. ? sericeipennis*, Fergusson I., WARREN, p. 294, *t. c.*; *P. albiflava*, *complanata*, *consimilata*, *grisescens*, p. 313, *inangulata*, *quinquestriata*, *semilinea*, p. 314, *unilineata*, p. 315, Khasia Hills, WARREN, *t. c.*; *P. deflavaria*, Tenimber Is., *nigranalis*, Timor, *pallidivestis*, Java, WARREN, p. 378, *t. c.* : n. spp.
- Pyrinia zizana*, *vanidosa*, p. 140, *fulvatoides*, *yerma*, p. 141, *castana*, p. 142, Loja, DOGNIN, Ann. Soc. ent. Belgique, xl, n. spp.
- Pyrriorachis*, n. g., type *P. cornuta*, n. sp., = (*Comostola pyrriorachis*, Meyr., nec Wlk.); WARREN, p. 292, Nov. Zool. iii.
- Rachela*, n. g., p. 253, type *bruceata*, Hulst, with *hyperborea*, *occidentalis*, *latipennis*, n. spp., N. America, p. 254; HULST, Tr. Amer. ent. Soc. xxiii.
- Racotis boarmiaria*, n. var. *sordida*; WARREN, p. 137, Nov. Zool. iii.
- Rambara costata*, Khasia Hills, WARREN, p. 101, Nov. Zool. iii; *R. colorata*, Tenimber Is., WARREN, p. 359, *t. c.* : n. spp.

- Remodes brunnescens*, Fergusson I., WARREN, p. 295, Nov. Zool. iii ; *R. ? angulosa*, Amboina, WARREN, p. 382, t. c. : n. spp.
- Rhaphidodemas*, n. g., *Ennominae*, type *titea*, Cram., with *R. nevadaria*, n. sp., Colorado ; HULST, p. 362, Tr. Amer. ent. Soc. xxiii.
- Rhodostrophia semipurpurascens*, Bhután, HAMPSON, p. 563, Moths India, iv ; *R. inornata*, Java, WARREN, p. 379, Nov. Zool. iii : n. spp.
- Sabulodes tinonaria*, *granula*, p. 135, *bermeja*, *ardilla*, p. 136, *rasata*, *maciza*, p. 137, *flavopuncta*, *brumosa*, p. 138, Loja, DOGNIN, Ann. Soc. ent. Belgique, xl ; *S. nivisparsa*, Bolivia ; THIERRY-MIEG, p. 253, Bull. Soc. ent. France, 1896 : n. spp.
- Sarcinodes subfulvida*, Trobriand Is., WARREN, p. 280, Nov. Zool. iii ; *S. compacta*, Amboina, WARREN, p. 355, t. c. : n. spp.
- Sauris nigricincta*, Fergusson I., WARREN, p. 295, Nov. Zool. iii, n. sp.
- Scardamia rectilinea*, Khasia Hills, WARREN, p. 127, Nov. Zool. iii ; *S. fasciata*, Fergusson I., WARREN, p. 296, t. c. : n. spp.
- Scelidacantha*, n. g., *Hydriominae*, type *triseriata*, Pack. ; HULST, p. 261, Tr. Amer. ent. Soc. xxiii.
- Scelolophia*, n. g., *Sterrhinæ*, p. 301, for *S. formosa*, n. sp., Texas, p. 302 ; HULST, Tr. Amer. ent. Soc. xxiii.
- Schistophyle*, n. g., *Orthostixinæ*, p. 100, for *S. falcifera*, n. sp., Khasia Hills, p. 101 ; WARREN, Nov. Zool. iii.
- Sciagraphia*, n. g., *Ennominae*, type *granitata*, Guen., with *S. maculifascia*, n. sp., N. America ; HULST, p. 329, Tr. Amer. ent. Soc. xxiii.
- Scodiona aspersaria*, n. n. for *S. inspersaria*, Stgr. ; STAUDINGER, p. 401, Deutsche ent. Zeitschr. Lep. ix.
- S. inspersaria*, Issyk-kul, STAUDINGER, p. 375, Deutsche ent. Zeitschr. Lep. ix, n. sp.
- Scordylia lacrymosa*, p. 254, *S. ? rosgala*, p. 255, Bolivia, THIERRY-MIEG, Bull. Soc. ent. France, 1896, n. spp.
- Scotopterix ? squamosa*, Sikkim, WARREN, p. 318, Nov. Zool. iii, n. sp.
- Scotorythra rara*, n. var. *brunnea* ; WARREN, p. 406, Nov. Zool. iii.
- Sebastosema*, n. g., *Orthostixinæ*, for *S. bubonaria*, n. sp., Japan ; WARREN, p. 100, Nov. Zool. iii.
- Selenia perangulata*, Colorado, HULST, p. 376, Tr. Amer. ent. Soc. xxiii, n. sp.
- Selidosema muricolor*, *correllatum*, *albescens*, N. America, HULST, p. 355, Tr. Amer. ent. Soc. xxiii, n. spp.
- Semiothisa temeraria*, n. var. *fumosa* ; WARREN, p. 320, Nov. Zool. iii.
- S. brumneata*, p. 140, *maculosata*, *penuibrata*, p. 141, Khasia Hills, WARREN, Nov. Zool. iii ; *S. connotata*, Trobriand Is., WARREN, p. 304, t. c. ; *S. angustimargo*, Oinanisa, p. 411, *fusca*, Cooktown, *subcastanea*, Java, p. 412, WARREN, t. c. : n. spp.
- Sesquiptera*, n. g., near *Chloroclystis*, for *S. inaequata*, n. sp., Khasia Hills ; WARREN, p. 126, Nov. Zool. iii.
- Sigela*, n. g., *Sterrhinæ*, p. 307, for *S. penumbriata*, n. sp., Florida, p. 308 ; HULST, Tr. Amer. ent. Soc. xxiii.
- Sinamedia intricata*, Khasia Hills, WARREN, p. 137, Nov. Zool. iii, n. sp.
- Somatina rufifascia*, Cooktown, WARREN, p. 379, Nov. Zool. iii, n. sp.
- Somatinoopsis*, n. g., near *Somatina*, for *S. nigriscata*, n. sp., Java, p. 379 ; WARREN, Nov. Zool. iii.
- Somatolophia*, n. g., *Ennominae*, for *S. umbripennis*, n. sp., Colorado ; HULST, p. 350, Tr. Amer. ent. Soc. xxiii.
- Spodolepis*, n. g., *Ennominae*, for *S. substriataria*, n. sp., N. America ; HULST, p. 347, Tr. Amer. ent. Soc. xxiii.
- Spodoptera*, n. g., *Ennominae*, type *opuscularia*, Hulst ; HULST, p. 350, Tr. Amer. ent. Soc. xxiii.
- Stegania micans*, Bhután, HAMPSON, p. 550, Moths India, iv, n. sp.

- Stenaspilates muricolor*, Texas, HULST, p. 379, Tr. Amer. ent. Soc. xxiii, n. sp.
- Stenocharta*, n. g., type *Nyctemera quadriplaga*, Wlk.; WARREN, p. 400, Nov. Zool. iii.
- Stergamatea*, n. g., *Ennominae*; for *S. inornata*, n. sp., Colorado; HULST, p. 368, Tr. Amer. ent. Soc. xxiii.
- Sterrrha philcearia*, Egypt, BRABANT, p. 384, Bull. Soc. ent. France, 1896, n. sp.
- Stibarostoma*, n. g., near *Perixera*, for *S. griseata*, n. sp., Cooktown; WARREN, p. 380, Nov. Zool. iii.
- Syllexis nacarada*, Loja, DOGNIN, p. 144, Ann. Soc. ent. Belgique, xl, n. sp.
- Symmacra*, n. g., near *Discoglypha*, for *S. regularis*, n. sp., Khasia Hills; WARREN, p. 116, Nov. Zool. iii.
- Sympherta*, n. g., *Ennominae*, type *tripunctaria*, Pack., with *S. julia*, *coloradensis*, n. spp., N. America; HULST, p. 338, Tr. Amer. ent. Soc. xxiii.
- Synaxis*, n. g., *Ennominae*, type *pallulata*, Hulst; HULST, p. 377, t. c.
- Synchlora viridipallens*, Colorado, HULST, p. 314, t. c., n. sp.
- Synelys*, n. g., *Sterrhinae*, type *ennucleata*, Guen.; HULST, p. 300, t. c.
- Synglochis*, n. g., *Ennominae*, for *S. berumbraria*, n. sp., California, p. 352; HULST, Tr. Amer. ent. Soc. xxiii.
- Synomila*, n. g., *Monocteniinae*, type *subochreata*, Hulst; HULST, p. 295; Tr. Amer. ent. Soc. xxiii.
- Syntaracta maculosata*, Khasia Hills, WARREN, p. 129, Nov. Zool. iii, n. sp.
- Tallegda*, n. g., *Hydriominae*, type *montanata*, Pack., with *T. tabulata*, n. sp., Alaska; HULST, p. 260, Tr. Amer. ent. Soc. xxiii.
- Tanaorhinus discolor*, Khasia Hills, WARREN, p. 108, Nov. Zool. iii, n. sp.
- Tephрина munda*, Sumba, p. 412, *subocellata*, Arabia, p. 413, WARREN, Nov. Zool. iii, n. spp.
- Tephrinopsis*, n. g., for part of *Tephрина*, with ♂ simple antennæ; WARREN, p. 412, Nov. Zool. iii.
- Tephroclystia biviridata*, Khasia Hills, WARREN, p. 125, Nov. Zool. iii; *T. nigrilinea*, *tenuisquama*, E. India, WARREN, p. 317, t. c. : n. spp.
- Tephroclystis misturata*, *nebulosa*, *edua*, p. 266, *ornata*, *leucata*, *inornata*, *annulata*, p. 267, *flavigutta*, *coloradensis*, *sierræ*, p. 268, *cretata*, *fumosa*, *mæstosa*, *nimbicolor*, *nimbosa*, p. 269, *longidens*, *multistrigata*, *multiscripta*, *stellata*, p. 270, *obscurior*, *bivittata*, *unicolor*, *cestata*, p. 271, *implorata*, p. 272, N. America, HULST, Tr. Amer. ent. Soc. xxiii, n. spp.
- Tephrosia bistortata* and *crepuscularia*, distinctions; TUTT, p. 281, Ent. Rec. viii. *T. bistortata*, variation, synonymy; TUTT, p. xl, P. ent. Soc. London, 1896. *T. crepuscularia* and *biundularia*, distinctions discussed; BRIGGS, p. 36, Ent. Mag. xxxii; BARRETT, t. c. p. 37. *T. biundularia*, *crepuscularia*, discussion; BAZETT, BARRETT, pp. 229 & 280, Ent. Mag. xxii, and ROBSON & BARRETT, t. c. pp. 266–268.
- Terpna funebrosa*, Khasia Hills, WARREN, p. 308, Nov. Zool. iii; *T. crassistriga*, Natuna Is., WARREN, p. 361, t. c. : n. spp.
- Thalassodes nigrifrons*, Ceylon, HAMPSON, p. 566, Moths India, iv; *T. albifusa*, Fergusson I., WARREN, p. 293, Nov. Zool. iii : n. spp.
- Thalerura ? decorata*, Queensland; WARREN, p. 369, Nov. Zool. iii, n. sp.
- Thalophaga*, n. g., *Ennominae*, type *fautaria*, Hulst; HULST, p. 339, Tr. Amer. ent. Soc. xxiii.
- Thamnonoma insularis*, Lifu, WARREN, p. 413, Nov. Zool. iii, n. sp.
- Timandra strigulata*, Khasia Hills, WARREN, p. 116, Nov. Zool. iii, n. sp.
- Tracheops*, n. g., *Ennominae*, p. 365, for *T. bolteri*, n. sp., New Mexico, p. 366; HULST, Tr. Amer. ent. Soc. xxiii.

- Trichochlamys*, n. g., *Hydriominae*, type *polata*, Hübn. ; HULST, p. 291, Tr. Amer. ent. Soc. xxiii.
- Trichopterygia ustimargo*, Khasia Hills, WARREN, p. 121, Nov. Zool. iii, n. sp.
- Triphosa acutipennis*, *pallescens*, Kumaon ; WARREN, p. 387, Nov. Zool. iii, n. spp.
- Urapteryx sambucaria*, var. ; SOUTH, Entomologist, 1896, p. 25.
- Xanthorhoë subbrunnescens*, Khasia Hills, WARREN, p. 315, Nov. Zool. iii ; *X. borealis*, p. 292, *nemorella*, *illocata*, *volucer*, p. 293, N. America, HULST, Tr. Amer. ent. Soc. xxiii ; *X. furinata*, New Zealand, *perviridis*, Jamaica, WARREN, p. 388, Nov. Zool. iii : n. spp.
- Xenoneura*, n. g., *Semiothisinae*, for *X. tephriata*, n. sp., Queensland ; WARREN, p. 414, Nov. Zool. iii.
- Xystrota*, n. g., *Sterrhinae*, type *hepaticaria*, Guen. ; HULST, p. 301, Tr. Amer. ent. Soc. xxiii.
- Zamarada xanthyala*, India and Borneo, HAMPSON, p. 553, Moths India, iv, n. sp.
- Zenophleps*, n. g., p. 280, *Hydriominae*, type *lignicolorata*, Pack., with *Z. obscurata*, n. sp., California, p. 281 ; HULST, Tr. Amer. ent. Soc. xxiii.
- Zeuctophlebia*, n. g., *Euochrominae*, for *Z. rufipalpis*, n. sp., Queensland ; WARREN, p. 356, Nov. Zool. iii.
- Zygoctenia* : characters amended ; *Z. albisparsa*, Fergusson I. ; WARREN, p. 300, Nov. Zool. iii, n. sp.

## PYRALIDÆ, &amp;c. (incl. THYRIDIDÆ).

- [Cf. BEUTENMÜLLER (76), CHRÉTIEN (178), DRUCE (414), FERNALD (328), HAMPSON (470, 471, 1201), HEDEMANN (484), JOHNSON (581), KENNEL (603), LOWER (722, 723), PAGENSTECHE (854), REBEL (932, 933), ROTHSCHILD (999, 1002), SLADEN (1092), SNELLEN (1113), WARREN (1205, 1206, 1210).]
- Classification of the subfamilies *Epipaschiinae*, *Eudotrichinae*, and *Pyralinae* ; HAMPSON, Tr. ent. Soc. London, 1896, pp. 451-550 : with woodcuts illustrating the generic characters, and much synonymy.
- Crambidae* of North America ; FERNALD (328). [Not seen by Recorder.]
- Examination of Walker's American types ; SCHAUS, pp. 640-643, P. Zool. Soc. London, 1896.
- Acentropus newæ*, larva, habits, mode of respiration ; KENNEL, pp. 43-50, SB. Ges. Dorpat, xi.
- Acharana subænescens*, Khasia Hills, WARREN, p. 113, Ann. Nat. Hist. (6) xviii, n. sp.
- Acrolepia* : the Netherlands species distinguished ; D. TER HAAR, Tijdschr. Ent. xxxix, pp. 71-74.
- Adeloïdes glaucoptera*, Bhután, HAMPSON, p. 395, Moths India, iv, n. sp.
- Agrotera leucostola*, India, HAMPSON, p. 268, Moths India, iv ; *A. griseola*, Khasia Hills, WARREN, p. 139, Ann. Nat. Hist. (6) xvii : n. spp.
- Ambia tenebrosalis*, *xantholeuca*, Ceylon, p. 203, *lobophoralis*, N. India, p. 207, HAMPSON, Moths India, iv ; *A. conspurcatalis*, Khasia Hills, *albipunctalis*, Cherra Punji, WARREN, p. 202, Ann. Nat. Hist. (6) xvii ; *A. complicata*, Khasia Hills, WARREN, p. 222, *op. cit.* xviii : n. sp.
- Ancylolomia anargyrella*, Algeria, CHRÉTIEN, p. 104, Naturaliste, 1896, n. sp.
- Ancylosis trilineatella*, E. India, *niveicostella*, Ceylon, HAMPSON, p. 72, Moths India, iv ; *A. nigritarsea*, Arabia, HAMPSON, p. 271, P. Zool. Soc. London, 1896 : n. spp.

- Anerastia pulverulella*, Ceylon, p. 56, *pallidicosta*, E. India, p. 57, HAMPSON, Moths India, iv, n. spp.
- Aphomia sociella*, habits; SLADEN & BARRETT, Ent. Mag. xxxii, pp. 173–175. *A. latro*, metamorphoses; FROGGATT, p. 86, P. Linn. Soc. N. S. Wales, 1895.
- Aplectropus*, n. g., for *A. leucopis*, n. sp., Aden, pl. x, fig. 10; HAMPSON, p. 275, P. Zool. Soc. London, 1896.
- Aporodes albilinealis*, Aden, HAMPSON, p. 274, pl. x, fig. 4, P. Zool. Soc. London, 1896, n. sp.
- Archerius obliquialis*, Sikhim, HAMPSON, p. 380, Moths India, iv, n. sp.
- Argyria*, distinguished from *Platytes*, p. 293, *A. opposita*, pl. lxiv, fig. 22, *pustulella*, fig. 23, figures; DRUCE, Biol. Centr.-Amer. Heter. ii.
- Aripiana annulata*, p. 168, *A. ? candidalis*, *A. radiata*, p. 169, Khasia Hills, WARREN, Ann. Nat. Hist. (6) xviii, n. spp.
- Arthriobasis*, n. g., for *A. lactiguttalis*, n. sp., Khasia Hills; WARREN, p. 131, Ann. Nat. Hist. (6) xvii.
- Aulacodes melanops*, Sikhim, HAMPSON, p. 214, Moths India, iv, n. sp.
- Aulacoptera*, n. g., *Pyraustinae*, type *fuscinervalis*, Swinh.; HAMPSON, p. 254, Moths India, iv.
- Balœnifrons*, n. g., near *Galleria*, for *B. homopteridia*, n. sp., Rangoon; HAMPSON, p. 9, Moths India, iv.
- Banisia dissimulans*, p. 227, India, *ordinaria*, p. 228, Queensland, WARREN, Ann. Nat. Hist. (6) xviii; *B. atriclathrata*, Khasia Hills, *elongata*, N. Australia, p. 340, *mollis*, Sikkim, *multifenestrata*, New Guinea, p. 341, WARREN, Nov. Zool. iii; n. spp.
- Beguma*, n. g., *Thyrididae*, for *B. constellata*, n. sp., Khasia Hills; WARREN, p. 228, Ann. Nat. Hist. (6) xviii.
- Bethulia championella*, figure, pl. lxiv, fig. 10; DRUCE, Biol. Centr.-Amer. Heter. ii.
- Blepharomastix ? delicata*, Onoribó, WARREN, p. 218, Ann. Nat. Hist. (6) xviii, n. sp.
- Bœotarcha hyulinalis*, E. India, HAMPSON, p. 419, Moths India, iv, n. sp.
- Bostra carnealis*, Pegu, HAMPSON, p. 179, Moths India, iv, n. sp.
- Botyodes rufalis*, Tenasserim, HAMPSON, p. 327, Moths India, iv, n. sp.
- Botys erratalis* (locality not mentioned, probably E. India); SNELLEN, p. 66, Tijdschr. Ent. xxxix, n. sp.
- Bradina melanoperas*, p. 227, *bicoloralis*, Pegu, *translinealis*, Himalaya, p. 228, HAMPSON, Moths India, iv, n. spp.
- Calamochrous ferruginalis*, *ruficostalis*, E. India, HAMPSON, p. 420, Moths India, iv, n. spp.
- Calera rosella*, Nilgiri Hills, HAMPSON, p. 53, Moths India, iv, n. sp.
- Cullinaïas nigripalpis*, Khasia Hills, WARREN, p. 149, Ann. Nat. Hist. (6) xvii, n. sp.
- Cumptochilus sinuosa*, Manipur, WARREN, p. 342, Nov. Zool. iii, n. sp.
- Camptomastyx*, n. g., *Hydrocampinae*, type *hisbonalis*, Wlk.; HAMPSON, p. 238, Moths India, iv.
- Cangetta albocarnea*, Khasia Hills, WARREN, p. 149, Ann. Nat. Hist. (6) xvii; *C. venustalis*, Khasia Hills, WARREN, p. 464, *t. c.* : n. spp.
- Cuprinia intermedia*, Khasia Hills, WARREN, p. 100, Ann. Nat. Hist. (6) xvii, n. sp.
- Cataclysta repetitalis*, Queensland, WARREN, p. 205, Ann. Nat. Hist. (6) xvii; *C. romanalis*, p. lxiii, fig. 14, *cumalis*, fig. 15, p. 273, *pulcherialis*, fig. 16, *darsanialis*, fig. 17, *cronialis*, fig. 18, *cryptalis*, fig. 19, p. 274, Central America, DRUCE, Biol. Centr.-Amer. Heter. ii : n. spp.
- Cenocnemis*, n. g., near *Enchocnemidia*, for *C. incurvata*, n. sp., Java; WARREN, p. 116, Ann. Nat. Hist. (6) xviii.

- Chalcidoptera atrilobalis*, Tenasserim, HAMPSON, p. 292, Moths India, iv, n. sp.
- Charema scabripennis*, p. 131, *longipennis*, p. 132, Khasia Hills, WARREN, Ann. Nat. Hist. (6) xvii, n. spp.
- Charitoprepes*, n. g., *Pyralides*, for *C. lubricosa*, n. sp., Khasia Hills; WARREN, p. 136, Ann. Nat. Hist. (6) xvii.
- Chrysommatodes*, n. g., *Pyralides*, for *C. areostavalis*, n. sp., Queensland; WARREN, p. 105, Ann. Nat. Hist. (6) xvii.
- Circobotys aurimargo*, Khasia Hills, WARREN, p. 109, Ann. Nat. Hist. (6) xviii, n. sp.
- Cœlorhyncidia*, n. g., *Hydrocampinæ*, for *C. ovulalis*, n. sp., Simla; HAMPSON, p. 232, Moths India, iv.
- Cœnodomus dudgeoni*, Bhután, HAMPSON, p. 118, Moths India, iv, n. sp.
- Comaria unilinealis*, Masuri, WARREN, p. 462, Ann. Nat. Hist. (6) xvii, n. sp.
- Conogethes punctiferalis*, n. var. *niğralis*; WARREN, p. 168, Ann. Nat. Hist. (6) xviii.
- C. diminutiva*, Khasia Hills, WARREN, Ann. Nat. Hist. (6) xviii, n. sp.
- Constantia (Zonora) rufimarginalis*, Arabia, HAMPSON, p. 273, P. Zool. Soc. London, 1896, n. sp.
- Coptobasis biocellata, incrassata*, Khasia Hills, WARREN, p. 171, Ann. Nat. Hist. (6) xviii; *C. ? subænescens*, Queensland, WARREN, p. 133, *op. cit.* xvii : n. spp.
- Cotachena peractalis*, Tenimber, WARREN, p. 465, Ann. Nat. Hist. (6) xvii, n. sp.
- Crambus acutulellus*, Italy, CHRÉTIEN, p. 190, Bull. Soc. ent. France, 1896; *C. leucozonellus*, Aden, HAMPSON, p. 269, pl. x, fig. 5, P. Zool. Soc. London, 1896; *C. chalcipterus*, p. 13, *hemileucalis*, p. 16, India, HAMPSON, Moths India, iv; *C. melchiellus*, pl. lxiv, fig. 12, *nergaellus*, fig. 13, *lascaellus*, fig. 14, p. 289, *cadarellus*, fig. 15, *racabellus*, fig. 16, *misgabellus*, fig. 17, p. 290, Central America, DRUCE, Biol. Centr.-Amer. Heter. ii : n. spp.
- Critonia sarcoglauca*, Ceylon, p. 60, *purpureotincta, roseistrigella, subconcinella*, E. India, p. 61, HAMPSON, Moths India, iv, n. spp.
- Crocidophora ptyophora*, Sikkim, HAMPSON, p. 389, Moths India, iv, n. sp.
- Cryptoblabe bipunctalis*, Bhután, *proleucella*, Ceylon, HAMPSON, p. 105, Moths India, iv, n. spp.
- Cybolomia præculturalis*, Canaries, REBEL, p. 111, Ann. Hofmus. Wien, xi, n. sp.
- Cyclarcha pallidicostalis*, p. 138, *paucistrialis*, p. 139, Khasia Hills, WARREN, Ann. Nat. Hist. (6) xvii; *C. monomma*, Khasia Hills, WARREN, p. 173, *op. cit.* xviii : n. spp.
- Cymoriza rivularis* and *exsolvalis* distinguished; SNELLEN, p. 69, Tijdschr. Ent. xxxix.
- C. albiflavidalis, fascialis*, p. 223, *fulvalis, interruptalis*, p. 224, Khasia Hills, WARREN, Ann. Nat. Hist. (6) xviii, n. spp.
- Danaga costipunctata*, Khasia Hills, WARREN, p. 217, Ann. Nat. Hist. (6) xviii, n. sp.
- Daulia aurantialis*, N. India, HAMPSON, p. 221, Moths India, iv, n. sp.
- Diathrausta profundalis*, n. varr. *conicalis, obliterated*; WARREN, p. 143, Ann. Nat. Hist. (6) xvii.
- Diathraustodes*, n. g., *Hydrocampinæ*, for *D. leucotrigona*, n. sp., Nilgiris; HAMPSON, p. 233, Moths India, iv.
- Diatræa neuricella*, pl. lxiv, fig. 27, *saccharalis*, fig. 29, figures; DRUCE, Biol. Centr.-Amer. Heter. ii.
- Dichocrocis bilinealis*, Tenasserim, HAMPSON, p. 307, Moths India, iv; *D. fuscifimbria*, New Guinea, WARREN, p. 170, Ann. Nat. Hist. (6) xviii : n. spp.

- Diloxia*, n. g., p. 179, *Pyralinæ*, for *D. fimbriata*, n. sp., Nilgiris, p. 180 ; HAMPSON, Moths India, iv.
- Diplopseustis constellata*, p. 464, *pallidalis*, p. 465, Khasia Hills, WARREN, Ann. Nat. Hist. (6) xvii, n. spp.
- Diplotyla*? *albilunata*, p. 143, *flexiguttalis*, Khasia Hills, *vestigialis*, Queensland, p. 144, WARREN, Ann. Nat. Hist. (6) xvii, n. spp.
- Diptychophora euzonella*, p. 18, *albilinealis*, p. 19, E. India, HAMPSON, Moths India, iv ; *D. smithi*, Mexico, pl. lxiv, fig. 20, p. 292, DRUCE, Biol. Centr.-Amer. Heter. ii : n. spp.
- Discordia basalis*, *siniferalis*, Ceylon, HAMPSON, p. 187, Moths India, iv, n. spp.
- Dolichosticha subauralis*, Khasia Hills, WARREN, p. 175, Ann. Nat. Hist. (6) xviii, n. sp.
- Doratoperas atrosarsellus*, figure ; DRUCE, pl. lxiv, fig. 28, Biol. Centr.-Amer. Heter. ii.
- Ebulea*? *anomalalis*, p. 110, *E. decoloralis*, *ochreipunctalis*, p. 111, Khasia Hills, WARREN, Ann. Nat. Hist. (6) xviii, n. spp.
- Ebuleodes*, n. g., near *Ebulea*, for *E. simplex*, n. sp., Khasia Hills ; WARREN, p. 112, Ann. Nat. Hist. (6) xviii.
- Embryoglossa*, n. g., *Galleriinae*, p. 225, for *E. variegata*, n. sp., Khasia Hills, p. 226 ; WARREN, Ann. Nat. Hist. (6) xviii.
- Enchocnemidia fuscitibia*, Tenimber, WARREN, p. 116, Ann. Nat. Hist. (6) xviii, n. sp.
- Endolasia*, n. g., *Phycitinae*, for *E. melanoleuca*, n. sp., Sind ; HAMPSON, p. 74, Moths India, iv.
- Endotricha fuscifusalis*, p. 134, *ardentalis*, p. 135, *luteogrisalis*, p. 136, E. India, HAMPSON, Moths India, iv, n. spp.
- Ephestia kuehniella* in Europe and America ; JOHNSON (581, 582) : life-history ; CHITTENDEN (158).
- E. rubrimediella*, E. India, HAMPSON, p. 66, Moths India, iv, n. sp.
- Epicrocis (Candiope) erubescens*, Aden, HAMPSON, p. 272, pl. x, fig. 30, P. Zool. Soc. London, 1896, n. sp.
- Epipaschia lithochlora*, Queensland, LOWER, p. 154, Tr. R. Soc. S. Austral. xx, n. sp.
- Eristena*, n. g., p. 149, *Pyralides*, for *E. murinalis*, n. sp., Khasia Hills, p. 150 ; WARREN, Ann. Nat. Hist. (6) xvii.
- Eromene californicalis*, figure, pl. lxiv, fig. 4 ; DRUCE, Biol. Centr.-Amer. Heter. ii.
- E. pavonialis*, Aden, HAMPSON, p. 269, pl. x, fig. 28, P. Zool. Soc. London, 1896, n. sp.
- Erupa ruptilineella*, figure, pl. lxiv, fig. 26 ; DRUCE, p. 295, Biol. Centr.-Amer. Heter. ii.
- Eschata melanocera*, Naga Hills, HAMPSON, p. 29, Moths India, iv, n. sp.
- Etiella venustella*, E. India, HAMPSON, p. 109, Moths India, iv, n. sp.
- Eurrhyparodes confusalis*, Khasia Hills, WARREN, p. 218, Ann. Nat. Hist. (6) xviii, n. sp.
- Eurycreon albifascialis*, Aden, HAMPSON, p. 276, pl. x, fig. 29, P. Zool. Soc. London, 1896 ; *E. ? rubralis*, Khasia Hills, WARREN, p. 97, Ann. Nat. Hist. (6) xvii : n. spp.
- Euryzona*, n. g., *Pyralinæ*, type *latifuscia*, Hmpsn. ; HAMPSON, p. 163, Moths India, iv.
- Euzophera plumbeifasciella*, Calcutta, p. 73, *niveicostella*, *micans*, Ceylon, p. 74, HAMPSON, Moths India, iv ; *E. ? pyrrhoptera*, Queensland, p. 159, *thermochroa*, Sydney, p. 160, LOWER, Tr. R. Soc. S. Austral. xx : n. spp.
- Furcivena*, n. g., *Pyraustinae*, for *F. strigifaralis*, n. sp., Sikkim, HAMPSON, p. 374, Moths India, iv.



- Gadessa?* *subalbalis*, *G. characteristica*, Khasia Hills, WARREN, p. 103, Ann. Nat. Hist. (6) xvii; *G. impuralis*, Khasia Hills, WARREN, p. 167, *op. cit.* xviii : n. spp.
- Gethosyne*, n. g., *Hydrocampinæ*, for *G. æquivocalis*, n. sp., Khasia Hills; WARREN, p. 221, Ann. Nat. Hist. (6) xviii.
- Glauconoë atrigenalis*, Cherra Punji, WARREN, p. 96, Ann. Nat. Hist. (6) xvii, n. sp.
- Glyphodes nilgirica*, p. 350, *cupripennalis*, *picticostalis*, p. 351, *pulverulentalis*, *dysallactalis*, p. 353, E. India, *minimalis*, Ceylon, p. 359, *orbiferalis*, Burma, p. 360, HAMPSON, Moths India, iv; *G. pedenotatu*, p. 117, Lifu, *tumidalis*, *violalis*, p. 118, E. India, WARREN, Ann. Nat. Hist. (6) xviii : n. spp.
- Gnamptorhiza*, n. g., *Pyralides*, for *G. multiplicalis*, n. sp., Khasia Hills, WARREN, p. 135, Ann. Nat. Hist. (6) xvii.
- Goniorhynchus*, n. g., type *gratalis*, Led., p. 322, with *G. plumbeizonalis*, n. sp., Tenasserim, p. 323; HAMPSON, Moths India, iv.
- G. flaviguttalis*, Khasia Hills, WARREN, p. 140, Ann. Nat. Hist. (6) xvii; *G. marginalis*, *obliquistriga*, Khasia Hills, WARREN, p. 115, *op. cit.* xviii : n. spp.
- Haliotigris*, n. g., *Pyralidæ*, p. 163, for *H. cometa*, n. sp., Khasia Hills, p. 164; WARREN, Ann. Nat. Hist. (6) xviii.
- Hedylepta confusalis*, Japan, *ochrifuscalis*, Khasia Hills; WARREN, p. 98, Ann. Nat. Hist. (6) xvii : n. spp.
- Hendecasis*, n. g., *Endotrichinæ*, type *duplifascialis*, Hmpsn.; HAMPSON, p. 140, Moths India, iv.
- Henaeasis fumilauta*, Khasia Hills, WARREN, p. 465, Ann. Nat. Hist. (6) xvii, n. sp.
- Heterocrasa*, n. g., *Pyralidinæ*, for *H. expansalis*, n. sp., Khasia Hills; WARREN, p. 459, Ann. Nat. Hist. (6) xvii.
- Heterographis unipunctella*, p. 270; *carnibasalis*, *proniphea*, p. 271, Aden, HAMPSON, P. Zool. Soc. London, 1896; *H. pygmælla*, *verrucicola*, Ceylon, *rubripictella*, E. India, p. 69, *micralis*, *resticula*, Ceylon, p. 70, HAMPSON, Moths India, iv : n. spp.
- Homœosoma*, *ephestidiella*, *griseipennella*, E. India, *bipunctella*, p. 67, *fuscifusella*, p. 68, Ceylon, HAMPSON, Moths India, iv : n. spp.
- Homura rebeli*, S. Croix, HEDEMANN, p. 5, Ent. Zeit. Stettin, lvii, n. sp.
- Hydrocampa decetialis*, pl. lxiii, fig. 22, *procialis*, fig. 20, *randalis*, fig. 21, p. 275, *debalis*, fig. 23, *pomperialis*, fig. 24, *H.?* *dematricalis*, fig. 25, *procrealis*, fig. 26, p. 276, *dendalis*, fig. 27, p. 277, Central America, DRUCE, Biol. Centr.-Amer. Heter. ii, n. spp.
- Hydrorybina*, n. g., *Hydrocampinæ*, type *polusalis*, Wlk.; HAMPSON, p. 239, Moths India, iv.
- Hypargyria ferrella*, Ceylon, HAMPSON, p. 88, Moths India, iv, n. sp.
- Hyperthalia*, n. g., for *H. flavicaput*, n. sp., Khasia Hills; WARREN, p. 134, Ann. Nat. Hist. (6) xvii.
- Hypolamprus fimbriata*, Khasia Hills; WARREN, p. 207, Ann. Nat. Hist. (6) xvii, n. sp.
- Hypsidia*, n. g., near *Vitessa*, p. 602, for *H. erythrospalis*, n. sp., Queensland, p. 603, ROTHSCHILD, Nov. Zool. iii, n. spp.
- Hypsotropha heterocerella*, Punjab, HAMPSON, p. 54, Moths India, iv, n. sp.
- Idinsia*, n. g., *Pyralides*, p. 98, for *I. benepictalis*, n. sp., Khasia Hills, p. 99; WARREN, Ann. Nat. Hist. (6) xvii.
- Idiostrophe*, n. g., near *Omiodes*, for *I. albipunctata*, n. sp., Mackay; WARREN, p. 133, Ann. Nat. Hist. (6) xvii.
- Isocentris phænicozona*, N. India, HAMPSON, p. 385, Moths India, iv, n. sp.
- Laodamia guatemalella*, figure, pl. lxiv, fig. 7; DRUCE, Biol. Centr.-Amer. Heter. ii.

- Lasiacme*, n. g., near *Marasmia*, for *L. pilosa*, p. 176, *mimica*, p. 177, n. spp., Khasia Hills ; WARREN, Ann. Nat. Hist. (6) xviii.
- Lepidogma rufescens*, Bhután, HAMPSON, p. 112, Moths India, iv, n. sp.
- Lepidoneura*, n. g., *Pyraustinae*, type *longipalpis*, Swinh.; HAMPSON, p. 411, Moths India, iv.
- Lepidoplaga longicorpus*, *elongalis*, Khasia Hills, WARREN, p. 108, Ann. Nat. Hist. (6) xviii, n. spp.
- Leucinodes apicalis*, Ceylon, &c., HAMPSON, p. 371, Moths India, iv, n. sp.
- Leucogephyra*, n. g., *Pyralidæ*, for *L. semifascialis*, n. sp., Khasia Hills ; WARREN, Ann. Nat. Hist. (6) xviii.
- Locastra pachylepidalis*, Bhután, HAMPSON, p. 119, Moths India, iv, n. sp.
- Lophopalpia*, n. g., *Pyralinae*, type *pauperalis*, Leech ; HAMPSON, p. 526, Tr. ent. Soc. London, 1896.
- L. ? chalybopicta*, Khasia Hills, WARREN, p. 452, Ann. Nat. Hist. (6) xvii, n. sp.
- Loxoneptera*, n. g., *Pyraustinae*, p. 405, for *L. carnealis*, n. sp., N. India, p. 406 ; HAMPSON, Moths India, iv.
- Loxoscia verecunda*, Khasia Hills, WARREN, p. 167, Ann. Nat. Hist. (6) xviii, n. sp.
- Macalla hypoxantha*, Sikkim, HAMPSON, p. 465, Tr. ent. Soc. London, 1896 ; *M. albifusa*, p. 113, *scoporhyncha*, p. 114, *parvula*, p. 115, *exrufescens*, p. 116, India, HAMPSON, Moths India, iv : n. spp.
- Macrospectrodes*, n. g., for *Botys subargentalis*, Snell. ; WARREN, p. 94, Ann. Nat. Hist. (6) xvii.
- Marasmia fusifascialis*, Ceylon, HAMPSON, p. 277, Moths India, iv, n. sp.
- Margarochroma*, n. g., p. 164, *Pyralidæ*, for *M. pictalis*, n. sp., Khasia Hills, p. 165 ; WARREN, Ann. Nat. Hist. (6) xviii.
- Menuthia fissirella*, *discipunctella*, Ceylon, HAMPSON, p. 52, Moths India, iv, n. spp.
- Merodictya*, n. g., p. 136, *Pyralides*, for *M. subtessellalis*, n. sp., Queensland ; WARREN, p. 137, Ann. Nat. Hist. (6) xvii.
- Metasia sabulosalis*, *M. ? fuscalis*, India, WARREN, p. 217, Ann. Nat. Hist. (6) xviii, n. spp.
- Metasiodes indecisalis*, Khasia Hills, WARREN, p. 148, Ann. Nat. Hist. (6) xvii ; *M. ? apicalis*, Khasia Hills, WARREN, p. 216, *op. cit.* xviii : n. spp.
- Metæca*, n. g., type *Isopteryx fœdalis*, Gn., with *M. amplificata*, n. sp., Khasia Hills ; WARREN, p. 145, Ann. Nat. Hist. (6) xvii.
- Mimistis*, n. g., *Phycitinae*, for *M. actiosoides*, n. sp., Ceylon ; HAMPSON, p. 65, Moths India, iv.
- Mimorista marginalis*, Khasia Hills, WARREN, p. 114, Ann. Nat. Hist. (6) xviii, n. sp.
- Mucialla unicolorella*, N. India, HAMPSON, p. 5, Moths India, iv, n. sp.
- Myelois pectinicornella*, Bhután, HAMPSON, p. 88, Moths India, iv, n. sp.
- Nacoleia aurantifascialis*, p. 314, Manipur, *fuscifimbrialis*, Ceylon, p. 315, HAMPSON, Moths India, iv, n. spp.
- Nephopteryx (Salebria) metamelana*, p. 271, pl. x, fig. 7, *nigristriata*, p. 272, fig. 22, Aden, HAMPSON, P. Zool. Soc. London, 1896 ; *N. basisignella*, Ceylon, p. 77, *canescentella*, *ochribasalis*, *semiirrerella*, *nocturnella*, E. India, p. 78, *strigivenata*, Ceylon, p. 83, HAMPSON, Moths India, iv : n. spp.
- Neurophruda*, n. g., *Endotrichinae*, p. 463, for *N. daulialis*, n. sp., Khasia Hills ; WARREN, p. 464, Ann. Nat. Hist. (6) xvii.
- Niphostola*, n. g., *Hydrocampinae*, for *N. micans*, n. sp., E. India ; HAMPSON, p. 222, Moths India, iv.
- Noctuelia fuscinervis*, Murree, HAMPSON, p. 446, Moths India, iv, n. sp.

- Nosophora parvipunctalis*, Tenasserim, HAMPSON, p. 290, Moths India, iv ;  
*N. triguttalis*, Khasia Hills, WARREN, p. 173, Ann. Nat. Hist. (6)  
 xviii : n. spp.
- Notarcha semiflava*, *paucinotalis*, Khasia Hills, WARREN, p. 166, Ann.  
 Nat. Hist. (6) xviii ; *N. ? nigriscriptalis*, p. 100, *tenebrosalis*, p. 101,  
*tenuis*, p. 102, Queensland, *N. stigmatalis*, p. 101, *triparalis*, p. 102,  
 Khasia Hills, WARREN, *op. cit.* xvii : n. spp.
- Nymphula leucostola*, p. 194, *fusalis*, *fuscicostalis*, p. 195, India, HAMPSON,  
 Moths India, iv ; *N. pygmæalis*, *N. ? inconsequens*, Khasia Hills,  
 WARREN, p. 204, Ann. Nat. Hist. (6) xvii ; *N. latifascialis*, *nigra*,  
 Khasia Hills, WARREN, p. 220, Ann. Nat. Hist. (6) xviii : n. spp.
- Oligocentris*, n. g., type *deciusalis*, Wlk. ; HAMPSON, p. 304, Moths  
 India, iv.
- Oligostigma fumibasale*, Ceylon, HAMPSON, p. 208, Moths India, iv ; *O.*  
*siennata*, Queensland, WARREN, p. 206, Ann. Nat. Hist. (6) xvii ; *O.*  
*albidivisa*, Khasia Hills, WARREN, p. 221, *op. cit.* xviii : n. spp.
- Omiodes nigriscripta*, Tenimber, WARREN, p. 132, Ann. Nat. Hist. (6)  
 xvii, n. sp.
- Omphalobasis*, n. g., *Pyralinæ*, type *chalybopicta*, Warr. ; HAMPSON, p. 525,  
 Tr. ent. Soc. London, 1896.
- Omphalocera canosparsalis*, Burma, HAMPSON, p. 168, Moths India, iv,  
 n. sp.
- Opsibotys profusalis*, Khasia Hills, WARREN, p. 95, Ann. Nat. Hist. (6)  
 xvii, n. sp.
- Orphanostigma versicolor*, India, WARREN, p. 175, *op. cit.* xviii, n. sp.
- Orphnophanes albisignalis*, India, HAMPSON, p. 231, Moths India, iv, n. sp.
- Orthaga roseiplaga*, p. 124, *molleri*, *auroviridalis*, p. 126, *euryzona*, p. 128,  
 E. India, HAMPSON, Moths India, iv, n. spp.
- Orthocona*, n. g., p. 214, near *Agrotera*, for *Thysanodesma eximialis*,  
 redescribed, p. 215 ; WARREN, Ann. Nat. Hist. (6) xviii.
- Orthoraphis*, n. g., *Pyraustinæ*, type *obfuscata*, Hmpsn. ; HAMPSON, p. 251,  
 Moths India, iv.
- Ottolenguia*, n. g., *Thyrididæ* ?, for *O. reticulina*, n. sp., N. America ;  
 BEUTENMÜLLER, p. 146, J. N. York Ent. Soc. iv.
- Oxycophina*, n. g., *Thyrididæ*, for *O. subfenestrata*, n. sp., New Britain ;  
 WARREN, p. 342, Nov. Zool. iii.
- Pachyarches punctalis*, Jamaica, WARREN, p. 100, Ann. Nat. Hist. (6)  
 xvii, n. sp.
- Pachynoa hypsalis*, Sikkim, HAMPSON, p. 398, Moths India, iv, n. sp.
- Pachyzancla rufescentalis*, Tenasserim, *ustulalis*, Ceylon, p. 403, *callista-*  
*lis*, Assam, p. 404, HAMPSON, Moths India, iv ; *P. honestalis*, Khasia  
 Hills, WARREN, p. 97, Ann. Nat. Hist. (6) xvii ; *P. granulata*, Khasia  
 Hills, WARREN, p. 174, *op. cit.* xviii : n. spp.
- Pagyda exalbialis*, p. 271, *straminealis*, p. 273, India, HAMPSON, Moths  
 India, iv, n. spp.
- Paliga contractalis*, E. India, WARREN, p. 113, Ann. Nat. Hist. (6) xviii ;  
*P. rubicundalis*, Khasia Hills, WARREN, p. 96, Ann. Nat. Hist. (6)  
 xvii : n. spp.
- Pantæocorne*, n. g., *Pyralidæ*, for *P. deformis*, n. sp., Khasia Hills ;  
 WARREN, p. 173, Ann. Nat. Hist. (6) xviii.
- Parachmidia*, n. g., *Endotrichinæ*, for *fervidalis*, Wlk. ; HAMPSON, p. 495,  
 Tr. ent. Soc. London, 1896.
- Paracymoriza semialbida*, *stellata*, Khasia Hills, WARREN, p. 203, Ann.  
 Nat. Hist. (6) xvii, n. spp.
- Paraponyx citronalis*, pl. lxiii, fig. 28, *azialis*, fig. 29, p. 277, *hodevalis*,  
 fig. 30, *bosoralis*, fig. 31, p. 278, Central America, DRUCE, Biol.  
 Centr.-Amer. Heter. ii ; *P. ? levalis*, Khasia Hills, WARREN, p. 206,  
 Ann. Nat. Hist. (6) xvii : n. spp.

- Parasarama conjuncta*, p. 454, *rufitinctalis*, p. 455, Khasia Hills, WARREN, Ann. Nat. Hist. (6) xvii, n. spp.
- Parorthaga*, n. g., *Epipaschiinæ*, for *euryptera*, Meyr.; HAMPSON, p. 110, Moths India, iv.
- Parotis planalis*, Dili, WARREN, p. 117, Ann. Nat. Hist. (6) xviii, n. sp.
- Patania excurvalis*, Queensland, WARREN, p. 175, Ann. Nat. Hist. (6) xviii, n. sp.
- Patissa luteifrons*, Calcutta, HAMPSON, p. 45, Moths India, iv, n. sp.
- Perisyntrocha ossealis*, India, HAMPSON, p. 222, Moths India, iv, n. sp.
- Petta costastrigalis*, Ceylon, HAMPSON, p. 138, Moths India, iv, n. sp.
- Peucela fumosalis*, *rubrifuscalis*, Khasia Hills, WARREN, p. 461, Ann. Nat. Hist. (6) xvii, n. spp.
- Pharumbara compunctalis*, p. 208, Khasia Hills, *costiscripta*, Queensland, *decoratalis*, p. 209, *obliquistrigalis*, *parcipunctalis*, p. 210, *semiperforata*, p. 211, *ulterior*, p. 212, Khasia Hills, WARREN, Ann. Nat. Hist. (6) xvii; *P. bullifera*, Khasia Hills, *quadrovata*, Timor, WARREN, p. 343, Nov. Zool. iii; *P. curvilinea*, India, *fallax*, New Guinea, WARREN, p. 229, Ann. Nat. Hist. (6) xviii: n. spp.
- Phlyctænodes brevivittalis*, Nágas, HAMPSON, p. 409, Moths India, iv, n. sp.
- Phryganodes unitinctalis*, *lophophoralis*, *pachycraspedalis*, E. India, HAMPSON, p. 302, Moths India, iv, n. spp.
- Phycita phænicocraspis*, Aden, HAMPSON, p. 272, P. Zool. Soc. London, 1896; *P. bipartella*, p. 90, *cyclogramma*, Ceylon, *dentilinella*, p. 91, Manipur, *ovalis*, *chloropterella*, Ceylon, *pachylepidella*, India, p. 92, *albilavalis*, Ceylon, *obliquifasciella*, p. 93, *majoralis*, India, *eulepidella*, Ceylon, p. 94, *hemixanthella*, p. 95, *jasminophaga*, India, *pectenella*, Ceylon, p. 96, HAMPSON, Moths India, iv: n. spp.
- Pileocera octosemalis*, Burma, HAMPSON, p. 236, Moths India, iv, n. sp.
- Pionea fuscizonalis*, *phænicistis*, Sikkim, HAMPSON, p. 428, Moths India, iv, n. spp.
- Platamonia binotalis*, Burma, WARREN, p. 177, Ann. Nat. Hist. (6) xviii, n. sp.
- Plateopsis*, n. g., *Pyralidæ*, p. 170, for *P. vespertilio*, n. sp., Khasia Hills, p. 171; WARREN, Ann. Nat. Hist. (6) xviii.
- Platytes endochalybella*, figure; DRUCE, p. 293, pl. lxiv, fig. 21, Biol. Centr.-Amer. Heter. ii.
- P. diatræella*, p. 20, *fulvizonella*, p. 21, *apicella*, p. 22, E. India, HAMPSON, Moths India, iv, n. spp.
- Pleonectoides sericialis*, Assam, HAMPSON, p. 141, Moths India, iv, n. sp.
- Pleonectusa pallidalis*, *subpurpurescens*, Khasia Hills, WARREN, p. 147, Ann. Nat. Hist. (6) xvii, n. spp.
- Pleuroptya fuscalis*, Khasia Hills, WARREN, p. 165, Ann. Nat. Hist. (6), xviii, n. sp.
- Pococera albulella*, Brazil, *melanoleuca*, Columbia, HAMPSON, p. 458, Tr. ent. Soc. London, 1896, n. spp.
- Polycampsis*, n. g., *Pyralidinæ*, p. 457, for *P. longinasus*, n. sp., Khasia Hills, p. 458; WARREN, Ann. Nat. Hist. (6) xvii.
- Polychorista*, n. g., for *Thliptoceras calvatalis*, Swinh.; WARREN, p. 109, Ann. Nat. Hist. (6) xviii.
- Polycorys*, n. g., near *Coptobasis*, for *P. seminigralis*, n. sp., Khasia Hills, and *C. crotonalis*, Wlk.; WARREN, p. 172, Ann. Nat. Hist. (6) xviii.
- Polyocha strigicostella*, Arabia, HAMPSON, p. 270, P. Zool. Soc. London, 1896; *P. cinerella*, Simla, HAMPSON, p. 62, Moths India, iv: n. spp.
- Poujadia rosella*, *parviplumella*, p. 59, *pulverosa*, p. 60, E. India, HAMPSON, Moths India, iv, n. spp.

- Preneopogon*, n. g., *Pyralides*, for *P. barbata*, n. sp., Khasia Hills ; WARREN, p. 146, Ann. Nat. Hist. (6) xvii.
- Procedema*, n. g., *Pyraustinae*, type *incisale*, Wlk. ; HAMPSON, p. 406, Moths India, iv.
- Prophantis*, n. g., for *Archernis octoguttalis* and *castoralis*, p. 113, with *P. ? triplagalis*, n. sp., Khasia Hills, p. 114 ; WARREN, Ann. Nat. Hist. (6) xviii.
- Proropera*, n. g., *Chrysauginæ*, p. 453, for *P. vinosalis*, n. sp., Khasia Hills, p. 454 ; WARREN, Ann. Nat. Hist. (6) xvii.
- Proteinia*, n. g., *Pyralinæ*, type *pallifrons*, Snell. ; HAMPSON, p. 182, Moths India, iv.
- Protonoceras lugens*, Khasia Hills, WARREN, p. 110, Ann. Nat. Hist. (6) xviii, n. sp.
- Protrigonia*, n. g., *Pyraustinae*, type *zizanialis*, Swinh. ; HAMPSON, p. 414, Moths India, iv.
- Pycnarmon nebulosalis*, Ceylon, HAMPSON, p. 260, Moths India, iv, n. sp.
- Pygospila evanidalis*, E. India, SNELLEN, p. 68, Tijdschr. Ent. xxxix, n. sp.
- Pyralis rectisectalis*, Peermaad, WARREN, p. 460, Ann. Nat. Hist. (6) xvii, n. sp.
- Pyrausta aurantifascialis*, Burma, p. 429, *canotinctalis*, p. 431, *nigritalis*, p. 434, *punctimarginalis*, p. 438, *foviferalis*, p. 439, *acutidental*, p. 441, *torridalis*, p. 443, E. India, HAMPSON, Moths India, iv, n. spp.
- Radiorista*, n. g., for *Heterocnephes venosa*, Butler ; WARREN, p. 138, Ann. Nat. Hist. (6) xvii.
- Rehimena pallidalis*, Tenimber, WARREN, p. 134, Ann. Nat. Hist. (6) xvii, n. sp.
- Rhodoneura atristrigulalis*, Bhutan, HAMPSON, p. 480, Moths India, iv, n. sp.
- Rhodophaea tenebralis*, *rufimarginella*, E. India, HAMPSON, p. 101, Moths India, iv, n. spp.
- Rhynchetera*, n. g., *Pyralinæ*, for *R. carnealis*, n. sp., E. India ; HAMPSON, p. 166, Moths India, iv.
- Rhynchopygia*, n. g., p. 163, *Pyralinæ*, for *R. purpureorufa*, n. sp., Ceylon, p. 164 ; HAMPSON, Moths India, iv.
- Rostripalpus*, n. g., *Endotrichinæ*, type *longipennis*, Hmps. ; HAMPSON, p. 142, Moths India, iv.
- Sacada unilinealis*, p. 170, *pallescens*, p. 171, *rufina*, p. 172, E. India, HAMPSON, Moths India, iv, n. spp.
- Sameodes miltochristalis*, Sikkim, HAMPSON, p. 375, Moths India, iv, n. sp.
- Scoparia virescens*, Marocco, REBEL, p. 174, Verh. Ges. Wien, xlvi ; *S. planilinealis*, Khasia Hills, WARREN, p. 207, Ann. Nat. Hist. (6) xvii ; *S. mediorufalis*, p. 243, *vinotinctalis*, *canicostalis*, p. 244, E. India, HAMPSON, Moths India, iv ; *S. anthomera*, p. 157, *hypoxantha*, p. 158, S. Australia, LOWER, Tr. R. Soc. S. Austral. xx ; *S. delphusa*, pl. lxiv, fig. 1, *smithi*, fig. 3, *sabura*, fig. 4, p. 279, Central America, DRUCE, Biol. Centr.-Amer. Heter. ii : n. spp.
- Scopocera aglossalis*, Khasia Hills, WARREN, p. 456, Ann. Nat. Hist. (6) xvii, n. sp.
- Siculodes argentalis*, n. var. *tuberosalis* ; WARREN, p. 212, Ann. Nat. Hist. (6) xvii.
- S. gigantea*, Ternate, PAGENSTECHEER, p. 54, Ent. Nachr. xxii, n. sp.
- Simæthistis*, n. g., *Pyraustinae*, p. 446, type *tricolor*, Butl. ; HAMPSON, Moths India, iv.
- Sindris cervinalis*, Accra, HAMPSON, p. 539, Tr. ent. Soc. London, 1896, n. sp.
- Spatulipalpia flabellifera*, Ceylon, p. 102, *erythrina*, Calcutta, p. 103, HAMPSON, Moths India, iv, n. spp.

- Spilobotys leonina*, n. var. *lifuensis*; ROTHSCHILD, p. 93, Nov. Zool. iii.
- Stemmatophora carnealis*, Pegu, *pallidella*, *pseudaglossa*, *sanguifusa*, Ceylon, p. 155, *herculialis*, *costinotalis*, p. 156, *laticincta*, *punctimarginalis*, p. 157, E. India, HAMPSON, Moths India, iv, n. sp.
- Stenia carbonalis*, Khasia Hills, WARREN p. 148, Ann. Nat. Hist. (6) xvii, n. sp.
- Stericta rufescens*, p. 120, *carneotincta*, *plumbifloccalis*, p. 123, India, HAMPSON, Moths India, iv; *S.?* *callizona*, *S. chionopa*, p. 155, *leucodesma*, *S.?* *streptomela*, p. 156, Australia, LOWER, Tr. R. Soc. S. Austral. xx : n. spp.
- Striglina duplicifimbria*, Khasia Hills, WARREN, p. 227, Ann. Nat. Hist. (6) xviii, n. sp.
- Sufetula nana*, Bombay, WARREN, p. 225, Ann. Nat. Hist. (6) xviii; *S. rectifascialis*, Ceylon, HAMPSON, p. 253, Moths India, iv : n. spp.
- Sylepta obliquifascialis*, Rangoon, *chalybifascia*, Nágas, HAMPSON, p. 330, Moths India, iv, n. spp.
- Syllythria metallica*, Khasia Hills, WARREN, p. 107, Ann. Nat. Hist. (6) xviii, n. sp.
- Symphonia*, n. g., p. 198, *Hydrocampinæ*, for *S. multipictalis*, n. sp., Ceylon, p. 199, HAMPSON, Moths India, iv.
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- Syntomodora plumbealis*, Khasia Hills, WARREN, p. 174, Ann. Nat. Hist. (6) xviii, n. sp.
- Talis cyclosema*, S. Australia, LOWER, p. 158, Tr. R. Soc. S. Austral. xx; *T. mesochra*, Centr. Australia, LOWER, p. 252, Horn Exped. pt. ii : n. spp.
- Tegostoma bipartalis*, Aden, HAMPSON, p. 274, P. Zool. Soc. London, 1896, n. sp.
- Tegulifera pallidibasalis*, *castanealis*, *rosealis*, p. 153, *rufifascialis*, p. 154, E. India, HAMPSON, Moths India, iv, n. spp.
- Teratomorpha*, n. g., p. 191, *Chrysauginæ*, for *T. hampsonii*, n. sp., Tenasserim, p. 192, pl. t, fig. lii; NICÉVILLE, J. Bombay Soc. x.
- Tetracona?* *pictalis*, Queensland, WARREN, p. 139, Ann. Nat. Hist. (6) xvii, n. sp.
- Thagora castanella*, Ceylon, HAMPSON, p. 4, Moths India, iv, n. sp.
- Thliptoceras stygiale*, Nágas, HAMPSON, p. 378, Moths India, iv, n. sp.
- Thysanodesma discalis*, p. 140, *eximiialis*, p. 141, *fusalis*, *T.?* *rosea*, p. 142, *elongalis*, p. 145, Khasia Hills, WARREN, Ann. Nat. Hist. (6) xvii, n. spp.
- Trebania muricolor*, E. India, HAMPSON, p. 174, Moths India, iv, n. sp.
- Trichotophysa*, n. g., *Epipaschineæ*, p. 456, for *T. olivalis*, n. sp., Khasia Hills, p. 457, WARREN, Ann. Nat. Hist. (6) xvii.
- Triphassa metaxantha*, p. 164, *luteiciliialis*, p. 165, E. India, HAMPSON, Moths India, iv, n. spp.
- Tylostega valvata*, Khasia Hills, WARREN, p. 104, Ann. Nat. Hist. (6) xvii, n. sp.
- Tyspanodes cardinalis*, Nágas, HAMPSON, p. 299, Moths India, iv, n. sp.
- Udea nigrostigmalis*, Khasia Hills, WARREN, p. 96, Ann. Nat. Hist. (6) xvii, n. sp.
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- Xanthomelana*, n. g., *Pyraustina*, type *schematias*, Meyr.; HAMPSON, p. 255, Moths India, iv.  
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*Zebrodes*, n. g., for *Zebroia rigidalis*, Snell; WARREN, p. 104, Ann. Nat. Hist. (6) xvii.  
*Zitha imperatrix*, Khasia Hills, WARREN, p. 462, Ann. Nat. Hist. (6) xvii, n. sp.

## TORTRICIDÆ.

[Cf. BANG-HAAS (46), HORVÁTH (530), LOWER (722), REBEL (932).]  
*Microlepidoptera* in the Tropics; HEDEMANN, pp. 284-288, Ent. Meddel. v.

Mode of leaf rolling; KNAGGS (648).

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*Ablabia osseana*, habits; BARRETT, p. 135, Ent. Mag. xxxii.

*Anisogona placoxantha*, p. 160, Victoria, LOWER, Tr. R. Soc. S. Austral. xx, n. sp.

*Carpocapsa pomonella* eating nuts; ADKIN, p. 2, Entomologist, 1896.

*Cheimatophila tortricella*, larval habits; BARRETT, p. 135, Ent. Mag. xxxii.

*Coccyx cosmophorana*, larval habits; TUTT, p. 235, Ent. Rec. vii; SALVAGE, t. c. p. 280.

*Dichelia? amæbaea*, Queensland, LOWER, p. 161, Tr. R. Soc. S. Austral. xx, n. sp.

*Eupœcilia alismana*, synonymy; DALE, p. 163, Entomologist, 1896.

*Grapholitha discretana*, p. 12, *leguminana*, p. 14, metamorphoses; SCHÜTZE, Ent. Zeit. Stettin, lvii. *G. maderæ*, figure; REBEL, pl. iii, fig. 8, Ann. Hofmus. Wien, xi. *G. solandriana*, variation; KENNEL, pp. 54-58, SB. Ges. Dorpat, xi.

*G. negatana*, Orotava, REBEL, p. 121, pl. iii, fig. 8, Ann. Hofmus. Wien, xi, n. sp.

*Heterognomon coriacanus*, description and figure; REBEL, p. 118, pl. iii, fig. 5, Ann. Hofmus. Wien, xi.

*Pandemis mactana*, Canaries, REBEL, p. 116, pl. iii, fig. 4, Ann. Hofmus. Wien, xi, n. sp.

*Penthina groenlandica*, Greenland, BANG-HAAS, p. 190, Vid. Medd. 1896, n. sp.

*Retinia margarotana*, larval habits; SCHÜTZE, p. 16, Ent. Zeit. Stettin, lvii.

*R. walsinghami*, Canaries, REBEL, p. 119, pl. iii, fig. 6, Ann. Hofmus. Wien, xi, n. sp.

*Sciaphila penziana* and *colquhounana*, distinctness queried; TUTT, p. 194, Ent. Rec. vii.

*Steganoptycha abiegana*, injurious to conifers; life-history; HORVÁTH, pp. 242-255, pls. v & vi, Termes. Fuzetek, xix.

*S. pygmæana*, dates of appearance; DURRANT, p. 228, Ent. Mag. xxxii.

*Teras schalleriana*, *comparana*, variation, distinctness queried; KENNEL, pp. 50-54, SB. Ges. Dorpat, xi.

*Tmetocera ocellana*, habits; SLINGERLAND (1093).

*Tortrix viridana*, ravages in England; BARRETT, pp. 196-198, Ent. Mag. xxxii.

## TINEIDÆ.

- [*Of*. BANKES (47), CHRÉTIEN (178, 180), HARTIG (479), HEDEMANN (483, 484), KLEMENSIEWICZ (647), LOWER (722), REBEL (932), RICHARDSON (972, 973), SCHÜTZE (1044), TURNER (1169), WALSINGHAM (1198, 1199, 1201).]
- Catalogue of Victorian *Æcophoridae*, &c. ; LOWER, pp. 41, &c., Victorian Natural. xiii.
- Jumping cocoons from S. Africa supposed to be those of a Tineid : SHARP, p. 325, Entomologist, 1896.
- Anacamptis infestella*, Orotava, REBEL, p. 128, Ann. Hofmus. Wien, xi, n. sp.
- Anarsia acaciæ*, Arabia and Algeria, WALSINGHAM, p. 278, P. Zool. Soc. London, 1896, n. sp.
- Argyresthia illuminatella*, note on ; WALSINGHAM, p. 98, Ent. Mag. xxxii. *A. gædartella*, habits ; BARRETT, p. 262, t. c. *A. fundella*, habits, metamorphoses ; HARTIG, Forstl. Zeitschr. Munchen, v, pp. 313–317. *A. atmoriella*, England and Germany, BANKES, p. 25, Ent. Mag. xxxii, n. sp.
- Asychna ceratella*, two years in larval state ; BANKES, p. 64, Ent. Mag. xxxii.
- Atychia anthomera*, Queensland, *desmotoma*, Victoria, LOWER, p. 162, Tr. R. Soc. S. Austral. xx, n. spp.
- Blastobasis rubiginosella*, Orotava, REBEL, p. 130, pl. iii, fig. 12, Ann. Hofmus. Wien, xi, n. sp.
- Bucculatrix chrysanthemella*, Orotava, REBEL, p. 142, t. c. n. sp.
- Butalis paulella*, habits ; SCHÜTZE, p. 26, Ent. Zeit. Stettin, lvii.
- Cedestis gysselinella*, habits ; DURRANT, p. 228, Ent. Mag. xxxii.
- Chrysocorys*, early stages ; CHAPMAN, p. 140, Tr. ent. Soc. London, 1896.
- Cæsyra spectabilis*, p. 28, *dicæla*, *chrysocolla*, p. 29, TURNER, Tr. R. Soc. S. Austral. xx, n. spp.
- Coleophora adjunctella*, metamorphoses, figured ; RICHARDSON, P. Dorset Club, xvii, plate. *C. glitzella* in Britain, metamorphoses ; BANKES, pp. 145–148, Ent. Mag. xxxii. *C. fletcherella*, habits ; FLETCHER, p. 128, Canad. ent. xxviii. *C. laricella*, note ; E. REUTER, p. 44, Medd. Soc. Faun. Fenn. xxi.
- C. plurifoliella*, Biskra, CHRÉTIEN, p. 191, Bull. Soc. ent. France, 1896 ; *C. orotavensis*, pl. iii, fig. 16, p. 137, *atlanticella*, p. 138, Canaries, REBEL, Ann. Hofmus. Wien, xi : n. spp.
- Compsotropha chrysozona*, Brisbane, TURNER, p. 27, Tr. R. Soc. S. Austral. xx, n. sp.
- Corethropalpa*, n. g., p. 27, near *Phryganeutis*, for *C. fulcata*, n. sp., Brisbane ; TURNER, Tr. R. Soc. S. Austral. xx.
- Cosmopteryx flavofasciata*, Woll., description and figure ; REBEL, p. 133, pl. iii, fig. 13, Ann. Hofmus. Wien, xi.
- C. crassicervicella*, Algeria, CHRÉTIEN, p. 104, Naturaliste, 1896 ; *C. turbidella*, Canaries, REBEL, p. 135, pl. iii, fig. 14, Ann. Hofmus. Wien, xi : n. spp.
- Crocantes epitherma*, *acroxantha*, Queensland, LOWER, Tr. R. Soc. S. Austral. xix, p. 170, n. spp.
- Crypsicharis pudica*, Queensland, LOWER, p. 164, *op. cit.* xx, n. sp.
- Depressaria campestrella*, Vernet, CHRÉTIEN, p. 104, Naturaliste, 1896, n. sp.
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- Elachista maculosella*, Europe, p. 192, *ursinella*, *lastrella*, France, *suspectella*, Algeria, p. 193, CHRÉTIEN, Bull. Soc. ent. France, 1896 : n. spp.



- Enemia crassinervella*, larva, habits; SLOSSON & DYAR, pp. 86 & 87, J. N. York Ent. Soc. iv.
- Eochrois sarcosina*, S. Australia, LOWER, p. 164, Tr. R. Soc. S. Austral. xx, n. sp.
- Eulechria stigmatophora*, *baryptera*, p. 11, *euchlora*, *curvilinea*, p. 12, *tetraploa*, p. 13, Queensland, TURNER, Tr. R. Soc. S. Austral. xx; *E. tetratherma*, *deltaostamela*, p. 165, *thermistis*, p. 166, Australia, LOWER, t. c. : n. spp.
- Euprionocera*, n. g., near *Heliocausta*, for *E. geminipuncta*, n. sp., Brisbane, TURNER, p. 6, Tr. R. Soc. S. Austral. xx.
- Eurypelta*, Turn., merged in *Heliocausta*; TURNER, p. 3, Tr. R. Soc. S. Austral. xx.
- Gelechia domestica*, var.; BANKES, p. 65, Ent. Mag. xxxii. *G. muscosella*, p. 22, *tragicella*, p. 23, habits; SCHÜTZE, Ent. Zeit. Stettin, lvii. *G. peliella*, ? as to dimorphism of larva, or two species; DURRANT, p. 248, Ent. Mag. xxxii.
- G. suppleiella*, England, WALSINGHAM, p. 250, Ent. Mag. xxxii; *G. molitor*, Aden, WALSINGHAM, p. 278, P. Zool. Soc. London, 1896; *G. anthochra*, *xanthastis*, p. 168, *deltodes*, *nana*, p. 169, Australia, LOWER, Tr. R. Soc. S. Austral. xx : n. spp.
- Glyphipteryx pygmaella*, Orotava, REBEL, p. 132, Ann. Hofmus. Wien, xi, n. sp.
- Gracilaria pyrigenes*, n. n. for *nitidula*, Turner; TURNER, p. 1, Tr. R. Soc. S. Austral. xx.
- G. rebeli*, Galicia, KLIEMENSIEWICZ, p. 212, Verh. Ges. Wien, xlvi; *G. hedemanni*, Tenerife, REBEL, p. 136, pl. iii, fig. 15, Ann. Hofmus. Wien, xi; *G. ophiodes*, Brisbane, TURNER, p. 2, Tr. R. Soc. S. Austral. xx : n. spp.
- Heliocausta acosmeta*, *achroa*, *complanula*, p. 4, *simplex*, *phanozona*, p. 5, Queensland, TURNER, Tr. R. Soc. S. Austral. xx, n. spp.
- Hemibela*, Turn., merged in *Ocystola*; TURNER, p. 3, Tr. R. Soc. S. Austral. xx.
- Holcopogon sophroniellus*, note and figure; REBEL, p. 128, pl. iii, fig. 10, Ann. Hofmus. Wien, xi.
- Hoplitica rufimaculella*, *eoxantha*, *atripunctatella*, *porphyraspis*, *pyrrhella*, p. 8, *pyrites*, p. 9, Queensland, TURNER, Tr. R. Soc. S. Austral. xx, n. spp.
- Hypercallia igniferella*, referred to *Lophopepla* and redescribed; TURNER, p. 10, Tr. R. Soc. S. Austral. xx.
- Hyponomeuta gigas*, larva and pupa; REBEL, p. 126, Ann. Hofmus. Wien, xi.
- Lampros coarctella*, Orotava, REBEL, p. 129, pl. iii, fig. 11, t. c. n. sp.
- Linosticha albida*, Brisbane, TURNER, p. 15, Tr. R. Soc. S. Austral. xx, n. sp.
- Lita (Gelechia) instabilella*, fig. 1, *salicornice*, fig. 2, metamorphoses, figured; RICHARDSON, P. Dorset Club, xvii, pl.
- Lithocolletis cytisella*, Orotava, REBEL, p. 140, pl. iii, figg. 17 & 17a, Ann. Hofmus. Wien, xi, n. sp.
- Macrobathra puncticulata*, *chrysobaphes*, p. 32, *rosea*, p. 33, Queensland, TURNER, Tr. R. Soc. S. Austral. xx, n. spp.
- Metallarcha crocanthes*, S. Australia, LOWER, p. 157, Tr. R. Soc. S. Austral. xx, n. sp.
- Micropteryx semipurpurella*, pupa; SHARP, p. xvii, P. ent. Soc. London, 1896.
- Nephogenes variabilis*, Brisbane, TURNER, p. 22, Tr. R. Soc. S. Austral. xx, n. sp.
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- Oecophora sphaeroides*, *hemileuca*, Queensland, TURNER, p. 31, Tr. R. Soc. S. Austral. xx, n. spp.

- Enochroa ochrosoma*, p. 13, *gnophodes*, p. 14, Brisbane, TURNER, Tr. R. Soc. S. Austral. xx, n. spp.
- Ornix australis*, Brisbane, TURNER, p. 2, Tr. R. Soc. S. Austral. xx, n. sp.
- Palparia euryptera*, Brisbane, TURNER, p. 3, *t. c. n. sp.*
- Parocystola*, n. g., near *Ocystola*, for *P. leucospora*, n. sp., Brisbane; TURNER, p. 30, Tr. R. Soc. S. Austral. xx.
- Placocosma phæina*, Brisbane, TURNER, p. 14, *t. c. n. sp.*
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- Philobata genostropha*, Queensland, LOWER, p. 166, Tr. R. Soc. S. Austral. xx, n. sp.
- Phlæopola subviridella*, p. 15, *eucapnodes. basigramma*, p. 16, *melanospila*, *euprepes*, p. 17, *leucocephala*, p. 18, Queensland, TURNER, Tr. R. Soc. S. Austral. xx, n. spp.
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- Phyllophanes*, n. g., *Æcophoridae*, for *P. dyseurata*, n. sp., Brisbane; TURNER, p. 21, Tr. R. Soc. S. Austral. xx.
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- Simæthis chionodesma*, *ophiosema*, Queensland, LOWER, p. 128, Tr. R. Soc. S. Austral. xx, n. spp.
- Solenobia triquetrella*, *conspurcatella*, note on; CHAPMAN, p. 79, Ent. Mag. xxxii.
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- Telecrates desmochrysa*, S. Australia, LOWER, p. 164, Tr. R. Soc. S. Austral. xx, n. sp.
- Teratomorpha*, n. g., near *Piloprepes*, for *T. cæliota*, n. sp., Bowen; TURNER, p. 20, Tr. R. Soc. S. Austral. xx.
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- Tineola allutella*, habits, cases; REBEL, p. 124, Ann. Hofmus. Wien, xi.
- T. tæniacornis*, Aden, WALSHINGHAM, p. 281, P. Zool. Soc. London, 1896, n. sp.
- Tischeria longiciliatella*, Orotava, REBEL, p. 141, Ann. Hofmus. Wien, xi, n. sp.
- Toxtria* ? *pyrrhopa*, Queensland, LOWER, p. 162, Tr. R. Soc. S. Austral. xx, n. sp.
- Trichophaga abruptella*, noticed; REBEL, p. 123, Ann. Hofmus. Wien, xi. *T. swinhoei* = (*coprobiella*, Rag.), peculiar habits; WALSHINGHAM, p. 280, P. Zool. Soc. London, 1896.
- Xylorycta candescens*, Queensland, LOWER, p. 163, Tr. R. Soc. S. Austral. xx, n. sp.
- Xysmatodoma astrella*, larva; SCHÜTZE, p. 18, Ent. Zeit. Stettin, lvii.

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[Cf. CHAPMAN (155, 156), HOFMANN (507), REBEL (932), TUTT (1174, 1178).]

Affinities of *Pterophorus*, structure of pupa ; CHAPMAN, pp. 135, &c., Tr. ent. Soc. London, 1896.

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*Agdistis canariensis*, Tenerife, REBEL, p. 114, Ann. Hofmus. Wien, xi, n. sp.

*Gypsochares hedemanni*, Orotava, REBEL, p. 115, pl. iii, fig. 3, Ann. Hofmus. Wien, xi, n. sp.

*Orneodes* : egg, pupa, &c., affinities ; CHAPMAN, pp. 138 & 137, Tr. ent. Soc. London, 1896. *O. hexadactyla*, pupa ; CHAPMAN, p. 268, Ent. Rec. vii.

*Platyptilia chapmani*, Lapland, TUTT, p. 293, Ent. Rec. viii, n. sp.

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[The following memoirs relate to *Diptera*, viz., ALDRICH (13), ALESSANDRINI (14), AUSTEN (37), BECKER (54), BEZZI (77), BLANCHARD (86), BLANDFORD (87), COCKERELL (185), COQUILLET (216-219, 237), COUCKE (222), DAHL (230), FICALBI (332, 333), GIGLIO-TOS (408), GRIFFINI (435, 439), HUNTER (548, 549, 550), JACOBSON (559), KERTÉSZ (612), KIEFFER (615-629), KÜNCKEL (685), KUNTZE (688), LABOULBÈNE (690, 691), LESNE (704), LICHTWARDT (713), LUFF (724), MAGALHAES (735), MARCHAL (738), MARCHAND (742), P. MARSHALL (750), MEADEN (772), MIK (793, 794, 795), OSBORN (842), OSTEN SACKEN (844, 845, 846), PANDELLÉ (856), E. REUTER (967), RÜDER (993), RUSER (1006), SCOTT-ELLIOT (1052), SEMENOW (1069), SKUSE (1091), SNOW (1117), J. A. THOMSON (1150), TOWNSEND (1156), VERHOEFF (1186), WHEELER (1237-1241), WILCOX (1247), WILLISTON (1250-1255), WULP (414, 1256, 1257, 1259).]

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Notes on amber *Diptera*; HELM (490).

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Tabulation of characters used in distinguishing the forms; KIEFFER, pp. 101-105, Wien. ent. Zeit. xv.

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*Aprionus*, n. n. for *Apriona*, p. 91, *A. spiniger*, p. 93, *bidentatus*, *digitatus*, p. 95, *miki*, p. 96, *perrisi*, p. 109, *præcox*, p. 110, Bitsch, KIEFFER, Miscell. ent. iii, n. spp.

*Asphondylia* sp., gall on *Prunus cocomilio*; MIK, p. 209, pl. ii, Wien. ent. Zeit. xv.

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*A. trabuti*, Algeria, MARCHAL, p. 97, t. c. : n. spp.
- Bertiera*, n. g., near *Dasyneura*, for *B. gemmicola*, n. sp., Europe, and some other species inhabiting *Salix*; KIEFFER, p. 189, Bull. Soc. ent. France, 1896.
- B. pierrei*, Europe, KIEFFER, p. 218, Bull. Soc. ent. France, 1896, n. sp.
- Braueriella*, n. g., for *phillyreæ*, Lw.; KIEFFER, p. 4, Miscell. ent. iv.
- Bremia abietis*, Bitsch, *sonchi*, Lorraine; KIEFFER, p. 382, Bull. Soc. ent. France, 1896, n. spp.
- Bryocrypta*, n. g., *Epidosis* allies, for *B. dubia*, n. sp., Bitsch; KIEFFER, p. 8, Berlin. ent. Zeitschr. 1896.
- Bryomyia*, n. g., *Campyloza*, p. 61, for *B. bergrothi*, n. sp., Bitsch, p. 78; KIEFFER, Miscell. ent. iii.
- Cecidomyia* on *Alopecurus pratensis*; REUTER, p. 33, Medd. Soc. Faun. Fenn. xxi.
- C. neomexicana*, New Mexico, COCKERELL, p. 204, J. N. York Ent. Soc. iv, n. sp.
- Camptomya recta*, Bitsch, KIEFFER, p. 27, Berlin. ent. Zeitschr. 1896, n. sp.
- Campylomyza*: study of the group; KIEFFER, Miscell. ent. iii, pp. 46, &c.
- C. tenuis*, p. 242, *lincolniensis*, *minuta*, p. 243, *nitida*, *hirta*, p. 244, *squamata*, *magna*, p. 245, *robusta*, p. 246, *ordinaria*, p. 247, pl. v, fig. 5, New Zealand, MARSHALL, Tr. N. Zealand Inst. xxviii, n. spp.
- Clinorhysis flavitarsis*, Bitsch, KIEFFER, p. 32, Berlin. ent. Zeitschr. 1896, n. sp.
- Contarinia*, Rond., = (*Eudiplosis*, Kieff.); KIEFFER, p. 14, Bull. Soc. ent. France, 1896.
- C. brizæ*, *sorbi*, p. 99, *pilosellæ*, *scrophulariæ*, p. 100, Bitsch, KIEFFER, Wien. ent. Zeit. xv; *C. sonchi*, p. 14, *medicaginis*, *onobrychidis*, p. 15, Lorraine, KIEFFER, Bull. Soc. ent. France, 1896; *C. marchali*, Bitsch, KIEFFER, p. 236, t. c.; *C. medicaginis*, *onobrychidis*, Lorraine, KIEFFER, p. 150, Miscell. ent. iii : n. spp.
- Dasyneura*, Rond., = (*Dichelomyia*, Rbs.); KIEFFER, p. 14, Bull. Soc. ent. France, 1896.
- D. kiefferi*, France, MARCHAL, p. 99, Bull. Soc. ent. France, 1896; *D. lupulina*, p. 86, *axillaris*, *pulsatillæ*, p. 87, Europe, KIEFFER, Wien. ent. Zeit. xv : n. spp.
- Diplosis*-group: table of the genera; KIEFFER, pp. 91-94; remarks, pp. 94-100, Wien. ent. Zeit. xv. *D. resinicola*, reprint of OSTEN SACKEN'S description of larva and imago; Ent. Nachr. xxii, p. 343.
- D. giardi*, Lorraine, KIEFFER, p. 383, Bull. Soc. ent. France, 1896; *D. pictipes*, St. Vincent, WILLISTON, p. 253, Tr. ent. Soc. London, 1896; *D. dubia*, pl. v, fig. 3, *difficilis*, p. 235, *melana*, *minuta*, p. 236, *fragilis*, *hirta*, p. 237, *scoparia*, *wanganuiensis*, p. 238, pl. vii, fig. 2, *flava*, p. 239, New Zealand, MARSHALL, Tr. N. Zealand Inst. xxviii : n. spp.
- Endaphis*, n. g., *Diplosis* group, for *E. perfidus*, n. sp., Lorraine; KIEFFER, p. 383, Bull. Soc. ent. France, 1896.
- Epidosis magna*, pl. v, fig. 4, p. 239, *agricolæ*, p. 240, *ordinaria*, *aurea*, pl. vi, fig. 3, p. 241, New Zealand, MARSHALL, Tr. New Zealand Inst. xxviii, n. spp.
- Harmandia*, n. g., for *tremulæ*, Winn.; KIEFFER, p. 5, Miscell. ent. iv.
- Holoneurus ciliatus*, *tridentatus*, p. 15, *musciicola*, p. 16, *setiger*, p. 17, *fulvus*, p. 18, Centr. Europe; KIEFFER, Berlin. ent. Zeitschr. 1896, n. spp.
- Janetia*, n. g., near *Dasyneura*, for *J. szeptigetii*, n. sp., Hungary; KIEFFER, p. 236, Bull. Soc. ent. France, n. sp.
- Joannisia intermedia*, p. 74, *muscorum*, *palustris*, p. 75, Bitsch, KIEFFER, Miscell. ent. iii, n. spp.

- Leptodiplosis giardi*, Lorraine, KIEFFER, p. 14, Bull. Soc. ent. France, 1896, n. sp.
- Lestremia novæ-zealandiæ*, p. 247, pl. vi, fig. 1, New Zealand, MARSHALL, Tr. N. Zealand Inst. xxviii, n. sp.
- Loewiola*, n. g., for *centaureæ*, Lw.; KIEFFER, p. 5, Miscell. ent. iv.
- Macrodiptosis bellevoeyi*, Lorraine, KIEFFER, p. 384, Bull. Soc. ent. France, 1896, n. sp.
- Mayetia*, n. g., for *destructor*, Say; KIEFFER, p. 5, Miscell. ent. iv.
- Mayetiola*, composition discussed; KIEFFER, p. 89, Wien. ent. Zeit. xv.
- M. joannissi*, p. 216, *dactylidis*, p. 217, France, KIEFFER, Bull. Soc. ent. France, 1896; *M. holci*, Lorraine, KIEFFER, p. 333, t. c. : n. spp.
- Mikiola*, n. g., for *fagi*, Lw.; KIEFFER, p. 5, Miscell. ent. iv.
- Miastor agricolæ*, p. 232, pl. v, fig. 1, *difficilis*, p. 233, New Zealand, MARSHALL, Tr. N. Zealand Inst. xxviii, n. spp.
- Monardia*, n. g., *Campylomyza*, p. 61, for *M. stirpium*, n. sp., Bitsch, p. 111; KIEFFER, Miscell. ent. iii.
- Oligotrophus alopecuri*, Finland, E. REUTER, p. 3, Acta Soc. Faun. Fenn. xi, No. 8, n. sp.
- Peromyia leveillei*, Bitsch, KIEFFER, p. 76, Miscell. ent. iii, n. sp.
- Prionellus*, n. n. for *Prionota*, *P. pini*, p. 91, *minor*, p. 92, *musciicola*, *coronatus*, p. 93, Bitsch, KIEFFER, Miscell. ent. iii, n. spp.
- Putoniella*, n. g., for *marsupialis*, Lw.; KIEFFER, p. 4, Miscell. ent. iv.
- Stenodiplosis*, n. g. (Kieff. i. l.), p. 9, for *S. geniculati*, n. sp., Finland, p. 10, pl., figg. 10-22; E. REUTER, Acta Soc. Faun. Fenn. xi, No. 4.
- Trichopterymyia*, n. g., for *T. modesta*, n. sp., St. Vincent; WILLISTON, p. 255, Tr. ent. Soc. London, 1896.
- Winnertzia anomala*, p. 34, *nigripennis*, p. 36, *pictipes*, p. 37, Europe, KIEFFER, Berlin. ent. Zeitschr. 1896, n. spp.

## MYCETOPHILIDÆ.

- Aneura*, n. g., p. 287, for *A. boletinoides*, n. sp., New Zealand, p. 288, pl. x, fig. 5, pl. xiii, figg. 12 & 13; MARSHALL, Tr. N. Zealand Inst. xxviii.
- Anomala*, n. g., p. 293, for *A. minor*, n. sp., New Zealand, p. 295, and *Mycetophila guttata*, Hutton, p. 294, pl. xi, fig. 3; MARSHALL, t. c.
- Aphelomera skusei*, New Zealand, MARSHALL, p. 296, t. c. n. sp.
- Boletina conformis*, Siebke, = (*pseudosciarina*, Strobl); MIK, p. 112, Wien. ent. Zeit. xv.
- Brachydicrania hiemalis*, New Zealand, MARSHALL, Tr. N. Zealand Inst. xxviii, n. sp.
- Brevicornu*, n. g., p. 306, for *B. flava*, p. 307, pl. xii, fig. 4, *fragilis*, p. 308, n. spp., New Zealand; MARSHALL, Tr. N. Zealand Inst. xxviii.
- Ceroplatus longimanus*, St. Vincent, WILLISTON, Tr. ent. Soc. London, 1896; *C. dendyi*, p. 275, pl. ix, fig. 3, *hudsoni*, *leucoceras*, pl. xiii, fig. 3, p. 276, New Zealand; MARSHALL, Tr. N. Zealand Inst. xxviii : n. spp.
- Cycloneura*, n. g., for *C. flava*, n. sp., New Zealand, p. 289, pl. xi, fig. 5; MARSHALL, Tr. N. Zealand Inst. xxviii.
- Cyrtoneura*, n. g., p. 262, for *C. hudsoni*, n. sp., New Zealand, p. 263, pl. x, fig. 4, pl. xiii, figg. 1 & 2; MARSHALL, Tr. N. Zealand Inst. xxviii.
- Eugnoriste*, n. g., p. 321, for *E. occidentalis*, n. sp., New Mexico, p. 322; COQUILLET, P. ent. Soc. Washington, iii.
- Euryceras*, n. g., p. 291, for *E. anaclinoides*, n. sp., New Zealand, p. 292, pl. xi, fig. 1; MARSHALL, Tr. N. Zealand Inst. xxviii.
- Huttonia*, n. g., p. 267, for *Platyura tridens*, Hutton, pl. viii, fig. 2; MARSHALL, Tr. N. Zealand Inst. xxviii.

- Macrocera concinna*, St. Vincent, WILLISTON, p. 255, Tr. ent. Soc. London, 1896; *M. montana*, pl. viii, fig. 3, *howletti*, p. 270, *antennatis*, p. 271, *scoparia*, pl. ix, fig. 1, p. 272, New Zealand; MARSHALL, Tr. N. Zealand Inst. xxviii : n. spp.
- Manota*, n. g., for *M. defecta*, n. sp., St. Vincent; WILLISTON, p. 260, Tr. ent. Soc. London, 1896.
- Mycetophila insipiens*, *dolosa*, *nodulosa*, St. Vincent, WILLISTON, p. 264, Tr. ent. Soc. London, 1896; *M. sylvatica*, p. 301, *howletti*, p. 302, *fagi*, p. 303, *variabilis*, p. 304, pl. xii, fig. 3, *robusta*, p. 305, *maculata*, p. 306, pl. xii, fig. 2, New Zealand; MARSHALL, Tr. N. Zealand Inst. xxviii : n. spp.
- Neoempheria maculipennis*, St. Vincent, WILLISTON, p. 262, Tr. ent. Soc. London, 1896, n. sp.
- Neoglaphyoptera nitens*, *concinna*, St. Vincent, WILLISTON, p. 259, Tr. ent. Soc. London, 1896, n. spp.
- Nervijuncta*, n. g., p. 265, for *N. nigrescens*, n. sp., New Zealand, p. 266, pl. viii, fig. 1; MARSHALL, Tr. N. Zealand Inst. xxviii.
- Paradoxa*, n. g., for *P. fusca*, n. sp., New Zealand, pl. xii, fig. 5; MARSHALL, Tr. N. Zealand Inst. xxviii.
- Parvicellula*, n. g., p. 284, for *P. triangula*, n. sp., New Zealand, p. 285, pl. x, fig. 2, & pl. xiii, figg. 8 & 9; MARSHALL, *t. c.*
- Phthinia fraudulentata*, St. Vincent, WILLISTON, p. 263, Tr. ent. Soc. London, 1896, n. sp.
- Platyura magna*, pl. xiii, figg. 5-7, p. 278, *agricolæ*, p. 279, *flava*, p. 281, New Zealand, MARSHALL, Tr. N. Zealand Inst. xxviii; *P. parva*, *ignobilis*, *pictipennis*, p. 257, *fasciventris*, p. 258, St. Vincent, WILLISTON, Tr. ent. Soc. London, 1896 : n. spp.
- Probolæus*, n. g., for *P. singularis*, n. sp., St. Vincent; WILLISTON, p. 261, Tr. ent. Soc. London, 1896.
- Sackeniella*, n. n. for *Snowia*, Willist.; WILLISTON, p. 270, Tr. ent. Soc. London, 1896.
- Sciara germana*, *concinna*, *debilis*, p. 266, *delectata*, *zygoneura*, p. 267, St. Vincent, WILLISTON, Tr. ent. Soc. London, 1896, n. spp.
- Sciophila diluta*, St. Vincent, WILLISTON, p. 263, Tr. ent. Soc. London, 1896; *S. fagi*, p. 282, pl. x, fig. 1, *S. ? hirta*, p. 283, pl. ix, fig. 5, New Zealand, MARSHALL, Tr. N. Zealand Inst. xxviii : n. spp.
- Tetragoneura nigra*, New Zealand, MARSHALL, p. 286, pl. xiii, figg. 10 & 11, Tr. N. Zealand Inst. xxviii, n. sp.
- Zygomyia flavicoxa*, p. 297, pl. xi, fig. 6, *fusca*, p. 298, New Zealand, MARSHALL, Tr. N. Zealand Inst. xxviii, n. spp.
- Zygoneura sciastica*, St. Vincent, WILLISTON, p. 268, Tr. ent. Soc. London, 1896, n. sp.

## BLEPHAROCERIDÆ, SIMULIIDÆ, BIBIONIDÆ.

- Paltostoma schineri*, St. Vincent, WILLISTON, p. 269, Tr. ent. Soc. London, 1896, n. sp.
- Simulium australiense* in New Zealand; MARSHALL, p. 310, pl. xiv, Tr. N. Zealand Inst. xxviii.
- S. tarsale*, St. Vincent; WILLISTON, p. 268, Tr. ent. Soc. London, 1896, n. sp.
- Dilophus tibialis*, with an antenna on front leg; WHEELER (1237).

## PSYCHODIDÆ.

Supplement to the Synopsis of British *Psychodidæ*; EATON, Ent. Mag. xxxii, pp. 70-76, 127-131, & 202-211. [Not yet completed.]

- Pericoma albitarsis*, St. Vincent, WILLISTON, p. 284, Tr. ent. Soc. London, 1896, n. sp.  
*Psychoda antennalis*, *pallens*, p. 283, *angustipennis*, p. 284, St. Vincent, WILLISTON, Tr. ent. Soc. London, 1896, n. spp.

## CHIRONOMIDÆ, CULICIDÆ.

- Ceratopogon maculithorax*, p. 277, *pygmaeus*, *venustulus*, *punctipennis*, p. 278, *eriphorus*, *propinquus*, p. 279, *flavus*, *longicornis*, *thersites*, p. 280, *lituratus*, *decor*, *phlebotomus*, p. 281, *lotus*, *sequax*, p. 282, St. Vincent, WILLISTON, Tr. ent. Soc. London, 1896, n. spp.  
*Chironomus spilopterus*, p. 273, *anonymus*, *longimanus*, *lugubris*, *inocuus*, p. 274, St. Vincent, WILLISTON, Tr. ent. Soc. London, 1896, n. spp.  
*Orthocladus debilis*, St. Vincent, WILLISTON, p. 275, Tr. ent. Soc. London, 1896, n. sp.  
*Tanypus flaveolus*, p. 275, *indecisus*, p. 276, St. Vincent, WILLISTON, Tr. ent. Soc. London, 1896, n. spp.  
*Aedes pertinans*, *perturbans*, St. Vincent, WILLISTON, p. 271, Tr. ent. Soc. London, 1896, n. spp.  
*Megarhinus rutila*, N. America, COQUILLET, p. 44, Canad. Ent. xxviii, n. sp.  
Continuation of FICALBI'S monograph of European *Culex*, pp. 108-196, Bull. Soc. ent. Ital. xxviii. These pages include list of species, collection of the old descriptions ; structure ; classification.  
*Oulex penicillaris*, sexes described ; FICALBI, pp. 23-28, Bull. Soc. ent. Ital. xxviii.  
*C. pungens*, life-history ; HOWARD, pp. 9-17, Bull. Dep. Agric. Ent. No. 4.  
*C. salinus*, Italy, FICALBI, p. 29, Bull. Soc. ent. Ital. xxviii ; *C. signifer*, *tarsalis*, N. America, COQUILLET, p. 43, Canad. Ent. xxviii : n. spp.  
*Hæmagogus*, n. g., near *Aedes*, p. 271, for *H. splendens*, n. sp., St. Vincent, p. 272, WILLISTON, Tr. ent. Soc. London, 1896.

## DIXIDÆ, TIPULIDÆ, RHYPHIDÆ.

- Atarba puella*, p. 288, *pleuralis*, p. 289, St. Vincent, WILLISTON, Tr. ent. Soc. London, 1896, n. spp.  
*Dapanoptera richmondiana*, Australia, SKUSE, p. 109, Rec. Austral. Mus. ii, n. sp.  
*Diotrepha concinna*, St. Vincent, WILLISTON, p. 291, Tr. ent. Soc. London, 1896, n. sp.  
*Dixa clavulus*, St. Vincent, WILLISTON, p. 298, *t. c.* n. sp.  
*Elephantomyia longirostris*, St. Vincent, WILLISTON, p. 288, *t. c.* n. sp.  
*Elliptera* : form allied to from St. Vincent ; WILLISTON, p. 290, *t. c.*  
*Epiphragma sackeni*, St. Vincent, WILLISTON, p. 294, *t. c.* n. sp.  
*Erioptera annulipes*, St. Vincent, WILLISTON, p. 294, *t. c.* n. sp.  
*Geranomyia pallida*, St. Vincent, WILLISTON, p. 284, *t. c.* n. sp.  
*Limnobia insularis*, St. Vincent, WILLISTON, p. 287, *t. c.* n. sp.  
*Mongoma manca*, *pallida*, St. Vincent, WILLISTON, p. 293, *t. c.* n. spp.  
*Pachyrrhina elegantula*, St. Vincent, WILLISTON, p. 295, *t. c.* n. sp.  
*Polymera albitarsis*, St. Vincent, WILLISTON, p. 296, *t. c.* n. sp.  
*Teucholabis annulata*, St. Vincent, WILLISTON, p. 290, *t. c.* n. sp.  
*Tipula subinfuscata*, St. Vincent, WILLISTON, p. 295, *t. c.* n. sp.  
*Rhipidia bipectinata*, p. 285, *unipectinata*, *costalis*, p. 286, *subpectinata*, p. 287, St. Vincent, WILLISTON, *t. c.* n. spp.  
*Rhyphus dolorosus*, St. Vincent, WILLISTON, p. 298, *t. c.* n. sp.



## STRATIOMYIIDÆ.

- Aochletus bistratus*, St. Vincent, WILLISTON, p. 300, Tr. ent. Soc. London, 1896, n. sp.  
*Chordonota leiophthalma*, St. Vincent, WILLISTON, p. 302, t. c. n. sp.  
*Chrysochroma*, n. n. for *Chrysonotus*; WILLISTON, Manual, p. 47.  
*Cyphomyia lasiophthalma*, St. Vincent, WILLISTON, p. 301, Tr. ent. Soc. London, 1896, n. sp.  
*Ephippium albitarsis*, metamorphoses; FROGGATT, p. 84, pl. ix, figg. 12 & 13, P. Linn. Soc. N. S. Wales, 1895.  
*Exodontha* = (*Acanthomyia*), *E.*, sub *Beris*, *dubia*, Zett., = (*pedemontana*, Rond.); GRIFFINI, Boll. Mus. Torino, xi, No. 245.  
*Neochauna*, n. n. for *Chauna*; WILLISTON, Manual, p. 48.  
*Pelagomyia albitalus*, St. Vincent, WILLISTON, p. 299, Tr. ent. Soc. London, 1896, n. sp.  
*Stratiomyia chamaeleon*, oviposition; MIK, p. 110, Wien. ent. Zeit. xv.  
*S. pyrrhocera*, *erythrocer*a, males described; RÖDER, p. 274, t. c.  
*S. rubricornis*, Italy, BEZZI, p. 217, Wien. ent. Zeit. xv, n. sp.

## TABANIDÆ.

- Pityocera*, n. g., p. 3, near *Pangonia*, for *P. festæ*, n. sp., Darien, p. 4; GIGLIO-TOS, Boll. Mus. Torino, xi, No. 224.  
*Tabanus alcis*, St. Vincent, WILLISTON, p. 302, Tr. ent. Soc. London, 1896, n. sp.

## BOMBYLIIDÆ.

- Anthracides* of Piedmont; GRIFFINI (435).  
*Argyromæba nivea*, n. subsp. *lioyi*; GRIFFINI, p. 38, Ann. Acc. Agric. Torin. xxxix, also Boll. Mus. Torino, No. 225.  
*Coquillettia*, n. n. for *Spogostylum*, Coq.; WILLISTON, Manual, p. 65.  
*Geron gibbosus*, habits; MIK, p. 106, Wien. ent. Zeit. xv.  
*Spongostylum flavipes*, Asia Minor, RÖDER, p. 273, Wien. ent. Zeit. xv, n. sp.

## ACROCERIDÆ.

- Helle*, n. g., for *Acrocera longirostris*, Hudson; OSTEN-SACKEN, p. 16, Ent. Mag. xxxii.  
*Oncodes marginatus*, n. var. *etruscus*; GRIFFINI, p. 4, Boll. Mus. Torino, xi, No. 244.

## ASILIDÆ, MIDASIDÆ.

- Supplementary list of N. American *Asilidæ*; SNOW, pp. 173-190, Kansas quart. iv.  
*Eremomidas*, n. g., *Midasidæ*, for *E. emir*, p. 384, *chan*, p. 385, n. spp., Transcaspian, SEMENOW, Annuaire Mus. St. Petersb. 1896.  
*Leptogaster roederi*, St. Vincent, WILLISTON, p. 305, Tr. ent. Soc. London, 1896, n. sp.  
*Loewiella*, n. n. for *Blacodes*; WILLISTON, Manual, p. 57.  
*Microstylum oberthurii*, Ta-t sien-lu, WULF, p. 241, Notes Leyden Mus. xviii, n. sp.  
*Mydas fruhstorferi*, Java; WULF, p. 98, Tijdschr. Ent. xxxix, n. sp.  
*Pycnopogon fasciculatus*, a mimic of *Dasygoda*; MEUNIER, Feuille Natural. xxvi, p. 121.

## LEPTIDÆ.

- Chrysopila atra*, St. Vincent, WILLISTON, p. 304, Tr. ent. Soc. London, 1896, n. sp.  
*Lampromyia*, species at Tunis, larval habits; MARCHAL, p. 343, Bull. Soc. ent. France, 1896.  
*Spania nigra*, ♀, habits; MIK, pp. 247 & 248, Wien. ent. Zeit. xv.  
*Subulaomyia*, n. n. for *Subula*; WILLISTON, Manual, p. 43.

## EMPIDÆ.

- Revision of N. American *Empidæ*; COQUILLET, P. U. S. Mus. xviii, pp. 387-440.  
*Brachystoma robertsonii*, Illinois, COQUILLET, p. 393, P. U. S. Mus. xviii, n. sp.  
*Drapetis xanthopodus, flavidus*, St. Vincent, WILLISTON, p. 308, Tr. ent. Soc. London, 1896, n. spp.  
*Empis loripedis*, p. 400, *clausa*, p. 401, *comantis, valentis*, p. 402, *humile, ravida*, p. 403, *tenebrosa, tersa*, p. 404, *captus, compta, avida*, p. 405, *levicula, manca*, p. 406, *otiosa*, p. 407, *gulosa, virgata*, p. 408, N. America, COQUILLET, P. U. S. Mus. xviii, n. spp.  
*Epimorpha*, n. g. for *E. comantis*, n. sp., California; COQUILLET, p. 396, t. c.  
*Euhybus*, n. g. for *Hybos subjectus, purpureus, triplex*, Walk.; COQUILLET, p. 437, t. c.  
*Hemerodromia captus*, p. 391, *rogatoris*, p. 392, N. America, COQUILLET, t. c. n. spp.  
*Hilara johnsoni*, Alabama, *cana*, California, *viridis*, Jamaica, COQUILLET, p. 395, t. c. n. spp.  
*Hybos slossonæ*, New Hampshire, COQUILLET, p. 437, t. c. n. sp.  
*Leptopeza compta*, N. America, COQUILLET, p. 435, t. c. n. sp.  
*Mantipeza palloris*, New Hampshire, COQUILLET, p. 392, t. c. n. sp.  
*Meghyperus occidens*, California, COQUILLET, p. 435, t. c. n. sp.  
*Microphorus ravidus*, California, COQUILLET, p. 409, t. c. n. sp.  
*Mythicomyia tibialis*, California, COQUILLET, p. 409, t. c. n. sp.  
*Neocota*, n. g., near *Rhamphomyia*, for *N. weedii*, n. sp., Mississippi; COQUILLET, p. 434, t. c.  
*Neoplasta*, n. g., type *Hemerodromia scapularis*, Loew.; COQUILLET, p. 392, t. c.  
*Platypalpus tersus, incultus*, N. America, COQUILLET, p. 439, t. c. n. spp.  
*Rhamphomyia ravida*, p. 418, *loripedis*, p. 419, *californica, pectoris, colorata*, p. 420, *arcuata*, p. 421, *amplipedis, tersa*, p. 422, *compta, nasoni*, p. 423, *duplicis, bifilata*, p. 424, *avida, otiosa*, p. 425, *setosa, insecta*, p. 426, *effera, manca*, p. 427, *valga, ciliata*, p. 428, *scutellaris, fimbriata*, p. 429, *abditata, virgata*, p. 430, *sudigeronis, amplicella*, p. 431, *stylata, piligeronis*, p. 432, *flexuosa, parva*, p. 433, *gilvipilosa*, p. 434, N. America, COQUILLET, t. c.; *R. scaurissima*, California, WHEELER, Ent. News Philad. vii : n. spp.  
*Syneches debilis*, p. 436, *hyalinus*, p. 437, N. America, COQUILLET, P. U. S. Mus. xviii, n. spp.  
*Tachydromia engadinica*, n. n. for *T. testacea*, Beck; MIK, p. 106, Wien. ent. Zeit. xv.  
*T. schwarzii*, Utah, COQUILLET, p. 440, P. U. S. Mus. xviii, n. sp.

## DOLICHOPODIDÆ.

- Achalcus sordidus*, St. Vincent, ALDRICH, p. 339, Tr. ent. Soc. London, 1896, n. sp.  
*Anepsius linearis*, St. Vincent, ALDRICH, p. 317, t. c. n. sp.

- Asyndetus fratellus*, St. Vincent, ALDRICH, p. 332, Tr. ent. Soc. London, 1896, n. sp.
- Chrysotus excisus*, p. 325, *proximus, flavus*, p. 326, *albipalpus, niger*, p. 327, *hirsutus*, p. 328, *longipalpus, acutus*, p. 329, *inermis, apicalis*, p. 330, St. Vincent, ALDRICH, t. c. n. spp.
- Cœloglutus*, n. g. for *C. concavus*, n. sp., St. Vincent; ALDRICH, p. 338, t. c.
- Diaphorus approximatus, parvulus*, p. 321, *dimidiatus*, p. 322, *contiguus, flavipes*, p. 323, *dubius*, p. 324, St. Vincent, ALDRICH, t. c. n. spp.
- Eutarsus sinuatus*, St. Vincent, ALDRICH, p. 334, t. c. n. sp.
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- Euxesta (Tephritis) pulchra*, Lw., habits; MIK, p. 108, Wien. ent. Zeit. xv.



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- Heteroneura xanthops*, p. 386, *flavipes*, *concinna*, *pleuralis*, p. 387, *valida*, *lumbalis*, p. 388, St. Vincent, WILLISTON, t. c. n. spp.
- Hippelates* (*Siphomyia*, n. subg.) *proboscideus*, p. 418, *dorsatus*, *H. equalis*, p. 419, *scutellaris*, p. 420, St. Vincent, WILLISTON, t. c. n. spp.
- Hyadina humeralis*, Germany, BECKER, p. 195, Berlin. ent. Zeitschr. 1896, n. sp.
- Hydrellia maculiventris*, p. 175, *lamina*, *transsylvania*, p. 184, *argyrogenis*, p. 185, Europe, BECKER, Berlin. ent. Zeitschr. 1896; *H. parva*, *pulchra*, St. Vincent, WILLISTON, p. 399, Tr. ent. Soc. London, 1896: n. spp.
- Hydrina nitida*, p. 400, *nitifrons*, p. 401, St. Vincent, WILLISTON, Tr. ent. Soc. London, 1896, n. spp.
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- L. scutellaris*, *pumila*, *dolorosa*, p. 432, *perparva*, *lugubris*, p. 433, St. Vincent, WILLISTON, Tr. ent. Soc. London, 1896, n. spp.
- Lipochæta*, n. g. (n. subfam. of *Ephydridæ*), p. 220, for *L. slossonæ*, n. sp., Florida; COQUILLET, p. 220, Ent. News Philad. vii.
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- Nerius bistrictus*, St. Vincent, WILLISTON, p. 373, Tr. ent. Soc. London, 1896, n. sp.
- Nothybus biguttatus*, Java, WULP, p. 112, pl. ii, figg. 18 & 19, Tijdschr. Ent. xxxix, n. sp.
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- Ochthera*, the N. American; WHEELER, pp. 121-123, Ent. News Philad. vii.
- O. lauta*, Wisconsin, WHEELER, p. 121, t. c.; *O. cuprilineata*, St. Vincent, WILLISTON, p. 402, Tr. ent. Soc. London, 1896: n. spp.
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- Orellia* (*Tephritis*) *eluta*, habits; MIK, p. 107, Wien. ent. Zeit. xv.
- Oscinis triangularis*, p. 421, *apicalis*, *quadrilineata*, p. 422, *anonyma*, *nana*, p. 423, *concinna*, *mitis*, *incipiens*, p. 424, *fur*, p. 425, St. Vincent, WILLISTON, Tr. ent. Soc. London, 1896, n. spp.
- Paralimna multipunctata*, p. 390, *obscura*, p. 391, St. Vincent, WILLISTON, Tr. ent. Soc. London, 1896, n. spp.
- Parydra nubecula*, p. 212, *undulata*, *quinquemaculata*, p. 213, *obliqua*, p. 215, Europe, BECKER, Berlin. ent. Zeitschr. 1896, n. spp.

- Pelina subpunctata*, Dalmatia, BECKER, p. 198, *t. c. n. sp.*  
*Philotelma*, n. g., p. 163, *Ephydridæ*, for *P. anomala*, n. sp., Silesia, p. 164;  
 BECKER, *t. c. n. sp.*  
*Philygria oblecta*, p. 192, *sexmaculata*, p. 191, Centr. Europe, BECKER,  
*t. c. n. spp.*  
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 1896, n. sp.  
*Phyllomyza magnipalpis*, St. Vincent, WILLISTON, p. 443, *t. c. n. sp.*  
*Physogenua nigra*, St. Vincent, WILLISTON, p. 379, Tr. ent. Soc. London,  
 1896, n. sp.  
*Platophrymyia*, n. g., *Agromyzidæ*, for *P. nigra*, n. sp., St. Vincent ;  
 WILLISTON, p. 426, Tr. ent. Soc. London, 1896.  
*Psilopa nigra, nigropuncta, nigrimana*, p. 393, *desmata*, p. 395, St. Vincent,  
 WILLISTON, Tr. ent. Soc. London, 1896, n. spp.  
*Sapromyza angustipennis, puella*, p. 381, *exul, octovittata*, p. 382, *sordida*  
 (Wied.), p. 383, *venusta*, p. 384, *lineata, sororia, ingrata*, p. 385,  
 St. Vincent, WILLISTON, Tr. ent. Soc. London, 1896, n. spp.  
*Scatophila*, n. g., p. 237, *Ephydridæ*, type *Ephydra caviceps*, Stenh., with  
*S. hamifera*, p. 242, *tetra*, p. 244, *halterata*, p. 245, n. spp., Europe ;  
 BECKER, Berlin. ent. Zeitschr. 1896.  
*Scatella quadrisetosa, pilosigenis*, p. 229, *indistincta*, p. 231, *crassicosta*,  
 p. 234, Europe, BECKER, Berlin. ent. Zeitschr. 1896 ; *S. obscura*,  
 St. Vincent, WILLISTON, p. 403, Tr. ent. Soc. London, 1896 : n. spp.  
*Sepsis cynipsea*, habits ; LABOULBÈNE, p. 111, Bull. Soc. ent. France, 1896.  
*S. insularis*, St. Vincent, WILLISTON, p. 431, Tr. ent. Soc. London, 1896,  
 n. sp.  
*Siphomyia*, n. subg. of *Hippelates*, q.v.  
*Stegana tarsalis*, p. 404, *horæ*, p. 405, St. Vincent, WILLISTON, Tr. ent.  
 Soc. London, 1896, n. spp.  
*Trigonometopus rotundicornis*, St. Vincent, WILLISTON, p. 388, Tr. ent.  
 Soc. London, 1896, n. sp.  
*Trypeta onotrophes*, habits ; MIK, p. 108, Wien. ent. Zeit. xv.  
*T. (Plagiotoma) incompleta*, St. Vincent, WILLISTON, p. 378, Tr. ent. Soc.  
 London, 1896, n. sp.

#### PUPIPARA.

- Brachypteromyia*, n. g., *Hippoboscidæ*, p. 184, for *B. femorata*, n. sp.,  
 Wyoming, p. 185 ; WILLISTON, Ent. News Philad. vii.  
*Megistopoda pilatei* and *Strebla vespertilionis*, parasitic on *Vampyrops*  
*lineatus* ; RÖDER, p. 321, Ent. Nachr. xxii.

#### APHANOPTERA (SIPHONAPTERA).

- [Cf. BAKER (43, 44), MEINERT (777), OSBORN (842).]  
 Account of Danish fleas ; MEINERT (777).  
 Note on *Stephanocircus* and on *Echidnophaga ambulans* ; SKUSE, p. 110,  
 Rec. Austral. Mus. ii.  
*Pulex keeni*, Queen Charlotte Is., BAKER, p. 234, Canad. Ent. xxviii,  
 n. sp.  
*Typhlopsylla mexicana* from *Mus rattus*, Guanajuato ; BAKER, p. 85,  
 Canad. Ent. xxviii ; *T. agyrtes*, Borkum, HELLER, p. 97, Ent. Nachr.  
 xxii, n. spp.

(E.) *RHYNCHOTA*.

Anatomy and Morphology of the mouth ; HEYMONS (504).

Mimicry amongst *Hemiptera* ; BREDDIN (113).

*Hemiptera* of Turkestan ; OSCHANIN (843).

## HEMIPTERA-HETEROPTERA.

[The following memoirs relate to *Hemiptera-Heteroptera*, viz., BERG (65), BERGROTH (66, 67, 69), BIANCHI (78, 79), BREDDIN (112, 113), HORVÁTH (529, 531), JONCK (583), KIMBALL (631), KIRBY (639), J. MARTIN (754), MONTANDON (800-803), NOUALHIER (828), OSCHANIN (843), PUTON (917), O. M. REUTER (968, 969, 970), UHLER (1180).]

Volume iii of the general catalogue of *Hemiptera*, including the families *Tingidæ* to *Anthocoridæ*, by LETHIERRY & SEVERIN (706) has been published in 1896. At its commencement is a list of the new specific names proposed in it.

Higher and lower families of *Heteroptera* ; PATTON, p. 202, Ent. News Philad. vii.

## PENTATOMIDÆ.

*Pentatomides* of Belgium ; JONCK (583).

*Aelia turanica*, Turkestan, HORVÁTH, p. 221, Termes. Fuzetek, xviii, n. sp.

*Apotomogonius maculatus*, Gaboon, MONTANDON, p. 95, Ann. Soc. ent. Belgique, xl, n. sp.

*Brachynema simonyi*, Canary Is., HORVÁTH, p. 323, Termes. Fuzetek, xix, n. sp.

*Brachyplatys translineatus*, Wlk., p. 431, *nigripes*, Stål, p. 432, characters ; MONTANDON, Ann. Soc. ent. Belgique, xl.

*B. obscurus*, New Guinea, p. 428, *laticeps*, Australia, p. 429, MONTANDON, Ann. Soc. ent. Belgique, xl ; *B. cæruleatus*, Woodlark I., MONTANDON, p. 111, Ann. Mus. Genova, xxxvii : n. spp.

*Cantharodes tibialis*, Gaboon, MONTANDON, p. 93, Ann. Soc. ent. Belgique, xl, n. sp.

*Caternaultiella haglundii*, Tropical Africa, MONTANDON, p. 131, *t. c. n. sp.*

*Ceratocoris seeldrayersi*, Congo, MONTANDON, p. 86, *t. c. n. sp.*

*Coptosoma* : notes synonymic, varietal and diagnostic on numerous species ; MONTANDON, pp. 100-131, Ann. Soc. ent. Belgique, xl.

*C. adjunctum*, Madagascar, p. 129, MONTANDON, Ann. Soc. ent. Belgique xl ; *C. depulsum*, Madagascar, p. 103, *punctatissimum*, Japan, p. 105, *pravum*, Tenasserim, p. 106, *viridans*, Poulo Laout, p. 108, *nasutum*, Java, &c., p. 109, *politum*, Philippines, p. 111, *signaticolle*, S. India, p. 112, *bellatulum*, Perak, p. 113, *limbatum*, Tenasserim, p. 115, *pygmaeum*, Ceylon, &c., p. 120, *perplexum*, Java, &c., p. 123, *stali*,

- Gaboon, p. 127, *atriceps*, Zanzibar, p. 128, *puncticeps*, E. Africa, p. 129, *amplexum*, Tonkin, p. 432, *perpunctum*, hab.?, p. 434, *prolaticeps*, China, p. 435, *nigricolor*, Java, p. 437, *noualhieri*, S. India, p. 439, with var. *obscuratum*, p. 441, *distigma*, India, p. 441, *limitatum*, hab.?, p. 444, *schefferi*, Borneo, p. 445, *cardoni*, India, p. 448, MONTANDON, Ann. Soc. ent. Belgique, xl; *C. spurium*, p. 112, *zonatum*, p. 115, *dubiosum*, p. 117, *sumatranum*, p. 118, *vollenhoveni*, *opimum*, p. 123, Sumatra, MONTANDON, Ann. Mus. Genova, xxxvii : n. spp.
- Eurygaster sodalis*, Taschkent, HORVÁTH, p. 221, Termes. Fuzetek, xviii, n. sp.
- Eysarcoris parva*, Japan, UHLER, P. U. S. Mus. xix, p. 258, n. sp.
- Fieberisca*, n. g., p. 98, *Plataspidinae*, for *F. ornata*, n. sp., India, p. 99; MONTANDON, Ann. Soc. ent. Belgique, xl.
- Odontotarsus callosus*, Algeria, HORVÁTH, p. 322, Termes. Fuzetek, xix, n. sp.
- Peribalus vernalis*, n. var. *stramineus*, Taschkent; HORVÁTH, p. 222, Termes. Fuzetek, xviii.
- Plataspis*: notes on numerous species; MONTANDON, pp. 87-92, Ann. Soc. ent. Belgique, xl.
- P. haglundii*, Madagascar, p. 89, *notatipes*, S. Africa, p. 92, MONTANDON, Ann. Soc. ent. Belgique, xl, n. spp.
- Trigonosoma rusticum*, n. var. *advena*, *T. fischeri* = (*confusum*, Kirby); HORVÁTH, p. 231, Rev. Ent. franc. xv.
- T. horvathi*, Syria, PUTON, p. 232, Rev. Ent. franc. xv, n. sp.

## COREIDÆ.

- Carlisis tenuicornis* referred to *Dilycochtha* = (*topiaria*, Karsch); BERGROTH, p. 38, Ent. Nachr. xxii.
- Cercinthus lehmanni*, n. var. *chobauti*; PUTON, p. 233, Rev. Ent. franc. xv.
- Corizus sericeus*, Ural, HORVÁTH, p. 323, Termes. Fuzetek, xix, n. sp.
- Homœocerus marginatus*, Japan, UHLER, p. 260, P. U. S. Mus. xix, n. sp.
- Hoplopterna serrata*, Hagl., referred to *Elasmopoda*; BERGROTH, p. 37, Ent. Nachr. xxii.
- Myrmus longiventris*, Turkestan, HORVÁTH, p. 324, Termes. Fuzetek, xix, n. sp.
- Plinachtus similis*, Japan, UHLER, p. 261, P. U. S. Mus. xix, n. sp.
- Puppeia vatia*, W. Africa, BERGROTH, p. 37, Ent. Nachr. xxii, n. sp.

## LYGÆIDÆ, PYRRHOCORIDÆ.

- Antilochus submaculatus*, Ogové, KIRBY, p. 268, pl. xii, fig. 4, Ann. Nat. Hist. (6) xviii, n. sp.
- Aphanus curruæ*, Turkestan, HORVÁTH, p. 224, Termes. Fuzetek, xviii, n. sp.
- Eremocoris planus*, Japan, UHLER, p. 262, P. U. S. Mus. xix, n. sp.
- Geocoris limbatellus*, Turkestan, HORVÁTH, p. 222, Termes. Fuzetek, xviii, n. sp.
- Ligyrocorus terminalis*, Japan, UHLER, p. 262, P. U. S. Mus. xix, n. sp.
- Pachygrontha similis*, Japan, UHLER, p. 264, P. U. S. Mus. xix, n. sp.
- Peritrechus putoni*, *dissimilis*, Turkestan, HORVÁTH, p. 223, Termes. Fuzetek, xviii, n. spp.
- Thaumastella*, n. g., n. subfam.?, for *T. aradoides*, n. sp., Biskra; HORVÁTH, p. 325, Termes. Fuzetek, xix.

## TINGITIDÆ.

- Derephysia foliacea*, n. var. *biroi*; HORVÁTH, p. 326, Termes. Fuzetek, xix.
- Phyllontochila debile*, Japan, UHLER, p. 265, P. U. S. Mus. xix, n. sp.

## HEBRIDÆ, HYDROMETRIDÆ.

- Chimarrhometra*, n. g. for *Halobates orientalis*, Dist.; BIANCHI, p. 71, *Annuaire Mus. St. Petersb.* 1896.  
*Halobatinae*: table of genera; BIANCHI, p. 70, *t. c.*  
*Halobatopsis*, n. g. for *Halobates platensis*, Berg; BIANCHI, p. 70, *Annuaire Mus. St. Petersb.* 1896.  
*Hebrus syriacus*, Kaiffa, HORVÁTH, p. 326, *Termes. Fuzetek*, xix, n. sp.  
*Heterobates*, n. g., *Gerrinae*, p. 74, for *H. dohrandti*, n. sp., Oxus River, p. 75; BIANCHI, *Annuaire Mus. St. Petersb.* 1896.  
*Limnotrechus elongatus*, Japan, UHLER, p. 273, *P. U. S. Mus.* xix, n. sp.  
*Potamometra*, n. g., *Halobatinae*, p. 72, for *P. berezowskii*, n. sp., Kan-su, p. 73, BIANCHI, *Annuaire Mus. St. Petersb.* 1896.  
*Velia nervosa*, Persia, HORVÁTH, p. 326, *Termes. Fuzetek*, xix, n. sp.

## REDUVIIDÆ.

- Acanthaspis variivenis*, Siam, NOUALHIER, p. 252, *Bull. Mus. Paris*, 1896, n. sp.  
*Acanthodesma*, n. g., *Stenopodidae*, for *A. perarmata*, n. sp., Japan; UHLER, p. 271, *P. U. S. Mus.* xix.  
*Conorhinus sanguisugus*, habits, life-history, cuts; KIMBALL, pp. 128-131, *Tr. Kansas Ac.* xiv.  
*Emesa marcida*, Japan, UHLER, p. 273, *P. U. S. Mus.* xix, n. sp.  
*Harpactor ornatus*, Japan, UHLER, p. 269, *P. U. S. Mus.* xix, n. sp.  
*Margasus impiger*, W. Africa, BERGROTH, p. 385, *Bull. Soc. ent. France*, 1896, n. sp.  
*Metatropiphorus tabidus*, Japan, UHLER, p. 268, *P. U. S. Mus.* xix, n. sp.  
*Nabis potanini*, p. 113, *consobrinus*, p. 115, Se-tschuan, BIANCHI, *Annuaire Mus. St. Petersb.* 1896, n. spp.  
*Oncocephalus fokkeri*, Algeria, HORVÁTH, p. 327, *Termes. Fuzetek*, xix, n. sp.  
*Orthunga bivittata*, Japan, UHLER, p. 272, *P. U. S. Mus.* xix, n. sp.  
*Pasiropsis nigerrima*, Bombay, BERGROTH, p. 9, *Bull. Soc. ent. France*, 1896, n. sp.  
*Procerates*, n. g., near *Harpactor*, for *P. rubida*, n. sp., Japan; UHLER, p. 270, *P. U. S. Mus.* xix.  
*Prostemma margelanum*, Turkestan, HORVÁTH, p. 225, *Termes. Fuzetek*, xviii; *P. siamense*, Siam, NOUALHIER, p. 253, *Bull. Mus. Paris*, 1896: n. spp.  
*Ptilocerus immitis*, Japan, UHLER, p. 269, *P. U. S. Mus.* xix, n. sp.  
*Reduvius personatus*, larval habits; POUJADE, p. 366, *Bull. Soc. ent. France*, 1896.  
*R. disciger*, Turcomania, HORVÁTH, p. 328, *Termes. Fuzetek*, xix, n. sp.

## ANTHOCORIDÆ, SALDIDÆ.

- Acanthia (Salda)*, the palæarctic species; REUTER, *Acta Soc. Sci. Fenn* xxi, No. 2.  
*Anthocoris confusus*, n. var. *funestus*, *amplicollis*, n. var. *xanthopus*; HORVÁTH, p. 329, *Termes. Fuzetek*, xix. *A. sp.*, habits, destroying *Hepialus* larva; THEOBALD, p. 194, *Entomologist*, 1896.  
*Montandoniella moraguesi*, Majorca, PUTON, p. 233, *Rev. Ent. franc.* xv, n. sp.

## CAPSIDÆ.

REUTER'S *Hem. Gymn. Eur.*, Vol. v, deals with this family. N.B. It is impossible to say which of the generic names, if any, in this work are new.

- Calocoris fulvomaculatus*, life-history; THEOBALD (1143): injuring hops; THEOBALD, Ent. Mag. xxxii, p. 61.  
*C. longitarsis*, Algeria, REUTER, p. 168, Hem. Gymn. Eur. v; *C. variabilis*, Japan, UHLER, P. U. S. Mus. xix, n. sp.  
*Dichrooscytus pseudosabinae*, Turkestan, REUTER, p. 120, Hem. Gymn. Eur. v, n. sp.  
*Dicyphus lautus*, Japan, UHLER, p. 267, P. U. S. Mus. xix, n. sp.  
*Grypocoris*: composition of the genus; *feberi* = (*Pycnopterna blanda*, Put.); REUTER, p. 254, Wien. ent. Zeit. xv.  
*G. noualhieri*, Spain, p. 256, *syriacus*, Syria, p. 257, REUTER, t. c. n. spp.  
*Halticus saltator*, food-habits; THOMAS (1148).  
*Lygus saundersi*, Amurland, REUTER, p. 97, Hem. Gymn. Eur. v; *L. simplicus*, Japan, UHLER, p. 266, P. U. S. Mus. xix: n. spp.  
*Periscopus*, n. g. for *P. mundulus*, n. sp., Java; BREDDIN, p. 106, Deutsche ent. Zeitschr. 1896.  
*Phytocoris saundersi*, Algeria, p. 244, *handlirschi*, Austria, p. 245, *algericus*, Algeria, p. 246, *setiger*, Dalmatia, p. 252, *hirtipes*, Algeria, p. 253, *confusus*, Hungary, p. 263, *vittiger*, Spain, p. 293, REUTER, Hem. Gymn. Eur. v, n. spp.  
*Pæciloscytus rubidus*, E. Siberia, p. 57, *dissimilis*, Turkestan, p. 60, REUTER, Hem. Gymn. Eur. v, n. spp.

## HYDROCORISÆ.

- Lamella, supposed to be respiratory in larva of *Belostoma*, MARTIN (754).  
 Fossil *Belostoma*, MEUNIER (786).  
*Appasus severini*, Congo, MONTANDON, p. 520, Ann. Soc. ent. Belgique, xl, n. sp.  
*Belostoma americanum*, p. 510, *obscurum*, p. 512, *annulipes*, p. 514, *niloticum*, p. 516, notes; MONTANDON, Ann. Soc. ent. Belgique, xl.  
*B. uhleri*, N. America, p. 513, *oculatum*, Madagascar, p. 517, MONTANDON, Ann. Soc. ent. Belgique, xl, n. spp.  
*Benacus griseus*, synonymy, &c.; MONTANDON, p. 508, Ann. Soc. ent. Belgique, xl.  
*Cheirochela birmaniensis*, p. 369, *feana*, p. 370, Burma, MONTANDON, Ann. Mus. Genova, xxxvii, n. spp.  
*Corisa substriata*, Japan, UHLER, p. 275, P. U. S. Mus. xix, n. sp.  
*Ctenipocoris*, n. g., p. 373, *Laccocorinæ*, for *C. asiaticus*, n. sp., Birma, p. 374; MONTANDON, Ann. Mus. Genova, xxxvii.  
*Gestroiella*, n. g., *Cheirochelinae*, for *G. limnocoroides*, n. sp., Birma; MONTANDON, p. 371, Ann. Mus. Genova, xxxvii.  
*Heleocoris strabus*, Tenasserim, MONTANDON, p. 372, Ann. Mus. Genova, xxxvii, n. sp.  
*Limnogeton expansum*, Tanganyka, MONTANDON, p. 519, Ann. Soc. ent. Belgique, xl, n. sp.  
*Monomyx serratus*, Birma, MONTANDON, p. 365, Ann. Mus. Genova, xxxvii, n. sp.  
*Notonecta*, oviposition; KIRKALDY, p. xxvii, P. ent. Soc. London, 1896.

## HEMIPTERA-HOMOPTERA.

- [*Cf.* BAKER (42, 45), BERG (65), BUCKTON (118), DISTANT (246, 247), EDWARDS (279), FOWLER (362, 414), FROGGATT (378), HORVÁTH (533), HYATT (552, 553), KIRBY (640), MELICHAR (779-783), NOUALHIER (828), OSCHANIN (843), PUTON (918), THEN (1141), UHLER (1180); also *Aphididæ*, p. 300, *Aleurodidæ*, p. 301, and *Coccidæ*, p. 302].

## CICADIDÆ.

- Attraction of *Cicadas* by rhythmical sounds ; HORVÁTH & ABELLE, Bull. Soc. ent. France, 1896, pp. 170 & 171.
- Senses and voices of African *Cicadæ* ; MARSHALL, pp. 42-48, Entomologist, 1896.
- Habits of some Australian *Cicadidæ* ; FROGGATT, P. Linn. Soc. N. S. Wales, 1895, pp. 526-532.
- Acrilla globosa*, New Guinea, DISTANT, p. 383, Ann. Mus. Genova, xxxvii, n. sp.
- Auta*, n. g., near *Rustia*, for *A. insignis*, n. sp., New Guinea ; DISTANT, Ann. Mus. Genova, xxxvii.
- Beturia rubricata*, *loriæ*, p. 382, *viridicata*, p. 383, New Guinea, DISTANT, Ann. Mus. Genova, xxxvii, n. spp.
- Cicada septendecim*, structure of mouth-parts and ovipositor ; HYATT, Tr. Amer. micr. Soc. xvii, pp. 111-114, and Amer. micr. J. xvii, pp. 45-51 : funnels, &c. ; LINTNER, P. Amer. Ass. xliii, p. 253.
- Cosmopsaltria loriæ*, p. 378, *mimica*, p. 379, *atra*, p. 380, New Guinea, DISTANT, Ann. Mus. Genova, xxxvii, n. spp.
- Dundubia spiculata*, Cambodia, NOUALHIER, p. 254, Bull. Mus. Paris, 1896, n. sp.
- Gæana paviei*, Cambodia, NOUALHIER, p. 254, *t. c.* n. sp.
- Lembeja papuensis*, New Guinea, DISTANT, p. 382, Ann. Mus. Genova, xxxvii, n. sp.
- Melampsalta*, synonymy of the New Zealand species ; KIRBY, pp. 454-459, Tr. New Zealand Inst. xxviii.
- M. radiator*, Japan, UHLER, p. 276, P. U. S. Mus. xix, n. sp.
- Mogammia saucia*, Cambodia, NOUALHIER, p. 254, Bull. Mus. Paris, 1896, n. sp.
- Muda*, n. g., near *Rustia*, for *M. concolor*, n. sp. ; Mentawai I., DISTANT, Ann. Mus. Genova, xxxvii.
- Pacilopsaltria subrufa*, abundant liquid discharged by ; BISCOE, p. 535, J. Bombay Soc. x.
- Pomponia gigantea*, Port Moresby, DISTANT, p. 380, Ann. Mus. Genova, xxxvii, n. sp.
- Platypleura argyrea*, Madagascar, MELICHAR, p. 198, pl. i, Wien. ent. Zeit. xv ; *P. arminops*, Siam, NOUALHIER, p. 253, Bull. Mus. Paris, 1896 : n. spp.

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- Cotyleceps marmorata*, Japan, UHLER, p. 280, P. U. S. Mus. xix, n. sp.
- Cyrene obtusata*, Bangkok, NOUALHIER, p. 258, Bull. Mus. Paris, 1896, n. sp.
- Dicranotropis vastatrix*, Java, BREDDIN, p. 107, Deutsche ent. Zeitschr. 1896, n. sp.
- Diostrombus*, n. g., p. 283, *Derbida*, for *D. politus*, n. sp., Japan, UHLER, P. U. S. Mus. xix.
- Eumetopina*, n. g. *Delphacinorum*, for *E. krügeri*, n. sp., Java, BREDDIN, Deutsche ent. Zeitschr. 1896.
- Eurysa brunnea*, Austria, MELICHAR, Cicadinen, p. 68, n. sp.
- Flata nigrocincta*, dimorphism, curious habits ; GREGORY (428), p. 273, and frontispiece.

- Fulgora monetaria*, Cambodia, NOUALHIER, p. 255, Bull. Mus. Paris, 1896, n. sp.  
*Hemisphærius interclusus*, Cambodia, NOUALHIER, p. 256, *t. c.* n. sp.  
*Leptocentrus subflavus*, Cambodia, NOUALHIER, p. 256, Bull. Mus. Paris, 1896, n. sp.  
*Myndus apicalis*, Japan, UHLER, p. 281, P. U. S. Mus. xix, n. sp.  
*Necethus semivitrus*, California, FOWLER, p. 107, Ent. Mag. xxxii, n. sp.  
*Oliarus cucullatus, petasatus*, Cambodia, NOUALHIER, p. 255, Bull. Mus. Paris, 1896, n. spp.  
*Ommatidiotus longiceps*, Spain, PUTON, p. 265, Rev. Ent. franc. xv, n. sp.  
*Orthophagus*, n. g., p. 278, near *Dictyophara*, for *O. lunulifer*, n. sp., Japan, p. 279; UHLER, P. U. S. Mus. xix.  
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*Ricania albomaculata*, Japan, UHLER, p. 277, P. U. S. Mus. xix;  
*R. flabellum*, Cambodia, NOUALHIER, p. 256, Bull. Mus. Paris, 1896: n. spp.  
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 [*Clastoptera osborni*, Colorado, GILLETTE & BAKER, p. 70, Bull. Colorado exp. Stat. xxxi in "Corrigenda," last year, n. sp.]  
*Cosmoscarta undata*, n. var. *obscurata*; NOUALHIER, p. 257, Bull. Mus. Paris, 1896.  
*C. carens*, Theng, NOUALHIER, *l. c.* n. sp.  
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*Monephora assimilis*, Japan, UHLER, p. 285, P. U. S. Mus. xix, n. sp.  
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*T. distincta*, Asia Minor, MELICHAR, p. 177, *t. c.* n. sp.

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- C. virescens*, pl. ix, fig. 1, *distinguendus*, p. 141, *vittatipennis*, *inequalis*, fig. 2, p. 142, Central America, FOWLER, *t. c.* n. spp.
- Endoiastus*, n. g., *Centrotinæ*, for *E. caviceps*, pl. x, fig. 16, n. sp., Central America; FOWLER, *t. c.* p. 168.
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- Machærotypus sellatus*, Japan, UHLER, p. 284, P. U. S. Mus. xix, n. sp.
- Metheisa*, n. g., near *Entylia*, for *M. lucillodes*, n. sp., Panama, pl. viii, fig. 13, p. 132; FOWLER, Biol. Centr.-Amer. Rhynch. Homop. ii.
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- Ophiderma mus*, Guatemala, FOWLER, p. 143, pl. ix, fig. 3, *t. c.* n. sp.
- Orthobelus flavipes*, Japan, UHLER, p. 284, P. U. S. Mus. xix, n. sp.
- Phaulocentrus*, n. g., *Centrotinæ*, for *P. pileatus*, pl. x, fig. 1, p. 159, *proximus*, fig. 2, *sordidus*, fig. 13, *cornutus*, fig. 4, p. 160, n. spp., Central America; FOWLER, Biol. Centr.-Amer. Rhynch. Homop. ii.
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- Acrobelus delphinus*, Theng, NOUALHIER, p. 258, Bull. Mus. Paris, 1896, n. sp.
- Agallia minuta*, Herzegowina, MELICHAR, p. 176, Verh. Ges. Wien, xlvi, n. sp.
- A. bigeloviae*, New Mexico, BAKER, p. 26, Psyche, vii, Supp., n. spp.
- Athysanus filaretanus*, amplified description; BERG, p. 135, An. Mus. Buenos Aires, v.
- A. acuminatus*, New Mexico, BAKER, p. 25, Psyche, vii, Supp., n. sp.

- Callitettix carinifrons*, Siam, NOUALHIER, p. 257, Bull. Mus. Paris, 1896, n. sp.
- Cicadula sexnotata* injurious to crops in France; MARCHAL, p. 259, Bull. Soc. ent. France, 1896.
- Deltocephalus chloroticus*, p. 233, *notatus*, p. 234, Central Europe, MELICHAR, Cicadinen; *D. neglectus*, p. 173, *alpinus*, p. 175, *bisubulatus*, p. 178, *bispinatus*, p. 180, *bicorniger*, p. 183, *hamatus*, p. 184, *laciniatus*, p. 189, E. Europe, THEN, Mt. Ver. Steiermark, 1895 : n. spp.
- Ectomops rubescens*, Siam, NOUALHIER, p. 259, Bull. Mus. Paris, 1896, n. sp.
- Euacanthus angustatus*, Japan, UHLER, p. 293, P. U. S. Mus. xix, n. sp.
- Eupteryx lombardi*, Hautes Alpes, MELICHAR, p. 287, Rev. Ent. franc. xv; *E. contaminata*, Dalmatia, MELICHAR, p. 331, Cicadinen : n. spp.
- Eutettix pulchella*, New Mexico, BAKER, p. 24, Psyche, vii, Supp., n. sp.
- Fieberella pallida*, Smyrna, MELICHAR, p. 179, Verh. Ges. Wien, xlvi, n. sp.
- Gnathodus* : the N. American species and varieties; BAKER, Canad. Ent. xxviii, pp. 35-42.
- G. occidentalis*, p. 41, *livingstonii*, p. 42, N. America, BAKER, *t. c.* n. spp.
- Hecalus platalea*, Siam, NOUALHIER, p. 259, Bull. Mus. Paris, 1896, n. sp.
- Idiocerus maculatus*, p. 156, *frontalis*, p. 160, Centr. Europe, MELICHAR, Cicadinen; *I. bicolor*, Smyrna, MELICHAR, p. 205, Wien. ent. Zeit. xv : n. spp.
- Kybos smaragdulus*, n. var. *rufescens*; MELICHAR, p. 180, Verh. Ges. Wien, xlvi.
- Pachyopsis mundus*, Japan, UHLER, p. 292, P. U. S. Mus. xix, n. sp.
- Parabolocratus guttatus*, Japan, UHLER, p. 291, P. U. S. Mus. xix, n. sp.
- Petaloccephala discolor*, Japan, UHLER, p. 290, P. U. S. Mus. xix, n. sp.
- Selenocephalus abbreviatus*, Greece, MELICHAR, p. 178, Verh. Ges. Wien, xlvi; *S. vittatipes*, *cinctipes*, Japan, UHLER, p. 292, P. U. S. Mus. xix : n. spp.
- Tettigonia guttigera*, Japan, UHLER, p. 294, P. U. S. Mus. xix, n. sp.
- Thamnotettix horvathi*, Triest, THEN, p. 193, Mt. Ver. Steiermark, 1895; *T. morbillosus*, Centr. Europe, MELICHAR, p. 293, Cicadinen; *T. sellata*, Japan, UHLER, p. 294, P. U. S. Mus. xix; *T. tenella*, New Mexico, BAKER, p. 24, Psyche, vii, Supp. : n. spp.
- Zygina bipunctata*, Greece, MELICHAR, p. 288, Rev. Ent. franc. xv; *Z. umbrata*, p. 358, *picta*, p. 359, Centr. Europe, MELICHAR, Cicadinen : n. spp.

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- Anomoneura*, n. g., p. 295, near *Psylla*, for *A. mori*, n. sp., Japan, p. 296, SCHWARZ, P. U. S. Mus. xix.
- Psylla pyricola*, habits, life-history; SLINGERLAND (1094).

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- [Cf. CHOLODKOVSKY (170-174), ERIKSSON (298), FRANCESCHINI (367), HENRICH (491), HORVÁTH (532), LIGNIÈRES (715), MOKRZECKY (798), MORDWILKO (807), WEED (1229).]
- Classification of *Phytophthires*, phylogeny; REEKER, p. 27, Jahresber. Westfal. Ver. xxiii.
- Extended paper on habits of *Aphididæ* and *Pemphigidæ*; MORDWILKO (807).
- Summary of Mordwilko's paper (1895) on anatomy of *Trama* and *Lachnus*; ADELUNG, pp. 72-75, Zool. Centralbl. iv.
- Hibernation of plant-lice; ERIKSSON (298). Hibernation of *Aphides* in N. America; WEED, pp. 351-362, Psyche, vii.

- Natural history of *Aphididæ* of the elm ; CHOLODKOVSKY, pp. 509-513, Zool. Anz. xix.
- Chermes*: monograph of forms living on conifers ; CHOLODKOVSKY (174). *C. viridis* and *abietis*, life-cycles described ; CHOLODKOVSKY, pp. 37-40, Zool. Anz. xix. *C. abietis*, Kalt., habits ; CHOLODKOVSKY, p. 513, *t. c.*
- C. viridanus*, N. Europe, CHOLODKOVSKY, p. 39, Zool. Anz. xix, n. sp.
- Cladobius* sp., Siebenburgen, described ; HENRICH, p. 31, Verh. Siebenb. Ver. xlv.
- Geoica squamosa*, Forbes, queried as identical with *Tetraneura setariæ*, Pass. ; HORVÁTH, p. 4, Wien. ent. Zeit. xv.
- Lachmus hyalinus*, *piceicola*, life-cycles ; CHOLODKOVSKY, pp. 145-150, Zool. Anz. 1896. *L. piceicola*, habits, n. var. *viridescens*, CHOLODKOVSKY, p. 508, *op. cit.* xix. *L. pineti* = (*Schizoneura fuliginosa*, Buckt.) ; CHOLODKOVSKY, p. 257, *t. c.*
- Myzoxylus*, Blot. = (*Schizoneura*), but more than one genus is included in the latter ; HORVÁTH, pp. 1 & 2, Wien. ent. Zeit. xv.
- Pentaphis*, n. g., for *Forda marginata*, Koch, and *Tychea trivialis*, Pass. ; HORVÁTH, p. 2, Wien. ent. Zeit. xv.
- Phlæomyzus*, n. g., for *Loewia passerinii* ; HORVÁTH, p. 6, *t. c.*
- Phylloxera vastatrix*, winged form ; FRANCESCHINI (367).
- Rhizoctonus*, n. g., near *Pemphigus*, for *R. ampelinus*, n. sp., Crimea ; MOKRZECKY, p. 438, Horæ Soc. ent. Ross. xxx.
- Schizoneura* = (*Mindarus*, Koch) ; CHOLODKOVSKY, p. 258, Zool. Anz. xix. *S. lanigera*, habits, life-histories of the various forms ; LIGNIÈRES, pp. 70-86, pls. i & ii, Mem. Soc. zool. France, ix. *S. ulmi* and *fodiens*, relations ; CHOLODKOVSKY, p. 510, Zool. Anz. xix.
- S. obliqua*, Narwa, CHOLODKOVSKY, p. 259, Zool. Anz. xix, n. sp.
- Siphonophora* sp., Siebenburgen, description ; HENRICH, p. 30, Verh. Siebenb. Ver. xlv.
- Tetraphis*, n. g. for *T. betulina*, n. sp., Europe, in galls on leaves of *Betula pubescens*, HORVÁTH, p. 6, Wien. ent. Zeit. xv.
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## ALEURODIDÆ.

[*Cf.* COCKERELL (185, 201), MASKELL (760).]

Preliminary monograph, with bibliography, &c. ; MASKELL, Tr. N. Zealand Inst. xxviii, pp. 411-449, pls. xxiv-xxxv.

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*A. berbericola*, New Mexico, COCKERELL, p. 207, J. N. York Ent. Soc. iv ; *A. banksiæ*, p. 423, pl. xxv, fig. 1, Australia, *barodensis*, E. India, p. 424, fig. 2, *cerata*, New Zealand, p. 425, pl. xxvi, fig. 1, *comata*, Fiji, p. 426, fig. 2, *cotesii*, E. India, p. 427, pl. xxvii, fig. 1, *croceata*, fig. 2, *decipiens*, p. 428, pl. xxviii, fig. 1, Australia, *erigerontis*, p. 429, fig. 2, Mexico, *eugeniæ*, p. 430, pl. xxix, fig. 1, with var. *aurantii*, fig. 2, p. 431, India, *floccosa*, Jamaica, p. 432, pl. xxx, fig. 1, *fodiens*, New Zealand, p. 433, fig. 2, *hirsuta*, Australia, p. 434, pl. xxxi, fig. 1, *holmesii*, Fiji, p. 435, fig. 2, *limbata*, Australia, pl. xxxii, fig. 1, *nicotianæ*, Mexico, fig. 2, p. 436, *niger*, Australia, p. 437, pl. xxxiii, fig. 1, *piperis*, Ceylon, p. 438, fig. 2, *pulvinata*, Trinidad, p. 439, pl. xxxiv, fig. 1, *stellata*, Jamaica, fig. 2, *stypheleiæ*, pl. xxxv, fig. 1, p. 442, *T-signata*, p. 443, fig. 2, Australia, MASKELL, *t. c.* : n. spp.

*Aleurodicus dugesii*, Guanajuato ; COCKERELL, p. 302, Canad. Ent. xxviii, n. sp.

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- [*Cf.* BERLESE (70), BERLESE & LEONARDI (71), COCKERELL (185, 202-213), CRAW (224, 225), FULLER (389, 390), GREEN (421-426), HOWARD (540), HOWARD & MARIATT (544), JOHNSON (579), LATASTE (696), MASKELL (761, 762, 763), MAYET (769), NEWSTEAD (820), SAJÓ (1014), SLINGERLAND (1094), J. B. SMITH (1107, 1108), STONE (1130), TOWNSEND (1155).]
- Catalogue of *Coccidæ*; COCKERELL (202).
- Anatomy and development of numerous *Coccidæ*; BERLESE (70).
- Peculiar articulation in ♂ antennæ; MASKELL, p. 224, Ent. Mag. xxxii.
- Abdominal glands in the *Diaspinæ*; GREEN, Ent. Mag. xxxii, p. 85.
- Synopsis of larval characters; MASKELL, p. 382, Tr. N. Zealand Inst. xxviii.
- Growth of wings in ♂ pupa; GREEN, p. lv, P. ent. Soc. London, 1896.
- The *Coccidæ* of Ceylon, with glossary, instructions for collection and preservation, classification, &c.; GREEN (421). This work also contains fuller descriptions and figures of the species diagnosed in Indian Mus. Notes, iv, pp. 2-10 (422).
- Scale insects and their enemies in California; SMITH, Bull. Dep. Agric. Ent. vi, pp. 46-48.
- Scale insects imported to California; CRAW (224, 225).
- Brachyscelid galls; FULLER (389, 390).
- Aonidia corniger*, Ceylon, GREEN, p. 5, Indian Mus. Notes, iv; *A. bullata*, p. 54, pl. xviii, *loranthi*, p. 56, pl. xix, figg. 1-5, *obscura*, p. 57, figg. 6-9, Ceylon, GREEN, *Coccidæ*: n. spp.
- Aspidiotus*: aonidiform stage in; GREEN, p. 84, Ent. Mag. xxxii. *A. perniciosus* and *Aonidia*, characters, distinctions queried; MASKELL, p. 33, t. c. *A. perniciosus* and *Aonidia fusca*, distinctions; MASKELL, pp. 13-16, Canad. Ent. xxviii. *A. perniciosus* and its enemies in N. America; SMITH (1107). *A. cladii*, food-plants, *A. eucalypti*, n. var. *comatus*, p. 385, *perniciosus*, notes, p. 386; MASKELL, Tr. N. Zealand Inst. xxviii.
- A. maculatus*, W. Africa, NEWSTEAD, p. 133, Ent. Mag. xxxii; *A. secretus*, p. 51, *duplex*, p. 52, Japan, COCKERELL, Bull. Dep. Agric. ent. Tech. iv; *A. albopunctatus*, Japan, COCKERELL, p. 43, t. c.; *A. moorei*, p. 199, *artocarpi*, p. 200, E. India, GREEN, Ent. Mag. xxxii; *A. osbeckiæ*, *occultus*, *trilobitiformis*, Ceylon, GREEN, p. 4, Indian Mus. Notes, iv; *A. excisus*, p. 39, pl. x, figg. 7-9, *putearius*, p. 40, pl. x, figg. 1-6, *inusitatus*, p. 49, pl. xvi, Ceylon, GREEN, *Coccidæ*; *A. hukeæ*, p. 383, pl. xviii, figg. 1-6, *virescens*, p. 384, figg. 7-10, Australia, MASKELL, Tr. N. Zealand Inst. xxviii; *A. forbesi*, p. 380, pl. xxix, figg. 1-5, *comstocki*, p. 383, pl. xxx, Illinois, *æsculi*, p. 386, pl. xxxi, fig. 3, pl. xxxii, figg. 1-3, California, *ulmi*, p. 388, pl. xxxii, figg. 4 & 5, Illinois, JOHNSON, Bull. Illinois Lab. iv; *A. nigropunctatus*, p. 31, *townsendi*, *yuccæ*, p. 32, Mexico, COCKERELL, Bull. Dep. Agric. ent. Tech. iv; *A. townsendi*, *nigropunctatus*, *yuccæ*, Mexico, *duplex*, *secretus*, *albopunctatus*, Japan, COCKERELL, p. 20, Psyche, vii, Supp.: n. spp.
- Aulacaspis texensis*, San Antonio, COCKERELL, p. 83, Canad. Ent. xxviii; *A. montanus*, Piños Altos, COCKERELL, p. 226, t. c.: n. spp.
- Brachyscelis pedunculata*, p. 212, pl. i, *crispa*, p. 213, pl. ii, *nux*, p. 214, pl. iii, *shraderi*, p. 214, pl. i, *fletcheri*, p. 215, pl. iv, Australia, FULLER, Agric. Gaz. N.S.W. vii, n. spp.
- Ceroplastes irregularis*, n. var. *rubidus*; COCKERELL, p. 203, J. N. York Ent. Soc. iv.
- C. actiniformis*, Ceylon, GREEN, p. 8, Indian Mus. Notes, iv; *C. euphorbia*, Jamaica, COCKERELL, p. 17, Psyche, vii, Supp.; *C. mexicanus*, Mexico, COCKERELL, p. 20, t. c., and p. 34, Bull. Dep. Agric. ent. Tech. iv: n. spp.

- Chionaspis aspidistræ*, n. var. *mussandæ*; *eugeniæ*, n. var. *varicosa*, *litzeæ*; GREEN, Indian Mus. Notes, iv, p. 2. *C. aspidistræ*, *brasiliensis*, distinctions; MASKELL, Ent. Mag. xxxii, p. 223. *C. aspidistræ*, habits; NEWSTEAD, p. 60, t. c. *C. prunicola*, n. var. *theæ*, p. 389, *spartineæ*, n. var. *natalensis*, p. 390; MASKELL, Tr. N. Zealand Inst. xxviii. *C. eugeniæ*, habits; FROGGATT, p. 87, P. Linn. Soc. N. S. Wales, 1895. *C. fraxini*, &c., notes; GILLANDERS, pp. 29-41, Tr. Manchester Micr. Soc. 1895.
- C. vitis*, *graminis*, *minuta*, *acuminata*, *elæagni*, *exercitata*, Ceylon, GREEN, p. 3, Indian Mus. Notes, iv; *C. difficilis*, *latus*, *bambusæ*, Japan, COCKERELL, p. 21, Psyche, vii, Supp.; *C. latus*, p. 53, *bambusæ*, p. 54, COCKERELL, Bull. Dep. Agric. ent. Tech. iv; *C. chinensis* on *Quercus* from China, COCKERELL, p. 37, Rep. Board Horticult. California, v; *C. difficilis*, Japan, COCKERELL, p. 42, Bull. Dep. Agric. ent. Tech. iv; *C. americana*, Illinois, JOHNSON, p. 390, pls. xxxiii & xxxiv, Bull. Illinois Lab. iv : n. spp.
- Coccus cacti*, n. var. *ceylonicus*; GREEN, p. 7, Indian Mus. Notes, iv. *C. cacti* and subsp. *confusus*, note; COCKERELL, p. 34, Bull. Dep. Agric. ent. Tech. iv.
- Comstockiella*, n. g. (not defined) for *Aspidiotus sabalis*, Comst.; COCKERELL, pp. 320 & 335, Bull. Illinois Lab. iv.
- Conchaspis angræci*, n. var. *hibisci*; COCKERELL, p. 36, Bull. Dep. Agric. ent. Tech. iv, and p. 19, Psyche, vii, Supp.
- C. socialis*, Ceylon, GREEN, Coccidæ, p. 15, pls. iii & iiiia, n. sp.
- Cryptokermitidæ*: enigmatic form from Australia; MASKELL, p. 394, pl. xx, figg. 9-17, Tr. N. Zealand Inst.
- Dactylopius vitis*, habits in Chili; LATASTE, pp. 78-83, Act. Soc. Chili, vi.
- D. talini*, p. 7, *scrobicularum*, p. 8, Ceylon, GREEN, Indian Mus. Notes, iv; *D. dasyliirii*, p. 202, *gutierrezia*, p. 203, New Mexico, COCKERELL, J. N. York Ent. Soc. iv; *D. prosopides*, New Mexico, COCKERELL, p. 224, Canad. Ent. xxviii; *D. olivaceus*, Mexico, COCKERELL, p. 18, Psyche, vii, Supp., and p. 36, Bull. Dep. Agric. ent. Tech. iv : n. spp.
- Diaspis circulata*, Ceylon, GREEN, p. 4, Indian Mus. Notes, iv; *D. fagrææ*, Ceylon, GREEN, p. 70, pl. xxv, Coccidæ : n. spp.
- Eriococcus dubius*, Mexico, COCKERELL, p. 18, Psyche, vii, Supp., and p. 37, Bull. Dep. Agric. ent. Tech. iv; *E. spiniger*, New Zealand, MASKELL, p. 398, Tr. N. Zealand Inst. xxviii : n. spp.
- Fiorinia sapsomæ*, *secretæ*, *scrobicularum*, *palmæ*, Ceylon, GREEN, p. 5, Indian Mus. Notes, iv; *F. similis*, Ceylon, p. 77, pl. xxviii, GREEN, Coccidæ : n. spp.
- Icerya ægyptiaca*, habitats; NEWSTEAD, p. 60, Ent. Mag. xxxii. *I. rosæ*, var. *australis*, ♂, &c.; MASKELL, p. 406, pl. xxiii, figg. 7-11, Tr. N. Zealand Inst. xxviii; *I. ewarti*, W. Africa, NEWSTEAD, p. 132, Ent. Mag. xxxii; *I. tangalla*, *crocca*, *pilosa*, Ceylon, GREEN, p. 7, Indian Mus. Notes, iv; *I. nudata*, Australia, MASKELL, p. 405, pl. xxiii, figg. 1-6, Tr. N. Zealand Inst. xxviii; *I. (Crypticerya) townsendi*, New Mexico, COCKERELL, p. 201, J. N. York Ent. Soc. iv : n. spp.
- Lachnodius*, n. g. for *Dactylopius eucalypti*, and *L. lectularius*, pl. xxi, figg. 12-19, p. 400, *hirtus*, p. 402, pl. xxii, figg. 1-9, n. spp., Australia; MASKELL, Tr. N. Zealand Inst. xxviii.
- Lecaniodiaspis (Prosopophora) quercus*, Japan, *celtidis*, Texas, COCKERELL, p. 19, Psyche, vii, Supp., and p. 51, Bull. Dep. Agric. ent. Tech. iv, n. spp.
- Lecanopsis brevicornis*, England and Wales, NEWSTEAD, p. 59, Ent. Mag. xxxii, n. sp.
- Lecanium*: development of scale in female; DOUGLAS, p. 182, Ent. Mag. clxxxii. *L. juglandis*?, notes on; SLINGERLAND (1094). *L. bituber-*

- culatum*, ♂ ♀ stages; NEWSTEAD, p. 58, Ent. Mag. xxxii. *L. scrobiculatum*, variation, with n. var. *leve*; MASKELL, pp. 391 & 392, Tr. N. Zealand Inst. xxviii. *L. robiniarum*, in Hungary; SAJÓ, Forstl. Zeitschr. Munchen, v, pp. 81–89.
- L. planum*, with var. *maritimum*, *geometricum*, *marginatum*, *expansum*, p. 9, *antidesmæ*, *caudatum*, *acutissimum*, *piperis*, *ophiorrhizæ*, *formicarii*, Ceylon, GREEN, Indian Mus. Notes, iv; *L. imbricatum*, Mexico, *nanum*, Trinidad, COCKERELL, p. 19, Psyche, vii, Supp.; *L. imbricatum*, Mexico, COCKERELL, p. 38, Bull. Dep. Agric. ent. Tech. iv: n. spp.
- Margarodes vitium*, note; HOWARD, p. 33, P. ent. Soc. Washington, iv: habits; LATASTE, pp. 93–105, Act. Soc. Chili, vi: extension of area, encysted condition; MAYET, p. 51, Bull. Soc. ent. France, 1896.
- Monophlebus zeylanicus*, Ceylon, GREEN, p. 6, Indian Mus. Notes, iv, n. sp.
- Mytilaspis gloveri* and *citricola*, habits and distribution; HUBBARD, p. 319, P. ent. Soc. Washington, iii. *M. citricolor*, note and plate; FULLER, p. 160, Agric. Gaz. N.S.W. vii. *M. pallens*, n. var. *Alba*; MASKELL, p. 388, Tr. N. Zealand Inst. xxviii.
- M. elongata*, p. 4, *pallida*, p. 5, Ceylon, GREEN, Indian Mus. Notes, iv; *M. cocculi*, Ceylon, GREEN, p. 61, pl. xxi, Coccidæ; *M. acaciæ*, p. 387, pl. xix, figg. 1 & 2, *banksiæ*, figg. 3–5, p. 388, *melaleucæ*, fig. 6, p. 389, Australia, MASKELL, Tr. N. Zealand Inst. xxviii; *M. carinatus*, Central America [Acapulco], *crawii*, Japan, COCKERELL, p. 21, Psyche, vii, Supp.; *M. crawii*, p. 44, *carinatus*, p. 45, Japan, COCKERELL, Bull. Dep. Agric. ent. Tech. iv: n. spp.
- Olliffiella*, n. g., *Idiococcinæ*, for *N. cristicola*, New Mexico, n. sp.; COCKERELL, p. 300, Science, iv.
- Orthezia sonorensis*, Mexico, COCKERELL, p. 38, Bull. Dep. Agric. ent. Tech. iv, n. sp.
- Parlatoria victrix*, Arizona (introduced from Egypt), COCKERELL, p. 52, Entomologist, 1896; *P. distinctissima*, Baluchistan, NEWSTEAD, p. 133, Ent. Mag. xxxii: *P. theæ*, Japan, COCKERELL, p. 55, Bull. Dep. Agric. ent. Tech. iv; *P. theæ*, *viridis* (an *theæ* var. ?), Japan, COCKERELL, p. 21, Psyche, vii, Supp.; *P. theæ*, n. var. *viridis*, COCKERELL, p. 43, Bull. Dep. Agric. ent. Tech. iv: n. spp.
- Phenacoccus yuccæ*, n. var. *barberi*; COCKERELL, p. 39, Bull. Dep. Agric. ent. Tech. iv.
- Phenacoccus pergandei*, Japan, COCKERELL, p. 18, Psyche, vii, Supp.; *P. pergandei*, Japan, COCKERELL, p. 55, Bull. Dep. Agric. ent. Tech. iv: n. spp.
- Planchonia quercicola*, abundance in New Zealand; MASKELL, p. 396, Tr. N. Zealand Inst. xxviii. *P. miliaria*, n. var. *longa*; GREEN, p. 5, Indian Mus. Notes, iv.
- P. delicata*, p. 5, *solenophoroides*, p. 6, Ceylon, GREEN, Indian Mus. Notes, iv, n. spp.
- Poliaspis exocarpi*, spinnerets; MASKELL, Tr. N. Zealand Inst. xxviii.
- Prosopophora atherospermæ*, Australia, MASKELL, p. 395, pl. xxi, figg. 1–8, Tr. N. Zealand Inst. xxviii, n. sp.
- Pseudococcus mangiferæ*, Ceylon, GREEN, p. 7, Indian Mus. Notes, iv, n. sp.
- Pseudolecanium*, n. subg., vide *Sphaerococcus*.
- Pulvinaria tessellata*, *tomentosa*, Ceylon, GREEN, p. 8, Indian Mus. Notes, iv; *P. (Takahashia*, n. subg.) *japonica*, p. 47, *aurantii*, p. 48, Tokio, COCKERELL, Bull. Dep. Agric. ent. Tech. iv; *P. thompsoni*, Tasmania, MASKELL, p. 393, pl. xx, figg. 1–8, Tr. N. Zealand Inst. xxviii; *P. aurantii*, Japan, *broadwayi*, Grenada, p. 19, *P. (Takahashia*, n. subg.) *japonica*, Japan, p. 20, COCKERELL, Psyche, vii, Supp.; *P. amygdali*, Pinos Altos, COCKERELL, p. 225, Canad. Ent. xxviii; *P. broadwayi*, Grenada, COCKERELL, p. 306, J. Trinidad Club, ii: n. spp.

- Rhizococcus? devoniensis*, England; GREEN, p. 260, pl. iii, Ent. Rec. viii.  
*Ripersia fraxini*, ♂ and pupa described; NEWSTEAD, Ent. Mag. xxxii, p. 57.  
*R. kingii*, p. 222, *lasii*, p. 223, *flaveola*, p. 224, Massachusetts, COCKERELL, Canad. Ent. xxviii, n. spp.  
*Sphærococcus inflatipes*, n. var. *simplicior*; MASKELL, p. 403, Tr. N. Zealand Inst. xxviii.  
*S. obscuratus*, Australia, MASKELL, p. 403, pl. xxii, figg. 10-17, Tr. N. Zealand Inst. xxviii; *S.* (n. subg. *Pseudolecanium*), for *S. tokionis*, n. sp., Japan, COCKERELL, p. 19, Psyche, vii, Supp.; *S.* (*Pseudolecanium*, n. subg.) *tokionis*, Japan, COCKERELL, p. 49, Bull. Dep. Agric. ent. Tech. iv : n. spp.  
*Takahashia*, n. subg., vide *Pulvinaria*.  
*Walkeriana compacta*, *euphorbiæ*, *poleii*, *senex*, Ceylon, GREEN, Indian Mus. Notes, iv, p. 6, n. spp.

## ANOPLURA.

[Cf. MEINERT (776), OSBORN (842).]

- Lice occurring on domestic and other animals; OSBORN, Bull. Dep. Agric. Ent., No. 5.  
*Echinophthirius sericans*, Greenland, MEINERT, p. 177, Vid. Medd. 1896, n. sp.  
*Euhæmatopinus*, n. g., p. 186, for *E. abnormis*, n. sp., on *Scalops argentatus*, N. America, p. 187; OSBORN, Bull. Dep. Agric. Ent., No. 5.  
*Hæmatopinus pedalis* on sheep, p. 170, *montanus* on grey squirrel, p. 184, *erraticus* from *Larus bonapartii*, N. America, OSBORN, Bull. Dep. Agric. Ent., No. 5, n. spp.

(F.) *NEUROPTERA.*

TRICHOPTERA.

- [*Cf.* GILSON (409), HENSEVAL (492), HOFMANN (506), MEINERT (776), MORTON (813, 814).]  
 On resemblances between the cases of different species, &c. ; STRUCK, pp. 615-619, *Illustr. Wochenschr.* i.  
*Trichoptera* in Greenland ; MEINERT, *Vid. Medd.* 1896, pp. 157-161.  
*Trichoptera* in Shetland ; KING, pp. 151 & 152, *Ent. Mag.* xxxii.  
 Thoracic glands in larvæ ; GILSON (409).  
 Anatomy, &c., of the Gilson thoracic glands in larvæ of *Phryganea*, *Limnophilus* and *Anabolia* ; HENSEVAL (492).  
*Asynarchus productus*, Finnish Lapland, MORTON, p. 109, *Medd. Soc. Fauna. Fenn.* xxi, n. sp.  
*Hydroptila campanulata*, Biskra, MORTON, p. 103, *Ent. Mag.* xxxii, n. sp.

NEUROPTERA—PLANIPENNIA.

- [*Cf.* BANKS (49), FELT (322), HOWARD (541), MACLACHLAN (734).]

*Sialidæ.*

- Corydalis cornutus*, destroyer of its eggs ; HOWARD, p. 310, *P. ent. Soc. Washington*, iii.  
*Sialis lutaria*, morphology of larva ; comparison with *Ephemera* ; HEYMONS (501).

*Panorpidæ.*

- Sense-organ on abdomen of ♂ ; MACLACHLAN, *Ent. Mag.* xxxii, p. 150.  
*Bittacus strigosus*, habits ; FELT (322).  
*Panorpa rufescens*, habits and metamorphoses ; FELT (322).

*Nemopteridæ.*

- Nemoptera imperatrix* in Algeria ; BRONGNIART, p. 30, *Bull. Mus. Paris*, 1896.

*Chrysopidæ.*

- Hypochrysa* and *Nothochrysa* in N. America ; MACLACHLAN, p. 175, *Ent. News Philad.* vii.  
*Meleoma slossonæ* (*infra*), note on ; MACLACHLAN, p. 175, *Ent. News Philad.* vii.  
*M. slossonæ*, Washington, BANKS, p. 95, *t. c.* n. sp.



## PSEUDO-NEUROPTERA.

## MALLOPHAGA.

[Cf. KELLOGG (598-601), MEINERT (776), OSBORN (842).]

Classification of the order, and table of genera; KELLOGG, pp. 375-379, *Psyche*, vii.

*Mallophaga*: introductory matter, classification, structure, comparison of mouth-parts with those of forms supposed to be allied; KELLOGG (600, 601).

*Mallophaga* of Italy (cont.); BERLESE, p. 244, *Bull. Soc. ent. Ital.* xxvii.

*Mallophaga* common to European and N. American birds; KELLOGG, *Zool. Anz.* xix, p. 121.

*Mallophaga* on birds in Greenland; MEINERT, *Vid. Medd.* 1896, pp. 164-167.

*Mallophaga* on N. American animals; OSBORN (842).

*Mallophaga* on poultry, eggs; THEOBALD (1142).

*Colpocephalum unciferum*, p. 140, pl. xii, figg. 1-3, *uniforme*, p. 142, fig. 4, *pingue*, p. 144, fig. 5, *timidum*, p. 145, fig. 6, *funebre*, p. 147, fig. 7, *laticeps*, p. 149, fig. 8, from maritime birds, California; KELLOGG, *P. Calif. Ac.* (2) vi; *C. chrysophæum*, p. 520, pl. lxxi, fig. 1, *osborni*, p. 521, figg. 2 & 3, *fumidum*, p. 523, fig. 5, from N. American land birds, KELLOGG, *t. c.*: n. spp.

*Docophorus halieti*, p. 218, *bubonis*, *quiscali*, p. 219, *agelaii*, *sialii*, *corvi*, p. 220, *minutotrabeculatus*, *fuscoventralis*, p. 221, *coccygi*, *speotyti*, p. 222, N. America, OSBORN, *Bull. Dep. Agric. Ent.* No. 5; *D. calvus*, p. 79, pl. iii, fig. 1, *fuliginosus*, p. 80, fig. 2, *graviceps*, p. 82, fig. 3, *acutipectus*, p. 84, fig. 4, *quadraticeps*, p. 85, fig. 5, *montereyi*, p. 87, fig. 6, *occidentalis*, p. 89, fig. 7, *kansensis*, p. 91, fig. 8, *atricolor*, p. 93, fig. 9, *insolitus*, p. 94, pl. iv, fig. 5, from maritime birds, Monterey, California, KELLOGG, *P. Calif. Ac.* (2) vi; *D. taurocephalus*, p. 471, pl. lxv, fig. 1, *alienus*, p. 473, fig. 2, *incisus*, p. 474, fig. 3, *domesticus*, p. 475, fig. 4, *distinctus*, p. 477, fig. 5, *transpositus*, p. 478, fig. 6, *evagans*, p. 480, pl. lxvi, fig. 2, *jungens*, p. 481, fig. 4, *californiensis*, p. 483, fig. 6, from N. American land birds, KELLOGG, *t. c.*: n. spp.

*Giebelia*, n. g., p. 137, for *G. mirabilis*, n. sp., from *Puffinus opisthomelas*, California, p. 138, pl. xi, figg. 7 & 8; KELLOGG, *P. Calif. Ac.* (2) vi.

*Goniocotes creber*, from *Phasianus nyctemerus*, KELLOGG, p. 510, pl. lxix, fig. 3, *t. c.* n. sp.

*Lambothrium similis* from *Colymbus nigricollis*, California, KELLOGG, p. 153, pl. xiv, figg. 1 & 2, *t. c.* n. sp.

*Lipeurus botauri*, *infuscatus*, N. America, OSBORN, p. 234, *Bull. Dep. Agric. Ent.* No. 5; *L. densus*, p. 114, pl. vii, figg. 1 & 2, *varius*, p. 116, figg. 3 & 4, *celer*, p. 117, figg. 5 & 6, *longipilus*, p. 119, fig. 7, *picturatus*, p. 121, pl. viii, figg. 1 & 2, *diversus*, p. 123, figg. 3 & 4, *limitatus*, p. 124, figg. 5 & 6, *constrictus*, p. 125, figg. 7 & 8, maritime birds, California, KELLOGG, *P. Calif. Ac.* (2) vi; *L. introductus*, p. 500, pl. lxviii, figg. 1-5, *snodgrassi*, p. 502, fig. 2, *macrocephalus*, p. 504, fig. 3, from N. American land birds, KELLOGG, *t. c.*: n. spp.

*Menopon expansum*, *interruptus*, *fuscomarginatus*, N. America, OSBORN, p. 245, *Bull. Dep. Agric. Ent.* No. 5; *M. navigans*, p. 156, pl. xiv, figg. 4 & 5, *indistinctum*, p. 157, figg. 6 & 7, *numerosum*, p. 159, pl. xv, fig. 1, *infrequens*, p. 161, fig. 5, *loomisii*, p. 162, fig. 6, from maritime birds, California, KELLOGG, *P. Calif. Ac.* (2) vi; *M. decoratum*, p. 526, pl. lxxii, fig. 2, *robustum*, p. 528, fig. 3, *monostæchum*, p. 530, fig. 4, *melanorum*, p. 532, pl. lxxiii, fig. 1, *incertum*, p. 533, fig. 2, *longicephalum*, p. 535, fig. 4, *dissimile*, p. 536, fig. 5, from N. American land birds, KELLOGG, *t. c.*: n. spp.

- Nirmus rotundatus, picturatus*, p. 226, *pallidus, secundarius, orpheus*, p. 227, *tyrannus, cordatus, marginatus*, p. 228, *abruptus, parallelus*, p. 229, N. America, OSBORN, Bull. Dep. Agric. Ent. No. 5 ; *N. prestantis*, p. 99, pl. v, figg. 1 & 2, *hebes*, p. 101, fig. 3, *farallonii*, p. 103, fig. 4, *ovarius*, p. 104, fig. 5, *giganticola*, fig. 6, p. 105, *bæphilus*, p. 107, fig. 7, from maritime birds, California, KELLOGG, P. Calif. Ac. (2) vi ; *N. longus*, p. 490, pl. lxxvii, fig. 1, *simplex*, p. 492, fig. 2, *eustigmus*, p. 493, fig. 3, *illustris*, p. 494, fig. 4, *vulgatus*, p. 496, fig. 5, from N. American land birds, KELLOGG, t. c. : n. spp.
- Nitzchia dubius* from *Chætura pelasgica*, KELLOGG, p. 540, pl. lxxiii, fig. 6, t. c. n. sp.
- Oncophorus advena* from American coot, California, KELLOGG, p. 133, pl. xi, figg. 1 & 2, P. Calif. Ac. (2) vi, n. sp.
- Physostomum lineatum*, N. America, from *Trochilus colubris*, OSBORN, p. 248, Bull. Dep. Agric. Ent. No. 5 ; *P. microcephalum*, p. 513, pl. lxx, fig. 1, *succineum*, p. 514, fig. 2, *angulatum*, p. 515, fig. 5, *australe*, p. 516, fig. 4, *diffusum*, p. 518, fig. 3, from N. American land birds, KELLOGG, t. c. : n. spp.
- Trichodectes parallelus*, p. 240, *castoris*, p. 241, *mephitidis*, p. 242, N. America, OSBORN, Bull. Dep. Agric. Ent. No. 5, n. spp.
- Trinoton minor*, N. America, from *Oidemia* ; OSBORN, p. 248, t. c.

## TERMITIDÆ.

- [*Cf.* BOUVIER (106), CLEGHORN (181), FORBES (356), BLANDFORD & GRASSI & SANDIAS (420), HAVILAND & SHARP (482), KNOWER (652), SCHWARZ (1046), SJÖSTEDT (1088), WASMANN (1215, 1220).]
- Notes on the economy of (unnamed) *Termitidæ* in Orissa ; CLEGHORN (181).
- Termites as cultivators of fungi in India ; E. F. SMITH, p. 319, Amer. Natural. xxx.
- Formation of red earth and laterite by Termites in Africa and India ; PASSARGE, p. 350, Ent. Nachr. xxii.
- Termites attacking a telegraphic cable at Tonkin ; BOUVIER (106).
- Ravages of *Termes flavipes* in Illinois ; FORBES, Rep. Ins. Illinois, xix, pp. 190-204.
- Translation of GRASSI & SANDIAS' work ; BLANDFORD, Quart. J. Micr. Sci. xxxix, pp. 245-322, pls. xvi-xx.
- Senses of a S. African Termite ; MARSHALL, p. 46, Entomologist, 1896.
- Embryology of *Eutermes* ; KNOWER (652) : reproduced, Ann. Nat. Hist. (6) xviii, pp. 277-282.
- Calotermes domesticus* [n. sp.] and *artocarporum* [n. sp.], from Singapore, habits in captivity in England ; HAVILAND & SHARP, pp. 589-594, Tr. ent. Soc. London, 1896.
- Coptotermes*, n. subg. for *Termes gestroi*, infra ; WASMANN, p. 629, Ann. Mus. Genova, xxxvi.
- Eutermes fungifaber*, p. 297, *latifrons, fuscotibialis*, p. 298, Cameroons, SJÖSTEDT, Ent. Tidskr. xvii, n. spp.
- Termes tubiformans* and others, habits in Texas ; SCHWARZ, p. 39, P. ent. Soc. Washington, iv. *T. azarelii* and *xenotermitis*, queens described ; WASMANN, p. 152, Ann. Mus. Genova, xxxvii.
- T. putorius*, Cameroons, SJÖSTEDT, p. 298, Ent. Tidskr. xvii ; *T. fecæ*, p. 625, *azarelii*, p. 626, *xenotermitis, gestroi*, p. 628, Burma, WASMANN, Ann. Mus. Genova, xxxvi : n. spp.

## EMBIIDÆ.

Structural characters, sexes, habits ; SAUSSURE, Mt. Schweiz. ent. Ges. ix, pp. 339-350.

*Embiu urichi*, p. 350, *trinitates*, Trinidad, *tartara*, Turkestan, *bramina*, Bombay, p. 352, *ruficollis*, Central America, *humbertiana*, Ceylon, p. 353, *hova*, Madagascar, p. 354, SAUSSURE, *t. c.* ; *E. urichi*, *trinitatis*, Trinidad, SAUSSURE, p. 293, J. Trinidad Club, xii : n. spp.

## PSOCIDÆ.

*Pterodela pedicularis* ; GIARD'S paper, recorded last year, translated in Ann. Nat. Hist. (6) xvii.

## PERLIDÆ.

[Cf. HEYMONS (500), KLAPÁLEK (646), MORTON (812), RIS (979).]  
Distinction between *Plecoptera*, *Odonata*, and *Ephemeroidea*, *Perla bicaudata*, and others ; structure of larva ; HEYMONS (500, p. 59).

*Capnia atra*, p. 58, Europe, *affinis*, Amurland, p. 60, MORTON, Tr. ent. Soc. London, 1896, n. spp.

*Capnopsis*, n. n. for *Capnodes*, Rost. ; MORTON, p. 61, *t. c.*

*Dictyopteryx* : the Swiss species ; RIS, Mt. Schweiz. ent. Ges. ix, pp. 303-309.

*D. fontium*, Switzerland, RIS, p. 310, *t. c.* n. sp.

*Nemoura sahlbergi*, Lapland, MORTON, p. 56, Tr. ent. Soc. London, 1896 ;  
*N. subtilis*, Sofia, KLAPÁLEK, SB. Bohmisch. Ges. 1895, No. xi : n. spp.

*Teniopteryx trifasciata*, micropterous form ; MORTON, p. 58, Tr. ent. Soc. London, 1896.

*T. risi*, Europe, MORTON, p. 56, *t. c.* n. sp.

## EPHEMERIDÆ.

[Cf. CAUSARD (147), HEYMONS (500, 501), MEINERT (776).]  
Oviposition and development in *Ephemerula vulgata* ; morphology of larva ; HEYMONS (501).

Eggs, embryology, affinities, and systematic position ; HEYMONS (500).

*Chlocopsis diptera*, viviparous habits ; CAUSARD, p. 705, C.R. Ac. Sci. cxxiii.

## ODONATA.

[Cf. BANKS (48), BARROIS (53), CALVERT (137), CARPENTER (144), FOERSTER (350), FÖRSTER (361), GILSON & SADONES (410) GODDARD (412), HEYMONS (500), KARSCH (594), KIRBY (637, 638), MACLACHLAN (730-733), MARTIN (756-758), MÉTALNIKOFF (784), MEUNIER (787), RIS (978), SADONES (1010), SCHWAIGHGOFER (1045), SELYS (1061, 1062).]

History of the study of system of *Odonata*, estimate of number of species, list of the legions, &c. ; SELYS (1061).

Terminology of the reticulation of wings ; SELYS, pp. 84-86, Ann. Soc. ent. Belgique, xl.

Larval gills, and respiration ; GILSON & SADONES, J. Linn. Soc. xxv, pp. 413-418.

Structure of the gizzard in imago and larva, and discussion of classification ; RIS, Zool. Jahrb. Syst. ix, pp. 596-624.

- Alimentary canal and respiratory system of larva of *Libellula depressa*, with some remarks on that of *Æschna*; SADONES (1010).  
 Structure and homologies of the organs of male *Libellulidae*; GODDARD (412).  
 Eggs, embryology, affinities, and systematic position; HEYMONS (500).  
*Odonata* of Central Europe; SCHWAIGHOFER (1045).  
 Assembly of *Diplax* for migration; BARROIS, JANET, MARTIN, pp. 25 & 26, Bull. Soc. ent. France, 1896.  
*Heterina occisa*, with three wings one side, one on the other; MACLACHLAN, Ent. Mag. xxxii, p. 83.  
*Æschna rileyi*, female and variation; CALVERT, p. 631, Ann. Mus. Genova, xxxvi.  
*Æ. rileyi*, E. Africa, CALVERT, p. 138, P. U. S. Mus. xviii; *Æ. ellioti*, Ruwenzori, KIRBY, p. 124, Ann. Nat. Hist. (6) xvii; *Æ. ornithocephala*, Moupin, MACLACHLAN, p. 368, *t. c.*; *Æ. erythromelas*, Simla, p. 419, *minuscule*, Cape Good Hope, p. 421, *subpupillata*, S. Africa, p. 423, MACLACHLAN, *t. c.*: n spp.  
*Allolestes maclachlani*, ♂ described; MARTIN, p. 107, Mem. Soc. Zool. France, ix.  
*A. nigra*, Seychelles, MACLACHLAN, *t. c.* n. sp.  
*Alloneura lansbergei*, ♀; FOERSTER, p. 424, Ann. Soc. ent. Belgique, xl.  
*Anaciaeschna triangulifera*, Delagoa Bay, MACLACHLAN, p. 409, Ann. Nat. Hist. (6) xvii, n. sp.  
*Anax rutherfordi*, ♀; CALVERT, p. 137, P. U. S. Mus. xviii.  
*Anotogaster sieboldii*, note on; MACLACHLAN, p. 368, Ann. Nat. Hist. (6) xvii.  
*Archineura incarnata*, ♀ characters; MACLACHLAN, p. 370, *t. c.*  
*Boyeria*, n. n. for *Fonscolombia*, Selys; MACLACHLAN, p. 424, *t. c.*  
*Cacconeura flavipennis*, ♀; FÖRSTER, p. 324, Ent. Nachr. xxii.  
*C. selysii*, Sumba, FOERSTER, p. 423, Ann. Soc. ent. Belgique, xl, n. sp.  
*Calophlebia*, n. g., near *Neophlebia*, for *C. karschi*, n. sp., Madagascar; SELYS, p. 80, Ann. Soc. ent. Belgique, xl.  
*Crocothemis servilia*, characters and variation; MACLACHLAN, p. 366, Ann. Nat. Hist. (6) xvii.  
*Diplucodes portoricana*, male described; CARPENTER, p. 261, J. Inst. Jamaica, ii.  
*Disparoneura abbotti*, E. Africa, CALVERT, p. 140, P. U. S. Mus. xviii, n. sp.  
*Erithragrion griffinii*, Panama, MARTIN, Boll. Mus. Torino, No. 240, n. sp.  
*Erythromma tinctipennis*, referred to *Pyrrosoma*, ♂ described; MACLACHLAN, p. 373, Ann. Nat. Hist. (6) xvii.  
*Gomphus scissus*, Szechuen, MACLACHLAN, p. 367, Ann. Nat. Hist. (6) xvii; *G. descriptus*, New York, BANKS, p. 194, J. N. York Ent. Soc. iv: n, spp.  
*Gynacantha khasiaca*, India, p. 411, *sextans*, Cameroons, p. 413, *quadrina*, W. Africa, p. 414, *chelifera*, Rio Janeiro, p. 416, MACLACHLAN, Ann. Nat. Hist. (6) xvii; *G. stylata*, Seychelles, MARTIN, p. 106, Mem. Soc. zool. France, ix: n, spp.  
*Helieschna fuliginosa*, characters; MACLACHLAN, p. 418, Ann. Nat. Hist. (6) xvii.  
*H. ugandica*, E. Africa, MACLACHLAN, *t. c.* p. 419, n. sp.  
*Hemicnemis bilineata*, descriptive notes; MARTIN, p. 108, Mem. Soc. Zool. France, ix.  
*Hemicordulia delicata*, Seychelles, MARTIN, p. 105, *t. c.* n. sp.  
*Idomacromia*, n. g., p. 19, *Corduliides*, for *I. proavita*, n. sp., Cameroons, p. 20; KARSCH, Ent. Nachr. xxii.  
*Mesopodagrion*, n. gen. (legion *Podagrion*) for *M. tibetanum*, n. sp., Moupin; MACLACHLAN, p. 372, Ann. Nat. Hist. (6) xvii.

- Neophlebia ? martini*, Madagascar, SELYS, p. 82, Ann. Soc. ent. Belgique, xl, n. sp.
- Orthetrum brachiale*, ♂, p. 130, *wrightii*, ♂, p. 134, CALVERT, P. U. S. Mus. xviii. *O. internum*, a valid species; MACLACHLAN, p. 366, Ann. Nat. Hist. (6) xvii.
- O. brevistylum*, p. 521, *phillipsi*, *lorti*, p. 522, Somaliland, KIRBY, P. Zool. Soc. London, 1896; *O. truncatum*, p. 128, *abbottii*, p. 133, E. Africa, CALVERT, P. U. S. Mus. xviii : n. spp.
- Planæschna*, n. g., type *Æschna milnei*, Selys; MACLACHLAN, p. 424, Ann. Nat. Hist. (6) xvii.
- Pantala flavescens* at sea; MACLACHLAN, p. 254, Ent. Mag. xxxii.
- Porpax*, n. g., p. 17, *Libellulides*, for *P. asperipes*, n. sp., Cameroons, p. 18; KARSCH, Ent. Nachr. xxii.
- Pseudagrion semicolon*, Celebes, FÖRSTER, p. 325, Ent. Nachr. xxii, n. sp.
- Schizonyx luctifera*, ♂; CALVERT, p. 122, P. U. S. Mus. xviii, p. 122.
- Tauriphila risi*, Paraguay, MARTIN, Boll. Mus. Torino, xi, No. 239, n. sp.
- Telebasis macrogaster*, sexes described; CARPENTER, p. 262, J. Inst. Jamaica, ii.
- T. alluaudi*, Seychelles, MARTIN, p. 110, Mem. Soc. zool. France, xi, n. sp.
- Thecodiplax infuscata* and *fastigiata* are one species, but *erotica* is probably distinct; MACLACHLAN, p. 364, Ann. Nat. Hist. (6) xvii.
- Tramea erythræa*, generic position, &c.; CALVERT, p. 215, Ent. Nachr. xxii.
- Trithemis ferrugaria*, ♂; CALVERT, p. 125, P. U. S. Mus. xviii.
- Vestalis smaragdina*, note on; MACLACHLAN, p. 371, Ann. Nat. Hist. (6) xvii.
- Zyxomma sechellarum*, Seychelles, MARTIN, p. 103, Mem. Soc. zool. France, ix, n. sp.

## THYSANOPTERA.

- [Cf. BERGROTH (68), PERGANDE (860), TRYBOM (1157-1159).]  
Account of the structure of the wings, and of winged and wingless forms in the order; TRYBOM (1159).
- The nature of the mouth-parts; GARMAN, p. 592, Amer. Natural. xxx.
- Presumed sense-organs in the legs; TRYBOM, Ent. Tidskr. xvii, pp. 102-104, cuts.
- Aptinothrips rufa*, redescribed; TRYBOM, p. 613, Ofv. Ak. Forh. 1896.
- Heliothrips femoralis*, Reut. = (*cestri*, Perg.); BERGROTH, p. 67, Ann. Soc. ent. Belgique, xl.
- Idolothrips coniferarum*, Washington, PERGANDE, p. 63, Ent. News Philad. vii, n. sp.
- Limothrips cerealium*, ♂, characters; TRYBOM, p. 614, Ofv. Ak. Forh. 1896.
- Phlæothrips sanguinolentus*, Blumenau; BERGROTH, p. 66, Ann. Soc. ent. Belgique, xl, n. sp.
- Thrips ericæ*, redescribed, p. 614, *T. obscura*, larva, p. 618, TRYBOM, Ofv. Ak. Forh. 1896. *T. salicaria*, habits and affinities; TRYBOM, pp. 87-102, Ent. Tidskr. xvii.
- T. secticornis*, Oregon, p. 620, *sibirica*, Jenisei, p. 622, TRYBOM, Ofv. Ak. Forh. 1896, n. spp.

(G.) *APTERA.*

[*Cf.* DYBOWSKI (278), FOLSOM (351-355), FRÊCHE & BEILLE (368), HAMANN (467), HARVEY (481), HEYMONS (502), JANET (574, 575), LANNELONGUE (693), LIE-PETTERSEN (714), MACGILLIVRAY (729), MARLATT (745), MEINERT (776), O. M. REUTER (971), SCHÄFFER (1019), SCHÖTT (1040, 1041), VOGLER (1194).]

Absence of amnion in *Orchesella*, nature of the embryonic membranes in *Lepisma*, relation of *Aptera* to other insects; HEYMONS (502).

The cavernicolous *Thysanura* and *Collembola* of Europe; HAMANN (467).

*Aptera* in the Paris catacombs; VIRÉ (1192).

*Thysanura.*

*Campodea* in the cave of Dargilan; LANNELONGUE (693).

*C. erebophila*, Adelsberg cave, HAMANN, Eur. Höhlenfauna, p. 153, pl. iii, fig. 1, n. sp.

*Lepismina polypoda*, habits, relations to ants; JANET, pp. 131-138, Bull. Soc. ent. France, 1896: habits; JANET (574): translated, Ann. Nat. Hist. (6) xvii, pp. 398-400.

*Machilis*: anatomy and morphology of mouth-parts; DYBOWSKI (278).

*Collembola.*

Revision of palæarctic *Collembola*; SCHÖTT, Svenska Ak. Handl. xxv, No. 11, 100 pp., 7 pls. This important work was overlooked in 1893.

Structure of terminal processes; swarms on snow; VOGLER (1194).

*Poduridae* causing red snow, criticism of Vogler's paper of last year; SCHÄFFER, Zool. Anz. xix, p. 139.

*Collembola* found on snow and ice; SCHÖTT, pp. 113-128, pl. iii, Ent. Tidskr. xvii.

*Collembola* in Greenland; MEINERT, pp. 167-170, Vid. Medd. 1896.

The *Collembola* of Norway; LIE-PETTERSEN, Bergens Mus. Aarbog, 1896, No. 8.

Revision of *Thysanura* and *Collembola* of Finland; REUTER, Acta Soc. Faun. Fenn. xi, No. 4.

*Achorutes pluvialis*, Switzerland, VOGLER, p. 149, Illustr. Wochenschr. i; *A. schotti*, *sahlbergi*, Finland, REUTER, p. 31, Acta Soc. Faun. Fenn. xi, No. 4; *A. trybomi*, N. Asia, p. 82, pl. vii, figg. 9 & 10, *navicularis*, Siberia, p. 83, figg. 11 & 12, SCHÖTT, Svenska Ak. Handl. xxv, No. 11: n. spp.

*Anoura 6-tuberculata*, N. America, ? = *gibbosa*, Pack., HARVEY, p. 423, cuts, Psyche, viii, n. sp.

*Calistella*, n. g. for *Degeeria superba*, Reut.; REUTER, p. 46, pl. iv, figg. 1-4, Svenska Ak. Handl. xxv, No. 11.

*Entomobrya flava*, Norway, LIE-PETTERSEN, p. 14, pl. i, fig. 6, Bergens Mus. Aarbog, 1896, No. 8, n. sp.

*Isotoma*: the N. American species tabulated; MACGILLIVRAY, pp. 47-58, Canad. Ent. xxviii.

- I. equalis*, *elongata*, *manubriata*, p. 49, *parva*, *unica*, *communa*, p. 50, *trispinata*, *tridentata*, p. 51, *brunnea*, *synonymica*, p. 52, *dilatata*, *brevipenna*, p. 53, *obsoleta*, *determinata*, p. 54, *inclinata*, *speciosa*, p. 55, *capitola*, *nigra*, *terminata*, *lateraria*, p. 56, *longipenna*, p. 57, N. America, MACGILLIVRAY, *t. c.*; *I. dubia*, p. 27, *tenella*, p. 28, Finland, REUTER, Acta Soc. Faun. Fenn. xi, No. 4; *I. hiemalis*, Halliko, p. 70, pl. vi, figg. 16-18, *reuteri*, Tschuktschland, p. 71, figg. 28-30, *clavata*, Bohuslan, p. 73, figg. 35-37, *litoralis*, Sweden and Spitzbergen, p. 75, SCHÖTT, Svenska Ak. Handl. xxv, No. 11; *I. hottingeri*, p. 31, *violacea*, p. 32, Alps. on snow, VOGLER, Bull. Soc. Vaudoise, xxxi, [omitted last year]; *I. hottingeri*, *ianthina*, Switzerland, VOGLER, p. 151, Illustr. Wochenschr. i : n. spp.
- Lipura alborufescens*, Switzerland, VOGLER, p. 150, Illustr. Wochenschr. i, n. sp.
- Lepidocyrtus elegantulus*, Greenland, MEINERT, p. 168, Vid. Medd. 1896; *L. insignis*, p. 16, *albicans*, p. 20, Finland, REUTER, Acta Soc. Faun. Fenn. xi, No. 4; *L. americanus*, Washington, in houses, MARLATT, p. 219, Canad. Ent. xxviii : n. spp.
- Lipura alborufescens*, Alps, on snow, VOGLER, p. 31, Bull. Soc. Vaudoise, xxxi [omitted last year]; *L. quadrispina*, p. 20, pl. ii, figg. 9 & 10, *schotti*, p. 21, fig. 11, Norway, LIE-PETTERSEN, Bergens Mus. Aarbog, 1896, No. 8 : n. spp.
- Neelidæ*, n. fam., allied to *Smythuridæ*, for the following :
- Neelus*, n. g. for *N. murinus*, n. sp., Massachusetts, greenhouse, connected with *Hymenophyllum* from Jamaica; FOLSOM, Psyche, vii, p. 391, pl. viii.
- Orchesella crassicornis*, Switzerland, VOGLER, p. 153, Illustr. Wochenschr. i, n. sp.
- Papirius texensis*, note on; FOLSOM, p. 384, Psyche, vii.
- P. hagenii*, *pini*, p. 344, *testudineatus*, p. 345, Massachusetts, FOLSOM, Psyche, vii; *P. vittatus*, p. 119, *opalinus*, p. 120, N. America, FOLSOM, Canad. Ent. xxviii : n. spp.
- Seira* : species inhabiting man; FRÊCHE & BEILLE (368).
- Smythurus concolor*, Greenland, MEINERT, p. 167, Vid. Medd. 1896; *S. fulvus*, Norway, p. 9, figg. 1-4, pl. i, LIE-PETTERSEN, Bergens Mus. Aarbog, 1896, No. 8; *S. marginatus*, N. Europe, SCHÖTT, p. 25, pl. i, figg. 11-14, Svenska Ak. Handl. No. 11; *S. packardii*, Texas, FOLSOM, p. 385, Psyche, vii; *S. benitus*, *socialis*, p. 446, *amicus*, p. 447, *remotus*, p. 448, *fitchii*, *henshawii*, p. 449, N. America, FOLSOM, *t. c.* : n. spp.
- Tomocerus arcticus*, Tschuktschland, SCHÖTT, p. 44, pl. iii, figg. 8 & 9, Svenska Ak. Handl. xxv, No. 11; *T. norvegicus*, Norway, LIE-PETTERSEN, p. 12, pl. i, fig. 5, Bergens Mus. Aarbog, 1896, No. 8 : n. spp.
- Tullbergia*, n. g., near *Sinella*, p. 15, for *T. immaculata*, pl. ii, figg. 1-4, *ocellata*, fig. 5, n. spp., Norway, p. 16; LIE-PETTERSEN, Bergens Mus. Aarbog, 1896, No. 8.

(H.) *ORTHOPTERA.*

[*Cf.* BOLIVAR (97), BORDAS (100-103), BULLER (119), CUÉNOT (229), DOMINIQUE (256), FABRE (304), FÉNARD (323-325), GRIFFINI (436, 437, 438, 440), HANCOCK (472), KANNEMEYER (588), KARSCH (595, 596), KIRBY (639, 641, 642, 643, 644), KRAUSS (681), KRAUSS & VOSSELER (682), KÜNCKEL (687), MARTINEZ (759), MÉTALNIKOFF (784, 785), MORSE (810, 811), PANTEL (857), POULTON (913), DE SAUSSURE (414, 1017, 1018), SAUSSURE & ZEHTNER (419), SCUDDER (1053-1058), SUBOWSKY (1131), TEPPER (1138, 1139), WILCOX (1248), ZUBOWSKY (1264).]

Anatomy, histology and physiology of the internal complementary organs of the genital structures ; FÉNARD (323-325).

List of exotic *Orthoptera* described by S. H. Scudder, 1868-1879, with a revision of their nomenclature ; P. Boston Soc. xxvii, pp. 210-218. For the numerous remarks made in these pages, reference must be made thereto ; a summary of the corrected nomenclature is given on pp. 217 & 218.

## FORFICULIDÆ.

*Anisolabis occidentalis*, W. Australia, KIRBY, p. 525, pl. xx, fig. 5, J. Linn. Soc. xxv, n. sp.

*Apachys pascoei*, Sylhet, KIRBY, p. 521, pl. xx, fig. 1, J. Linn. Soc. xxv, n. sp.

*Cylindrogaster rufescens*, N. India, KIRBY, pl. xx, fig. 2, p. 524, J. Linn. Soc. xxv, n. sp.

*Dyscritina* : habits ; GREEN, p. iii, P. ent. Soc. London, 1896. *D. longisetosa*, notes on, possibly a Forficulid ; GREEN, p. 229, Tr. ent. Soc. London, 1896.

*Forficula auricularia*, injuring hops ; THEOBALD, p. 60, Ent. Mag. xxxii.

*Labidura ? walkeri*, Hong Kong, KIRBY, pl. xx, fig. 6, p. 524, J. Linn. Soc. xxv, n. sp.

*Loboptera decipiens*, variation ; PANTEL, p. 76, An. Soc. Espana, xxv.

*Psalis borneensis*, Baram, KIRBY, p. 525, J. Linn. Soc. xxv, n. sp.

*Pygidicrana forcipata*, p. 522, *egregia*, pl. xx, fig. 3, p. 523, S. America, KIRBY, J. Linn. Soc. xxv, n. spp.

*Sparatta apicalis*, pl. xx, fig. 7, *clarkii*, fig. 8, p. 526, *pygidiata*, fig. 10, p. 527, *semirufa*, fig. 4, S. America, *bormansi*, Mexico, p. 528, KIRBY, J. Linn. Soc. xxv, n. spp.

## HEMIMERIDÆ.

The external structure and affinities of *Hemimerus* ; DE SAUSSURE, pp. 277-300, pl. x, Rev. Suisse Zool. iv.

## BLATTIDÆ.

Gizzard of *Blattidæ* ; BORDAS (102). Digestive system ; BORDAS (103). *Blattidæ* of Madagascar ; SAUSSURE & ZEHTNER (419).



- Revision of fossil cockroaches of America, with discussion of points of general interest ; SCUDDER, Bull. U. S. Geol. Surv. No. 124 : for the new species see Palæozoology.
- Allacta*, n. n. for *Abrodiæta*, Br. ; SAUSSURE & ZEHNTNER, p. 45, in Grandidier, xxiii.
- A. undata*, p. 47, pl. i, fig. 5, *brachyptera*, p. 49, fig. 6, *abbreviata*, p. 50, Madagascar, SAUSSURE & ZEHNTNER in Grandidier, xxiii, n. spp.
- Apolyta testacea*, p. 358, *litura*, p. 359, Central Australia, TEPPER, Horn Exped. pt. ii, n. spp.
- Blatta papua*, Rockhampton, p. 25, *massauæ*, Abyssinia, p. 28, *madecassa*, p. 29, *lacrymula*, p. 31, pl. 1, fig. 10, Madagascar, *curvinervis*, p. 32, *adversa*, p. 33, pl. i, fig. 9, Java, *ferrea*, p. 36, pl. i, fig. 7, *incisa*, fig. 8, p. 37, *fissa*, fig. 11, p. 39, *opima* (= *latipennis*, Sauss. olim), p. 40, fig. 13, SAUSSURE & ZEHNTNER in Grandidier, xxiii, n. spp.
- Chrastoblatta*, n. g., p. 20, for *C. tricolor*, n. sp., Madagascar, p. 21, pl. ii, fig. 17, and *Proscratea dimidiata*, Sauss. ; SAUSSURE & ZEHNTNER in Grandidier, xxiii.
- Derocalymma punctata*, *granulata*, pl. v, fig. 65, *analis*, S. Africa, SAUSSURE & ZEHNTNER, p. 132, in Grandidier, xxiii, n. spp.
- Ellipsica*, n. g., p. 108, for *E. insculpta*, pl. iv, fig. 53, *ænea*, p. 110, *cribrosa*, fig. 52, p. 111, *subænea*, *virescens*, p. 112, Madagascar, n. spp. ; SAUSSURE & ZEHNTNER in Grandidier, xxiii.
- Elliptoblatta sakalava*, p. 116, pl. iv, fig. 49, *antennata*, *punctulata*, p. 117, *consobrina*, p. 118, *polita*, *bisignata*, pl. iv, fig. 47, p. 119, *semilimbata*, *brunneriana*, fig. 48, p. 120, *cælebs*, p. 121, fig. 51, *marginalis*, fig. 46, p. 122, Madagascar, SAUSSURE & ZEHNTNER in Grandidier, xxiii, n. spp.
- Epilampra fraserensis*, supplementary description ; TEPPER, p. 360, Horn Exped. pt. ii.
- E. malagassa*, Madagascar, SAUSSURE & ZEHNTNER, p. 65, pl. ii, fig. 25, in Grandidier, xxiii ; *E. festæ*, p. 2, *bergrothi*, p. 3, Panama, GRIFFINI, Boll. Mus. Torino, xi, No. 236 : n. spp.
- Eustegasta lepida*, p. 104, *blanda*, p. 106, *micans*, p. 107, Madagascar, SAUSSURE & ZEHNTNER in Grandidier, xxiii, n. spp.
- Gymnonyx*, n. g., for *G. grandidieri*, pl. iii, figg. 40 & 41, p. 124, *scabra*, fig. 39, p. 126, n. spp., Madagascar ; SAUSSURE & ZEHNTNER in Grandidier, xxiii.
- Hedaia*, n. g., p. 66, for *H. venusta*, n. sp., Madagascar, p. 67, pl. iv, fig. 43 ; SAUSSURE & ZEHNTNER in Grandidier, xxiii.
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- Homaloblatta*, n. g., for *H. peringueyi*, pl. v, fig. 61, n. sp., Madagascar ; SAUSSURE & ZEHNTNER, p. 132, in Grandidier, xxiii.
- Ischnoptera malagassa*, Antananarivo, SAUSSURE & ZEHNTNER, p. 18, pl. iv, fig. 66, in Grandidier, xxiii, n. sp.
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- Choryphistes obscuro-brunneus*, p. 367, *interioris*, p. 368, Central Australia, TEPPER, Horn Exped. pt. ii, n. spp.
- Chrysochraon levipes*, E. Africa, KARSCH, p. 255, Ent. Zeit. Stettin, lvii, n. sp.
- Clinocephalus*, n. g., *Tryxalinae*, for *C. elegans*, n. sp., New England; MORSE, p. 326, Psyche, vii, and p. 402, t. c.
- Cænona*, n. g., *Caloptenides*, for *C. brevipedalis*, n. sp., E. Africa; KARSCH, p. 307, Ent. Zeit. Stettin, lvii.
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- Cymatopsygma*, n. g., near *Penichrotes*, for *C. flabelliferum*, n. sp., E. Africa; KARSCH, p. 247, Ent. Zeit. Stettin, lvii.
- Cyrtacanthacris baumanni*, p. 293, *dius*, p. 294, *corallinipes*, p. 295, *validiceps*, p. 296, *illustrissimus*, p. 297, *decipiens*, p. 298, *tectiferus*, p. 299, *debilis*, p. 300, *humilicrus*, p. 301, Tropical Africa; KARSCH, Ent. Zeit. Stettin, lvii, n. spp.
- Cystocelia absidata*, E. Africa; KARSCH, p. 245, t. c. n. sp.
- Dichromorpha*, n. g. for *Chloecaltis viridis*, Scudd.; MORSE, p. 383, Psyche, vii.
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- Duronina insipida*, *duriu*, Africa, KARSCH, p. 252, t. c. n. spp.
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- Eremidium*, n. g., p. 280, near *Teratodes*, for *E. equuleus*, n. sp., S. Africa; KARSCH, p. 281, Ent. Zeit. Stettin, lvii.

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- Eunapius quadridentatus*, note and figure, p. 540, pl. vii, fig. 7; KRAUSS, Zool. Jahrb. Syst. ix.
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- Ischnansis*, n. g., p. 312, near *Catantops*, for *I. insitiva*, n. sp., E. Africa, p. 313; KARSCH, Ent. Zeit. Stettin, lvii.
- Lentula modicicrus*, p. 279, *turgidicrus*, p. 280, E. Africa, KARSCH, Ent. Zeit. Stettin, lvii, n. spp.
- Lobopoma*, n. g. for *L. ambages*, n. sp., Zanzibar; KARSCH, p. 253, Ent. Zeit. Stettin, lvii.
- Locheuma*, n. g. for *Elæochlora brunneri*, Scudd.; SCUDDER, p. 207, P. Boston Soc. xxvii.
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- Metaxymecus pendulus*, p. 323, *laxus*, p. 324, Trop. Africa, KARSCH, t. c. n. spp.
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- Tritropis vittatus*, p. 370, *striatus*, p. 374, Centr. Australia, TEPPER, Horn Exped. pt. ii, n. spp.
- Tryxalinæ* of New England ; MORSE, pp. 323–327, Psyche, vii.
- Xiphiola*, n. g., near *Vilerna*, for *X. cyanoptera*, n. sp., Amazons; BOLIVAR, p. 17, Act. Soc. Espan. xxv.
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## XIV. ECHINODERMA.

[VACANT.]

It is intended to publish the record of the literature of 1896 in combination with that of 1897, in Volume xxxiv.



# XV. VERMES.

BY

FLORENCE BUCHANAN, B.Sc.

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## INTRODUCTION.

A SLIGHTLY different arrangement of recording "Vermes" is adopted this year, in that the groups *Hemichorda*, *Rotifera*, and *Mesozoa* are treated separately from the rest, since the only reason that exists for recording the heterogenous assemblage of animals called "Vermes" all together, namely, that so much of the literature overlaps, does not apply in their case.

Renewed study of *Phoronis*, and of its development, makes its position amongst the *Gephyrea* still more anomalous, and it is here, and will be henceforward, treated of with the *Hemichorda* (see p. 44).

Our knowledge of the *Mesozoa* is increased by the discovery of a new form, and a detailed description of an already known one (see p. 48).

Several important memoirs on the *Polychæta* have appeared during the year. Amongst them may be mentioned: HÆCKER's valuable contribution to our knowledge of the anatomy and histology of the Pelagic larvæ, their development being compared with that of non-Pelagic larvæ (82); PEREYASLAZEWA's detailed account of the anatomy and development of *Nerilla antennata* (161); GRAVIER's monograph of the *Phyllodocidæ* of the English Channel (80), using anatomical characters as the basis of his classification, after the example set by Eisig, but which is unfortunately too little followed, as a rule, by writers on Polychætes; RACOVITZA's study of the anatomy, morphology, and histology of the cephalic and nuchal region of several of the different families (170); FAUVEL's of the anterior region of the *Ampharetidæ* (54); and MÉSNIL's account of the external morphology of the *Spionidæ* of the Channel, to be followed by a similar treatment of other families, and then by a discussion of their relative systematic positions (129). ROULE (185) gives good descriptions and figures of several Atlantic species, and MÉSNIL & CAULLERY (132) give a preliminary account of 2 new types of *Serpulidæ*.

Alternation of generations (of an epitochous with an atochous form) is shown to occur amongst Sedentary Polychætes, namely, in the *Cirratulidæ* by MÉSNIL & CAULLERY. The formation of sexual forms by the modification of a whole individual (epigamy) or by only part of one (schizogamy) is discussed by MALAQUIN (124), and by MENSCH (128). Otocysts which were hitherto only known to occur in the *Teletthusidæ* are now also described in one of the *Clymenidæ*; MÉSNIL (130).

Our knowledge of the Terricolous *Oligochæta* is, as usual, furthered by the work of ROSA (180-184), MICHAELSEN (134), BEDDARD (8) & (9), and BENHAM (11) & (15); while the aquatic Oligochætes receive the attention this year especially of UDE (228), OBNORSKI (148), GOODRICH (74), and BEDDARD (9).

HESCHELER (90) gives an account of experimental observations on regeneration in Earthworms, and RIBAUCOURT (175), while describing fully and giving synoptical tables for the distinction of the Swiss Earthworms, pays special attention to the abnormalities occurring in the several species. RIEVEL (176) describes the histological processes involved in regeneration in Earthworms, Nails, and a Polychæt.

Special visual cells, or rather cells sensitive to light, are described in Earthworms by HESSE (91); ROSA (180) and LIM BOON KENG (99) discuss the composition and functions of the coelomic fluid of Earthworms; and phagocyte organs are described in different genera by SCHNEIDER (193) & (194).

WHEELER (241) deals with the anatomy and habits of the different species of *Myzostoma*, and points out homologies with Chætopods, especially with the genus *Spinther*.

The nephridia of *Branchiobdella* are described by VOINOV (234), and their resemblance to those of Leeches dwelt upon.

The most important work on the *Hirudinea* is the full description of the interesting genus *Acanthobdella* by A. KOWALEVSKY (100), and of *Archæobdella* by the same author. BLANCHARD, as usual, has several papers on the group, including one on Asiatic, one on S. American Leeches (23) & (24); and SIMON (204) & (205) and BERTELLI (19) add to our knowledge of the nervous system, and of the different glands of Leeches, respectively.

BLOCHMANN (25) has a treatise on the epithelium of *Platyhelminthes*, a subject which is also dealt with by BRAUN (33) and JAMMES (96). RIGGENBACH (177), FUHRMAN (65), and PINTNER (166), deal with the anatomy and morphology of the genus *Ichthyotania*, *Davainea*, and of the *Tetrabothridæ* respectively; OTTO (153) with that of the *Amphistomidæ* amongst Trematodes, and LOOSS (118) describes a number of new Trematodes from Egyptian animals.

Not very much work has been done on the Nemertines during the year. BURGER (37) describes some new S. American species. LEBEDINSKY'S work on the early development of *Drepanophorus* is important.

With regard to the *Turbellaria*, several very interesting new Polyclads are described by PLEHN (167)-(169). Amongst others he describes (167) a new Planocerid with alimentary opening to the exterior by large pores, and a new genus in which there is a second pharynx of different structure to the other, usual, one. The arrangement of the gonads and the branching of the alimentary canal is peculiar in other new species, and one species is described without eyes. JÄGERSKIÖLD (95) describes a new genus of ectoparasitic Triclad which has no eyes, but otherwise has no special modifications for parasitic life. v. GRAFF (79) discusses the morphology of the genital system of Land-Planarians, and (78) gives an abstract of a forthcoming monograph dealing with their geographical distribution and systematic arrangement. The peripheral nervous system of fresh-water Dendrocoels has been studied by MONTI (140), and a European species of *Haplodiscus* is described by SABUSSOW (189).

STOSSICH (219) has an important monograph of the genus *Ascaris*, while LOOSS (117) deals with the anatomy and histology of the œsophagus in 10 species, and ZOJA (248) with the early stages of development in one species. MEYER (133) describes the anatomy and histology of 3 new species of Nematodes from Ceylon.

RÖMER'S systematic monograph of the *Gordiidæ* has appeared (179), and, together with the descriptions of some new forms by CAMERANO (40), is likely to be of great service to students of the group.

With regard to the *Acanthocephala*, not much new work has been done, although SHIPLEY'S detailed account of his new genus has appeared (201). CONANT (43) has some notes on the classification of the *Chatognatha*, objecting, like most other students of the group, to the recognition of 2 genera when the definitions of the two have been so often confused. He describes the process of egg-laying in a *Sagitta*.

Of collective works, the "Ergebnisse der Hamburger Magalhaenische Sammelreise, i" adds to our knowledge of the S. American *Oligochæta* (BEDDARD & UDE), *Gephyrea* (FISCHER), *Cestoda* (LÖNNBERG), *Trematoda* (BRAUN), and *Nemathelminthes* (v. LINSTOW), and affords evidence in some cases of the specific identity of Antarctic and Arctic forms, a fact which is also insisted upon in the important memoir by MURRAY (146). The second volume of the "Cambridge Natural History" [see HARMER & SHIPLEY (84)] gives well illustrated accounts by different authors of the several groups comprised under the term "Vermes" (with the exception of the *Hemichorda*), most of which will prove very useful.

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2. —. (2) Sopra alcuni Dibotrii nuovi o poco noti e sulla classificazione del genere *Botriocephalus*. T. c. pp. 261-282, pl. iv; and Boll. Mus. Genova, ii, No. 52.
3. —. (3) Note intorno agli Elminti del Museo zoologica di Torino. —Di alcuni botriocefali. Boll. Mus. Torino, xi, No. 259, 7 pp., 5 figg.  
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5. —. (2) Faunistiska undersøgelser i Osterfjorden. Op. cit. 1896, No. 13, pp. 9-12.
6. AURIVILLIUS, C. Das Plankton des Baltischen Meeres. Bih. Svenska Ak. xxi, Afd. iv, No. 8, pp. 1-83, 1 pl., 1 map.
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14. —. (4) Earthworms and Streamworms: review of Beddard's monograph on the *Oligochæta*. Nature, liii, pp. 74 & 75.
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\* An asterisk prefixed to a quotation indicates that the Recorder has not seen the Journal or Work referred to.



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## II. BIOLOGY.

### GENERAL.

Anatomy (external and internal) and systematic position of the *Phyllodocidæ*; GRAVIER: of *Nerilla antennata*, PEREYASLAWZEWA.—Anatomy of *Polyophthalmus* and of *Dodecaceria*; MONTICELLI (2).—External anatomy and morphology of the Spionids; MÉSNIL (1).—Morphology of anterior region of Polychætes; RACOVITZA.—Relation of *Myzostoma* to Chætopods, and to *Spinther* in particular; WHEELER.

Anatomy of Oligochætes, *Terricola*; BEDDARD, BENHAM, MICHAELSEN, and ROSA: *Enchytraidæ*; UDE; GOODRICH.—Of Hirudinea: *Archeobdella* and *Acanthobdella*; A. KOWALEVSKY (1).—Biology of Clepsine and other fresh-water Leeches; A. KOWALEVSKY (2).

Anatomy of *Aspidogaster*, STAFFORD; of *Trematodes*; BRAUN.—Anatomy and histology of *Amphistomidæ*, OTTO.—Histology of *Cerebratulus lacteus*; MONTGOMERY.

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Proboscis of *Tetrarhynchidae* compared with hooked sucker of *Echinocotyle*, and derived from the apical auxiliary sucker-grooves of the *Tetrabothriidae*; PINTNER (1).—Structure of ventral warts of *Gastrodiscus*, their distinction from suckers; LOOSS (2).—"Caudicle" suggested as a new name for the caudal papilla of Nemertines; MONTGOMERY (2).

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Epithelium of Cestodes and Trematodes, epithelial cells sunk down into muscle-layers; BLOCHMANN.

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Alimentary canal of *Acanthobdella* compared with that of Oligochætes; A. KOWALEVSKY (1).—Microscopic structure of alimentary canal of *Hirudo*; RAKOWSKIEGO.—Peripharyngeal and labial glands of *Hirudo* and their function; BERTELLI.—Physiology of intestine of fresh-water Leeches; A. KOWALEVSKY (3).

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Lymphocytes of Oligochætes, 4 kinds distinguished (mucocytes, eleocytes, amæbocytes, and vacuolocytes): their distribution in different species, and their origin, (criticising Cuenot); ROSA (1).—Coelomic corpuscles of three kinds, one containing a long coiled thread, in an Enchytraeid; GOODRICH.

"Coelomic" nature of body cavity in a Leech, *Acanthobdella pellucida*, and structure of pigment cells and giant gland-cells embedded in connective tissue; KOWALEVSKY, A. (1).—"Acid-cells" in wall of body cavity of fresh-water Leeches; KOWALEVSKY, A. (3).

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comparison with those of Leeches; VOINOV.—Nephridia of *Clepsine*; GRAF (1).—Internal termination of nephridia in Leeches; BOLSIUS (2).

Excretory system of different Cestodes; BRAUN (3) p. 1353; PINTNER (2): of the different species of *Ichthyotenia* and of *Corallobothrium*; RIGGENBACH (1): of the embryo of *Distomum*; COE.—Dorsal excretory pore in a Trematode; LOOSS (2).

### NERVOUS SYSTEM.

Nerve-cords far apart and in ectoderm in *Nerilla*; PEREYASLAWZEWA: far apart between the ganglia and very close to the epidermis in *Phyllo-docidae*; GRAVIER.—Anatomy, morphology, and histology of cerebral ganglion in *Amphinomidae*, *Palmyridae*, *Lycoridae*, and *Maldanidae*; RACOVITZA.—Functions of cerebral and suboesophageal ganglia in *Nereis*, *Lumbricus*, and *Hirudo*; MAXWELL.—Nervous system of *Dero*; BRODE: of *Aeolosoma* (presence of ladder-like ventral cord); BRACE.

Ganglia of ventral nerve cord of Leeches; SIMON & THIRY.—Cells of sympathetic ganglia with definitely arranged networks in protoplasm of cell in Leeches; SIMON.

Nervous system of Cestodes; BRAUN (3) p. 1275: of 2 species of *Moniezia* (posterior, anterior lateral, and two pairs commissural ganglia in each proglottid); TOWER: of *Ichthyotenia*; RIGGENBACH: of *Ligula* (band of longitudinal nerves between inner and outer muscular layers connected with main lateral nerves by commissures); LÜHE (2), see also BRAUN (3) p. 1279.

Neurochord cells in ventral lobes of cerebral ganglion and at intervals, dorsally and ventrally (but asymmetrically), down the lateral cords in a *Cerebratulus*; MONTGOMERY (1).—Nervous system of fresh-water Dendrocoels, and terminations of nerves in muscles of pharynx; MONTI.

Visceral nervous system in *Ascaris*; LOOSS (1).

### SENSE ORGANS.

Special epidermis cells serving for the perception of light in the *Lumbricidae*, comparison with eyes of Leeches; HESSE.—Disposition and structure of the three pairs of eyes in *Acanthobdella*; KOWALEVSKY, A. (1).—Relation of Platyhelminth to Hirudinean eyes: structure of those of *Turbellaria*; JÄNICHEN.—Provisional eyes in *Spio* larvæ; HÆCKER.

Otocysts in a Maldanid (*Clymenides sulfureus*, Clp.); MÉSNIL (2).

Nuchal organ of Polychætes, histological structure thereof in *Chrysopetalum* and *Clymene*; RACOVITZA.

Lateral line organs in *Acanthobdella*; KOWALEVSKY, A. (1).

### GENITAL SYSTEM.

In *Nerilla*, the ♀ with rudimentary ♂ organs, eggs apparently lying directly on the intestinal epithelium, and passing out through the alimentary canal; PEREYASLAWZEWA.—Gonads of *Arenicola*; KYLE.—Development of Gonads and sexual phases in *Myzostoma*, eggs with accessory cells (as in certain Polychætes and Gephyreans, Leeches and many Crustaceans); WHEELER.—Compound nuclei in eggs of certain Polychætes; MICHEL (1).—The origin of egg centrosomes in *Chatopterus*; MEAD.

A Lumbriculid with asymmetrical arrangement of spermathecae and sperm-ducts; SMITH.

Histology of testes and sperm-cells in the Earthworm, (not agreeing



with Calkin); ERLANGER (2).—Spermatophores in 11 species of Swiss Earthworms, in 7 of which they were not known to occur before; RIBAU-COURT.

Gonads of Cestodes; BRAUN (3) p. 1384: their arrangement and development in *Ichthyotænia*; RIGGENBACH (1).—A *Monostomum* with the genital aperture surrounded by spines, and with a single testis; LOOSS (2).

Morphology of genital apparatus in Land-Planarians; v. GRAFF (2): arrangement and structure in certain Polyclads; PLEHN (2).—Structure of male genital organs in *Stenostomum*; SABUSSOW (1).

### REPRODUCTION.

Fertilisation of *Ascaris* egg; ERLANGER (1).—Egg-laying in a *Sagitta*, the eggs breaking through the germinal epithelium into a duct lying between the ovary and body wall; CONANT.—Egg-laying in *Nerilla*; PEREYASLAWZEWA.

Proterandric hermaphroditism in *Dodecaceria*; MONTICELLI (1).

Asexual reproduction, its nature and significance in Annelids and Platyhelminthes; SEELIGER.—Epigamy and schizogamy in Polychætes, sometimes both occurring in one life cycle (e.g., in *Autolytus longiferiens* and *Exogone gemmifera*); MALAQUIN (2).—Epitochous stage in Cirratulids (formed by epigamy); MÉSNIL & CAULLERY (1).—Formation of two epitochous forms from one individual (both by schizogamy) in an *Autolytus*; MENSCH.—Fission in *Naidomorpha*; SMITH: in Nemertines; BEN-IAM (3).

### DEVELOPMENT AND LIFE-HISTORY.

Anatomy and histology of pelagic Polychæt larvæ; development compared with that of non-pelagic larvæ; significance and duration of swarm-stage; HÆCKER.—Post-larval stages of *Arenicola*; KYLE.

Development of *Myzostoma*; WHEELER.

Structure of miracidium (ciliated embryo) of *Distomum*; unsuccessful attempt to decide whether budding or parthenogenetic development of the egg takes place; the fact that not even one polar body is given off established; COE.—Development of other species of Trematodes; LOOSS (2).

Early development of the Nemertine *Drepanophorus spectabilis*; LEBEDINSKY.—Maturation and fertilisation of egg of *Thysanozoon brocchi*; v. D. STRICHT.

Segmentation and formation of germinal layers in *Ascaris*, one abnormal embryo described; ZOJA.—Two cases of eggs apparently fusing with one another in *Ascaris*; ZUR STRASSEN.

Life-history of certain Bird Tæniae, parasitic in fresh-water Crustacea; MRÁZEK: of *Bothriotænia plicata*; ARIOLA (1).—A proliferating *Cysticercus*; BRAUN (1).

Direct development of *Ascaris lumbricoides* in man; BRANDES.

### REGENERATION.

Regeneration of anterior region in *Polydora*; MÉSNIL (1) pp. 201 & 209.—Regeneration of posterior end of body in *Nephtys* and *Allolobophora*, proliferation of ectoderm—not of mesoderm-cells; MICHEL (2) & (3).—Regeneration in several species of *Lumbricidæ* after self-amputation or artificial amputation of posterior or anterior end of body, its limitations, and the conditions which influence its rapidity; HESCHELER.—Regeneration of anterior and posterior part of alimentary canal after

amputation of head or tail respectively, with or without regeneration of segments, in *Ophryotrocha*, a *Nais*, and 3 Earthworms, there being no fresh ingrowth from ectoderm, and the new pharynx being formed from endoderm; RIEVEL.—Same subject dealt with in a preliminary notice by HEPKE in the *Naidæ*, the alimentary canal being, however, according to him, as well as nervous system and muscle, formed from the ectoderm.

Regeneration of parts not corresponding to the amputated parts (Heteromorphosis) in Planarians; DUYNE.

#### VARIATIONS AND ANOMALIES.

Variations in shape of dorsal cirri in individuals of the same species, or even in the same individual of *Phyllodoce*; GRAVIER.—Individual variation in the number of segments bearing crochet-chætæ in *Spionida*; MÉSNIL (1) p. 135, &c.—Asymmetry in a *Pygospio*; MÉSNIL (1) p. 179. in a *Polydora*, p. 198.—A specimen of *Lepidonotus clava* with the last 4 elytra on one side replaced by dorsal cirri, the other side being normal; ORLANDI.

Variations in position of clitellum, tuberculæ pubertates, and in arrangement of spermathecæ in different species of Earthworms of Switzerland; RIBAUCCOURT. Asymmetry of spermathecæ and sperm ducts of a Lumbriculid; SMITH.—An Earthworm bifurcated posteriorly; Acta Ac. Chili, vi, pp. v & lxxiii.—Abnormalities in regenerated parts of Earthworms; HESCHELER: of Planarians; DUYNE.

Irregular segmentation in Cestodes; ARIOLA (3).—Five specimens of *T. serrata* all from one dog, with proglottids very much fused—in one case as many as 34 posteriorly all in one piece; NEUMANN (1, No. 4).—399 specimens of *Anoplocephala plicata* in a horse, almost all with anomalies; BERNARD.—Abnormalities in *Cysticercus cellulosæ*; NEUMANN (1, No. 3).

Abnormal eggs and embryo in *Ascaris*; ZOJA; ZUR STRASSEN.

#### PHYSIOLOGY.

The physiology of muscle and nerve in *Sipunculus nudus*, with curves of isotonic and isometric contractions of the retractors; UEXKÜLL.

The functions of the supracæsophageal, subcæsophageal, and central nerve-cord in *Nereis*, *Hirudo*, and *Lumbricus*, compared with one another; MAXWELL.—Functions of septal glands of *Owenia*; GILSON.—Regulation of dorsal pores of Earthworm by nervous system, their function; KENG.—Endoplasmatic secretion in Enchytræids; GOODRICH.—Function of the chloragogene cells of Earthworms probably for storing food material; SCHNEIDER (1).

Physiology of fresh-water Leeches; KOWALEVSKY, A. (2) & (3).

#### MEDICAL NOTES.

Action of Leech-extract on blood in preventing coagulation not anti-septic but due to stimulation of the phagocytes; BOSC & DELEZENNE.

Toxic action of Cestodes and Nematodes in man and domestic animals; V. LINSTOW (2).

Human Tapeworms; MAGALHÃES, SONSINO & ZSCHOKKE, WARD.—A death due to the presence of a *Cysticercus* (with hypertrophied development of the scolex) in 3rd ventricle of brain; KRALTER & BÜHMIG.

Presence of *Ancylostomum duodenale* without secondary anæmia in niggers; ZINN & JACOBI.

### CLASSIFICATION.

Peculiar classification of "Vermes," the Nemathelminthes being referred to a group with the Arthropods, the rest supposed to form a series from Rotifers to Vertebrates; PERRIER (2): of the *Polychæta*, the *Aphroditidæ*, *Syllidæ*, *Tomopteridæ*, *Typhloscolicidæ*, and *Glyceridæ*, e.g., all being referred to one suborder, whilst the *Capitillidæ* have a suborder to themselves, the *Maldanidæ* and *Opheliidæ* being placed with the *Chlorhæmidæ*, &c., in another; BENHAM (6): of the Helminthes, the Gregarines being included amongst the Platyhelminthes; VILLOT.

The systematic position of *Nerilla*; PEREYASLAWZEWA.—Classification of *Spionidæ*; MÉSNIL (1).—Contribution to the classification of the *Lumbricidæ*; RIBAUCOURT, p. 88.

Classification of the genus *Bothriocephalus*; ARIOLA (2): of Land-Planarians, according to the two kinds of eyes; v. GRAFF (1): of the genus *Ascaris* according to the arrangement of jaws and lips; STOSSICH (1): of the *Gordiidæ*; RÖMER: of the *Chatognatha*; CONANT.

### HABITS, &c.

Self-amputation in Earthworms; HESCHELER.—Living Earthworms from ice: *L. rubellus*, REEKER: *Dendrob. rubida*; SEKERA (1).—Habits of *Xerobdella lecontei*; PENECKE.

Polymorphism in *Gordius*; VILLOT.

Egg-laying in *Sagitta*; CONANT (1).

Destruction of *Heterodera schachtii*; WILLOT.

### PARASITES.

In vascular system of *Filigrana* and *Salmacina*, Copepod embryos; MALAQUIN: In special cavities, communicating with the exterior, inside *Polydora*, adult Copepods; GIARD: In *Phyllodocidæ*, Gregarines; GRAVIER, p. 307: In *Nerilla*, a fungus; PEREYASLAWZEWA: In coelomic fluid of *Lumbricus*, symbiotic bacteria; KENG, LIM BOON: In *Myzostoma*, a new species of *Amæba* (*A. myzostomatis*) amongst the eggs and puncturing them; WHEELER, p. 256: In *Corallobothrium lobosum*, cysts of a *Cysticercus* of a *Tænia*; RIGGENBACH (1).

## III. DISTRIBUTION.

### 1.—GEOGRAPHICAL.

#### (a) MARINE FORMS.

Identical species in Extra-Tropical regions of N. and S. hemispheres unknown hitherto within the Tropics, 5 Polych. and 2 Nemertines, p. 452; corresponding species in N. and S. Hem., 2 Polychætes: (*Lumbriconereis kerguelensis* and *L. mardonis*, *Nereis eatoni* and *N. dumerilii*), p. 455; MURRAY.

Identical and corresponding Arctic and Antarctic *Gephyrea*; FISCHER (2) p. 7; Cestodes; LÖNNBERG.

### *Arctic Ocean.*

Siberia : Polychætes: (*Aricia kupfferi*, Ehl., and *Disoma multisetosum*, Oerst., var.); BIRULA.

White Sea : Oligochætes: 5 species Enchytræids; OBNORSKI.

E. of Spitzbergen : 2 new Polyclads; PLEHN (1).

### *Atlantic Ocean.*

7 species non-pelagic (4 new), and 4 pelagic Polyclads; PLEHN (3).

Contrasts in the marine fauna of Gt. Britain; MCINTOSH.

Coast of Norway.—Herløfjord: 52 or more *Polychæta*, 4 *Geph.*, APPELLOF (1); Osterfjord: 84 *Polychæta*, 7 *Geph.*, APPELLOF (2).

Kattegat: On *Raia*, n. sp. of ectoparasitic Triclad; JÄGERSKIÖLD.

Baltic Sea: *Chætognatha*, *Spadella*, and *Polychæt*-larvæ compared with those of extra-Baltic; AURIVILLIUS, p. 37.

Faroe Is.: New species of *Sagitta*; FOWLER.

W. coast of Scotland: 7 species *Polych.*, 1 *Geph.*, 1 *Nemertine*, 1 *Rotifer*; SCOTT, P. Phys. Soc. Edinb. cxxv, pp. 188 & 189.

Irish Sea: List of recorded species of *Vermes*; Rep. Brit. Ass. 1896, pp. 433-435.

English Channel: Enumeration of Polychætes found there, including 27 species not hitherto recorded from the locality; FAUVEL (2).—*Spionidæ* (16 spp.), and *Magelona*; MÉSNIL (1).—Saint-Vaast-la-Hougue: 20 species of *Phyllodocidæ*, 2 new and 2 others new to France; GRAVIER.

Straits of Dover: Nemertines, 28 species, supplementary to Joubin's list, 12 new to locality, of which 2 had not been found out of the Mediterranean before; HALLEZ.

Bay of Biscay:—Bay of Concarneau: 29 species of Rhabdocœl Planarians, 5 new and 7 undetermined ones; FÜHRMAN.—Gulf of Gascony: Deepwater *Polychæta* and *Gephyrea*, including *Pista mirabilis* and species of *Hemipodus*, which had only been found in the meridional zone of the S. Atlantic before; ROULE.

Mediterranean:—Polychætes in localities which had hitherto not been much investigated; ORLANDI.—Sardinia: *Polyophthalmus* and *Dodecaceria*, and a *Eunice siciliensis*, with tube rooted into a bivalve shell; MONTICELLI (2) & (1).

Sea of Marmora: Polychætes and Gephyreans; OSTROUMOFF.

C. Verde I.: New Polyclad; PLEHN (1).

Coast of N. America:—E. coast of U. S. A., Bahamas, and Jamaica: Chætognaths, 9 species; CONANT: Ectoparasitic Trematodes; GOTO.

### *Indian and West Pacific Oceans.*

N. of Sumatra: 1 new Polyclad belonging to a new family; PLEHN (1).

Molluccas and Borneo: A Gephyrean on a coral; KÜKENTHAL.—Amboyna: 4 new Polyclads; PLEHN (2): 6 species Gephyreans, 2 new; FISCHER (1).

Hong Kong: A new Polyclad; PLEHN (1).

New Zealand Seas: Chætognaths (*Spadella möbius*?); PARKER, Tr. N. Zealand Inst. xxviii, p. 758.

*East Pacific Ocean.*

Gulf of Panama : 1 new Polyclad ; PLEHN (1).  
 W. coast of S. America : 2 new species Polyclads (1 new genus) and 5 species hitherto only known from European seas ; PLEHN (1).—Peru, Chili, and S. Patagonia : 7 species marine Nemertines ; BÜRGER (1).

*Southern Oceans.*

S. of Tropic Capricorn, excluding Kerguelen Region, deep water, below 1000 faths.: 1 *Geph.*, 20 *Polych.*, and 1 *Nemert.* ; MURRAY, Tr. R. Soc. Edinb. xxxviii, pp. 384 & 385.

Kerguelen Region, in depths exceeding 1260. faths.: 1 *Geph.*, 17 *Polych.*, 2 species *Myzostoma* and 1 *Stelechopus*, 1 *Nemert.*, and 2 *Nemat.* ; (pp. 361 & 362). In 150–1000 faths.: 2 species *Polych.* (p. 405). Above 150 faths.: 1 *Geph.* and 41 *Polych.*, 6 *Nemert.* and 2 *Nemat.* (pp. 418–420), of which 1 *Geph.* and 8 *Polych.* were not found by the "Challenger" (p. 445). At surface : 2 *Polych.* (p. 477) ; MURRAY, *t. c.*

Straits of Magellan : *Gephyrea* ; FISCHER (2) : Nematodes ; v. LINSTOW (4).

## (b) LAND AND FRESH-WATER FORMS.

Distribution of the genus *Perichata*: regarded essentially as an Oriental genus ; enumeration of the 8 species found in both Old and New Worlds, and the 8 species found in the New World only ; BEDDARD, P. Zool. Soc. London, 1896.

*Palæarctic Region.*

N. Europe :—Murmanian Coast: Lake on I. of Kildin, Annelids (names not mentioned) ; KNIPOWITSCH, Bull. Ac. St. Petersb. iii, p. 459.  
 East Prussia : Fresh-water leeches (9 species) ; BLANCHARD (1, xx).

N. W. Europe :—I. of Borkum : 6 species of Leeches ; BLANCHARD (1, xxii) : Lake of Plön ; ZACHARIAS.

France :—Basses-Pyrenees : A giant Earthworm ; GUERNE & HORST.

Azores : Occurrence of *Mermis* noted for the first time (in one of the islands) ; RICHARD (2) p. 176.

Middle Europe :—Switzerland : 7 species (or subspecies) of *Lumbricus* (2 new, and 2 new varr.) ; 37 species *Allolobophora* [4 (? 5) new, 17 new subspecies, and 10 new varr.] ; RIBAUCOURT.—Alpine Lakes of Tessin : (*Turbel.*, *Nemat.*, *Leeches*, and *Oligoch.*) ; FUHRMAN (3).—Lake Garda : Nemertines, their presence due to birds, showing that they do not indicate a relict fauna ; GARBINI (1).—Benaco : Deep and limnetic fauna ; GARBINI (2).—Italian Helminthes (*Cest.*, *Trem.*, and *Nemat.*) ; PARONA (1).—Austro-Hungary : Earthworms ; ROSA (5).—S. E. Bohemia : Turbellarians, and 2 species *Aeolosoma* in ditches ; SEKERA (2).—Hungary : Fresh-water Nematodes ; DADAY (1) : 4 *Turb.*, 22 *Nemat.*, 2 *Oligoch.* ; DADAY (2).

Asia :—*Hirudinea* ; BLANCHARD (3).—Caucasus, Central Asia, China, and Mongolia : *Gordiidae* ; CAMERANO (3).—Hong Kong : New species of *Perichata*, and one species shown to be identical with one found in Sandwich Is. ; BEDDARD (1) pp. 204 & 202.

*Oriental and Australian Regions.*

Bombay : a new species of *Benhamia*; BEDDARD, P. Zool. Soc. London, 1896.

Sumatra : Oligochætes; ROSA (2) & (4).—Mentawai : Oligochætes; ROSA (3).

Borneo, Celebes, Gilolo, Batjan and Ternate : 2 species *Geoscolicidæ*; 13 *Megascolicidæ*, several new species of *Perichæta*; MICHAELSEN.—Celebes and Jampea : 6 new species of *Perichæta*; BENHAM (5).

New Guinea : Land Nemertine; BÜRGER (1).

Central Australia : a new species of *Acanthodrilus*; SPENCER.

Queensland : Land Nemertine; BÜRGER (1).

New Zealand :—Springburn (foot of Mt. Somers) : Land-Planarians (11 species of *Geoplana*); DENDY (1) : Land Nemertine; DENDY (2).—Macquarie I. : New species of *Acanthodrilus*; BEDDARD (1).

Sandwich Is. : Earthworms, 9 species, of which 5 peculiar to the locality; BEDDARD (1).

*Ethiopian Region.*

Togoland :—Bismarckburg : New genus of Leech; BLANCHARD (2).

Madagascar : a new species of *Kynotus*; BENHAM (1).

*Neotropical Region.*

South American *Oligochæta* and their geographical relations; UDE, Magal. Reise, pp. 30–42.

S. of S. America :—Straits of Magellan, &c. : Nails, Tubificids, and Terricolous Oligochætes; BEDDARD (2) : Enchytræids; UDE : Cestodes; LÖNNBERG : Trematodes; BRAUN (4) : Nematodes and *Acanthocephala*; v. LINSTOW (6).—Argentina and Paraguay : Leeches (2 species *Helobdella*, 1 *Haementaria*, 2 *Semiscolex*, 1 *Liostomum*); BLANCHARD (4).—Chili : a *Gordius*; CAMERANO (1).

Bolivia :—Basso Beni : a new species of *Gordius*; CAMERANO (2).

Barbadoes and Trinidad : New spp. of *Perichæta*; BEDDARD (1).

*Nearctic Region.*

N. American *Oligochæta* : notes on; SMITH.—*Bipalium kewense* in U.S.A.; WOODWORTH (2).

Florida : 4 species of *Oligochæta*; SMITH, p. 406.

Illinois : 2 new species (and 1 new genus) of *Oligochæta*; SMITH, p. 396.

Pennsylvania : new fresh-water Nemertine; MONTGOMERY (2).

Lake Michigan and neighbouring waters : 11 Turbellarians, 3 new to N. America, and 2 new species; WARD : other new species; WOODWORTH (1).

Newfoundland : 2 species of Leeches, both European; BLANCHARD (1, xxiii).

## 2. GEOLOGICAL.

Tertiaries :—of Italy : Annelids, with their synonyms; ROVERETO : of Savoy and Dauphiny : Annelids; DOUXAMI.

Palæozoics:—Lower Carboniferous, Flintshire: a new species *Eunicites*; HINDE.—Devonian of Sta. Lucia: 2 species *Spirobis*; CEHLERT.

### 3. IN OR ON OTHER ANIMALS.

#### *Mammals.*

In Man.—A new species of Cestode; WARD (1): another new species; DANIELS.—A second instance of the occurrence of *Hymenolepis diminuta*, Rud., in man; MAGALHAES: another instance, (?); SONSINO & ZSCHOKKE.—A *Cysticercus* in third ventricle of brain; BÖHMIG & KRALTER.—A "mummified" *T. solium*, BARBAGALLO.—*Cysticercus acanthotriax* of man = abnormal *C. cellulosa*, NEUMANN (1, 3).—*Filaria nocturna* in eye in America; HENRY (1).—*Filaria sauguinis hominis* in man at Rouen; SPALIKOWSKI, Bull. Soc. Rouen, xxxi, p. 9.—The *Filaria* of the blood, urine, &c., of an Umbrian; ORSI.—Normal occurrence of *Ancylostomum duodenale* in niggers; ZINN & JACOBY.

In other Mammals:—Occurrence of parasites before only known in man in other Mammals, viz.: *Strongylus subtilis* in a camel, Egypt, *Dist. heterophyes* in dog, Egypt and Japan; LOOSS (3).—*Entozoa* (mostly larval forms) in several Mammals; SONSINO (3).—Ascarids (35 species); STOSSICH (1): Nematodes, Trematodes and Cestodes; STOSSICH (2).—Nematodes of Ceylon Mammals (*Manis* and *Stenops*); MEYER.—Egyptian horse, cattle, and buffaloes, Trematodes; LOOSS (2).—Horse: an *Ascaris megaloccephalus* causing peritonitis and death; GRAEFE.—Large number of *Anoplocephala plicata*, with anomalies; BERNARD.—Sardinian cattle: occurrence of *Bilharzia crassa* in liver; SANFELICE & LOI.—*Cysticercus* of oxen; GENERALI; FERRUGATI & CAMPANINI.—Dromedary: 3 Nematodes, 1 larval Nematode, and a Cestode; RAILLIET (1).—Seal: a Trematode; MÜHLING.—Cats and dogs: Cestodes; NEUMANN: a *Cysticercus* in heart of dog; LINDEMANN.—Nematode embryos in skin of dog; J. G. SCHNEIDER (195).—Mole: a Trematode; MÜHLING.—In *Spermo-philus*: cysts of a *Cysticercus* in a swelling under the axle; BRAUN (1).—Hares and rabbits: Adult Cestodes; STILES: *Strongylus retortiformis* causing epidemic of pneumonia; YUNG (1) & (2).—Bats: Several new species of *Distomum* in Egyptian bats; LOOSS (2): a new species of Cestode from *Galeopithecus orlans*; SLUITER.—Aplacental Mammals: Cestodes; ZSCHOKKE (2).

#### *Birds.*

*Entozoa* (mostly larval forms) of several birds; SONSINO (3).—Ascarids (47 species); STOSSICH (1).—Nematodes, Trematodes and Cestodes; STOSSICH (2).—Trematodes of Egyptian birds; LOOSS (2).—Cestodes, Trematodes, Nematodes, and an Echinorhynchus from birds near Warsaw; SINIZIN.—On the genus *Davainea*; FÜHRMAN (2).

List of Worms parasitic in fowls; THEOBALD.—Tapeworms of poultry; STILES & HASSALL (1).—The genus *Echinostomum* in the fowl and domestic duck; KOWALEVSKI, M. (1).—*Dispharagus nasutus* of fowls; PIANA.—Trematodes of birds (crows, stork, and ducks), including a new species of *Distomum* and a new genus in the long-tailed duck, *Harelda glacialis*; MÜHLING.—A new species of *Bilharzia* in the blackheaded gull; PARONA & ARIOLA (1).—Echinococcus cysts in liver of *Meleagris gallopavo*; LEONARDI.—A new genus of Cestode in *Fuligula ferina*; JACOBI.—*T. filum* in a bird of prey; LÖNNBERG.—*Bothriotænia erostris* in the blue penguin, Terra del Fuego; LÖNNBERG.—A *Filaria* in the egg of *Rhea americana*; BERG.

*Reptiles.*

Ascarids (29 species); STOSSICH (1).—*Entozoa* of chameleon; SONSINO (3).—Trematodes in Egyptian reptiles (including several new species in chameleon); LOOSS (2).—A *Ligula* in a specimen of *Gongylus ocellatus* from Algiers; SAINT-RÉMY.—A Trematode of *Thalassochelys caretta*, L.; MONTICELLI (3).—Nematode in python; STOSSICH (2).—A new species of *Distomum* in buccal cavity of a Brazilian snake; WEST.

*Amphibians.*

Ascarids (5 species); STOSSICH (1).—In *Salamandrina perspicillata*, Sav.: a new *Distomum* and an encysted Nematode larva; SONSINO (2).

*Fish.*

Ascarids (98 species); STOSSICH (1).—Distribution of parasitic Worms (13 *Cest.*, 18 *Trem.*, 14 *Nem.*, 7 or more *Echinorh.*, 2 *Piscicola*), in 25 species of fresh-water fish of the Rhine and L. of Geneva; ZSCHOKKE (1) & (3).—Endoparasitic Trematodes of fresh-water fish of Basle; HAUSMANN: of Egyptian fish; LOOSS (2).—The genus *Ichthyotenia* and its distribution in fish; RIGGENBACH (1).—Embryo of *Bothriocephalus latus* in perch at Dorpat; SCHRÖDER.—Helminthes (4 *Trem.*, 1 *Cest.*, and 2 (?) *Nem.*) of *Orthogoriscus mola*; STOSSICH (3): of *Pagellus erythrinus*; STOSSICH (2).—2 new species of Trematodes on branchiæ of *Brama rayi*; PARONA & PERUGIA.

Holocephali:—In *Chimera monstrosa*: a Leech externally, 2 Cestodes and 2 Trematodes internally; OLSSON.

Selachians:—In *Heptanchus*: larva of *Tetrarhynchus* in stomach; PINTNER (3).—On *Raia*: a new genus of ectoparasitic Trematode; JÄGERSKIÖLD.

*Arthropods.*

In Insects:—Ascarids; STOSSICH (1).—Nematode larva in flies; PIANA.

In Myriapods:—Nematodes of *Diplopoda*; PARONA (2).—An *Oxyuris* in *Julus* from Ceylon; MEYER.

In Crustaceans:—Cestodes, Trematodes, and Nematodes of Brachyurous and Anomurous Decapods; VAULLEGEARD. — Cestode larvæ in Amphipods and Copepods; MRÁZEK.

*Molluscs.*

Australian snails in which *Cercaria* of liver-fluke found; FIELDER; CHERRY.

*Echinoderms.*

Crinoids:—New species of *Myzostomum* on *Pentacrinus* and *Metacrinus*; WHEELER.

*Annelids.*

A *Distomum* parasitic in wall of pharynx of a *Myzostoma*; WHEELER.

*Plants.*

Diseases caused by Nematodes; FRANK.—A new Nematode from leaves of *Cirsium* and *Carduus*; THOMAS.—Cucumber and Tomato Nematodes; DYKE.



## IV. SYSTEMATIC.\*

## ANNELIDA.

## A.—GEPHYREA.

## INERMIA.

- Phascolion* sp. ?, Smyth Channel; FISCHER, Magal. Reise, p. 5.  
*Phascolosoma margaritaceum*, Sars, var. *capsiforme*, Baird, in Straits of Magellan, notes and anatomy; FISCHER, *l. c.* p. 3.  
*Phymosoma ambonense*, n. sp., Amboyna, FISCHER, Semon's Forschungsreisen, v, pt. 3, p. 337.  
*Priapulius caudatus*, Lam., var. *antarcticus*, Mich., in Straits of Magellan; FISCHER, Magal. Reise, p. 7.  
*Sipunculus nudus*, physiology of muscle and nerve; UEXKÜLL.

## ARMATA.

- Echiurus chilensis*, M. Müll., in Straits of Magellan, notes and anatomy; FISCHER, Magal. Reise, p. 6.  
*Thalassema semoni*, n. sp., Amboyna, FISCHER, Semon's Forschungsreisen, v, pt. 3, p. 338.  
*Thalassema*, n. sp.?, with a remarkable green pigment, I. of Man; Rep. Brit. Ass. 1896, p. 419.

## B.—CHÆTOPODA.

## POLYCHÆTA.

- Ampharete*: anatomical distinction of genus from *Amphicteis*; enumeration of the 11 species comprised in it; FAUVEL, Bull. Soc. Normand. (4) x.  
*Amphicteis*, distinction from *Ampharete*, enumeration of the 9 species comprised in it; *A. angustifolia*, Gr., *A. intermedia*, Mar., and *A. nasuta*, Ehl., referred to genus *Ampharete*; FAUVEL, *l. c.* *A. curvipalea*, Clp., referred to *A. gunneri*, Sars; FAUVEL, C.R. Ac. Sci. cxxiii, p. 708.  
*Amphinomidæ*: systematic position of family, p. 207; cephalic lobe and encephalon of *Eurythoe borealis*, p. 179, and of *Euphrosyne audouini*, p. 186 (nuchal region, p. 260); RACOVITZA, Arch. Zool. exp. (3) iv.  
*Aonides*: diagnosis of genus, p. 120; *A. oxycephala*, Sars, p. 242, external anatomy, synonymy and affinities; MÉSNIL (1) [see also under *Spionides*].  
*Aricia ligustica*, n. sp., Mediterranean, ORLANDI, Atti Soc. Ligustica, vii, p. 154.  
*Boccardia*: diagnosis of the subgenus of *Polydora*, p. 119; *P. (B.) polybranchia*, p. 221, external anatomy, larvæ, and synonymy; MÉSNIL (1).  
*Carazzia*, n. g. [or ? n. subg. of *Polydora*], for *C. (P.) antennata*, Clp.; MÉSNIL, Bull. Sci. France Belgique, xxix, p. 227.

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\* A † is prefixed to fossil forms.

- Chaetozone* : not a separate genus, but the epitochous stage of other Cirratulids; MÉSNIL & CAULLERY (1).
- Chrysopetalum debile*, Gr., cephalic lobe and encephalon, p. 209; nuchal region, p. 282; systematic position of genus, p. 217; RACOVITZA.
- Clymene lumbricoides*, M.-Edw., cephalic lobe and encephalon, p. 231, nuchal region, p. 288; RACOVITZA.
- Clymenides sulphureus*, Clp., anatomy; MÉSNIL (2).
- Clytie simplex*, Gr., shown to be a Spionid; MÉSNIL (1) p. 122.
- Disoma multisetosum*, Oerst., var., in Siberia; BIRULA, *Annuaire Mus. St. Petersb.* 1896, p. viii.
- Ditrupa* : diagnosis of genus and description of *D. arietina*, O. F. M.; ROULE, *Ann. Univ. Lyon*, xxvi, pp. 463-465.
- Dodecaceria concharum*, Oerst., description of animal and of its borings; MONTICELLI, *Boll. Soc. Napoli*, ix, pp. 87-92. Atochous and epitochous form; MÉSNIL & CAULLERY.
- Ehlersiella hirsuta*, n. sp., Bay of Gascony, ROULE, *Ann. Univ. Lyon*, xxvi, p. 460.
- Eteone arctica*, Mlmg., on French coast; GRAVIER, p. 308.
- Eulalia aurea*, n. sp., dredged at Petit-Nord (B. of La Hogue); GRAVIER, *Bull. Sci. France Belgique*, xxix, p. 309.
- Eumida communis*, n. sp., dredged in Bay of La Hogue; GRAVIER, *l. c.*
- Eunice amphihelice*, n. sp. (Marion), inhabiting *Lophohelia* and *Amphihelia*, Bay of Gascony, ROULE, *Ann. Univ. Lyon*, xxvi, p. 446. *E. gunneri*, Storm., the inhabitant of *Lophohelia prolifera*. Synonymy: (*E. philocorallia*, Buch.), and (*E. floridana*, Ehl. [?]) referred to it; BUCHANAN.
- †*Eunicites reidiæ*, n. sp., Lower Carboniferous, Halkin Mts., Flintshire, jaw apparatus, HINDE, *Quart. J. Geol. Soc.* lii, p. 448.
- Glycera kœhleri*, n. sp., Bay of Gascony, ROULE, *Ann. Univ. Lyon*, xxvi, p. 151.
- Hekaterobranchus*: its position amongst the *Spionidæ*; MÉSNIL (1) p. 248: regarded as a Cirratulid; BENHAM (6).
- Hemipodus septentrionalis*, n. sp., Bay of Gascony, at depth of 1700 m., ROULE, *Ann. Univ. Lyon*, xxvi, p. 452.
- Heterocirrus flavo-viridis*, St.-J., epitochous form; MÉSNIL & CAULLERY (1). (*H. saxicola*), Gr., and (*H. ater*), Qfg., = *Dodecaceria concharum*, Oerst.; MONTICELLI (1).
- Heterospio*, Ehl., not a Spionid; MÉSNIL (1) p. 122.
- Josephella*, n. g. of Serpulid (with only 5 thoracic segments, with operculum, but without thoracic membrane, and with 6 branchiæ, having cartilaginous branchial axes), for *J. marenzelleri*, n. sp., rocks, C. de la Hogue; MÉSNIL & CAULLERY, *Zool. Anz.* xix, p. 484.
- Lagisca propinqua*, McL., var. *abyssorum*, n. var., Bay of Gascony; ROULE, *Ann. Univ. Lyon*, xxvi, p. 444.
- Laonice* : diagnosis of genus; MÉSNIL (1) pp. 120 & 247.
- Leiocephalus leiopygos*, Gr., cephalic lobe and encephalon; RACOVITZA, pp. 229 & 237.
- Lepidonotus clava*, Johnst., specimen with asymmetrical arrangement of elytra; ORLANDI, p. 150.
- (*Lysippe*) : referred to genus *Amphicteis*; FAUVEL, *Bull. Soc. Normand.*
- Magelona papillicornis*, O. F. M., its affinities with the *Spionidæ* and with the *Chaetopteridæ*; MÉSNIL (1) p. 257: its development; HÆCKER.
- Maldanidæ* : cephalic lobe and encephalon, 3 types recognized; RACOVITZA, p. 227. Relation of family to *Telethusidæ*; RACOVITZA, *l. c.* p. 244, and MÉSNIL (2).
- Marenzelleria*, n. g. of *Spionidæ*; MÉSNIL (1) p. 120. [No species are definitely referred to it.]

- Microspio*, n. g., for *Spio mecznikowianus*, Clp., and *Spio atlanticus*, Lnghs.; MÉSNIL, Bull. Sci. France Belgique, pp. 119 & 174.
- Mysta siphonodonta*, Gr., diagnosis of species; GRAVIER, p. 311.
- Nereis dumerilii*, Aud. & Edw., cephalic lobe and encephalon; RACOVITZA, p. 217.
- Nerine*: diagnosis of genus, p. 119, and of its 5 contained species, p. 171, including *N. bonnieri*, n. sp., Wimereux, p. 168; *N. cirratulus*, p. 152, external anatomy, development and synonymy; and *N. foliosa*, p. 165, external anatomy and synonymy; MÉSNIL.
- (*N. (Malacoceras) longirostris*, Qfg.) non St.-J. = *N. cirratulus*, p. 164, Wimereux; MÉSNIL, Bull. Sci. France Belgique, xxix.
- Nerineides*, n. g. for ("*Nerine longirostris*, Qfg." of St.-J.), diagnosis of genus, p. 119; MÉSNIL l. c. p. 152.
- Oriopsis*, n. g. of Serpulid (with only 5 thoracic and 4 abdominal segments); for *O. metschnikowi*, n. sp., in empty *Spirorbis* tube, near S. Vaast la Hogue; MÉSNIL & CAULLERY, Zool. Anz. xix, p. 483.
- Paraonis tenera*, Gr., probably a *Spionides*; MÉSNIL l. c. p. 120.
- (*Periptyches*, Gr.): genus referred to *Prionospio*; MÉSNIL, l. c. p. 121.
- Petaloproctus spatulus*, Gr., cephalic lobe and encephalon; RACOVITZA, p. 232.
- Phyllochætopterus (fallax*, Clp.) = *P. socialis*, Clp.; ROULE, Ann. Univ. Lyon, xxvi, p. 458.
- Phyllodoce teres*, Mlmgr., on French coast; GRAVIER, p. 308.
- Polydora*: characters of genus, pp. 119 & 230: table for distinguishing the species, p. 236; *P. langerhansi*, n. sp., p. 202, for (*P. ciliata*, var. *minuta*, Lnghs); *P. flava*, Clp., p. 180, external and internal anatomy, larva, synonymy; *P. cæca*, Oerst., p. 191; *P. socialis*, Schm., p. 193, external anatomy and synonymy; *P. giardi*, Mésn., p. 195, external and internal anatomy and larva; *P. armata*, Lnghs., p. 203, *P. ciliata* Johnst., p. 210, external anatomy, larva, and synonymy; MÉSNIL (1). *P. giardi*, Mésn., inhabited by a parasitic Copepod; GIARD (1) & (2).
- Polyophthalmus*: critical revision of the Mediterranean species, concluding that there is really only 1 species varying very much in its colour markings; (*P. ehrenbergi*, Qfg.), (*P. pallidus*, Clp.), and (*P. dubius*, Qfg.), are therefore all referred to *P. pictus*, Duj.; MONTICELLI, Boll. Soc. Napoli, x, p. 35, and ix, p. 86.
- Pterocirrus* as a host for an Orthonectid; SAINT-JOSEPH.
- Pygophyllum*, Schm., not a Spionid; MÉSNIL (1) p. 122.
- Pygospio*: diagnosis of genus, p. 119; *P. elegans*, Clp., var. *minuta*, Giard, external anatomy, larvæ, abnormalities in segmentation, and synonymy; MÉSNIL (1) p. 175.
- Claparède's "larva of *Pygospio ciliata*" probably that of *Polydora (Carazzia) antennata*; *ib.* p. 182.
- Sabella pavonina*, var. *abyssorum*, n. var.; ROULE, Ann. Univ. Lyon, xxvi, p. 461.
- Scolecopsis*, Bl. (Mgrn.): diagnosis of genus, p. 120, *S. fuliginosa*, Clp., p. 132, *S. ciliata*, Kef., p. 138, *S. girardi*, Qfg., external morphology and synonymy, and a larva which? that of *S. girardi*, p. 149; MÉSNIL (1).
- †*Serpula* sp.?, Tertiaries of Aosta; DOUXAMI.
- (*Sosane*): genus referred to *Amphicteis*; FAUVEL, Bull. Soc. Normand.
- Spinther mineaceus*, Gr., cephalic lobe and encephalon, p. 197; its affinities to the *Amphinomidæ*, p. 206; RACOVITZA.
- Spionidæ*: external morphology; MÉSNIL, Bull. Sci. France Belgique, xxix.
- Spio*: diagnosis of genus, p. 118, enumeration of species, p. 129, including *S. martinensis*, n. sp., St. Martin's Bay, p. 122, MÉSNIL, l. c.

- Spionides*, Webst. and Ben.: diagnosis of genus, p. 120, to include (*Aonides*) *fulgens*, Lev., and (*A.*) *gracilis*, Tauber., as well as *S. cirratus*, Webst. & Ben.; MÉSNIL, *l. c.* p. 246.
- Spiophanes*: diagnosis of genus, p. 121; *S. bombyx*, Clp., external anatomy, synonymy, and position amongst the *Spionidae*; MÉSNIL, *l. c.* p. 249.
- †*Spirobis lusitanica* and *ornata*, n. spp., Devonian, Sta. Lucia, ÖHLERT, p. 847.
- Thelepus cincinnatus*, var. *profundus*, n. var., Bay of Gascony; ROULE, Ann. Univ. Lyon, xxvi, p. 459.
- Tomopteris onisciformis*, Esch., in Mediterranean; ORLANDI.
- Tyrrhena atlantica*, n. sp., Bay of Gascony, at depth of 1410 m.; ROULE, Ann. Univ. Lyon, xxvi, p. 455.

## b. OLIGOCHÆTA.

- Acanthodrilus eremius*, n. sp., Central Australia, where apparently it is the only representative of the Earthworms, SPENCER, Rep. Horn Exped. ii, Zoology, p. 418; *A. macquariensis*, n. sp., Macquarie I., S. of New Zealand, BEDDARD, P. Zool. Soc. London, p. 208; *A. albus*, n. sp., Corral, p. 37, *A. bicinctus*, n. sp., Smyth Channel and Picton I., p. 27, *A. carneus*, n. sp., Quilpue, p. 33, *A. chilensis*, n. sp., and *A. cingulatus*, n. sp., Teja I., Valdivia, p. 29, *A. corralensis*, n. sp., Corral, p. 35, *A. decipiens*, n. sp., Valdivia, p. 21, *A. magellanicus*, n. sp., Elizabeth I., p. 25, *A. minutus*, n. sp., Valdivia, p. 27, *A. occidentalis*, n. sp., Valparaiso, p. 23, *A. purpureus*, n. sp., Straits of Magellan, Pta. Arenas, p. 28, *A. putablensis*, n. sp., Valdivia, p. 32, and *A. simulans*, n. sp., Corral, p. 36, BEDDARD, Magal. Reise (9).
- A. bovei*, Rosa, *A. dalei*, F. E. B., *A. pictus*, Mich., and *A. platyurus*, Mich., contributions to anatomy, and distribution in S. America; BEDDARD, *l. c.*
- Aeolosoma*: nervous system; BRACE.
- Allolobophora exacystis*, n. sp., near Kronstadt, Transylvania, and *A. tigrina*, n. sp., near Mehadia, Hungary, ROSA, Boll. Mus. Torino, xi, No. 246; *A. claparedi*, n. sp., Brengarten, p. 85, *A. danieli rosai*, n. sp. (non *A. rosaea*, Sav. & Rosa), Bernese Alps, p. 39, *A. darvini*, n. sp., Morgins, p. 82, *A. nusbaumi*, n. sp., Valais, p. 84, *A. sulfurica*, n. sp., Sulphur Spring, Bernese Alps, and *A. tyrtea*, n. sp.?, Valais, p. 78, RIBAUCOURT, Rev. Suisse Zool. iv.
- A. caliginosa*, Rosa & Sav., varr., *trapezoides* and *turgida*, n. varr., p. 49, and *A. c. beddardi*, n. subsp., p. 53; RIBAUCOURT, *l. c.*
- A. chlorotica*, Oerl., varr., *curiosa* and *waldensis*, n. varr., p. 46, and *A. c. morgensis*, n. subsp., p. 47; RIBAUCOURT, *l. c.*
- A. cyanea profuga*, Rosa, var., *sylvestris*, n. var., p. 63, and *A. c. recta*, n. subsp., p. 67, and 3 other subsp., p. 64; RIBAUCOURT, *l. c.*
- A. octoedra*, Rosa, varr. *alpinula*, p. 33, *irregularis*, p. 29, *lilliputiana*, p. 32, n. varr., Valais Alps; RIBAUCOURT, *l. c.*
- A. parva*, Eis., *ulei*, n. subsp., Bernese Alps; RIBAUCOURT, *l. c.* p. 80.
- A. putris*, var. *subrubicunda*, Eis., var. *helvetica*, n. var., and *A. p. arborea*, Rosa, *l. c.*; RIBAUCOURT, *l. c.* p. 18.
- A. rosea*, Rosa, subsp. *macædonica*, Eisen?; RIBAUCOURT, *l. c.* p. 37.
- A. gigas*, Dugès?, specimen with clitellum beginning further back than usual, and comprising fewer segments, Ahusquy (Lower Pyrenees); GIARD & HORST, Bull. Soc. zool. France, xxi, p. 108.

- Allurus tetraedus*, Eis., varr. *bernensis* and *novis*, n. varr., p. 73, *A. t. infinitesimalis*, n. subsp., p. 74, Switzerland; RIBAUCOURT, *l. c.*
- (*Annadrilus*) Horst = *Glyphidrilus*, Horst; MICHAELSEN, p. 196.
- Archienchytræus albimaris*, n. sp., White Sea, OBNORSKI, Protok. St. Peterb. xxvi, No. 6, p. 11.
- Benhamia modiglianii*, n. sp., Sumatra, ROSA, Ann. Mus. Genova, xvi, p. 310; *B. indica*, n. sp. (or possibly the type of a new genus), Thana, Bombay (1500–2500 ft.), BEDDARD, P. Zool. Soc. London, p. 209.
- (*Bilimba*) Rosa = *Glyphidrilus*, Horst; MICHAELSEN, p. 196.
- Bothrioneuron americanum*, n. sp., fresh-water ditches, Buenos Aires, anatomy, BEDDARD, Magal. Reise, p. 9.
- ? *Chatogaster filiformis*, Schm., in Valdivia R.; BEDDARD, *l. c.* p. 5.
- (*Deltania*), Eis.: genus referred to *Microscolex*; BEDDARD, *l. c.* p. 45.
- Dero vaga*, Leidy (for *Aulophorus vagus*, Leidy); BRODE.
- Desmogaster schildi*, n. sp., Sumatra, ROSA, Ann. Mus. Genova, xvii, p. 339.
- Enchytræus hortensis*, n. sp., GOODRICH, Quart. J. Micr. Soc. xxix, p. 51.  
*E. humicultor*, Vejd., var. *similis*, n. var., Straits of Magellan, &c., comparison with the two other S. American species; UDE, Magal. Reise, p. 27.
- Fridericia striata*, Lev., at Lota and Montevideo; UDE, p. 29.
- Glyphidrilus kuekenthali*, n. sp., Barum River, Borneo, MICHAELSEN, Abh. Senckenb. Ges. xxiii, p. 195.
- Henlea ventriculosa*, d'Udek, Straits of Magellan; UDE, p. 29.
- Hesperodrilus*, n. g. of *Tubificidæ*, with *H. albus*, n. sp., Falkland Is., *H. branchiatus*, n. sp., Valdivia, *H. niger*, n. sp., Falkland Is., and *H. pellucidus*, n. sp., Uschuaia; BEDDARD, Magal. Reise, pp. 9–18.
- Kerria rosæ*, n. sp., Buenos Aires, and *K. saltensis*, n. sp., Valparaiso, and *K. speggazzinii*, Rosa; BEDDARD, *l. c.* p. 40.
- Kynotus cingulatus*, n. sp., Imerina, Madagascar, BENHAM, Quart. J. Micr. Soc. p. 445.
- Lumbricus michaelseni*, n. sp., Forest of Bremgarten, p. 15, *L. studeri*, n. sp., Chasseral, p. 5, *L. castaneus*, Dug., varr. *morelli* and *perrieri*, n. varr., p. 13, RIBAUCOURT, Rev. Suisse Zool. iv.
- Marionina exigua*, n. sp., Uschuaia, p. 19, *M. insignis*, n. sp., Pt<sup>a</sup>. Arenas, p. 17, *M. singula*, n. sp., Uschuaia, p. 20, and *M. georgiana*, Mich., UDE, Magal. Reise.
- Mesopododrilus*, n. g. of *Lumbriculidæ*, with *M. asymmetricus*, n. sp., shore of Quiver Lake, Illinois, allied to *Eclipsoidrilus frigidus*, Eisen, spermiduct and spermathecae on one side only, their pores median; SMITH, Bull. Illinois Lab. iv, p. 402.
- Michaelsona*, n. g. of *Enchytraidæ*, with *M. subtilis*, n. sp., Straits of Magellan and Uschuaia; UDE, Magal. Reise, p. 23.
- Microscolex hempeli*, n. sp., near Quincy, Florida, SMITH, Bull. Illinois Lab. iv, p. 407; *M. corralensis*, n. sp., Corral, p. 56, *M. diversicolor*, n. sp., Valdivia, p. 59, *M. gracilis*, n. sp., Terra del Fuego, p. 54, *M. griseus*, n. sp., Chili, p. 48, *M. longiseta*, n. sp., Terra del Fuego, p. 49, *M. michaelsonii*, n. sp., Straits of Magellan and Terra del Fuego, p. 52, *M. modestus*, n. sp., *M. papillosus*, n. sp., and *M. robustus*, n. sp., Valdivia, p. 58, BEDDARD, Magal. Reise.
- Moniligaster modiglianii*, n. sp., Sumatra, ROSA, Ann. Mus. Genova, xvi, p. 503. (*M. cæruleus*, Horst), = *M. viridis*, Bedd., referred to a n. g. *Polygaster*; HORST.
- Pachydrius americanus*, n. sp., Montevideo, p. 10, *P. insularis*, n. sp., Elizabeth I., p. 12, *P. maritimus*, n. sp., Uschuaia, p. 7, *P. parvus*, n. sp., Straits of Magellan and Terra del Fuego, p. 14, *P. tenuis*, n. sp., Montevideo, and anatomy of *P. verrucosus*, Clp., and *P. maximus*, Mich.; UDE, Magal. Reise.

*Perichata sancti-jacobi*, n. sp., Santiago, BEDDARD, Magal. Reise, p. 61.  
*P. perkinsi*, *P. molokaiensis*, *P. sandvicensis*, n. spp., Sandwich Is., pp. 198-204, *P. insulæ*, n. sp., Hong Kong, p. 204, *P. trityphla*, n. sp., Barbados, p. 205, *P. trinitatis*, n. sp., Trinidad, p. 206, BEDDARD, P. Zool. Soc. London.

*P. acrophila*, p. 527, *P. atheca*, p. 520, *P. eoa*, p. 530, *P. glandulosa*, p. 524, *P. nana*, p. 519, *P. papulosa*, p. 525, *P. propora*, p. 522, *P. udei*, p. 521, n. spp., Sumatra, *P. hippocrepis*, n. sp., Mentawai, p. 607, ROSA, Ann. Mus. Genova, xvi.

*P. bonthainensis*, n. sp., p. 437, Celebes, *P. digitata*, n. sp., p. 432, Jampea, *P. hexatheca*, n. sp., p. 440, Celebes, *P. jampeana*, n. sp., p. 430, Jampea, *P. purpurea*, n. sp., p. 445, *P. zebra*, n. sp. and young?, p. 442, Celebes, BENHAM, Ann. Nat. Hist. xviii.

*P. barami*, n. sp., Borneo and Celebes, p. 203, *P. supuensis*, n. sp., Gilolo, p. 225, *P. densipapillata*, n. sp., Batjan, p. 227, *P. minutihassæ*, n. sp., Celebes, p. 235, MICHAELSEN, Abh. Senckenb. Ges. xxiii.

*P. halmaheræ*, n. sp., Gilolo, with *P. h. coecilia*, *gamsungi*, *galelensis*, *kauensis*, n. subspp., Gilolo, and *P. h. batjanensis*, n. subsp., Gilolo and Batjan, and *P. h. imparicystis*, n. subsp., Batjan, MICHAELSEN, l. c. pp. 208-222.

*P. crassicystis*, n. sp., Gilolo, Patani, and Ternate, with *P. c. tobeloënsis*, n. subsp., Gilolo, and *P. c. chica*, n. subsp., Gilolo, Batjan, and Celebes, MICHAELSEN, l. c. pp. 204-208.

*P. pataniensis*, n. sp., Gilolo, with *P. p. labuhensis*, n. subsp., Batjan, MICHAELSEN, l. c. pp. 222-225.

*P. capensis*, Horst, revision of species, with synonymy of the type form and inclusion, as subspp., of *P. fasciata*, Rosa, *P. willeyi*, Benham, ? *P. inflata*, Horst, and ? *P. sumatrana*, Horst; MICHAELSEN, l. c. pp. 229-234.

*Phreodrilus* to be regarded as an aberrant Tubificid, not as the type of a new fam.; BEDDARD, Magal. Reise, p. 9.

*Pleionogaster ternatæ*, n. sp., Ternate, MICHAELSEN, Abh. Senckenb. Ges. xxiii, p. 198.

*Polygaster*, n. g. for *Moniligaster cæruleus*, Horst, which ? = *M. (viridis)*, Beddard; HORST, Notes Leyden Mus. xvii, p. 166.

*Pontoscolex hawaiiensis*, n. sp., Sandwich Is., BEDDARD, P. Zool. Soc. London, p. 196.

*Pristina proboscidea*, n. sp., brook near Valparaiso, with a long prostomium like a *Stylaria*; BEDDARD, Magal. Reise, p. 4. *P. leidyi*, n. sp., Illinois R., ? for (*P. longiseta*, Leidy) non Ehrenb.; SMITH, Bull. Illinois Lab. iv, p. 396.

(*Rhododrilus*), Bedd.: referred to gen. *Microscolex*; BEDDARD, Magal. Reise, p. 45. See also SMITH, p. 410.

*Stylodrilus vejdoskyi*, Benh., notes on; FRIEND.

*Tubifex rivulorum*, Lam.; *Ib.*

### c. MYSOSTOMIDÆ.

Relation to Polychæta, and to *Spinther* especially; WHEELER.

*Myzostoma belli*, n. sp., p. 246, *M. circinatum*, n. sp., p. 236, both on species of *Pentacrinus*, S. of Philippines, *M. cryptopodium*, n. sp., p. 248, on a *Metacrinus*, ? from the Indian Ocean, and *M. eremita*, n. sp., on a *Metacrinus*, S. of Philippines, p. 250, WHEELER, Mt. Stat. Neapel, xii.

## C.—ARCHIANNELIDA.

*Branchiobdella varians*, nephridia ; VOINOV.

## D.—HIRUDINEA.

*Acanthobdella peledina*, Gr. : detailed anatomy from preserved and living specimens, some of them from L. Onega, and smaller green ones from Pedrosavodsk, (? to be distinguished specifically by the form and shape of setæ from Grube's *A. peledina* from Jenesei) ; KOWALEVSKY, Bull. Ac. St. Petersb. p. 263.

*Archæobdella esmontii*, O. Grimm., shown not to be primitive, but to be allied to *Nephelis*, detailed anatomy from preserved and living specimens from the Dniester ; KOWALEVSKY, *l. c.* p. 331.

[“(*Glossiphonia* ?) *scutifera*,” J. Young] = *G. stagnalis*, L. ; BLANCHARD, Bull. Soc. zool. France, xxi, p. 137. *G. complanata*, L., synonymy and occurrence in America ; BLANCHARD, *l. c.* p. 140.

*Helobdella*, n. g. for small *Glossophonidæ* with only one pair of eyes, including *H. (Hirudo) stagnalis*, L., and *H. triserialis*, Bl. ; BLANCHARD, Boll. Mus. Torino, xi, No. 263, p. 4.

*Herpobdella atomaria*, Car., var. *suecica*, n. var., Sweden and E. Prussia ; BLANCHARD, Bull. Soc. zool. France, xxi, p. 120.

*Hirudininae* : the sub-fam. divided into two groups according to the number of series of teeth in jaw, viz., *Distichodonta*, with *Hæmopsis* and *Praobdella* ; *Monostichodonta*, with *Hirudo*, *Limnatis*, and *Hirudinaria* ; BLANCHARD, Arch. Naturg. lxii.

*Hirudo asiatica*, n. sp., on frogs (*R. esculenta*, var.) in water, Tirphul, Afghanistan ; BLANCHARD, Mem. Soc. zool. France, ix, p. 320.

*Liostomum*, Wagler : genus defined, and *L. joscense*, Gr. & Oerst., described ; BLANCHARD, Boll. Mus. Torino, xi, No. 263, pp. 17 & 20.

*Nephelis*, only one species in U.S.A. ; BRISTOL, Science, iii, p. 33.

*Piscicola elegans*, n. sp., parasitic on *Hypophthalmichthys* (fresh-water and marine), China, BLANCHARD, Mem. Soc. zool. France, ix, p. 318.

*Praobdella*, n. g. of *Hirudininae*, with two rows of teeth in jaw, for *P. büttneri*, n. sp., and *P. (?) guineensis*, n. sp., Bismarckburg, Togoland, BLANCHARD, Arch. Naturg. lxii, pp. 50 & 52.

*Semiscolex*, Kbg., for (*Cyclobdella*, Weyenb.) ; BLANCHARD, Boll. Mus. Torino, xi, No. 263, p. 10.

*Trachelobdella sinensis*, n. sp., Tshe-fu, China, probably on branchiæ of a Teleostean, BLANCHARD, Mem. Soc. zool. France, ix, p. 316. *T. nodulifera*, Malmgr., on *Chimæra* ; OLSSON : anatomy ; JOHANSSON.

*Whitmania* : revision of genus ; to include *W. ferox*, n. sp. for (*Trocheta subviridis*, Murié) non Dutrochet, China (S. of Hindustan) ; the genus only known in Japan before ; BLANCHARD, *l. c.* p. 322.

*Xerobdella lecontei*, Frauentf., habits and distribution ; PENECKE.

## PLATYHELMINTHES.

## A.—CESTODA.

*Adult Forms.*

*Anoplocephala plicata*, large number of specimens in horse, almost all with anomalies ; BERNARD.

*Bothriodiätenia*, n. g. for (*Tænia*) *erostris*, Lönnb., with *B. e. typica* and *B. e. eudypitidis*, n. subsp., from intestine of *Eudypetes cataractes*, Terra del Fuego, and *B. e. minor*, Berg. ; LÖNNBERG, Magal. Reise, p. 7.

- Bothriocephalus*: genus and its family defined, description of *B. minutus*, n. sp., from intestine of *Syngnathus*, and 7 other species; ARIOLA, Atti Soc. Ligustica, p. 263. *B. polycalceolus*, n. sp., from intestine of *Phoca vitulina*, ARIOLA, Boll. Mus. Torino, xi, No. 259, p. 4.
- B. maculatus*, Leuck., *B. elegans*, Kr., and table to distinguish 12 species; (*B.*) *plicatus*, Rud., and (*B.*) *truncatus*, Leuck., referred to genus *Bothriotenina*, ARIOLA, t. c. p. 18.
- Bothriotenina*: anatomy and biology, definition of the genus and of 6 of its 8 species, including *B. chilensis*, n. sp., from intestine of *Genypterus chilensis*, Chili; RIGGENBACH, Centrbl. Bakter. xx, p. 229.
- B. plicata*, Rud., definition of species and its life-history; ARIOLA (1).
- (*Chapmannia tauricollis*, Chpm.), shown to be a *Davainea*; FUHRMAN (2)
- Copeosoma*, n. g. (with genital pore on surface-side of proglottid, although near to edge), for *C. papillosum*, n. sp., from *Tringa minuta*, Warsaw; SINIZIN (206).
- Corallobothrium*: relation of genus to the *Ichthyoteniae*; detailed anatomy of *C. lobosum*, Rig.; RIGGENBACH, Rev. Suisse Zool. iv, p. 211.
- Ctenotenia denticulata*, Rud., not a parasite of cattle and sheep, but of rabbits and hares; *C. (pectinata)*, Goeze, referred to it; *C. goezei*, Baird, distinguished from it; STILES & HASSALL, Centrbl. Bakter. xix, p. 71.
- Davainea* (?) *musculosa*, n. sp., from intestine of *Sturnus vulgaris*, with alternating genital apertures, p. 122, anatomy of 2 other species (*D. leptosoma*, Dies., and *D. tauricollis*, Chpm.), and revision of the 20 remaining species; FUHRMAN, Rev. Suisse Zool. iv, p. 111.
- Diploposthe*, n. g. for *D. (Taenia) laevis*, Dies., from *Fuligula ferina*; JACOBI, Zool. Anz. xix, p. 269.
- (*Dithridium*) of dog = larval form of *Mesocestoides*, into which it develops without the intervention of any intermediate host; NEUMANN (147) No. 1.
- Echinocotyle*, young stage in *Boeckella brasiliensis*; MRÁZEK.
- Gyrocotyle*, relation to *Caryophyllaeus* and to the *Cestodaria* of Monticelli; OLSSON, p. 509.
- Hypophthanotenia*, new subfam. for 2 new genera, *Trichocephaloides* and *Copiosoma*, with genital pores on the surface-side of the proglottids; SINIZIN (206).
- Ichthyotenia*: discussion of genus, p. 241, detailed anatomy of *I. fossata*, p. 166, and *I. abscisa*, p. 193, Rig.; 19 species recognised; the group most closely allied to the *Calliobothriæ* (of Selachians), and to the *Tetrabothriæ* by means of *Corallobothrium*; RIGGENBACH, Rev. Suisse Zool. iv.
- Ligula*, nervous system and musculature; LÜHE (2); BRAUN (2).
- Macraspis*: relation of genus to *Apilogaster*. *M. elegans*, Ols., from gall-bladder of *Chimarra*, described and figured; OLSSON, p. 505.
- Mesocestoides*, remarks on genus and on its life-history; NEUMANN (147, No. 1). *M. alaudi*, n. sp., from intestine of *Alauda arvensis*, Trieste, STOSSICH (2), p. 133 [?].
- Ptychophysa (Taenia) michaelsonii*, n. sp., intestine of *Canis azaræ*, Quilipué, LÖNNBERG, Magal. Reise, p. 1.
- Scolex paguri bernhardi*, v. Ban., in Decapod Crustacea; VAULLEGARD, p. 664.
- Stilesia vittata*, n. sp. or n. var. of *S. globopunctata*, intestine of dromedary; RAILLIET, C.R. Soc. Biol. iii, p. 491.



- Tænia confusa*, n. sp., man, WARD; *T. demerariensis*, n. sp.?, man, British Guiana, DANIELS; *T. plastica*, n. sp., intestine of *Galeopithecus volans*, India, SLUITER, Centrbl. Bakter. xix, p. 941; *T. semoni*, n. sp. from *Perameles obesula*, to form with *T. echidnæ*, A. W. Thomps., a new genus; *T. obesa*, n. sp., from *Phascolarctos cinereus*, ? the type of another new genus to include also *T. plastica*, Sluiter, ZSCHOKKE, Zool. Anz. xix, p. 481; *T. novella*, n. sp., intestine of cat, NEUMANN, Mem. Soc. zool. France, ix, p. 117; *Tænia*, ? n. sp., intestine of lion, PAVONA, Boll. Mus. Torino, xi, No. 258, p. 3; *T. filum*, Goeze, forma *polybori*, n.f., from intestine of *Polyborus thrarus*, LÖNNBERG, Magal. Reise, p. 5.
- T. (Hymenolepis) pyramidalis*, n. sp., from *Lasciola philomela*, Warsaw, and *T. (Dicranotænia) spiculigera*, N., var. *varsoviensis*, n. var., from *Tringa alpina*, SINIZIN.
- T. nana*, v. Sieb., of man distinguished from *T. murina* of rat; anatomy of both species; v. LINSTOW, Jena. Zeitschr. xxx, p. 571. *T. crassiceps*, Leuck., life-history; BRAUN, Centrbl. Bakter. xx, p. 584. *T. flavopunctata*, Weinl. (= *T. diminuta*, Rud.) SONSINO; ZSCHOKKE. *T. (Ctenotænia) denticulata*, Rud., not in sheep and cattle, as Stiles said, but only in rabbit and hare; LÜPKE, Centrbl. Bakter. xx, p. 549.
- Tetrarhynchidæ*, morphology of proboscis; PINTNER (1): anatomy; PINTNER (2).
- Tetrarhynchus ruficollis*, Eisenh., anthocephalus- and tetrarhynchus-form in Marine Decapod Crustaceans, n. sp.; VAULLEGEARD, p. 663.
- Trichocephaloides*, n. g. (with genital pores on the surface-side of the proglottids, some way from edge), for *I. inermis*, n. sp., from *Tringa alpina*, Warsaw; SINIZIN.

### Young Forms.

- Cysticercus cellulosæ*, abnormalities; "*C. acanthotrias*" of man, probably only an abnormal form of it; *C. c.*, in brain of dog, specimen differing in size, and abnormal development of hooks, from other normal ones of same host; NEUMANN (147, No. 3): in heart of dog; LINDEMANN. *C. longicollis*, Rud. (before only known from mule), cysts forming swellings in axilla of *Spermophilus citellus*, proliferating so that there are several in one cyst, some with 2 or more heads in grape-like bundles; adult found in fox only; BRAUN, Centrbl. Bakter. xx, p. 580.
- C. parasilphæ*, n. sp., long-tailed, but without hooks on rostellum; *C. Tæniæ microstomatos*, Duj., *C. T. furcata*, Stieda (both rare), refound; v. LINSTOW (3).
- New Cysticercoid from *Diaptomus*; Cysticercoid of *T. lanceolata* of goose in *Cyclopida*; Cestode larva, ? of *T. fallax*, Kr., in a *Gammarus*; MRÁZEK.
- [See also under *Dithridium* and *Echinocotyle*.]

## B.—TREMATODA.

### Adult Forms.

- Amphistomum gigantocotyle*, n. sp., stomach of *Hippopotamus bothriophoron*, Braun, and *A. subtriquetrum*, Rud., redescribed; OTTO. *A. conicum*, Rud., development and life-history; LOOSS (2).

*Apoblema*: characteristics of the subgenus (of *Distomum*), and anatomy of the Egyptian form of *A. mollissimum*, Lev., and of another species, both from intestine of *Clupea nilotica*; LOOSS (2).

*Bilharzia polonica*, n. sp., from blood of 3 species of *Anas*, Lemburg and Poland; so different from the 3 other species (*B. hæmatobia*, *crassa*, and *magna*) that he would refer these all to 1 species, viz.: *B. hæmatobia*; KOWALEWSKI, Bull. Ac. Cracovie, p. 63. [See also PARONA & KOWALEWSKI.] *B. kowalewskii*, n. sp., ♂ only, from *Larus melanocephalus* (near Albenga); PARONA & ARIOLA, Atti Soc. Ligustica, vii, p. 114.

*B. hæmatobia*, errors in Lortet & Vailleton's description; LOOSS (2): methods of entering host; SONSINO & KOWALEWSKI.

*Cyathocotyle*, n. g., as type of a n. fam. *Cyathocotylæ*, belonging to the *Holostomidæ*, with *C. prussica*, n. sp., intestine of *Harelda glacialis*, Pillau; MÜHLING, Arch. Naturg. lxii, p. 270.

*Distomum platyurum*, n. sp., from *Harelda glacialis*, Pillau; MÜHLING, l. c. p. 267. *D. philodryadum*, n. sp. (from buccal and nasal cavities of a Brazilian snake); WEST, J. Linn. Soc. xxv, p. 322.

*D. ramlianum*, n. sp. (intestine of *Chameleo*), *D. unicum*, n. sp. (intestine of *Trionyx nilotica*), *D. geminum*, n. sp. (bile duct of *Milvus parasiticus*), *D. simulans*, n. sp. (bile duct of *Pernis apivorus*), *D. amphileucum*, n. sp. (bile duct of *Naja haje*), all from Egypt, and belonging to Blanchard's *Opisthorcis* group (= *Prosthometra*, Looss); LOOSS (2).

*D. glandulosum*, n. sp. (intestine of *Taphosus nudiventris*), *D. hirsutum*, n. sp. (intestine of *Chameleo*), *D. chefrenianum*, n. sp. (intestine of *Rhinopoma microphyllum*), *D. pyramicum* and *D. sphaerula*, n. spp. (intestine of *Rhinolophus hipposcrepis*), *D. obtusum*, n. sp. (intestine of *Chameleo*), all from Egypt and belonging to the group *Lecithodendrium*; LOOSS (2).

*D. coleostomum*, n. sp. (alimentary canal of *Pelicanus onocrotalus*), *D. spiniceps* and *D. cahiricum*, n. spp. (intestine of *Bagrus bayud* and *D. catervarium*, n. sp. (intestine of *Clupea nilotica*), all from Egypt; LOOSS (2).

*D. vallei*, n. sp., from *Fulco subbuteo*, STOSSICH, Boll. Soc. Adriat. xvii, p. 129.

*D. salamandrinae perspicillatæ*, n. sp., from Salamander, Italy; SONSINO, Atti Soc. Toscana, P.-v. x, p. 116.

*D. angusticollæ*, n. sp., from *Cottus gobio*, near Basel, and *D. perlatum*, Nordm., var., *expinosum*, n. var.; HAUSMANN, Centrbl. Bakter. xix, p. 391.

*D. myzostomatis*, n. sp., young specimens in parenchyme of wall of pharynx of *Myzostoma platypus*, v. Gr.; WHEELER, Mt. Stat. Neapel, xii, p. 257.

*D. hepaticum*, var. *ægyptica*, n. var.; LOOSS (2): anatomy and life-history, ? = var. *angusta*, Raill., and therefore *D. giganteum*, Cobb; BRAUN, Centrbl. Bakter. xx, p. 108, and SONSINO, Centrbl. Bakter. xx, p. 447; development; COE.

*D. phoxini*, *notidobice*, *mystacidis*, n. spp. (young), v. LINSTOW, Arch. mikr. Anat. xlvi.

(*D. constrictum*, Leared) referred to genus *Mesogonimus*; MONTICELLI (3).

*D. cirratum*, R., *flexuosum*, R., *hians*, R., *longicauda*, R., and *tenuicollæ*, R., anatomy; MÜHLING, Arch. Naturg. lxii, pp. 244-266. *D. hepaticum*, development; COE. *D. megastomum*, R., in Decapod Crustacea; VAULLEGEARD, p. 665.

*D. (Brachylaimus) didelphidis*, n. sp., in *Didelphis marsupialis*, Paraguay, p. 164, and *D. (B.) meropis*, Rud., intestine of "vespière,"

- p. 167, *D. (B.) lingulata*, Rud., p. 172, *D. (B.) monas*, Rud., p. 173, *D. (B.) serpentatum*, Molin, p. 179; PARONA, Atti Soc. Ligustica, vii.
- D. (Dicrocoelium) crassicole*, Rud., p. 174, *D. (D.) dendriticum*, Rud., p. 177; PARONA, l. c.
- D. (Opisthorcis) caudatum*, Polonio; PARONA, l. c.
- D. (Echinostomum) coronarum*, Cobb; PARONA, l. c. p. 168.
- Echinostomum liliputanum*, n. sp. (intestine of *Fernis apivorus*), *E. euryporum*, n. sp. (intestine of *Milvus parasiticus*), Egypt; LOOSS (2); *E. lydiæ*, n. sp. (intestine of *Orthagoriscus mola*); STOSSICH, Boll. Soc. Adriat. xvii, p. 190.
- E. conoideum*, Bloch., for (*E. froelichii*, Kow.), which shown to identical with (*E. oxycephalum*, Rud.), and distinct from *E. echinatum*, Zed.; KOWALEWSKI, Kosmos polski. xxi, p. 563.
- (*Epibdella hippoglossi*, v. Ben.), referred to genus *Phyllonella*; GOTO.
- Fasciola hepatica* [see *Distomum hepaticum*].
- Gastrodiscus ægypticus*, Cobb, full anatomy and development; LOOSS (2).
- G. polymastos*, Lkt., new points in anatomy; OTTO.
- Gastrothylax*: the genus distinguished from *Amphistomum*; anatomy and development of *G. gregarius*, n. sp., paunch of buffalo, Alexandria; LOOSS (2): also in Egyptian oxen; SONSINO, Centrbl. Bakter. xx, pp. 446. *G. crumenifer*, Crepl., and *G. gregarius*, Looss, new points in anatomy; OTTO.
- Lophocotyle*, n. g. of fam. *Tristomidae* (subfam. *Monocotylidae*), with *L. cyclophora*, n. sp., ectoparasitic, probably on *Notothenia*; BRAUN, Magal. Reise, p. 1.
- Mesogonimus constrictus*, Leared, from *Thalassochelys caretta*, anatomy and development, and systematic position of genus; MONTICELLI (3).
- Microcotyle acanthurum*, n. sp., branchiæ of *Brama rayi*, Genova, PARONA & PERUGIA, Atti Soc. Ligustica, vii, p. 136.
- Monostomum pumilio*, n. sp., intestine of *Pelecanus onocrotalus*, Egypt; with genital aperture in middle of body with spines round it, and excretory pore dorsal, not ventral; LOOSS (2).
- Notocotyle diserialis*, n. sp., from *Rallus aquaticus*; SINIZIN.
- Octobothrium bramæ*, n. sp., on branchiæ of *Brama rayi*, Genoa; PARONA & PERUGIA, Atti Soc. Ligustica, vii, p. 135.
- (*Octocotyle thuninnæ*, Par. & Per.) referred to genus *Hexacotyle*; GOTO.
- Polystomum hassalli*, n. sp., bladder of *Kinosternon pennsylvanicum*, U. S. A. coast; *P. oblongum*, Leidy, distinguished from *P. oblongum*, Wright; GOTO, Congr. Zool. iii, p. 352.
- Tristomum (ovale)*, Goto = *T. laeve*, Verr.; GOTO, l. c. p. 351.

### Young Stages.

*Cercaria cellulosa*, n. sp., *C. pusilla*, n. sp., and *C. exigua*, n. sp., sporocysts in liver of *Melania tuberculata*, *Vivipera unicolor*, and *Cleopatra bulimoides* respectively.

*C. distomatosa*, Sons., *C. pleurolophocerca*, Sons., *C. vivax*, Sons., and *C. capsularia*, Sons.; LOOSS (2).

[See also under *Distomum*.]

### C.—NEMERTINEA.

A *Carinella* (? *C. linearis*, Mont.), anatomy, and process of fission in; BENHAM (2).

*Cerebratulus lacteus*, Verr., histology; MONTGOMERY (1).

- Drepanophorus spectabilis*, Qfg., development; LEBEDINSKY.  
*Eunemertes flavens*, n. sp., and *E. violacea*, n. sp., W. coast of S. America, BÜRGER, Zool. Jahrb. Syst. ix, p. 272.  
*Eupolia aurea*, n. sp., and *E. platei*, n. sp., W. coast of S. America, BÜRGER, l. c. p. 274.  
*Geonemertes graffi*, n. sp., Samarai (Queensland), and *G. micholitzii*, n. sp., New Guinea, BÜRGER, l. c. p. 272. Living specimens of *G. novaezealandiae*; DENDY (2).  
*Stichostemma asensoriatum*, n. sp., Taylor's Run, Pennsylvania; MONTGOMERY, Zool. Anz. xix, p. 437.

## D.—TURBELLARIA.

- Revision of Terricolous Triclad, 5 families and 19 genera (to include the 317 species) defined; v. GRAFF, Verh. Deutsch. Zool. Ges. vi, pp. 63–74.  
*Acelis*, n. g. of *Leptoplanidae*, with *A. arctica*, n. sp., E. of Spitzbergen (79° N., 22° E.); PLEHN, Jena. Zeitschr. xxx, p. 146.  
*Aceros nationalis*, n. sp., off Cape St. Vincent, PLEHN, Plankton Exp. ii, f, p. 7.  
*Alloioplana*, n. g. of *Planoceridae*, with *A. delicata*, n. sp., coast of Peru near Payta, under stones; PLEHN, Jena. Zeitschr. xxx, p. 142.  
*Allostoma durum*, n. sp., in marsh, Bay of Concarneau, FUHRMAN, C.R. Soc. Biol. iii, p. 1012.  
*Amblyplana*, n. g. of *Rhynchodemidae*, with 9 species; v. GRAFF, l. c. p. 72.  
*Artiocotylus*, n. g. of *Cotyloplanidae*, for *A. speciosus*, n. sp., Cape of Good Hope; v. GRAFF, l. c. p. 69.  
*Artioposthia*, n. g. of *Geoplanidae*, with 6 species; v. GRAFF, l. c. p. 66.  
*Bipaliidae*: definition of family and of its 3 genera; represented in Palæarctic, Ethiopian, and Oriental regions; v. GRAFF, l. c. p. 67.  
*Bipalium kewense*, in U. S. A.; WOODWORTH (2, No. 1).  
*Cheradoplana*, n. g. of *Geoplanidae*, with 4 species (all Neotropical); v. GRAFF, l. c. p. 65.  
*Cotyloplanidae*: definition of family and of its 2 genera represented in Ethiopian and Australian regions; v. GRAFF, l. c. p. 69.  
*Ctenoplana*: the genus referred to the *Ctenophora* as an ancestral form; WILLEY, Quart. J. Micr. Soc. xxxix, p. 323.  
*Diplopharyngeatidae*, n. fam. of Polyclads, for *Diplopharyngeata*, n. g., with *D. filiformis*, n. sp., North of N. point of Sumatra; PLEHN, Jena. Zeitschr. xxx, p. 167.  
*Dolichoplana feildeni*, n. sp., E. Indies, Guyana, and Barbadoes, v. GRAFF, l. c. p. 75 [not defined].  
*Geoplanidae*: definition of family, including 6 genera; represented in all regions except Nearctic, though rare in Palæarctic; v. GRAFF, l. c. p. 64.  
*Geoplana alfordensis*, *G. iris*, and *G. latissima*, n. spp., and *G. graffi*, var. *somersii*, n. var., Springburn. N. Z.; DENDY, Tr. N. Z. Inst. pp. 211–213.  
*Haplodiscus ussowi*, n. sp., Gulf of Naples; SABUSSOW, Mt. Stat. Neapel.  
*Latocestus*, n. g. of *Cestoplanidae*, with *L. atlanticus*, n. sp., C. Verd I.; PLEHN, Jena. Zeitschr. xxx, p. 159.  
*Leimacopsidae*: definition of family and of its 1 Neotropical genus, (for the species *Leimacopsis terricola*, Schm.); v. GRAFF, Verh. Deutsch. Zool. Ges., p. 63.

- Leptoplana subviridis*, n. sp., Amboyna, PLEHN, Semon's Forschungsreisen, v, pt. 3, p. 330; *L. kükenthalii*, n. sp., E. of Spitzbergen, p. 149, *L. panamensis*, n. sp., G. of Panama, p. 151, *L. pacificola*, n. sp., W. coast of S. America, p. 153, *L. chierchia*, n. sp., Ancon and Callao, p. 155. PLEHN, Jena. Zeitschr. xxx; *L. nationalis*, n. sp., near Ascension I. (8° S., 14° W.); PLEHN, Plankton Exped. ii, f, p. 6.
- Macrorhynchus cæruleus*, n. sp., on red algæ in laboratory of Forest, Bay of Concarneau, FUHRMAN, C.R. Soc. Biol. iii, p. 1012.
- Mesostoma wardii*, n. sp., New Baltimore, Lake St. Clair, WOODWORTH, p. 241, Bull. Mus. Harvard, xxix, and WARD, Bull. Mich. Fish Comm. *M. viridatum*, in United States; WOODWORTH, l. c.
- Micropharynx*, n. g. of ectoparasitic Triclad, with *M. parasitica*, n. sp., on back of *Raia clavata* and *R. batis*, Kattegat; JÄGERSKIÖLD, Ofv. Ak. Forh. liii, p. 707.
- Microstoma lucidum*, n. sp., Bay of Concarneau; FUHRMAN, C.R. Soc. Biol. iii, p. 1011.
- Nematodemus*, n. g. of *Rhynchodemidæ*, for *N. lumbricoides*, n. sp., Ceylon; v. GRAFF, l. c. p. 72.
- Pelmatoplana*, n. g. of *Geoplanidæ*, with 12 spp.; v. GRAFF, l. c. p. 65.
- Perocephalus*, n. g. of *Bipaliidæ*, with 4 spp., new, but names not given; v. GRAFF, l. c. p. 68.
- Placocephalus*, n. g. of *Bipaliidæ* with 14 species; v. GRAFF, l. c. p. 69.
- Plagiostoma fabrei*, n. sp., Glenau Is., and *P. violaceum*, n. sp., amongst algæ, Bay of Concarneau; FUHRMAN, C.R. Soc. Biol. iii, p. 1012.
- Plagiotata*, n. g. of *Planoceridæ*, with *P. promiscua*, n. sp., coast of Hong Kong; PLEHN, Jena. Zeitschr. xxx, p. 144.
- Planaria simplex*, n. sp., N.Y. Pt., Lake Michigan; WOODWORTH, Bull. Mus. Harvard, xxix, p. 239, and WARD, Bull. Mich. Fish Comm.
- Platydemus*, n. g. of *Rhynchodemidæ*, with 28 species; v. GRAFF, l. c. p. 70.
- (*Procotyla fluviatilis*) Leidy, = *Dendrocælum lacteum*, Oerst.; WOODWORTH (2, No. 2).
- Prosthiostomum nationalis*, n. sp., off Labrador (42° N., 55° W.); PLEHN, Plankton Exped. ii, f, p. 8.
- Rhynchodemidæ*: definition of family and of its 7 genera (for 80 species), represented in all regions; v. GRAFF, l. c. p. 70.
- Semonia*, n. g. of *Leptoplanidæ*, with *S. maculata*, n. sp., Amboyna (Moluccas); PLEHN, Semon's Forschungsreisen, v, pt. 3, p. 329, and Jena. Zeitschr. xxx, p. 157.
- Stenostamum leucops*, O. Schn., male genital organs; SABUSSOW (1).
- Stylochoplana nationalis*, n. sp., S. of Labrador (42° N., 55° W.); PLEHN, Plankton Exped. ii, f, p. 5.
- Thysanoplana*, n. g. of *Pseudoceridæ*, with *T. indica*, n. sp., and *T. marginata*, n. sp., Amboyna; PLEHN, Semon's Forschungsreisen, v, pt. 3, pp. 332 & 334, and Jena. Zeitschr. xxx, p. 162.
- Vortex bilineata*, n. sp., Round Lake, Charleroi; WOODWORTH, Bull. Mus. Harvard, p. 242.

## NEMATHELMINTHES.

## A.—NEMATODA (and GORDIIDÆ).

## (a) NEMATODA, S.S.

*Anchylostomum incertum*, ? n. sp., in horse from Italy ; SONSINO, Centrbl. Bakter. xx, p. 440.

*A. duodenale*, Dub., development ; LOOSS (3) p. 865. *A. stenocephalum*, Raill., in *Canis azaræ*, S. America ; v. LINSTOW (4).

*Anguillula*, n. sp., skin of dog, possibly the type of a n. g., with 18 regularly alternating preanal ventral papillæ and peculiar constrictor muscles of pharynx ; SCHNEIDER, J. G., Centrbl. Bakter. xx, p. 113.

*Anticomma reflexa*, n. sp., Uschuaia, v. LINSTOW, Magal. Reise, p. 8.

*Ascaris*: systematic monograph of the genus, of which 101 species are definitely recognised ; STOSSICH (1). Exhibition of specimens of the rare species, *A. capularia*, from muscles of fish ; Ber. Ver. Kassel, xli, p. xliii. *A. adunca*, Rud., from *Atherinichthys microlepidotus* ; (*A. rigida*, Rud.) and (*A. biuncinata*, Molin.) identified with it ; v. LINSTOW (4). *A. sp. ?* in Decapod Crustacea ; VAULLEGEARD, p. 667.

*Cucullanus* (?) *orthogorisci*, Rud., refound, ? = young of *Coronilla*, v. Ban. ; STOSSICH (3) p. 191.

*Dispharagus nasutus*, Rud., anatomy ; PIANA

*Enoplus atratus*, n. sp., Navarin, *E. erythrophthalmus* and *E. michaelsonii*, n. spp., Uschuaia ; v. LINSTOW, Magal. Reise, p. 10.

*Filaria ammocætis*, n. sp., from *Ammocætes branchialis*, and *F. geotrupidis*, n. sp., from *Geotrupidis sylvaticus* ; v. LINSTOW, Arch. mikr. Anat. xlviii. *F. zschokkei*, n. sp., p. 55, from intestine of *Manis pentadactyla*, Ceylon, and *F. sarasinorum*, n. sp., p. 72, from intestine of *Stenops gracilis*, Ceylon, anatomy and histology ; MEYER, Arch. Naturg. lxii. *F. erinacei*, ? n. sp., larva encysted in muscles and peritoneum of *Erinaceus* ; *F. rhabdogalis*, ? n. sp., cysts in peritoneum of *Rhabdogale*, Egypt ; SONSINO, Centrbl. Bakter. xx, pp. 438 & 440.

*F. horrida*, Dies, in egg of *Rhea americana* ; BERG.

*Heterodera (radicola)* of beetroot = *H. schachtii* ; STOKLASA, Centrbl. Bakter. (2) ii, pp. 771 & 772.

*Isacus silvestrii*, n. sp., in *Sphæropæus* and *Platyrrhacus*, Sumatra, *I. modiglianii*, n. sp., from *Spiroptreptus*, I. of Mentawai, Sereim (Sipora) ; PARONA, Atti Soc. Ligustica, vii, pp. 111 & 112.

*Leptosomatum setosum*, n. sp., Straits of Magellan and Uschuaia ; v. LINSTOW, Magal. Reise, p. 15.

*Nematodum clyti*, n. sp., from *Clytus arcuatus* ; v. LINSTOW, Arch. mikr. Anat. xlviii.

*Œsophogostomum venulosum*, Rud. ?, in intestine of dromedary ; RAILLIET (1) p. 490.

*Oncholaimus antarcticus*, n. sp., Uschuaia, v. LINSTOW, Magal. Reise, p. 9.

*Oxyuris longicaudata*, n. sp., in a species of *Julus*, Ceylon ; MEYER, Arch. Naturg. lxii, p. 79. *O. pachyjuli*, n. sp., from intestine of *Julus*, *O. sphæropæi*, n. sp., intestine of *Sphæropæus*, *O. platyrrhaci* and *O. sumatrensis*, n. spp., intestine of *Platyrrhacus* ; PARONA, Atti Soc. Ligustica, vii, pp. 109-111.

- Strongylus spathiger*, n. sp., intestine of dromedary, Alfort; RAILLIET, C.R. Soc. Biol. iv, p. 490. *S. costatus*, n. sp., from intestine of *Manis pentadactyla*, Ceylon, anatomy and histology; MEYER, Arch. Naturg. lxii, p. 69. *S. eisiliae*, n. sp., from *Python molurus*; STOSSICH, Boll. Soc. Adriat. xvii, p. 124. *Strongylus*, n. sp., and *S. subtilis*, Lss. (of man), in camel, Egypt; LOOSS (3).
- Symplocostoma antarcticum*, n. sp., ♀ only, Uschuaia; v. LINSTOW, Magal. Reise, p. 11.
- Trichocephalus echinophyllus*, Nitzsch, in intestine of dromedary; RAILLIET (1), p. 491.
- Tylenchus*, sp.?, forming galls on leaves of thistles; THOMAS.

## (b) GORDIIDÆ.

- Chordodes*: revision of genus, with 16 well-defined species and discussion of 4 doubtful ones; RÖMER, Abh. Senckenb. Ges. xxiii, pp. 276-293.
- C. bedriagæ*, n. sp., loc.?, p. 123, and *C. baeri*, n. sp., Iter Caspium, p. 124; CAMERANO, Annuaire Mus. St. Petersb. 1896; *C. balzani*, n. sp., Bolivia; CAMERANO, Ann. Mus. Genova, p. 19.
- Gordius*: revision of genus, with its 16 well-defined species and discussion of 9 doubtful ones; RÖMER, Abh. Senckenb. Ges. xxiii, pp. 257-276.
- G. latastei*, n. sp., Chili, CAMERANO, Act. Soc. Chili, v, p. 8; *G. balzani*, n. sp., Bolivia, CAMERANO, Ann. Mus. Genova, xvi, p. 9. *G. pleskei*, n. sp., N. China, *G. villoti*, Rosa, forma *pseudo-areolata*, n. f. for specimens with peculiar arrangement of the cuticle; CAMERANO, Annuaire Mus. St. Petersb. 1896, p. 118.
- (*G. preslii*), Vejd., as a stage in the development of *G. violaceus*, Baird; VILLOT (1).
- G. chilensis* in *Mantis gayi*; LATASTE (1).

## B.—ACANTHOCEPHALA.

- Arhynchidæ*, n. fam. for *Arhynchus hemignathi*, Shipl.; SHIPLEY, Quart. J. Micr. Soc. xxxix, p. 207.
- Echinorhynchus heteracanthas* and *E. tumescens*, n. spp., intestine of *Atherinichthys microlepidotus*, Jen., *E. miniatus*, n. sp., intestine of *Anas*, v. LINSTOW, Magal. Reise, p. 12.

## C.—CHÆTOGNATHA.

- Classification, agreeing in the main with Langerhans and Béranek; CONANT.
- Sagitta flaccida*, n. sp., Bimini, *S. tenuis*, n. sp., Jamaica; CONANT, Ann. Nat. Hist. xviii, p. 213. *S. whartoni*, n. sp., Faroe Channel; FOWLER, P. Zool. Soc. London, p. 991.
- Spadella maxima*, n. sp., N. Atlantic (42° 48' N., 50° 55' W.); CONANT, l. c. p. 212.

HEMICHORDA (including *Phoronis*).

## TITLES.

1. MASTERMAN, A. T. Preliminary note on the structure and affinities of *Phoronis*. P. R. Soc. Edinb. xxi, pp. 59-71, 5 figg. [Summary in Rep. Brit. Ass. Liverpool, p. 837.]
2. ——. On the structure of *Actinotrocha*, considered in relation to the suggested chordate affinities of *Phoronis*. T. c. pp. 129-136, 4 figg. [Preliminary note in Zool. Anz. xix, pp. 266-268.]
3. ROULE, L. Sur les métamorphoses larvaires du *Phoronis sabatieri*. C.R. Ac. Sci. cxxii, pp. 1343-1345.
4. SHIPLEY, A. E. *Phoronis*. Cambr. Nat. Hist. ii, ch. xvi, pp. 450-464, 6 figg.

## BIOLOGY, SYSTEMATIC, &amp;c.

Although no work has been done this year on what are universally recognised as *Hemichorda*, the Hemichordate affinities of *Phoronis* are very clearly shown by the researches of MASTERMAN (1) & (2). He describes notochord and mesoblastic somites in the *Actinotrocha* stage, and a branchial fissure representing a gill-slit. He proposes the name *Diplochorda* as a group name for *Phoronis*, and would place the two groups *Hemichorda* and *Diplochorda* into a division, *Trimetamera*, as opposed to all other *Chordates*, for which he proposes the collective name of *Polymetamera*.

SHIPLEY (4) gives a brief account of the genus and of 6 species.

The larval metamorphosis of *P. sabatieri* is described in a preliminary communication by ROULE (3).

## ROTIFERA.

## TITLES.

1. AURIVILLIUS, C. Das Plankton des Baltischen Meeres. Bih. Svenska Ak. xxi, Afd. iv, No. 8, pp. 1-83, 1 pl., 1 map.
2. \*BARROIS, T. Recherches sur la faune des eaux douces des Açores. Mem. Soc. Agric. Lyon (5) vi, 1896, 172 pp., 3 maps. Abstract in Zool. Centralbl. iii, pp. 609-611.



3. DADAY, J. Adatok a Tátrai tavak mikrofaunájának ismeretéhez. [Contributions to our knowledge of the microfauna of L. Tatri.] Math. Term. ertes. Magyar Ak. xiv, pp. 116-437.
4. DIXON-NUTTALL, F. R. On the male of *Stephanoceros eichhorni*. J. R. Micr. Soc. p. 166, pl. v.
5. \*FRANK, A. B. Die Thierparasitären Krankheiten der Pflanzen. Die Krankheiten der Pflanzen, ein Handbuch für Land- und Forstwirthe (Gärtner, Gartenfreunde und Botaniker). Breslau: 1896, vol. iii, 263 pp., 86 figg.
6. FUHRMAN, O. Recherches sur la Faune des lacs Alpains du Tessin. Rev. Suisse Zool. iv, pp. 489-543.
7. HARTOG, M. (1) On the relation of the *Rotifera* to the *Trochophore*. Rep. Brit. Ass. Liverpool, 1896, p. 836.
8. ———. (2) *Rotifera, Gastrotricha, and Kinorhyncha*. Cambridge Nat. Hist. ii, chap. viii, pp. 195-238, 15 figg.
9. HEMPEL, A. Descriptions of new species of *Rotifera* and *Protozoa* from the Illinois River and adjacent waters. Bull. Illinois Lab. iv, pp. 310-316, pls. xxii-xxvi.
10. JENNINGS, H. S. Rotifers of Lake Michigan. Bull. Michigan Fish Comm. No. 6 (1896).
11. KEL LICOTT, D. S. The *Rotifera* of Sandusky Bay. P. Amer. Soc. Micr. xviii, pp. 155-164.
12. KOFOID, C. A. On the occurrence of *Trochosphaera solstitialis* in the Illinois River. Science, iv, pp. 935 & 936.
13. RICHARD, J. Sur la faune des eaux douces des Açores. Bull. Soc. zool. France, xxi, pp. 171-178.
14. ROTHERT, W. Zur Kenntnis der in *Vaucheria*-Arten parasitierenden Rotatorie—*Notommata wernecki*, Ehr. Zool. Jahrb. Syst. ix, pp. 672-713, 4 figg.
15. ROUSSELET, C. F. (1) *Rattulus collaris*, n. sp., and some other Rotifers. J. Quekett Club, vi, pp. 265-270.
16. ———. (2) Structural features in *Rotifera*. Sci. Gossip, iii, p. 189.
17. ———. (3) On the male of *Rhinops vitrea*. J. R. Micr. Soc. 1897, pp. 4-9.  
Including list of species whose males are known (64 + 31).
18. ———. (4) Second list of new Rotifers since 1889. T. c. pp. 10-15.  
109 new names since 1893, but not so many new species. Bibliography.
19. SHEPHARD, J. A new Rotifer—*Lacinularia elongata*. Victorian Natural. xiii, pp. 22-24, 1 pl.
20. SKORIKOW, A. S. Rotatoria okrestnostei gh. Kharkov. [Rotifers of the neighbourhood of Charkov.] Trudui Kharkov. Univ. xxx, pp. 207-374, 4 pls.  
Full paper of which preliminary notice recorded in 1894. Abstr. in J. R. Micr. Soc. 1897, p. 208. 140 spp. or varr.

21. STOKES, A. C. (1) Notes on the genus *Apsilus* and other American *Rotifera*. J. R. Micr. Soc. pp. 269-278, pl. vi.
22. —. (2) Structural features in American *Rotifera*. Sci. Gossip, iii, pp. 121, 122, 148 & 149, 1 fig.  
Criticized by ROUSSELET (16).
23. —. (3) Some new forms of American *Rotifera*. Ann. Nat. Hist. xviii, pp. 17-28, pls. vii & viii.
24. THORPE, V. G. Notes on a new species of *Pedalion* found in the Solomon Islands. P. Soc. Tasmania, 1894-95 (1896), pp. 40 & 41.
25. \*WARD, H. B. A biological examination of Lake Michigan in the Traverse Bay Region. Bull. Michigan Fish Comm. 151 pp., 2 figg., 5 pls., maps.
26. ZACHARIAS, O. Forschungsberichte aus der biologischen Station zu Plön, IV. Friedlander : 1896, 290 pp., 1 pl., 45 figg., 1 map.
27. \*ZELINKA, C. Monographie der *Echinoderen*. Verh. Zool. Ges. vi, pp. 197-199, 23 pls.

## BIOLOGY.

SKORIKOW (20) has a well-illustrated treatise on the Rotifers of Charkow.

The peculiar *Trochosphaera solstitialis*, hitherto only known to occur in China, the Philippine Is., and Australia, has now been found in America, and is briefly described by KOFOID (12).

HARTOG (7) tries to maintain that the affinities of the Rotifers are rather with the *Pilidium*- than with the *Trochosphere*-larva. ROUSSELET (16) shows that the peculiarities mentioned by Stokes in American species occur also in their European representatives, and (17) gives a list of species whose males are known, and describes the male of *Rhinops vitrea*. DIXON-NUTTALL (4) describes that of *Stephanoceros eichhorni*.

The parasitic Rotifers of plants are dealt with by FRANK (5), and ROTHERT (14) deals with the one parasitic on *Vaucheria*.

A monograph of the *Echinoderidae* by ZELINKA is announced and briefly summarised (27). He would divide the group into 2 orders, the *Homalorhagæ* (with 3 families), and the *Cyclorhagæ* (with 2 families), and describes the development by metamorphosis.

## GEOGRAPHICAL DISTRIBUTION.

- Sandhurst : Bog ponds ; ROUSSELET.  
Denmark : (Ponds, &c.); WESENBERG-LUND.  
Baltic (compared with Extra-Baltic) : Brackish water, 2 species, p. 11 (*Synchaeta*); Euryhaline, 1 species, p. 45 ; AURIVILLIUS.  
Tergern See : 3 species ; RICHARD, Zool. Anz. xix, p. 29.  
Alpine Lakes of Tessin ; FUHRMAN.  
Hungary : Rotifers and Gastrotricha ; DADAY (2).  
Russia : Near Charkow, 140 species ; SKORIKOW.

Azores : BARROIS ; *Pedalion mirum* in three of the islands ; RICHARD, p. 176.

Victoria : A new Rotifer ; SHEPHERD.

Solomon Is. : *Pedalion fennicum* ; THORPE.

America : Several new species ; STOKES (1) & (2) & (3).—Illinois River : 3 new species of *Brachionus* ; HEMPEL : presence of *Trichosphæra solstitialis* ; KOFOID.—Lake Erie : Sandusky Bay, 67 species ; KELLICOTT.—Lake Michigan, &c. : 58 species (1 new) ; WARD ; JENNINGS.

## SYSTEMATIC.

*Apsilus* : the 4 known species distinguished, *A. bucinedax*, Forbes, and *A. bipera*, Foulke, described and figured ; STOKES (1).

*Brachionus mollis*, *punctatus*, *variabilis*, n. spp., Illinois Riv., HEMPEL, Bull. Illinois Lab. iv, p. 310. *B. cluniorbicularis*, n. sp., and *B. (lineatus)*, n. sp., Charkow ; SKORIKOW, Trudui Kharkov. Univ. xxx. The latter species = *B. punctatus* ; HEMPEL, J. R. Micr. Soc. 1896, p. 208. *B. bakeri*, Ehr., peculiar appendage in stomach ; STOKES (2) p. 121.

(*Cælopus*, Gosse), = *Rattulus* ; ROUSSELET (2).

*Colurus agilis*, n. sp., shallow pool, near Trenton, New Jersey, U. S. A., STOKES, J. R. Micr. Soc. p. 275.

*Copeus quinquelobatus*, n. sp., shallow pool, near Trenton, New Jersey, U. S. A., STOKES, l. c. p. 277, and Sci. Gossip, iii, p. 122.

(*Diplois propatula*, Collins), = (*Euchlanis subversa*, Boyce), = *E. propatula* (Gosse) ; ROUSSELET.

*Distyla signifera*, n. sp., L. Michigan, WARD, Bull. Michigan Fish Comm.

*Lacinularia elongata*, n. sp., Heidelberg, Victoria, SHEPHARD, Victorian Natural. xiii, p. 22.

*Mastigocera mucosa*, n. sp., shallow pool near Trenton, New Jersey, STOKES, Ann. Nat. Hist. xviii, p. 17.

*Mellicerta flocculosa*, n. sp., Sandusky Bay, L. Erie, KELLICOTT, P. Amer. Micr. Soc. xviii, p. 157.

*Metopidia collaris*, n. sp., and *M. c.* var. *similis*, n. var., shallow pool near Trenton, New Jersey ; STOKES, Ann. Nat. Hist. xviii, pp. 19 & 20.

*Monostyla hamata*, *robusta*, *bipes*, n. spp., shallow pool near Trenton, New Jersey, STOKES, t. c. pp. 21-23.

*Notommata (mirabilis)*, n. sp., shallow pool near Trenton, New Jersey, STOKES, l. c. p. 26 : = (*N. pilarius*, Gosse), = *N. tripus*, Gosse ; ROUSSELET (2). *N. wernecki*, the gall-making Rotifer of *Vaucheria*, description of male, and of summer and winter ova of female, and conditions of producing them ; ROTHERT.

*Pedalion fennicum*, Lev., in the Solomon Is., and Dunk I. (coast of Queensland) ; THORPE.

*Philodina aculeata*, Ehr., and *citrina*, Ehr., American varieties ; STOKES (2) p. 148.

*Pleurotrocha sigmoides*, n. sp., Charkow, SKORIKOW, Trudui Kharkov. Univ. xxx.

*Polyarthra platyptera*, var. *ramata*, n. var., Charkow : SKORIKOW, l. c.

*Pterodina patina*, Ehr., dorsal antennæ ; STOKES (2) p. 149.

- Rattulus collaris*, n. sp., ponds at Sandhurst ; ROUSSELET, J. Quekett Club, vi, p. 266. *R. palpitatus*, n. sp., shallow pool near Trenton, New Jersey, STOKES, Ann. Nat. Hist. xviii, p. 25, = ? (*Cælopus brachiurus*, Gosse), which then might be referred to it ; ROUSSELET (2). *R. (?) bicornis*, n. sp., Charkow, SKORIKOW, Trudui Kharkov. Univ. xxx.
- Rhinops vitrea*, Rouss., discovery of ♂, Esher ; ROUSSELET, J. R. Micr. Soc. 1897, p. 5.
- Salpina (similis)*, n. sp., shallow pool near Trenton, New Jersey, STOKES, Ann. Nat. Hist. xviii, p. 24, = *S. macracantha*, Gosse ; ROUSSELET (2).
- Stephanoceros eichhorni*, male described and figured ; DIXON-NUTTALL.
- Taphrocampa clavigera*, n. sp., shallow pool near Trenton, New Jersey, STOKES, Ann. Nat. Hist. xviii, p. 18. *T. selenura*, Gosse, antennæ and frontal cilia ; STOKES (2) p. 148.
- Triarthra thranites*, n. sp., Charkow, SKORIKOW, Trudui Kharkov. Univ. xxx.
- Trochosphæra solstitialis*, in Illinois River ; KOFOID.

## MESOZOA.

### TITLES.

1. GAMBLE, F. W. *Mesozoa*. Cambr. Nat. Hist. ii, ch. iv, pp. 92-96, 3 figg.
2. MONTICELLI, F. S. *Adelotacta zoologica*. Mt. Stat. Neapel, xii, pp. 432-462, pls. xix & xx.
3. SAINT-JOSEPH, DE. *Rhopalura pterocirri*, n. sp. Orthonectidé parasite d'une annelidé. Bull. Soc. zool. France, xxi, pp. 56-59, 3 figg.

### BIOLOGY.

MONTICELLI (2) describes cysts embedded in the jelly and in the tentacles of *Rhizostoma*, each containing several individuals of a new form of *Mesozoa*, to which he gives the name *Pemmatodiscus*. Each individual consists of two epithelial layers of cells, with a cavity between them. The outer layer is ciliated ; the inner surrounds a cavity, into which a mouth opens. There are no organs, and reproduction is by fission. The author shows that the organism has nothing to do with *Gastrodes parasiticus*. He also gives a good description and figures of *Treptoplax reptans*, Korotneff, and compares it with *Trichoplax adherans*.

SAINT-JOSEPH (3) describes a new species of Orthonectid, consisting of 6 segments, of which 4 (2nd to 5th) are separated from one another by deep ciliated grooves ; the other 2 segments bear tufts of cilia.

## SYSTEMATIC.

## ORTHONECTIDÆ.

(*Intoshia*), Giard, identified with genus *Rhopalura*; SAINT-JOSEPH (1).  
*Rhopalura pterocirri*, n. sp. (♀ and embryo only), parasitic in body-cavity of a Polychæt, Concarneau, SAINT-JOSEPH, Bull. Soc. zool. France, xxi, p. 58.

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*Pemmatodiscus*, n. g., with *P. socialis*, n. sp., encysted in jelly and in tentacles of *Rhizostoma pulmo*; MONTICELLI, Mt. Stat. Neapel, xii, p. 432.

*Treptoplax reptans*, Montic., anatomy; MONTICELLI, l. c. p. 444.



## XVI. CŒLENERATA.

BY

R. T. GÜNTHER,

Magdalen College, Oxford.

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## I. TITLES.\*

1. AGASSIZ, A. A visit to the Great Barrier Reef of Australia. Amer J. Sci. ii, pp. 240-244.
2. —. The Florida Elevated Reef. Bull. Mus. Harvard, xxviii, pp. 29-51, pls. i-xvii.
3. — & WOODWORTH, W. McM. Some variations in the genus *Eucope*. *Op. cit.* xxx, pp. 121-150, 9 pls.
4. ALLEN, E. J., GARSTANG, W., BROWNE, E. T., & HODGSON, T. V. Faunistic Notes. J. Mar. Biol. Ass. iv, pp. 164-178.
5. APPELLÖF, A. Die Actiniengattungen *Fenja*, *Aegir*, und *Halcampoides*, Dan. Bergens Mus. Aarbog, 1896, No. xi, 16 pp., 2 pls.
6. BEAUMONT, W. I. Note on Lucernarians occurring in the neighbourhood of Port Erin, Isle of Man. Rep. Faun. Liverpool Bay, iv, pp. 151-161. [*Vide* Zool. Rec. 1893.]
7. BEDOT, M. Les Siphonophores de la Baie d'Amboine. Étude suivie d'une revision de la famille des *Agalmidæ*. Rev. Suisse Zool. iii, pp. 367-414, 1 pl. [Abstr. in J. R. Micr. Soc. 1896, p. 318.]

\* An asterisk prefixed to a quotation indicates that the Recorder has not seen the Journal or Work referred to.

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## II. BIOLOGY.

Physiology of Actinians ; BJELOUSSOW (9) : feeding of *Metridium* ; PARKER (86).

Chemical composition of gorgonin ( $C_4H_8NI_2$ ) from horny axial skeleton of *Gorgonia cavolinii*. Contains iodine, whereas the soft tissues do not ; DRECHSEL (26).

Gas contained in the pneumatophor of *Physalia pelagica* differs from that found in the swimming bladders of certain fish, in that it does not contain any carbon dioxide ; RICHARD (88).

Variation in 3917 specimens of *Eucope diaphana* ; AGASSIZ & WOODWORTH (3) : in *Lizzia blondina*, *Lar sabellarum* ; BROWNE (14).

Polygastry produced in *Sarsia* by the reproduction of the manubrium ; HARTLAUB (44).

Nervous system of *Cœlentera* ; HICKSON (47), LENDENFELD (65).

Skeleton of *Madreporaria* ; OGILVIE (79).

Nematocysts, structure, physiology, and development described and figured by IWANZOFF (50), who states that he has also observed them in the Ctenophor *Euchlora rubra*. MURBACH (75) finds that the thread of the nematocyst develops round the nucleus and not round the wall of the nematocyst. The cells wander to their destination by amœboid movements.

Oogenesis in *Tubularia larynx* ; DOPLEIN (24). Ovum is formed by the coalescence of a number of germ-cells. The strongest nucleus overcomes the other germ-cell nuclei, and becomes the nucleus of the ovum.

Development of egg of *Ctenophora* ; DRIESCH (28).

Budding and polymorphism ; CHUN (21), SEELIGER (98), BRAEM (11) considers that the buds of *Rathkea octopunctata* are formed from indifferent cells like the sex cells, which are *not* ectoderm cells. BRAEM suggests that they may possibly be young germ-cells, which do not become ova or spermatozoa, but which come together as indifferent embryonic cells, form a morula, and grow direct into a new organism in a way comparable to the analogous process in the *Polyzoa*.

Reproduction of *Plumularia pinnata* referred to as "stoloniferous ;" NUTTING (78).

Regeneration of *Tubularia* ; DRIESCH (27).

Life-histories of *Gonionemus*, MURBACH (74), *Obelia commissuralis*, NORTON (77), and of several British Medusæ, *Lar sabellarum*, *Hybocodon prolifer*, *Phialidium temporarium*, *P. cymbaloideum*, *Liriantha appendiculata*, etc. ; BROWNE (14).

Swarms : VANHÖFFEN (109) notes swarms of *Beroe*, *Physalia*, *Porpita*.

Bionomics of *Zoanthus* and *Gemmaria* ; DUERDEN (29).

Symbiosis : *Palythoa arenacea* on *Hyalonema*, *Ditrupea*, and *Antipathes*, *Epizoanthus paguriphilus* on *Parapagurus pilosimanus* ; ROULE (89).

Parasites : *Cercaria* and *Halcampa* in *Phialidium temporarium* ; BROWNE (14) p. 491.

## FAUNISTIC.

## I. RECENT.

East African Medusæ and Siphonophora ; CHUN (19).

Amboyne Bay Siphonophora ; BEDOT (7) notes similarity to those of Mediterranean.

Atlantic, Deep Sea ; ROULE (89).

Azov, Sea of. OSTROUMOFF (84) classifies the fauna as follows :—

1. Visitors. *Pilema pulmo*.

2. Immigrants—

α. from Mediterranean. *Aurelia aurita*, *Actinia equina*.

β. From Celtic Province. *Cordylophora lacustris*, *Thaumantias mæotica* (new autochthones).

3. Aborigines. *Mæotias inexpectata* (old autochthones).

British Coasts :—Medusæ ; BROWNE (14). Falmouth ; VALLENTIN (106, 107). Liverpool District ; THORNELEY (105). Plymouth ; ALLEN, GARSTANG, BROWNE, HODGSON (4). Plymouth hydroids ; NUTTING (78). Valencia Harbour, County Kerry ; BROWNE (13).

French Coasts ; GRANGER (37). Gulf of Lyons, Corals ; LACAZE-DUTHIERS (63). St. Vaast-la-Hougue ; FAUVEL (32).

Freshwater : *Cordylophora* ; WESENBERG-LUND (115) : *Mneopsis* ; SHARP (100).

Kaiser Wilhelm Canal, *Gonothyræa loveni* ; BRANDT (12).

New Zealand Hydroids ; FARQUHAR (31).

Philippine Islands ; CASTO DE ELERA (18).

Ternate ; CAMPENHAUSEN (16), GERMANOS (36), KÜKENTHAL (59, 60), KWIETNIEWSKI (62), SCHULTZE (96, 97).

## CORAL REEFS.

Great Barrier Reef, Australia ; AGASSIZ (1), PENCK (87).

Florida Elevated Reef ; AGASSIZ (2).

Popular account ; KELLER (54).

Reefs of Amboyna ; SEMON (99).

Funafuti boring ; WATTS (113).

## II. FOSSIL.

North American graptolites ; GURLEY (39). Gives tables showing vertical range of the different species.

Pliocene *Anthozoa* from Ponticello di Saveno, Bologna ; SIMONELLI (101). 23 corals, 4 new species.

Miocene : List of 18 corals from the Tortonian of the upper valley of the Idice, Bologna ; SANGIORGI (91). Corals from Tortonian of Castelnovo ne' Monti ; SIMONELLI (102).

Eocene corals and *Millepora cylindrica*, Reuss, from Monte Postale, Bolca, Verona ; OPPENHEIM (82).

Tertiary corals of Dauphiné and Savoy, *Dendrophyllia colonjoni*, Thiollière, Niveau d'Aoste ; DOUXAMI (25).

Lower Tertiary of the Colli Berici in Venetia, Corals ; OPPENHEIM (81).

Tertiary, Chile, *Oculina remondi* ; MÖRICKE (73).

Mesozoic coral fauna of S. Cassian ; VOLZ (111). Deep sea forms absent ; fauna consists of reef builders ; a few Palæozoic forms, such as *Aræopora*, *Chaetetes*, and *Zaphrentida*, occur.

Cretaceous corals of Switzerland, monograph ; KOPY (55).

Neocomian *Anthozoa* of Mexico ; FELIX (33).

Trias : *Anthozoa* of Marmolata ; SALOMON (90).

Carboniferous corals and stromatoporoids from the Ural Mts. and Timan ; STÜCKENBERG (104).

Carboniferous *Anthozoa* of central France ; JULIEN (52).

Coal Measures of Arkansas : *Fistulipora nodulifera*, Meek, *Lophophyllum proliferum* ; SMITH (103).

Lower Devonian corals from the Carnic Alps ; FRECH (34).

Upper Silurian corals of Gotland ; LINDSTRÖM (66).

Lower Silurian corals and graptolites of Minnesota ; WINCHELL & SCHUCHERT (119). *Lichenaria*, new genus of corals.  
Cambrian graptolites ; MATTHEW (70).

### III. SYSTEMATIC.

#### *General.*

Literature for 1890 ; VANHÖFFEN (108) ; 1895 ; MAYER (71).  
Systematic phylogeny of *Cnidaria* ; HÆCKEL (42).  
Palæontological text-books ; KOKEN (58), ZITTEL (121).

### HYDROZOA.

Morphology of Medusæ ; MAAS (68).

#### GYMNOBLASTEÆ—ANTHOMEDUSÆ.

N.B.—Synonyms of Medusæ are given in square brackets, thus [ ].

*Cordylophora lacustris* ; ZERNECKE (120), OSTROUMOFF (84) : in Danish fresh waters ; WESENBERG-LUND (115).  
*Corymorpha nutans* [= *Hybocodon nutans*] ; BROWNE (14) p. 463.  
*Eudendrium*, influence of light on ; LOEB (67).  
*E. album*, n. sp., Millbay Channel, Plymouth ; NUTTING (78).  
*Gemmaria implexa* ; BROWNE (14) p. 461.  
*Hybocodon prolifer* [= *Amphicodon globosa*, *A. fritillaria*, *A. amphipleurus*] ; BROWNE (14) p. 466.  
*Lar subellarum* [= *Willia stellata*] ; *id.*, p. 468.  
*Perigonimus repens* ; *id.*, p. 462.  
*Podocoryne carnea* [= *Dysmorphosa carnea*] ; *id.*, p. 463.  
*Solanderia rufescens*, n. sp., Japan ; JÄDERHOLM (51).  
*Spongocladium*, n. gen. of *Solanderiidae* : no signs of hydrophores ; *S. laeve*, n. sp., Hirudo Strs., Japan, 36 fath. ; JÄDERHOLM (51).  
*Tubularia* ; WAUTHY (114) : regeneration ; DRIESCH (27) : oogenesis ; DOPLEIN (24).

#### *Medusæ.*

*Amphinema dinema*, Plymouth, p. 475 ;  
*Dipurena halterata*, Plymouth, I. of Man, Valencia, *D. sp.*, Plymouth, p. 473 ;  
*Euphysa aurata*, I. of Man, Valencia I., p. 474 ;  
*Lizzia blondina* [= *L. claparedi*, Hck.], Plymouth, I. of Man, Valencia I., p. 475 ;  
*Margellium octopunctatum* [= *M. gratum*, Hck.], Plymouth, I. of Man, Valencia I., p. 477 ; BROWNE (14).  
*Rathkea octopunctata*, budding ; BRAEM (11).  
*Sarsia*, polygastry ; HARTLAUB (44).

#### CALYPTOBLASTEÆ—LEPTOMEDUSÆ.

*Aglaophenia suensonii*, Hirudo Strs., Japan, JÄDERHOLM (51), n. sp.  
*Antennella suensonii*, 45 fath., *ib.*, *id.*, n. sp.  
*Antennellopsis*, n. gen. with *A. integerrima*, *ib.*, *id.*, n. sp.  
*Antennularia octoseriata*, 45 fath., *ib.*, *id.*, n. sp.  
*Cumpanularia sulcata*, 45 fath., *ib.*, *id.*, n. sp.  
*Sertularella mirabilis*, 45 fath., *ib.*, *id.* ; *S. sinensis*, 50 miles S. of Amoy, 35 fath., *id.* : n. spp.



- Thyroscyphus regularis*, Chinese Sea, 25 fath., *id.*, n. sp.  
*Aglaophenia bispinosa*, Allm., 400 metres, *A. calamus*, Allm., 180-500 metres, Atlantic; ROULE (89).  
*Calypthothujaria opposita*, Ternate, CAMPENHAUSEN (16), n. sp.  
*Caminothujaria*, n. gen. for *C. molukkana*, Ternate, CAMPENHAUSEN (16), n. sp.  
*Cryptolaria ternatana*, Ternate, CAMPENHAUSEN (16), n. sp.  
*Diphasia pinaster*, Ellis & Sol., Atlantic, 400 metres, *A. pinnata*, Pall., Atlantic, 400-500 metres; ROULE (89).  
*Opercularella hispida*, Plymouth, NUTTING (78), n. sp.  
*Plumularia alleni*, Plymouth, *id.*, n. sp.  
*P. pinnata*, structure of nematophores; stoloniferous reproduction; *id.*  
*Sertularella polyzonias*, Linn., Atlantic, 400-500 metres, *S. tricuspida*, Alder, Atlantic, 1220-1410 metres; ROULE (89).

### Medusæ.

- Epenthesis cymbaloidea*, p. 487;  
*Euchilota pilosella*, Plymouth, Valencia I., pp. 484-487, figg. 7 & 7a; BROWNE (14).  
*Eucope diaphana*, variation in 3917 specimens; AGASSIZ & WOODWORTH (3).  
*Eutima insignis*, Plymouth, I. of Man, pp. 492 & 493; BROWNE (14).  
*Gonionemus*, life-history; MURBACH (74).  
*Laodice cruciata*, pp. 482-484;  
*Octorchis gegenbauri*, Plymouth, p. 494;  
*Phialidium buskianum*, Plymouth, pp. 488 & 489, figg. 6 & 6a; *P. cymbaloideum*, Plymouth, Port Erin, pp. 491 & 492, figg. 1, 2, & 2a;  
*P. temporarium*, Valencia, I. of Man, pp. 489-491; *P. variabile*, pp. 487 & 488 [= several species], figg. 4-6;  
*Saphenia mirabilis*, Plymouth, Valencia, pp. 493 & 494, fig. 3;  
*Thaumantias hemisphaerica*, pp. 480-482 [= *Phialidium variabile*]; BROWNE (14).  
*T. maotica*, Sea of Azov, OSTROUMOFF (83, 84), n. sp.

### HYDROCORALLINÆ (FOSSIL).

- Millepora cylindrica*, Reuss, from Eocene of Monte Postale, Bolca, Verona; OPPENHEIM (82).

### NARCOMEDUSÆ.

- Solmaris* sp.? Plymouth, BROWNE (14) p. 496.

### TRACHOMEDUSÆ.

- Liriantha appendiculata*, Plymouth, BROWNE (14) p. 495: notes on development.  
*Maeotias*, n. g. of *Olindiidae*: tentacles numerous, hollow; the flexible ones hanging down. Beneath the tentacles are numerous marginal bodies, amongst them closed auditory organs in pairs;  
*M. inexpectata*, n. sp., estuaries of Don and Kuban; OSTROUMOFF (83, 84).

### SIPHONOPHORA.

- Morphology and Phylogeny of Siphonophor body; SCHNEIDER (94, 95), CHUN (20).  
 E. African *Siphonophora*; CHUN (19).

- Agalmidæ*, revision of, with *Amphiroa dispar*, Bay of Amboyna, *Enneagonoides picteti*, Bay of Amboyna, *Parusphenoides amboinensis*, BEDOT (7) : n. spp.  
*Physalia pelagica* : composition of gas in float ; RICHARD (88).  
*Stephanopsis*, n. gen. of *Agalmidæ*, for *Agalma clausi* ; BEDOT (7).

## RHABDOPHORA.

- See DENCKMANN (23), GEINITZ (35), MARR (69), MOBERG (72), WIMAN (117, 118), WINCHELL (119).  
 Phylogeny ; NICHOLSON (76).  
 Structure ; WIMAN (118).  
*Bryograptus lentus*, Black Shales, Navy I., St. John Harbour, MATTHEW (70), n. sp.  
*Caryocaris oblongus*, *C. curvilatus*, GURLEY (39) : n. spp.  
*Climacograptus retioloides*, WIMAN (117), n. sp. *C. oligotheca*, *C. kamptotheca*, *C. phyllophorus* ; GURLEY (39).  
*Clonograptus proximatus*, Black Shales, Navy I., St. John Harbour, MATTHEW (70), n. sp.  
*Dawsonia monodon*, *D. tridens* ; GURLEY (39).  
*Dendrograptus unilateralis*, GURLEY (39) ; *D. ? ælandicus*, *D. ? balticus*, *D. ? bottnicus*, WIMAN (117) : n. spp.  
*Desmograptus macrodictyum*, *D. devonicus*, n. spp., GURLEY (39).  
*Dicellograptus gurleyi*, Lapw. ; GURLEY (39).  
*Dictyonema actinotum*, n. sp., *D. blairi*, *D. perexile*, GURLEY (39). *D. pelatum*, *D. rarum*, *D. tuberosum* ; WIMAN (117).  
*Didymograptus perflexus*, *D. convexus*, *D. sagitticaulis* ; GURLEY (39).  
*Didymograptus caduceus*, Salter, HALL (43).  
*Diplograptus stenopus*, GURLEY (39), n. sp.  
*Diplograptus uplandicus*, WIMAN (117), n. sp.  
*Glossograptus arthracanthus*, GURLEY (39), n. sp.  
*Leptograptus ? macrotheca*, GURLEY (39), n. sp.  
*Monograptus*, sp., from Schiefergebirge, Kellerwalde, DENCKMANN (23).  
*Phycograptus*, n. g. ; *P. bruchynera*, n. sp., GURLEY (39).  
*Ptilograptus suecicus*, WIMAN (117), n. sp.  
*Stephanograptus crassicaulis*, GURLEY (39), n. sp.

## STROMATOPOROIDEA.

- Amphipora socialis*, Romanowsky ;  
*Mezenia*, n. g. ; *M. rozeni*, n. sp., Upper Carboniferous Limestone, Timan ; STUCKENBERG (104).

## SCYPHOZOA.

- Atolla wyvillei*, Haeck, Atlantic, 700–1710 metres ; ROULE (89).  
*Aurelia aurita*, life-history, HAACKE (40), nothing new.  
*Brooksella*, n. g. of fossil *Discomedusæ* ; *B. alternata*, *B. confusa*, n. spp., Middle Cambrian Limestones, Coosa Valley, Alabama ; WALCOTT (112).  
*Laotira*, n. g. of fossil *Discomedusæ*, from Middle Cambrian ; with *L. cambria*, n. sp. ; WALCOTT (112).  
*Pilema pulmo*, sense-organs ; LENDENFELD (64).

## ANTHOZOA.

## ZOANTHARIA.

## ACTINIARIA.

- Position of mesenteries of *Zoantharia*; CARLGREN (17).  
*Acrozoanthus* to be abolished. *A. australie*, S.-Kent [= *Zoanthus australie*]; HADDON (41).  
*Actinauge nodosa*, Fabr., Atlantic, 400 metres; ROULE (89).  
*Anthosactis Jan Mayeni*, Dan., Atlantic, 650–1710 metres; ROULE (89).  
*Bolocera kerguelensis*, n. sp., KWIETNIEWSKI (61).  
*Corynactis carnea*, n. sp., *id.*  
*Cereus brevicornis*, n. sp., *id.*  
*Cryptodendrum adhaesivum*, n. sp.; KWIETNIEWSKI (61).  
*Epizoanthus paguriphilus*, Verrill [= *E. parasiticus* on *Parapagurus pilosimanus*], 650–950 metres; ROULE (89).  
*Gonactinia prolifera*, M. Sars, recorded from Falmouth; VALLENTIN (107).  
*Halcampa purpurea*; KWIETNIEWSKI (61).  
*Halcampoides clavus* (Quoy & Gaimard?, Hertwig) includes *Fenja mirabilis*, Dan., *Aegir frigidus*, Dan., *Halcampoides abyssorum*, Dan.; APPELLÖF (5).  
*Halianthella*, n. g. of *Halianthinæ*, with more than 12 tentacles. *H. kerguelensis* [= *Edwardsia kerguelensis*, Studer]; KWIETNIEWSKI (61).  
*Metridium*, experiments on feeding; PARKER (86).  
*Palythoa arenacea*, Delle Chiaje, on *Hyalonema*, *Ditrupa* tubes and *Antipathes*, Atlantic; ROULE (89).  
*Phellia ternatana*, Ternate, KWIETNIEWSKI (62), n. sp.  
*Radianthus*, n. g. of *Discosomidæ*. *R. kukenthali*, n. sp., Ternate, KWIETNIEWSKI (62).  
*Tealia digitata*, Müll., Atlantic, 180 metres; ROULE (89).  
*Thalassianthæ*, new tribe with characters of fam. *Thalassianthidæ*,  
*Thalassianthus senckenbergianus*, Ternate, KWIETNIEWSKI (62), n. sp.  
*Teniothoa sulcata*, Gosse, Atlantic, 400–500 metres; ROULE (89).

## ANTIPATHARIA.

SCHULTZE (96, 97) describes the following new species from Ternate:—

- Antipathes delicatula* and *A. ternatensis*.  
*Aphanipathes thamnoïdes* and *A. spinulosa*.  
*Parantipathes simplex*.

SCHULTZE proposes a new classification of the *Antipathidæ* according to the number of septa which extend in the upper part of the polyps between the body wall and the gullet.

## ANTIPATHIDÆ.

1. Sub-fam. *Dodekamerota*. Upper portion of the gastric cavity traversed by 12 septa. *Leiopathes*, Gray, Brook.
2. Sub-fam. *Dekamerota*. Upper portion of the gastric cavity traversed by 10 septa. *Cirripathes*, Blainv., Brook; *Stichopathes*, Brook; *Antipathes*, Pallas, Schultze; *Aphanipathes*, Brook; *Parantipathes*, Brook.
3. Sub-fam. *Hexamerota*. Upper portion of the gastric cavity traversed by 6 septa. *Cladopathes*, Brook.

*Schizopathinæ* do not exhibit real dimorphism.

ROULE (89) records *Antipathes dichotoma*, Pall., 400–1410 metres; *A. scoparia*, Lam., 400–500 metres; *Antipathella subpinnata*, Ellis & Sol., 400–500 metres; *Parantipathes larix*, Esper., 1220 metres; *Schizopathes crassa*, Brook, 1220 metres; *Stichopathes spiralis*, Pourt., 1220–1410 metres; *Tylopathes crispa*, Brook, 1410 metres; all dredged by the "Caudan" in the Atlantic Ocean.

## MADREPORARIA.

KOCH describes the budding of *Alveopora retusa*, Verrill, and of *Favia cavernosa*, Forsk. (57); and the skeleton of the following stony corals (56):—

*Caryophyllia cyathus*, *Flabellum anthophyllites*, *F. spinosum*, *Clissophyllum hisingeri*, *Lithostrotion irregulare*, *Fascicularia caespitosa*, *Goniopora molluccensis*, *Alveopora retusa*, *Dendrophyllia ramea*, *Mussa*?, *Siderastraea sidera*, *Pæcillopora*? *batavia*, *Cylicia smithii*, *Galaxea lapeyrana*, *Asteroides calycularis*.

OGILVIE (79) has made an extensive investigation into the structure of the skeleton of *Galaxea*, pp. 106–128 & 136–139; *Mussa*, pp. 128–139; *Heliastrea*, pp. 139–146; *Goniastraea*, pp. 146–153; *Montlivaltia*, pp. 153 & 154; *Fungia*, pp. 167–178; *Siderastraea*, pp. 178–184; *Eupsammia*, pp. 193–201; *Turbinaria*, pp. 203–211; *Madrepora*, pp. 212–218; *Porites*, pp. 218–223; *Actinactis*, p. 211.

She proposes a classification which is stated to be based upon the microscopic structure of the trabecula as well as on the fundamental lines of structure followed by trabeculæ in the septum:—

## Order MADREPORARIA.

A. *Zaphrentoidea* or *Madreporaria Haplophracta*.I. *Murocorallia*.

Fam. 1. *Zaphrentidae*, E. H.

2. *Turbinolidae*, E. H. (emend. Ogilvie). A large number of genera formerly classified amongst the *Astraeidae Eusmilinae*, E. H., as well as the *Cyathaxonidae* are included.

Subfam. i. *Turbinoline*; ii. *Trochocyathinae*; iii. *Trochosmilinae*. Tribe  $\alpha$ . *Desmophyllaceae*;  $\beta$ . *Trochosmiliaceae*.

Fam. 3. *Amphiastraeidae*, n. fam., to include *Columnaria* (p. 334).

II. *Cœnenchymata*.

Fam. 4. *Stylinidae*, Klz.

5. *Oculinidae*, E. H.

6. *Pocilloporidae*, E. H.

Subfam. i. *Pocilloporinae*; ii. *Seriatoporinae*; iii. *Stylophorinae*.

Fam. 7. *Madreporidae*, Dana.

Subfam. i. *Madreporinae*; ii. *Montiporinae*; iii. *Alveoporinae*; iv. *Turbinarinae*.

III. *Porosa* (affinities and position doubtful).

Fam. 8. *Poritidae*, Dana (pro parte).

Subfam. i. [*Spongiomorphinae*] = *Spongiomorphidae*, Frech; ii. *Poritinae*.

B. *Cyathophylloidea* or *Madreporaria* *Pollaplophracta*.IV. *Septocorallia*.Fam. 9. *Cyathophyllidæ*, E. H.10. *Astræidæ*, E. H. (emend. Ogilvie).11. *Fungidæ*, Dana (emend. Ogilvie).Subfam. i. *Funginæ*; ii. *Thamnastræinæ*; iii. *Lophoserinæ*.V. *Spinocorallia*.Fam. 12. *Eupsammidæ*, E. H. (emend. Ogilvie), to include the Jurassic genera *Haplaraea*, *Epistreptophyllum*, *Dermosmilæa*, and the Triassic genera *Stylophyllum*, *Stylophyllopsis*.13. *Cystiphyllidæ*, E. H.14. *Archæocyathidæ*, Walcott (placed here provisionally).

BERNARD (8) has monographed the *Turbinaria* and *Astræopora* in the British Museum. The following systematic arrangement of species is adopted:—

## TURBINARIA.

Group 1. *Turbinariæ crateriformes*. *T.*, which in the adult condition appear to depart least from the early cup-shape.

*T. crater*, Pallas, p. 23: *cinerascens*, Ellis & Solander, p. 25, *danae*, Malay Seas, Formosa, p. 27, *laminata*, p. 28, *edwardsi*, W. Australia, p. 29, *plicata*, W. Australia, p. 30, *undata*, W. Australia, p. 31, *speciosa*, P. Denison, p. 32, *mollis*, Singapore, p. 32, *aurantiaca*, Gt. Barrier Reef, p. 33, *aqualis*, Quelch, p. 34, *pustulosa*, Gt. Barrier Reef, p. 35, *quincuncialis*, Ortmann, p. 36, *nidifera*, Gt. Barrier Reef, p. 36, *abnormalis*, Gt. Barrier Reef, p. 36, *pocilliformis*, N. W. Australia, p. 37.

Group 2. *Turbinariæ peltiformes*. *T.*, in which the early cup-form tends to be disc-shaped.

*T. pelta*, Esper., p. 38, *patula*, Dana, p. 41, *orbicularis*, W. Australia, p. 43, *radicalis*, Gt. Barrier Reef, p. 43, *agaricia*, Torres Sts., W., p. 44.

Group 3. *Turbinariæ frondentes*. *T.*, in which the nearly perpendicular edge of the deep bowl-shaped cup increases in circumference by forming lobes, which may curl inwards round vertical axes.

*T. frondens*, Dana, p. 46, *brassica*, Dana, p. 46, *auricularis*, Ponapé, p. 47, *calicularis*, Amboyna, p. 47, *porcellanea*, Solomon I., p. 48.

Group 4. *Turbinariæ foliatæ*. *T.*, whose adult stocks are composed of sinuous fronds, more or less erect, and fusing together irregularly.

*T. magna*, Shark's Bay, W. Australia, p. 48, *irregularis*, Mauritius, p. 51, *robusta*, N. E. to N. W. Australia, p. 51, *pulcherrima*, Tongatabu, p. 52, *crispa*, Rehberg, p. 53, *sinensis*, Verrill, p. 53, *tubifera*, Formosa, p. 54, *venusta*, Gt. Barrier Reef, p. 55, *aspera*, Red Sea, p. 56, *gemmulata*, Verrill, p. 57.

Group 5. *Turbinariæ mesenteriformes*. *T.*, in which the edge of the cup curls up at more or less regular intervals to form open cylinders or fringe-shaped processes. The intervening tracts of the margin grow out as more or less horizontal lobes, which again curl up to form new cylinders.

*T. mesenterina*, Lam., p. 57, *conica*, Klunz., p. 58, *lichenoides*, Gt. Barrier Reef, p. 59, *reptans*, Torres Sts., W., p. 60, *brueggemanni*, Formosa, p. 60.

- Group 6. *Turbinariæ tabulatæ*. *T.*, in which the coralla form thick, more or less horizontal dish-like growths, with the margins turned up. Successive growths form flat tiers one above another.
- T. reniformis*, Palm I., p. 61, *foliosa*, p. 61, *rugosa*, Formosa, p. 62, *crassa*, Gt. Barrier Reef, p. 63, *elegans*, Tongatabu, Gt. Barrier Reef, p. 63, *veluta*, Tongatabu, p. 64, *marmorea*, Rehberg, p. 65.
- Group 7. *Turbinariæ glomeratæ*. *T.*, in which the growth in thickness which characterises the last group is so great that they form spherical or hemispherical masses, the margins hanging down and creeping round former growths.
- T. stellulata*, Lam., p. 65, *palifera*, Lam., p. 67, *parvistella*, Sav.-Kent, p. 67, *globularis*, Diego Garcia, Gt. Barrier Reef, p. 68.
- Group 8. *Turbinariæ bifrontales*. *T.*, in which the margin of the cup forms vertical folds, which fuse back to back; the subsequent growth of the stock is carried on by these folds, which thus form fronds with calicles on both sides.
- T. bifrons*, Brüggemann, p. 69, *conspicua*, Shark's Bay, Gt. Barrier Reef, p. 70, *gracilis*, Gt. Barrier Reef, p. 72, *dendrophyllia*, Roebuck Bay, W. Australia, p. 73.
- Group 9. *Turbinariæ varicæ contortæ*.
- T. contorta*, S. Chinese Seas, p. 74, *subversa*, Palm I., Gt. Barrier Reef, p. 75.

## ASTRÆOPORA.

- Group 1. *Astræoporæ explanatæ*. *A.*, in which the corallum spreads laterally, either encrusting or with a free edge supported by an epitheca. The corallum thickens slowly, and often irregularly.
- A. expansa*, Brüggemann, p. 86; *horizontalis*, Seychelles, p. 87, *myriophthalma*, Lam., p. 87, *incrustans*, p. 89, *arenaria*, Red Sea, p. 90.
- Group 2. *Astræoporæ pulvinateæ*. *A.*, in which the calicles rise up like a sheaf of corn above the epitheca, the top expanding and hanging over. Under the pendent edges of the expanded bolster-like top, a secondary epitheca may appear. This expanded top is grown over by fresh layers, until great, smooth, cushion-shaped masses are formed.
- A. listeri*, Tongatabu, p. 91, *ehrenbergii* [= *A. myriophthalma*, Klunz., non Lam.], p. 92, *gracilis*, Solomon I., p. 93, *hirsuta*, Gt. Barrier Reef, p. 94, *ocellata*, Warrior I., Baudiu I., p. 95.
- Group 3. *Astræoporæ globulares*. *A.*, in which the calicles lengthen and increase in number in such a way that the cœnenchymatous skeleton early rolls over the edge of the epitheca, forming at first a hemispherical, and later, as new layers cover the old, an almost completely globular mass.
- A. punctifera*, Lam., p. 96, *ovalis*, p. 97, *kenti*, King's Sound, p. 97, *profunda*, Verrill, p. 98.

ROULE (89) records *Amphihelia oculata*, Linn., 1220–1710 metres; *Amphihelia variabilis*, Dunc., *Lophohelia candida*, Moseley, 400–500 metres; *L. prolifera*, Pallas, 400–500 metres; *Caryophyllia clavus*, Scacchi, 180–400 metres; *C. communis*, Moseley, 650–950 metres; *Cyathoceras cornu*, Moseley, 400 metres; *Desmophyllum crista-galli*, Milne-Edwards & Haine, 1220–1700 metres; *Flabellum alabastrum*, Moseley, 1710 metres; *Stephanotrochus diadema*, Moseley, 1710 metres; *Dendrophyllia cornigera*, Lam., 400–500 metres, from the Bay of Biscay.

## FOSSIL CORALS.

VOLZ (110, 111) derives fossil corals from 4 main stems, the *Cyathaxonidæ*, *Zaphrentidæ*, *Cyathophyllidæ*, and the Stylinid stem.

Phylogeny; OGILVIE (79).

The relationships of the *Tabulata* with the *Alcyonaria* are discussed in detail by SARDESON (92).

## RUGOSA.

*Cyathaxonidæ*.

*Cyathaxonia cornu*, Mich., *C. krotowi*, n. sp.; STUCKENBERG (104). *C. sp.*, La Varville; JULIEN (52).

*Cyathaxonella*, n. g., related to *Cyathaxonia*. *C. gracilis*, n. sp., Lower Carboniferous, W. Ural,

*Permia*, n. g. *P. iwanowi*, n. sp., Lower Carboniferous, W. Ural,

*Ufimia*, n. g., related to *Petraia*. *U. carbonaria*, n. sp., Upper Carboniferous, Ural; STUCKENBERG (104).

*Amphiastræidæ*.

New family, to include *Columnaria*; OGILVIE (79) p. 334.

*Zaphrentidæ*.

*Amplexus coralloides*, Sow., *A. lahuseni*, n. sp., Lower Carboniferous, Ural, *A. ibicinus*, Keys., *A. koswa*, n. sp., *A. wisherianus*, n. sp., *A. kunguriensis*, n. sp., Upper Carboniferous, Ural; STUCKENBERG (104). *A. coralloides*, Sowerby, La Varville, Régný; JULIEN (52).

*Cælocœnia*, Duncan, em. Volz. *C. major*, n. sp., Trias, Seelandalp; VOLZ (111).

*Streptelasma* (?) *parasiticum*, n. sp., *S. breve*, Lower Silurian, Minnesota; WINCHELL & SCHUCHERT (119).

*Zaphrentis impressa*, Ludwig, *Z. karpenskyi*, n. sp., *Z. mülleri*, n. sp., Lower Carboniferous, W. Ural, *Z. vermicularis*, Keys., *Z. omaliusi*, E. H., *Z. helmsereni*, n. sp., Lower Carboniferous, W. Ural, *Z. intermedia*, Koninck, *Z. sp. indet.*

*Zaphrentoides*, n. g. *Z. ludwigi*, n. sp., Upper Carboniferous, W. Ural, *Z. panderi*, n. sp., Upper Carboniferous, W. Ural, *Z. mylensis*, Carboniferous Limestone, Timan,

*Verneuilia*, n. g. *V. urbanowitschi*, n. sp., Lower Carboniferous Limestone, W. Ural; STUCKENBERG (104).

*Nodulipora*, n. g., *N. acuminata*,

*Holophragma*, n. g., *H. calceoides* = *Hallia calceoloides*, Ldm.,

*Dinophyllum*, n. g., = *Clisiophyllum* (Dana), M.-Edw., & H., and *Streptelasma*, p. p. Kunth, non Hall, *D. involutum*, Upper Silurian, Gotland; LINDSTRÖM (66).

*Cyathophyllidæ*.

*Acrophyllum georgi*, n. sp., Upper Carboniferous, W. Ural,

*Botrophyllum baeri*, n. sp., Upper Carboniferous, Timan,

*Campophyllum schrenki*, n. sp., Timan, W. Ural, *C. orientale*, n. sp., Lower Carboniferous, W. Ural, *C. nikitini*, n. sp., Timan,

*Caninia cylindrica*, E. H., *C. gigantea*, E. H., *C. gebaueri*, n. sp., Lower Carboniferous, W. Ural, *C. verneuili*, n. sp., Upper Carboniferous, Ural and Timan, *C. kokscharowi*, n. sp., Carboniferous, W. Ural, *C. lonsdalei*, Keys., *C. socialis*, n. sp., Lower Carboniferous, W. Ural,

- C. multiseptata*, n. sp., Lower Carboniferous, W. Ural, *C. arietina*, Keys., *C. meglitzkyi*, n. sp., *C. ruprechtii*, n. sp., Upper Carboniferous, Timan, *C. antipowi*, n. sp., Lower Carboniferous, W. Ural, *C. colossea*, Ludw., *C. uswæ*, n. sp., Lower Carboniferous, W. Ural, *Carcinophyllum indigæ*, n. sp., Upper Carboniferous, Timan, *C. ludwigi*, n. sp., Lower Carboniferous, W. Ural, *Clisiophyllum coniseptum*, Keys., *C. squamosum*, Ludw., *C. gracilis*, Ludw., *C. cinctum*, Ludw., *C. uralense*, n. sp., Lower Carboniferous, W. Ural, *C. krasnopolskyi*, n. sp., Lower Carboniferous, W. Ural; STUCKENBERG (104). *C. turbinatum*, M'Coy, L'Ardoisière; JULIEN (52). *Columnaria solida*, Ludw., *C. zitteli*, n. sp., Timan, *C. toulai*, n. sp., Upper Carboniferous, Timan, *Cyathophyllum regium*, Phill., *C. heliops*, Keys., *C. eichwaldi*, n. sp., W. Ural; STUCKENBERG (104). *C. multiplex*, Keys., Cussy-en-Morvan; JULIEN (52). *Cyclophyllum falki*, n. sp., Lower Carboniferous, W. Ural, *Dibunophyllum murchisoni*, n. sp., Lower Carboniferous, W. Ural, *D. palasi*, n. sp., Lower Carboniferous, W. Ural, *D. vermiculare*, n. sp., *Diphyphyllum concinnum*, Lonsd., *D. calamiforme*, Lonsd.; STUCKENBERG (104). *D. concinnum*, Lonsd., L'Ardoisière; JULIEN (52). *Keyserlingophyllum*, n. g., *K. obliquum*, Keys., *K. lepechini*, n. sp., Upper Carboniferous, W. Ural; STUCKENBERG (104). *Lithostrotion junceum*, Flem., L'Ardoisière; JULIEN (52), STUCKENBERG (104). *L. affine*, Flem., *L. caespitosum*, Mart., *L. irregulare*, Phillips, *L. portlocki*, E. H., *L. m'coyanum*, E. H., *L. basaltiforme*, Phill., *L. romanowskyi*, n. sp., Upper Carboniferous, W. Ural, *L. wangenheimi*, n. sp., Upper Carboniferous, Ural, *L. boreale*, n. sp., Upper Carboniferous, Timan, *Lonsdaleia floriformis*, Flemm., *L. annulata*, Lonsd., *L. tschussowiana*, n. sp., Lower Carboniferous, W. Ural, *Petalaxis portlocki*, E. H., *P. indigæ*, n. sp., Timan, *P. timanicus*, n. sp., W. Ural, Timan, *P. uchtensis*, n. sp., Timan, *P. kunthi*, Stuckenberg, *Phillipsastrea lamellosa*, n. sp., *P. wischeriana*, n. sp., *P. radiata*, E. H., *P. uchtensis*, n. sp., Upper Carboniferous of W. Ural and Timan, *Timania*, n. g. *T. schmidti*, n. sp., Upper Carboniferous, Timan, *Uralinia*, n. g., connecting link between *Plenophora* and *Cystophora*. *U. gracilis*, Ludw., *U. multiplex*, Ludw., *U. arietina*, Ludw.; STUCKENBERG (104).

*Cystiphyllidæ.*

- Humboldtia*, n. g., related to *Strephodes*. *H. rossica*, n. sp., Lower Carboniferous, W. Ural, *Strephodes multiplex*, Keys., *S. uralensis*, n. sp., *S. giganteus*, n. sp., E. Ural, *S. cornutus*, Lower Carboniferous, W. Ural, *S. murchisoni*, E. H.; STUCKENBERG (104).

## HEXACORALLIA (ZOANTHARIA).

## APOROSA.

*Turbinolidæ.*

- Caryophyllia ingens*, n. sp., *C. elegans*, var. *hemisphæricus* n. var., *C. felsineu*, n. sp., *Flabellum bertii*, n. sp., *F. fornasinii*, n. sp., Pliocene, Ponticello di Saveno, Bologna; SIMONELLI (101). *Thecocyathus radiatus*, Cretaceous, Perte du Rhône, Koby (55) p. 8, n. sp.



*Oculinidæ.*

- Euhelia expansa*, Cretaceous, Perte du Rhône, Koby (55) p. 10, n. sp.  
*Oculina rémondi*, Tertiary, Caldera, Chile; MÖRICKÉ (73).  
*Prohelia anomalos*, Neocomian, Tehuacan, Mexico, FELIX (33), n. sp.

*Stylophoridæ.*

- Stylophora tehuacanensis*, Neocomian, Tehuacan, Mexico, FELIX (33), n. sp.

*Astræidæ.*

Characters of family and classification; OGILVIE (79).

- Astrocœnia expansa*, d'Achiardi, Tertiary, Zovencedo; OPPENHEIM (81).  
*A. globosa*, From., Neocomian, Tehuacan, Mexico; FELIX (33).  
*Calamophyllia sandbergi*, Neocomian, Tehuacan, Mexico, FELIX (33), n. sp.  
*Choriastræa beneckeii*, Frech. [= *Thecosmilia zietenii*, Laube], Trias, St. Cassian; VOLZ (111).  
*Cladophyllia miroi*, Neocomian, Tehuacan, Mexico, FELIX (33), n. sp.  
*Cryptocœnia micrommatos*, Neocomian, Tehuacan, Mexico, *id.*, n. sp.  
*Cyathophora atempa*, Neocomian, Tehuacan, Mexico, *id.*, n. sp.  
*Dendrogyra mariscali*, Mexico, *id.*, n. sp.  
*Diplocœnia picteti*, Cretaceous, Reignier, Koby (55) p. 24, n. sp.  
*Epismilia robusta*, Cretaceous, Perte du Rhône, *id.*, p. 14, n. sp.  
*Eugyra digitata*, Cretaceous, Reignier, *id.*, p. 21, n. sp. *E. pusilla*, Cretaceous, Morteau, *id.*, p. 22, n. sp. *E. neocomiensis*, de From., *E. cotteaudi*, de From., Mexico, FELIX (33).  
*Goniocora sublævis*, Münster. [= *Lithodendron sublæve*, Münster.], Marmolata; SALOMON (90).  
*Heliocœnia picteti*, Cretaceous, Reignier, Koby (55) p. 23, n. sp.  
*Hydnophyllia wollheimi*, Neocomian, Tehuacan, Mexico, FELIX (33), n. sp.  
*Latimœandra steini*, *L. sauteri*, *L. montezumæ*, *L. tulæ*, Neocomian, Tehuacan, Mexico; *id.*  
*Latusastræa polygonalis*, de From., *L. provincialis*, d'Orb., Neocomian, Tehuacan, Mexico; *id.*  
*Lichenaria*, n. g. *L. typa*, *L. minor*, Lower Silurian, Minnesota; WINCHELL & SCHUCHERT (119).  
*Margarastræa*, n. subg. *M. klipsteini*, Frech., Trias, Stores, Misurina; VOLZ (111).  
*Margarophyllia*, n. subg. *M. michaelis*, n. sp., Stores-wiesen, *M. richthofeni*, n. sp., Stores; *id.*  
*Margarosmilia*, n. subg. *M. hintzei*, n. sp., Misurina, *M. richthofeni*, n. sp., Falzarego-Strasse; *id.*  
*Montlivaltia cipitensis*, n. sp., Trias, Cipit-bach, *M. septafindens*, n. sp., Forcella di Sett Sass (Richthofen-Riff), *M. veræ*, n. sp., Falzarego-Strasse, *id.* *M. radiciformis*, Münster., *M. marmolata*, n. sp., *M. n. sp.*, *ind.*, *M. schüferi*, n. sp., Marmolata, SALOMON (90).  
*Phyllocœnia cyclops*, n. sp., *P. nannodes*, Neocomian, Tehuacan, Mexico, FELIX (33).  
*Placosmilia urgoniensis*, Cretaceous, Reignier, Koby (55) p. 15, n. sp.  
*Pleurosmilia stutzi*, Bannalp, p. 17, *P. renevieri*, Reignier, *id.*, p. 18, n. spp.  
*Stylina micropora*, Käsernalp an Drüsberg, p. 25, *S. pachystylina*, Morteau, p. 26, *S. favrei*, Reignier, p. 27, *id.*, n. spp.  
*Thecosmilia badiotica*, Trias, Forcella di Sett Sass, VOLZ (111), n. sp.  
*Trochosmilia lorioli*, Cretaceous, Charbonny, Grand Bernard, Koby (55) p. 13, n. sp.

*Astræidæ (Stylophyllidæ).*

Described from Trias by VOLZ (111).

*Stylophyllum prænuntians*, Valparola, *id.*, n. sp.

*Stylophylloopsis romerloana*, Stolla-Alp, *S. pontebbanae*, Pontafel, *id.*, n. spp.

*Hexastræa*, n. g. *H. fritschi*, n. sp., St. Cassian, *H. leonhardi*, n. sp., St. Cassian; *id.*

*Cyathocoenia*, Duncan, emend. Volz. *C. andreaei*, n. sp., St. Cassian, *C. milchi*, n. sp., Forcella di Sett Sass; *id.*

*Astræidæ (Stylinidæ).*

*Cassianastræa*, n. g. *C. reussi*, Lbe., St. Cassian; VOLZ (111).

*Fungidæ (Lophoseridæ).*

*Cyathoseris petalophyes*,

*Siderofungia zitteli*, *S. irregularis*,

*Thamnoseris arborescens*, Neocomian, Tehuacan, Mexico; FELIX (33).

## PERFORATA.

*Thamnastræidæ.*

*Astræomorpha pratzi*, Trias, Seelandalp, VOLZ (111), n. sp.

*Craspedophyllia*, n. subg. *C. alpina*, Loretz; *C. cristata*, n. nom. [= *Omphalophyllia boletiformis*, Lbe., non ! M.]; VOLZ (111).

*Mastophyllia*, n. g. *M. couphora*, n. sp., Neocomian, Tehuacan, Mexico; FELIX (33).

*Myriophyllia*, n. g. *M. müsteri*, n. sp., Stores, Seelandalp; *M. mojsvari*, n. sp., Stores-Wiesen, Misurina; *M. badiotica*, Loretz; VOLZ (111).

*Omphalophyllia*, Lbe., emend. Volz.

*O. zitelli*, n. sp., Seelandalp; *O. zitteli*, var. *exigua*, Pordoi Jock; *O. bittneri*, n. sp., Falzarego Strasse; *O. luubei*, n. sp., Stores-Wiesen; VOLZ (111).

*Polyphylloseris polymorpha*, Neocomian, Tehuacan, Mexico; FELIX (33).

*Thamnastræa frechi*, Misurina, *T. loretzii*, Forcella di Sett Sass, *T. sett sassi*, Forcella di Sett Sass, *T. ramosa*, M., St. Cassian, VOLZ (111), n. spp.

*T. xipei*, *T. barcenai*, *T. tenochi*, *T. crespoidi*, Neocomian, Tehuacan, Mexico; FELIX (33).

*Toechastræa*, n. g. *T. oppeli*, Lbe., Trias, Seelandalp; *T. ogilviæ*, n. sp., St. Cassian, Stores; VOLZ (111).

*Poritidæ.*

*Thamnarcæa holmoides*, Neocomian, Tehuacan, Mexico, FELIX (33), n. sp.

*Madreporidæ.*

*Dendrophyllia colonjoni*, Thiollière, Tertiary, Niveau d'Aoste; DOUXAMI (25).

*Palaeacis* appears to represent a distinct family of perforate corals in some features more nearly allied to the *Favositidæ* than to the *Madreporidæ* or *Poritidæ*, HINDE (49).

*P. humilis*, n. sp., Carboniferous Limestone, River Hodder, Lancashire, HINDE (49).

## TABULATA.

*Favositidæ.*

- Favosites goldfussi*, Edw. & H.; *F. polymorpha*, Gf., = *cervicornis*, Blainv.; *F. cristata*, Blainv.?, Dalmanite Sandstone, Kleinlinden, Giessen; KAYSER (53).  
*Michelinia tenuisepta*, Phill., *M. megastoma*, Phill., *M. parasitica*, Phill., *M. minima*, n. sp., Upper and Lower Carboniferous Limestone, Ural; STUCKENBERG (104).  
*Pleurodictyum petrii*, Maur.; *P. selcanum*, Giebel?, Dalmanite Sandstone, Giessen; KAYSER (53).

*Syringoporidæ.*

- Kazania*, n. g., *K. elegantissima*, n. sp., *K. grünewalddi*, n. sp., *K. ufimiana*, n. sp., Upper Carboniferous, Ural; STUCKENBERG (104).  
*Syringopora distans*, Fischer, *S. conferta*, Keys., *S. gracilis*, Keys., *S. parallela*, Fisch., *S. ramulosa*, Goldf., *S. gigantea*, Thoms., *S. hoffmanni*, n. sp., *S. uralica*, n. sp., *S. repens*, n. sp., *S. reticulata*, Goldf., *S. capillaria*, Ludw., *S. tschernyschewi*, n. sp., *S. permiana*, n. sp.; STUCKENBERG (104). *S. ramulosa*, Goldf., Régny, *S. distans*, Fischer, Domaine des Roches; JULIEN (52).

*Auloporidæ (Tubulosa).*

- Aulopora? trentonensis*, n. sp., Lower Silurian, Minnesota; WINCHELL & SCHUCHERT (119). *A. macrostoma*, Fischer, *A. repens*, Knorr & Walch; STUCKENBERG (104).  
*Cladochonus michelini*, Edw. & Haime, *C. bacillaris*, M'Coy; STUCKENBERG (104). *C. michelini*, E. H. Siguret, *C. heribaudi*, n. sp., Régny, Néronde, Montmain; JULIEN (52).

*Chætetidæ.*

- Ascopora nodosa*, Fischer,  
*Beaumontia sterlitamakiana*, n. sp., Upper Carboniferous, Ural, *B. rozdi-niana*, n. sp., Upper Carboniferous, Timan,  
*Chætetes radians*, Fischer, *C. orientalis*, n. sp., Lower Carboniferous Limestone, W. Ural,  
*Geinitzella crassa*, Lonsd., *G. columnaris* v. *ramosa*, Schl., *G. arbusecula*, Eichw., *G. borealis*, n. sp., Upper Carboniferous Limestone, Timan,  
*Stenopora lahusei*, Romanowsky; STUCKENBERG (104).

## ALCYONARIA.

Relationships with the *Tabulata*, see SARDESON (92).

*Alcyoniidæ*; SCHENK (93). *Clavulariidæ*; *id.* *Gorgonacea*; GERMANOS (36). *Nephthyidæ*; KÜKENTHAL (60). *Siphonogorgiidæ*; *id.* *Xeniidæ*; SCHENK (93).

The above contain the fuller descriptions of collections made by Dr. WILLY KÜKENTHAL in Ternate. The new species have already been recorded in the Zool. Rec. for 1895.

*Alcyonaria* collected by "Caudan" expedition in the Bay of Biscay; ROULE (89).

*Gorgonia cavolinii*, chemical composition of Gorgonin in horny skeleton; DRECHSEL (26).

## FOSSIL ALCYONARIA.

*Helioporidæ.*

*Dybowskiella labiata*, Keys., *D. waageni*, n. sp., Carboniferous, Ural ;  
STUCKENBERG (104).

*Pachycanalicula*, n. subg. of *Heliolithes*, for species of the type of *H.*  
*barrandei*, R. Hoernes ; WENTZEL, Zool. Rec. 1895 (209).

## CTENOPHORA.

*Ctenoplana korotneffi*, E. Archipelago of New Guinea, *C. rosacea* ;  
WILLEY (116).

*Euchlora rubra*, Nematocysts ; IWANZOFF (50).

*Mneopsis leidyi*, in freshwater pond near Nantucket ; SHARP (100).

## XVII. SPONGIÆ.

BY

PROFESSOR R. VON LENDENFELD.

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## INTRODUCTION.

THE most important papers on Sponges published in 1896 are:—(18) in which HÆCKEL gives his ideas concerning the structure, the individuality, the phylogeny, and classification of Sponges; (36) in which MINCHIN deals with the classification of the *Asconidæ*; (43) in which F. E. SCHULZE introduces several new Hexactinellids to science, and proposes some alterations in the arrangement of previously described forms; (8, 9, 10), (22), (24), (27), and (49, 50), in which BREITFUSS, IJIMA, KIESCHNICK, LAMBE, and TOPSENT, describe a number of new species from the

Moluccas, Japan, Canada, and the Eastern Atlantic; (55) in which WEITNER gives a concise account of the structure of *Ephydatia fluviatilis*; (35) in which MINCHIN treats of the development of Asconids; (1, 2) and (4), in which ALLEN and BIDDER dwell on the artificial culture of bath Sponges; and (41) in which RAUFF proves that the structures described by CAYEUX (12, Zool. Rec. 1895) as remains of Precambrian Sponge-spicules, are not of organic origin at all, but growing pyrites.

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I.—TITLES.\*

1. ALLEN, E. J. Report on the Sponge-fishery of Florida, and the artificial culture of Sponges. *J. Mar. Biol. Ass. (n.s.)* iv, pp. 188–194. [Summaries, *J. R. Micr. Soc.* 1896, p. 319; *Zool. Centralbl.* iii, pp. 688–690.]
2. —. Supplement to report on the Sponge-fishery of Florida, and the artificial culture of Sponges (Letter by Ralph Monroe). *J. Mar. Biol. Ass. (n.s.)* iv, pp. 289–292. [Summary, *Zool. Centralbl.* iii, pp. 892 & 893.]
3. BADE, E. Das Süßwasseraquarium. Geschichte, Flora und Fauna des Süßwasseraquariums, seine Anlage und Pflege. vi & 230 pp., 258 figg., 6 pls. (Sponges under the heading "Protozoa," pp. 497 & 498.)
4. BIDDER, G. Note on projects for the improvement of Sponge-fisheries. *J. Mar. Biol. Ass. (n.s.)* iv, pp. 195–202. [Summaries, *J. R. Micr. Soc.* 1896, p. 319; *Zool. Centralbl.* iii, pp. 688–690.]
5. \*BOGDANOW, E. A. Ueber das Konserviren zoologischer Objecte mit Erhaltung der Form und Farbe. Tagblatt der zoologischen Abtheilung der Gesellschaft der Freunde der Naturwissenschaften in Moskau, ii, pp. 1–5.
6. BONAPARTE, R. Recherches faites sous la direction de Mr. de Lacaze-Duthiers, à bord du vapeur le "Roland" de la station zoologique de Banyuls-sur-mer. *Congr. Internat. Leyden*, pp. 129 & 130. (Some references to the works on French Sponges by Topsent.)
7. BRANDT, K. Das Vordringen mariner Thiere in den Kaiser Wilhelm-Canal. *Zool. Jahrb. Syst.* ix, pp. 432 & 433. [Summary, *Naturw. Rundsch.* xi, pp. 432 & 433.]
8. BREITFUSS, L. Kalkschwämme der Bremer Expedition nach Ost-Spitzbergen im Jahre 1889 (Prof. W. Kükenthal und Dr. A. Walter). *Zool. Anz.* xix, pp. 426–432. [Summary, *J. R. Micr. Soc.* 1896, p. 637.]
9. —. Kalkschwämme von Ternate (Molukken) nach den Sammlungen Prof. W. Kükenthals. *Zool. Anz.* xix, pp. 433–435.
10. —. *Amphoriscus semoni*, eine neue Art heterocoeler Kalkschwämme. *T. c.* pp. 435 & 436.
11. BUCK, E. Die Süßwasserschwämme im Aquarium und ihre Zucht. *Blatt. Aquar. Fr.* vii, pp. 257–259 & 267–270, 1 pl.

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\* An asterisk prefixed to a quotation indicates that the Recorder has not seen the Journal or Work referred to. The titles without date refer to papers published in 1896; to the titles of papers omitted in last year's record, and now given, the date (1895) is attached.

12. \*DELAGE, Y. La conception polyzoïque des êtres. Rev. Scient. v, pp. 641-653, 14 figg. [Summary, Zool. Centralbl. iii, pp. 801 & 802.]  
DENDY, A. (15). Zool. Rec. 1895. [Summary, Zool. Centralbl. iii, p. 167.]
13. \*DESMAZIÈRES, O. Note bibliographique sur les Spongiaires d'Anjou et de la Touraine. Bull. Soc. Angers, 1894, pp. 147-153 (1895).
14. DUERDEN, J. E. Notes on the rock pools of Bundoran. Irish Natural. v, pp. 153-155.
15. EDWARDS, A. M. Sponges considered microscopically. Amer. Micr. J. xvi, pp. 379-391.
16. FAUVEL, P. (Liste des animaux recueillis dans un coup de drague donné à St. Vaast-la-Hougue, le 8 août 1895 au Grand Nord et par le travers des Escraoulettes par 20-28 mètres de profondeur). Bull. Soc. Normand. (ser. 4) ix, pp. lxx-lxxvii.
17. GRANGER, A. Histoire Naturelle de la France. 17 Partie : Coelentérés, Échinodermes, Protozoaires. Paris : 390 pp., 187 figg. (Sponges, pp. 251-296, figg. 131-143.)
18. HÆCKEL, E. Systematische Phylogenie der wirbellosen Thiere (Invertebrata). Zweiter Theil des Entwurfs einer systematischen Phylogenie. Berlin : xviii & 720 pp. (Sponges, pp. 49-90.)  
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21. HINDE, G. J. Descriptions of fossils from the Carboniferous Limestone. I. On *Pemmatites constipatus*, n. sp., a Lithistid Sponge. Quart. J. Geol. Soc. lii, pp. 438-440, pl. xxii. [Summary, Ann. Nat. Hist. (ser. 6) xvii, p. 467.]
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## II.—BIOLOGY.

## 1. MORPHOLOGY and PHYSIOLOGY.

## A. GENERAL (12, 15, 17, 18, 33, 35).

HÆCKEL (18) draws attention to the importance of *Individuality* in Sponges and complains that it is not taken sufficiently into account by Spongiologists. He considers the simple Ascon (*Olynthus*) and the ciliated chamber of all higher Sponges (*Heterocæla* and *Silicea*) to be an individual or "person," and believes that all higher Sponges are colonies like the colony-forming Corals, the ciliated Sponge chamber being homologous to a Polyp of a Coral colony. All the parts of Sponges which are not ciliated chambers are to be considered as Cœenchym.

MINCHIN (35) considers the interstitial layer as a sort of ectodermal subepithelium and not as a mesoderm; the Sponges are accordingly two-layered (and not three-layered) organisms.

## B. CANAL SYSTEM (18, 44, 55)

WELTNER (55) has carefully investigated *Ephydatia fluviatilis*, and finds that the subdermal cavities are very large in this species. The inhalent canals proper are so extensive, that usually only thin trabeculæ of sponge tissue separate them. The ciliated chambers are spherical, 0.028–0.05 in diameter, and provided with 3–5 afferent pores. Oscular chimneys are often present. Large specimens always have more than one osculum.

F. E. SCHULZE (44) proves the diploidal nature of the ciliated chambers in *Corticium candelabrum*, *Chondrilla nucula*, and *Oscarella lobularis*, by means of photographs, which clearly show both the afferent and the efferent chamber-canals. These photographs demonstrate the incorrectness of TOPSENT'S statements, according to which these Sponges have no afferent chamber-canals.

## C. SKELETON (18, 43, 51, 55).

HÆCKEL (18) distinguishes the following six kinds of siliceous spicules: "Monaxillen" = Monaxons; "Trigonillen" = Triactins; "Tetraxillen" = Tetraxons; "Hexactillen" = Triaxons; "Pollaxillen" = Polyaxons; and "Anomaxillen" = Desms; and the following three kinds of calcareous spicules: "Trigonillen" = Triactins; "Tetraxillen" = Tetractins; and "Monaxillen" = Monaxons. He also discusses the various evolutionary possibilities of deriving these spicule forms from each other.

F. E. SCHULZE (43) has established the following new names for triaxon spicules: *Calicom*, Hexaster, the primary rays of which terminate each in a cup-shaped extension, cylindrical, smooth, secondary (branch-) rays arise from the cup-margin. *Codonhexaster*, Discohexaster, the terminal discs of which are strongly recurved, semispherical with toothed margin, the teeth are long and lie parallel to that secondary ray to which the disc belongs. *Drepanocom*, a Floricom-like Hexaster, the secondary rays of which are, however, smooth, sharp-pointed, and terminally recurved like a scythe. *Graphiocom*, for Graphiohexaster. It has been found that certain spicules of *Aphrocallistes* and other Hexactinellids, previously described as Discohexasters, or Oxyhexasters, bear on the termini of their secondary rays slender, vertically disposed spines curved backwards like claws, for which spicules now the name *Onychaster* is established. *Oxystauractin*, a Stauractin with pointed rays. *Sigmatocom*, like the *Drepanocom*, but with upstanding, not recurved

secondary rays. *Stauractin*, cross-shaped Tetractin, the rays of which lie in one plane (chiefly for such spicules with cylindrical, terminally rounded, and often spined rays).

TOPSENT (51) has found in an Esperellid remarkable nail-like spicules, for which he proposes the new name *Exotyl*.

WELTNER (55) describes the skeleton of *Ephydatia fluviatilis*. The fibres arise from a basal Spongin-plate, in which "nuclei," remnants of the Spongoblasts which had originally secreted this basal plate, are met with. In the radial main fibres as many as 12 (or even more) spicules lie side by side, in the transverse connecting fibres only 2-6. The quantity of Spongin-cement, which holds the spicules together, is very small, smaller than in other Spongillids. The spicules of the whole skeleton weigh one-thirteenth of what the Sponge to which it belongs weighs in the fresh state.

#### D. EPITHELIA AND CUTICULA (18, 55).

WELTNER (55) states that the outer surface and all internal cavities of *Ephydatia fluviatilis*, with the exception of the ciliated chambers, are clothed with an epithelium composed of flattened polygonal cells. Round the dermal pores sickle-shaped cells are situated. The thin trabeculae traversing the subdermal cavities appear to be composed of a single row of modified epithelial cells. A kind of cuticle is met with in the lower part of the interstitial layer of the dermal membrane. The collar-cells in the chamber walls are either close together, and then mutually compressed into prisms with polygonal transverse section; or they stand further apart, and then have a circular transverse section. In the latter case hyaline ground substance, similar to that of the interstitial layer, occupies the intervals between the collar cells. The collar is, in the living collar cell, twice as long as the body, and the flagellum has a perpendicular root which extends down to the nucleus.

#### E. CORTEX (51, 55, 56).

According to WELTNER (55) the dermal membrane of *Ephydatia fluviatilis* is clothed on both sides with flat epithelium, and contains, in the interior, a cuticular structure.

In *Gomphostegia loricata*, according to TOPSENT (51), the nail-like "exotyles" form, standing side by side vertically close together in the skin, a strong armour.

A somewhat similar armour, composed of stout-shafted triaens, has been found by WINCHELL & SCHUCHERT (56) in *Anomalospongia reticulata*.

#### F. INTERSTITIAL LAYER (18, 35, 55).

MINCHIN (35) is of the opinion that the interstitial layer of Sponges is derived mostly from the ectoderm, partly also from the entoderm, and not truly mesodermal.

Similarly HÆCKEL (18) considers the interstitial layer as a mesenchym populated by ectodermal cells, and remaining throughout closely connected with the ectoderm.

According to WELTNER (55) three kinds of cells occur in the interstitial layer of the dermal membrane in *Ephydatia fluviatilis*. Many of these are connected by processes which appear to be movable, like Pseudopodia, and continually sever old connections and form new ones. In the interior of the Sponge, the same three kinds of cells occur; and eight other

kinds besides, viz. : Cyst cells, containing one large vacuole or several smaller ones; sceletoblasts, producing some spongin, others spicules; ova (various stages of development); ova-nourishing cells; follicle-cells; sperm-mother-cells; and sperm-cells (various stages of development).

G. SEXUAL CELLS, PROPAGATION AND DEVELOPMENT (11, 18, 31, 35, 46, 48, 55).

SEELIGER (46) criticises the statements made by various authors concerning the propagation of Sponges by budding. He thinks that there is certainly no continuity of the germinal layers through the gemmules from the mother to the daughter Sponge, developed from a gemmule, even if—as appears more than doubtful—both ectodermal and entodermal cells combine to produce the gemmules. The propagation of Sponges by gemmules may, according to him, perhaps be a sort of "Polysporogonie."

MAAS (31) criticises WILSON'S statements concerning the development of Sponges, and upholds his formerly expressed opinion that the principle of blastologic development is the same in *Silicea* and *Calcarea*: in both the "ectoderm" of the larva produces the entoderm (collar-cells) of the adult, and the "entoderm" of the larva the ectoderm (outer epithelium and greater part of the interstitial layer) of the adult.

MINCHIN (35) has studied the development of the larva of *Ascandra* (*Leucosolenia*) *variabilis* and other *Asconida*. The larva of *A. variabilis* is an Amphiblastula, with slender flagellated cells in the anterior, and broader, non-flagellated, granular cells in the posterior region. The central part of the larva is occupied by brown pigment. The posterior, granular cells, originally less numerous than the anterior flagellated ones, afterwards become relatively more numerous, because the flagellated cells are—at the border line between the two kinds of cells—continually being converted into non-flagellated granular elements. The cells being thus converted form an intermediate zone. The flagellum of the flagellated cells arises from the onion-shaped nucleus. The central pigment mass has the shape of a tube. The lumen of this tube is occupied by a subspherical space filled with granules, supposed to be the remnant of the segmentation-cavity. Several cells are in this stage observed, lying below the superficial granular elements, so that the larva is no longer a blastula composed of a single cell-layer. The larva attaches itself with the anterior end, and the granular cells overgrow it entirely. The attached larva is composed of two cell layers: a single layer of flattened cells on the surface and a compact mass of polyædric cells in the interior. No trace is left of the former central cells, which appear to be thrown out together with the pigment during the metamorphosis. The inner mass is the future gastral layer; the outer epithelium the future dermal layer. The rapidity with which these two layers develop further is not constant: in this respect the two are independent of each other. The outer cell layer (epithelium) is soon differentiated into two layers: an outer continuous epithelial, and an inner subepithelial layer, which latter is represented by scattered cells only. In each of the epithelial cells one monaxon spicule is formed, which soon grows so as to project considerably from the surface. The subepithelial cells unite into groups, and produce the triactines. Monaxones appear about twenty-four hours after fixation, the triactines twelve hours later. The inner cells (gastrol layer) become cylindrical and radially arranged round a cavity, originally split-like, which is formed in the centre, and rapidly increases in size. In one place, however, the radial cells are missing, and here the dermal cells only compose

the body-wall; this is the place where afterwards, on the sixth day after fixation, the osculum is formed. The adjacent dermal cells produce the oscular chimney, which is free from collar cells. The gastral cells become shorter and are transformed into collar cells. In other *Asconidae* immigration of cells from the dermal layer into the interior takes place at various points all over the surface. After fixation the flagellated cells are surrounded by the granular cells, "so that the ciliated external layer of the larva represents the gastral layer of the adult, while the inner mass becomes the dermal layer; the reverse of what was supposed by Metschnikoff and Schmidt." In *Ascetta* (*Leucosolenia*) *cerebrum* the process is similar to that in *Ascandra* (*Leucosolenia*) *variabilis*. The larva of *Ascandra variabilis* is intermediate between that of *Ascandra reticulum* and *Sycandra raphanus*. The primitive larva in Asconid phylogeny was probably a blastula composed of indifferent flagellated cells. The collar cells of the adult are derived directly from the primitive flagellated cells of the blastula. The larva of *Ascandra variabilis* fixes itself in a much earlier stage of development than the larva of *Sycandra raphanus*. The apparently very different *Sycandra* larva may be supposed to have been evolved from the *Ascandra* larva by the hastening of the process of development.

According to BUCK (11), the larva of *Ephydatia mülleri* is 1.5 mm. long, and swarms [in the aquarium] only a very short time.

SOUKATSCHOFF (48) found ovoid larvæ, with long spined spicules, in a specimen of *Lubomirskia*.

According to WELTNER (55) the larva of *Ephydatia fluviatilis* already possesses irregularly disposed diactine spicules in a very early stage of its development. The spermatozoa of this species have a spherical head, with a bright, shining corpuscle, and a long flagellum.

## H. PHYSIOLOGY (11, 33, 55).

MASTERMAN (33) repeats his statements concerning the transformation of collar cells, after ingestion, into amoeboid cells, which sink into the interstitial layer, and, after having traversed it, pass through the ectoderm to the exterior, carrying with them the egestive residua. In a similar way the cells producing spicules wander outwards, and are, together with the spicules they contain, ejected. Thus all these elements behave like the sexual cells. The Recorder feels it incumbent on him to state that these statements are directly contradicted by a number of well-known facts.

WELTNER (55) fed specimens of *Ephydatia fluviatilis* with carmine powder. In a few hours they had absorbed all the pigment in the water and then appeared deep red. Kept in a greater volume of water, they ejected all the carmine particles in the course of a few days, and then again appeared colourless.

## I. HABITS, BIONOMICS (3, 4, 7, 11, 32, 34, 35, 55).

MINCHIN (35) states that the larva of *Ascandra variabilis* swims on birth at once upwards to the surface, and for about twenty-four hours moves about near the surface. It then descends, swims for another twelve to twenty-four hours at lower levels, and finally affixes itself. The metamorphosis is completed in a few hours. The larvæ of *Ascetta cerebrum* and *Ascandra reticulum* swim for about twenty-four hours before they affix themselves, whilst the larva of the British *Ascetta coriacea*, a Sponge living between tidemarks, affixes itself much sooner, already

after a few hours, which appears advantageous, considering the strong tidal currents of its abode.

BIDDER (4) is of opinion that the differences between the bath Sponges of the Mediterranean and the Bahamas are not of a racial nature, but merely the consequence of the differences between the external influences acting on the same species and variety. This view is combated by the Recorder in the Summary of Bidder's paper (Zool. Centralbl. iii, pp. 688-690).

According to BUCK (11) species of *Ephydatia* thrive in aquaria much better than *Spongilla*. The gemmules produced in autumn should be dried, kept dry during the winter, and immersed in spring; they will then produce a superior crop of Spongillids. He now no longer considers it advantageous (*vide* Zool. Rec. 1895) to feed Spongillids with the microfauna of decaying salad-leaves.

According to WELTNER (55), *Ephydatia fluviatilis* lives through the winter in the Tegeler See, and in the Spree near Berlin, and does not, like other Spongillids, die after reproduction by the formation of gemmules or ripe ova. In the Tegeler See specimens with ova occur all the year round.

MARSHALL (32) makes some, mostly compiled, statements concerning the boring action of boring Sponges.

MCINTOSH (34) states that boring organisms, amongst others also *Vioa*, attack chiefly the upper, convex shell of the Oyster.

#### K. ARTIFICIAL SPONGE CULTURE (1, 2, 4, 47).

BIDDER (4) states that Sponges attain a larger size when hanging down from some projecting object than when growing upright. Still more favourable it is for them if they are suspended from some floating thing. This is probably caused by the currents being more favourable in such localities, and should be taken into account when cuttings of Sponge are artificially affixed for the purpose of obtaining marketable bath Sponges. He also states what precautions must be taken if bath Sponges are to be transported alive from the Mediterranean to a distant place like the Bahamas. He fears, however, that the fine Mediterranean qualities of bath Sponges will, when transplanted to the Bahamas, probably acquire the same less valuable properties which characterize the bath Sponges indigenous to those islands.

According to ALLEN (1), the bath Sponges from Florida are more regular in shape, and therefore more valuable, than the bath Sponges from the Bahamas. The difference between them is ascribed to the influence of the differences in the nature of the sea-bottom of these places. Experiments show that cuttings of Sponges grow much more rapidly in currents than in still water, and that the rate of growth (in currents) is much greater than that given by Buccich. In suitable places at Key West small Sponge-cuttings grow to four or six times their size in six months.

ALLEN (2) reproduces a letter by Monroe, in which this gentleman gives his experiences on the artificial culture of Sponges in Biskayne Bay. Under favourable conditions, cuttings of about 16 cubic cm. attained twice this size in six months. Strong currents make the growth of Sponges more rapid, but cause their shape to become irregular and their texture harsh. Several hours of exposure to air does not injure a bath Sponge. A detailed account of how to affix and plant the cuttings is given.

## 2. GEOGRAPHICAL DISTRIBUTION.

## A. GENERAL (39, 49).

TOPSENT (49) gives a list of 102 *Tetractinellida*, *Clavulina*, and *Axinellida* from the French coast. 23 of these occur on the Atlantic coast only, 55 on the Mediterranean coast only, and 24 are common to both coasts.

B. FAUNISTIC (1, 6, 7, 8, 9, 10, 14, 16, 19, 20, 22, 24, 25, 27, 32, 37, 40, 43, 45, 48, 49, 50, 51, 52, 53, 55, 57).

*Great Britain and Ireland.*—SCOTT (45) mentions a *Hymeniacidon* from Skye. DUERDEN (14) found a *Vioa* boring in limestone in Donegal Bay. HERDMAN (19) gives a list of the Sponges of the Irish Sea; there are 58 species in all—4 *Calcarea Homocœla*, 9 *Calcarea Heterocœla*, 2 *Hexaceratina*, 4 *Tetractinellida*, and 39 *Monaxonida*.

*Continent of Europe.*—WELTNER (55) finds *Ephydatia* in the Tegeler See and the Spree, near Berlin; and ZOLLER (57) a freshwater Sponge in the Althäuser Altweiher, in Württemberg.

*Atlantic Coast of Continental Europe.*—BREITFUSS (8) records 10 species of *Calcarea* from East Spitzbergen. MARSHALL (32) mentions 8 species of *Silicea* from the German coast. BRANDT (7) states that *Halisarca* has entered the new Kaiser Wilhelm Canal, and now occurs there on muddy parts of the bottom. FAUVEL (16) found 3 species of Sponges near St. Vaast La Hogue. TOPSENT (48) records 45 species of *Silicea* from the Atlantic coast of France. TOPSENT (50) describes 5 species of *Hexactinellida*, 2 species of *Tetractinellida*, and 16 species of *Monaxonida* from the Gulf of Gascoigne (Bay of Biscay).

*Mediterranean.*—PRUVOT (40) gives an account of the fauna of Banyuls (Gulf of Lyon). Between tide-marks and a depth of 27 m., 19 species; between 27 m. and 91 m., 12 species; and below 91 m., 8 species of Sponges occur there. A good map, showing many localities of Sponge species, accompanies the paper. TOPSENT (49) records 79 species of Sponges from the Mediterranean coast of France generally, and mentions the occurrence of 36 species on the coast of Provence. MARSHALL (32) states that at Corfu a red species of *Vioa* is so numerous between tide-marks, that it produces—viewed at low tide from a distance—the appearance of a red band running along the shore-line.

*Atlantic.*—TOPSENT (51) describes 2 new *Esperellidæ* from the Açores. LAMBE (27) records 4 species of *Calcarea*, 1 species of *Tetractinellida*, 8 species of *Clavulina*, and 17 species of *Cornacuspongia*, in all 30 Sponges from the Atlantic coast of Canada. ALLEN (1) states that 6 varieties of bath Sponges (*Euspongia* and *Hippospongia*) occur on the coast of Florida and in the Bahamas, in depths of 3–6 fathoms.

*Continent of Asia.*—SOUKATSCHOFF (48) found 4 species of *Lubomirskia* in the Baikal Lake.

*Northern Pacific.*—IJIMA (22) describes 7 species of Hexactinellids from Sagami Bay, Japan.

*Indian Ocean.*—F. E. SCHULZE describes 26 species of Hexactinellids from the Indian Ocean.

*Australian Region.*—BREITFUSS (9) describes 6 species of *Calcarea*; and KIESCHNICK (24) 17 species of *Tetractinellida*, 2 species of *Lithistida*, and 32 species of *Monaxonida*, from Ternate (Moluccas). BREITFUSS (10) describes 1 Calcareous Sponge from Ambon. KIRK (25) describes 3 species of *Calcarea Homocœla* from New Zealand. TRAXLER (52) describes 3 species of "subfossil" Spongillids from Australia; and (53) 1—a recent one—from New Zealand.

## 3. GEOLOGICAL DISTRIBUTION (13, 18, 21, 26, 27, 41, 56).

*Precambrian*.—RAUFF (41).

*Lower Silurian*.—WINCHELL & SCHUCHERT (56).

*Carboniferous*.—HINDE (21).

*Pleistocene*.—LAMBE (27).

*General*.—HÆCKEL (18), KOKEN (26).

## 4. PHYLOGENY AND CLASSIFICATION (17, 18, 36, 43).

HÆCKEL (18) considers the Sponges as a separate phylum of the animal kingdom belonging to his group *Diploblastica*, and defines this phylum thus: "Cœlenterien mit Dermalporen, ohne Tentakeln, ohne Nesselorgane. Grundform der Person Monaxon." The only organ system which can be used for classificatory purposes is the skeleton. Although he acknowledges the possibility or even likelihood of a polyphyletic origin of the Horny Sponges in the text, they are, both in the ancestral tree and in the classificatory scheme, put down as a monophyletic group, and derived from askeletous Sponges. This is a grave error. Anybody acquainted with Chalinine and Horny Sponges must know that some at least of the Horny Sponges are closely related to, and no doubt descended from, Chalinids. The establishment of special groups for the askeletous and for those Sponges which possess a skeleton composed of sand-grains, or other foreign bodies, is equally unnatural, and must also be condemned. HÆCKEL's classificatory scheme is the following:—

I. Class.—MALTHOSPONGIÆ (without spicules): 1. *Myxospongia* (without skeleton); 2. *Psammospongia* (with a skeleton composed of sand-grains or other foreign bodies); 3. *Cornuspongia* (with a skeleton composed of horny fibre).

II. Class.—SILICISPONGIÆ (with siliceous spicules): 1. *Monactinella* (primary spicules monaxon); 2. *Pollactinella* (primary spicules irregular, branched, or polyaxon); 3. *Tetractinella* (primary spicules tetractin); 4. *Hexactinella* (primary spicules hexactin).

III. Class.—CALCISPONGIÆ (with calcareous spicules): 1. *Leuconella* (without horny fibre); 2. *Pharetrella* (with horny fibres).

These 9 groups HÆCKEL calls Legions, and within them he distinguishes 19 orders.

MINCHIN (36) proposes a new classification of the *Asconidæ*. He divides them into the three genera—*Clathrina*, Gray; *Leucosolenia*, Bowerbank; and *Ascandra*, Hæckel, to each of which an entirely new meaning is given [see below, Recorder (29).]

The RECORDER (29) upholds his name *Homandra* versus *Ascandra*, sensu MINCHIN.

F. E. SCHULZE (43) gives a systematic account of the *Euplectellidæ*, in which the older arrangements are somewhat modified.

## 5. METHODS (5, 42, 55).

According to WELTNER (55) the best way to demonstrate the flagellum of the collar-cell and its basal, interplasmatic extension (in *Ephydatia*) is to tease out a fragment of the fresh Sponge in a solution of corrosive sublimate.



## III.—SYSTEMATIC.

## CALCAREA.

## HOMOCÆLA (8, 25, 29, 36).

KIRK, Tr. N. Zealand Inst. xxviii, describes the following new species :

*Leucosolenia intermedia*, p. 208, *laxa*, p. 208, *rosea*, p. 209.

*Leucosolenia nanseni*, BREITFUSS, Zool. Anz. xix, p. 427, n. sp.

MINCHIN (36) gives new diagnoses of the genera *Leucosolenia*, *Clathrina*, and *Ascandra*, and places the species examined by him thus :  
*Ascetta clathrus*, *coriacea*, *primordialis*, *cerebrum*, *spinosa*, *blanca*,  
*Ascandra lacunosa* (= *angulata*), *reticulum*, *contorta* in *Clathrina* ;  
*Ascandra botrys*, *complicata* (= *pinus*), *lieberkühni* and *variabilis* in  
*Leucosolenia* ; and *Homandra falcata* in *Ascandra*.

The Recorder (29) objects to replacing the name *Homandra* by *Ascandra*.

## HETEROCÆLA (9, 27, 56).

LAMBE, Tr. R. Soc. Canada (ser. 2) ii, sect. 2, describes the following new species :

*Sycon protectum*, p. 204, *asperum*, p. 205 ;

*Grantia canadensis*, p. 206.

BREITFUSS, Zool. Anz. xix, describes the following new species :

*Sycetta asconoides*, p. 428 ;

*Ebnerella schulzei*, p. 429, *kükenthali*, p. 430 ;

*Pericharax polejaevi*, p. 431 ;

*Amphoriscus semoni*, p. 435.

SCHUCHERT & WINCHELL (56) redescribe some species of fossil *Calcarea Heterocæla*.

## SILICEA.

## TRIAXONIA.

## HEXACTINELLIDA (22, 43, 50, 56).

*Chaunoplectella*, n. g. ; IJIMA, Zool. Anz. xix, p. 250.

*Hyalascus*, n. g. ; IJIMA, t. c. p. 251.

*Aulosaccus*, n. g. ; IJIMA, t. c. p. 252.

*Dictyaulus*, n. g. ; F. E. SCHULZE, Abh. Ak. Berlin, 1895, pp. 36 & 51.

*Saccocalyx*, n. g. ; F. E. SCHULZE, t. c. p. 53.

IJIMA, Zool. Anz. xix, describes the following new species :

*Semperella stomata*, p. 249 ;

*Regadrella okinoseana*, p. 250 ;

*Chaunoplectella cavernosa*, p. 250 ;

*Walteria leuckarti*, p. 250 ;

*Hyalascus sagamiensis*, p. 251 ;

*Aulosaccus schulzei*, p. 252 ;

*Rossella longispina*, p. 253.

F. E. SCHULZE, Abh. Ak. Berlin, 1895, describes the following new species :

*Holascus robustus*, pp. 4 & 45, *tener*, pp. 7 & 44 ;

*Euplectella simplex*, pp. 15 & 49, *aspera*, pp. 26 & 47 ;

*Dictyaulus elegans*, pp. 36 & 51 ;

*Saccocalyx pedunculata*, p. 53 ;

*Bathydorus lævis*, p. 57 ;

*Placopegma solutum*, p. 63.

*Hyalonema infundibulum*, TOPSENT, Ann. Univ. Lyon, 1896, p. 277, n. sp.

*H. lusitanicum*, BOCAGE, redescribed, TOPSENT, t. c. p. 280.

*Regadrella phoenix*, O. SCHMIDT, redescribed, TOPSENT, t. c. p. 275.

F. E. SCHULZE (43) gives a revised list of the genera and species of *Euplectellida*.

WINCHELL & SCHUCHERT (56) give a list of fossil American *Hexactinellida*.

#### HEXACERATINA (49).

*Hexadella*, n. g. ; TOPSENT, Mem. Soc. zool. France, ix, p. 119.

TOPSENT, Mem. Soc. zool. France, ix, describes the following new species :

*Hexadella racovitzai*, p. 119, *pruvoti*, p. 120.

#### TETRAXONIA.

##### TETRAXONIDA.

#### TETRACTINELLIDA (24, 56).

† *Anomalospongia*, n. g. ; WINCHELL & SCHUCHERT, Final Report of the Minnesota Geological Survey, iii, p. 68 (new name for *Anomaloides*, Ulrich).

† *A. reticulata*, ULRICH, redescribed, WINCHELL & SCHUCHERT, Final Report of the Minnesota Geological Survey, iii, p. 68.

KIESCHNICK, Zool. Anz. xix, describes the following new species :

*Tetilla ternatensis*, p. 527 ;

*Stelletta lobata*, p. 527, *sphaeroides*, p. 528, *reniformis*, p. 528, *aspera*, p. 528, *porosa*, p. 528, *truncata*, p. 528, *stellifera*, p. 529 ;

*Cydonium sphaeroides*, p. 529 ;

*Psammastra conulosa*, p. 529 ;

*Synops alba*, p. 529 ;

*Erylus inaequalis*, p. 530.

#### LITHISTIDA (21, 24, 56).

† *Pemmatites constipatus*, HINDE, Quart. J. Geol. Soc. lii, p. 438, n. sp.

*Discodermia claviformis* and *conica*, KIESCHNICK, Zool. Anz. xix, p. 530, n. sp.

† *Hindia parva*, Ulrich, redescribed ; WINCHELL & SCHUCHERT, Final Report of the Minnesota Geological Survey, iii, p. 79.

#### MONAXONIDA.

#### CLAVULINA (24, 49, 50).

*Spongosorites*, n. g., TOPSENT, Mem. Soc. zool. France, ix, p. 117.

*Spongosorites placenta*, TOPSENT, t. c. p. 117, n. sp.

*Spiroxya*, n. g., TOPSENT, t. c. p. 121.

*Spiroxya heteroclita*, TOPSENT, t. c. p. 122, n. sp.

*Suberites oculatus* and *radiatus*, KIESCHNICK, Zool. Anz. xix, p. 534, n. sp.

*Spirastrella cylindrica* and *dilatata*, KIESCHNICK, t. c. p. 534, n. sp.

*Stylocordyla borealis*, Loven, redescribed ; TOPSENT, Ann. Univ. Lyon, 1895, ii, p. 286.

## CORNACUSPONGIÆ.

*Marine Forms* (24, 27, 49, 50, 51).

*Menanetia*, n. g., TOPSENT, Mem. Soc. zool. France, ix, p. 115.

*Pozziella*, n. g., TOPSENT, Bull. Soc. zool. France, xxi, p. 147.

*Gomphostegia*, n. g., TOPSENT, t. c. p. 149.

TOPSENT, Mem. Soc. zool. France, ix, describes the following new species :

*Menanetia minchini*, p. 116 ;

*Rhabderemia spinosa*, p. 121 ;

*Vosmaeria laevigata*, p. 128 ;

*Axinella agnata*, p. 129, *guiteli*, p. 130, *padina*, p. 131, *pedunculata*, p. 131, *perlucida*, p. 132.

TOPSENT, Bull. Soc. zool. France, xxi, describes the new species :

*Pozziella clavisaepta*, p. 147 ;

*Gomphostegia loricata*, p. 149.

*Leptosia koehleri*, TOPSENT, Ann. Univ. Lyon, 1895, ii, p. 285.

LAMBE, Tr. R. Soc. Canada, (ser. 2) ii, sect. 2, describes the new species :

*Esperella modesta*, p. 188 ;

*Clathria delicata*, p. 192.

KIESCHNICK, Zool. Anz. xix, describes the following new species :

*Halichondria incrustans*, p. 530, *fragilis*, p. 531.

*Siphonochalina claviformis*, p. 531.

*Rhizochalina crassispicula*, p. 531.

*Gellius truncatus*, p. 531, *irregularis*, p. 531.

*Toxochalina ternatensis*, p. 532.

*Cladorhiza depressa*, p. 532.

*Desmacidon fragilis*, p. 532, *nodosus*, p. 532, *ternatensis*, p. 532.

*Chondrocladia ramosa*, p. 532.

*Myxilla ramosa*, p. 533.

*Raphidophlus ramosus*, p. 533.

*Thrinacophora incrustans*, p. 533.

*Gellius flagellifer*, Ridley & Dendy, redescribed ; TOPSENT, Ann. Univ. Lyon, 1895, ii, p. 280.

*Desmacella annexa*, O. Schmidt., redescribed ; TOPSENT, t. c. p. 281.

*Rhizaxinella elongata*, Ridley & Dendy, redescribed ; TOPSENT, t. c. p. 290.

## SPONGILLIDÆ (3, 11, 42, 48, 52, 53, 55, 57).

† *Ephydatia lendenfeldi*, TRAXLER, Földtani Kozl. xxvi, p. 27, n. sp.

*Ephydatia kakahuensis*, TRAXLER, Termes. Fuzetek, xix, p. 32, n. sp.

*Lubomirskia tscherskii*, SOUKATSCHOFF, Trav. Soc. St. Petersb. xxv, 2, p. 4, n. sp.

*L. fusifera*, SOUKATSCHOFF, t. c. p. 6.

SOUKATSCHOFF (48) gives an account of various species of *Lubomirskia*.

*Doubtful Forms* (23, 28, 41).

JENNINGS (23) shows that the organism described by Duncan as a parasitic calcareous Sponge, under the name *Möbiusispongia*, is not a Sponge, but a Foraminifer.

RAUFF (41) proves conclusively that the structures described by Cayeux (*vide* Zool. Rec. 1895) as spicule remains of Precambrian Sponges, are not of organic origin, but growing pyrites.

The RECORDER (28) expresses his doubts about the Sponge nature of the structures described by Hækel as Deep Sea *Keratosa*.



# XVIII. PROTOZOA.

BY

ALBERT WILLIAM BROWN.

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## INTRODUCTION.

THE Record for 1896 contains about the same number of Titles as that for 1895. The energy devoted to the study of Cancer a few years ago seems to have spent itself for a time, PODVISSOTZKY'S paper being the only one in the Record for this year. On the other hand, a great deal of interest still centres in the *Hamatozoa* of Malaria, a large number of articles having been written. Amongst others, those of MANSEN, RCSS, and SACHAROFF should be consulted. A full list will be found under the head, "Pathology," of the Section BIOLOGY.

The largest memoir of the year is SHEVYAKOV'S on the *Ciliata aspiro-trocha*. Unfortunately, it is written in Russian, and is therefore inaccessible to the great majority of English readers.

LANKESTER'S rediscovery in Switzerland and description of *Chlamydomyxa* are worthy of note, as also is BORGERT'S paper on the reproduction of the *Radiolaria tripylæa*. CARTER & SUTTON have both described a number of new fossil species of *Radiolaria* from Barbadoes.

The larger works of the year deal principally with the *Foraminifera*. CHAPMAN & RUPERT JONES continue their monographs of the *Foraminifera* of the Gault of Folkestone and of the Crag respectively. GOËS has

described the *Foraminifera* collected by the "Albatross"; whilst SHERBORN has published the concluding part [NON to Z.] of his index to the species of the same group.

Amongst other systematic works, WILDEMANN'S on the *Volvocaceæ*, LABBÉ'S on the *Coccidia*, BRANDT'S on the *Tintinnidae*, and SCHAUDINN'S synopsis of the *Heliozoa*—the first instalment of the German Zoological Societies' work, "Das Thierreich"—demand mention. SCHAUDINN'S description of the life-history of *Paramæba eilhardi* and his observations on the copulation of *Actinophrys sol*, must not be passed over in silence.

GREENWOOD, DOFLEIN, and KEUTEN have also written embryological papers.

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## II. BIOLOGY.

### 1. ANATOMY.

BERGH describes the supporting threads in the cell-substance of certain *Infusoria*.

CASAGRANDE & BARBAGALLO-RAPISARDI (2) describe *Balantidium coli*.

JENNINGS (1) discusses the nature of *Möbiussongia parasitica*, and places it with the *Foraminifera*.

JENNINGS (2) describes a new genus of *Foraminifera* of the family *Astrorhizidae*.

KARAWAEW describes his observations on the *Radiolaria*.

KUSTLER publishes his researches on the morphology of *Trichomonas intestinalis*.

LABBÉ gives a lengthy account of the *Cocciidea*.

LAGERHEIM publishes a description of *Phaeocystis poucheti*.

LANKESTER describes a new species, *Chlamydomyxa montana*, and discusses its relation to *Labyrinthula* and *Biomyxa*.

LEYDEN & SCHAUDINN describe *Leydenia gemmipara*, a parasitic Rhizopod.

PITARD discusses the different forms of *Ceratium hirudinella*.

SAND publishes an account of the *Acinetaria*.

SCHAUDINN (3) describes a new genus and species of *Amœba*, *Paramœba eilhardi*.

SCHMIDT gives an account of *Trichomonas pulmonalis*.

SCHULZE discusses the cell membrane, pellicle and cuticle.

VANHÖFFEN discusses the genus *Ceratium*.

### 2. EMBRYOLOGY.

BEARD discusses the significance of the conjugation of the *Infusoria*.

BORGERT describes the reproduction of the *Tripylean Radiolaria*.

DOPLEIN describes the nuclear division of *Kentrochona nebalice*.

GREENWOOD discusses the structural change in the resting nucleus of *Carchesium polypinum*.

KEUTEN gives an account of the nuclear division of *Euglena viridis*.

SCHAUDINN (2) discusses the centrosome in the *Heliozoa*.

SCHAUDINN (3) describes the life-cycle of *Paramœba eilhardi*.

SCHAUDINN (4) describes the copulation of *Actinophrys sol*.

## 3. PHYSIOLOGY.

GRETHIE discusses the action of certain derivatives of quinine on the *Infusoria*.

HEMMETER discusses the rôle of acid in the digestion of Rhizopods.

LILLIE gives an account of his experiments and observations on the regeneration of *Stentor* from small fragments.

MENDELSON discusses thermotropy amongst the unicellular organisms.

NEISSER considers the hygienic importance of *Protozoa* in water.

VERWORN describes experiments on the cellular physiology of Rhizopods.

## 4. TAXONOMY, &amp;c.

BRANDT (2) gives a systematic account of the *Tintinnida*.

CARTER (1) gives a classification of the *Radiolaria*.

DAWSON reviews the evidence for the animal nature of Eozoon.

DELAGE & HÉROUARD publish a systematic account of the *Protozoa* in vol. I of their *Traité de Zoologie Concrète*.

DILL discusses the members and near relatives of the genus *Chlamydomonas*.

LAMEERE discusses the position of the *Protozoa* in the animal kingdom.

SCHAUDINN (1) publishes a synopsis of the *Heliozoa*.

SCHLUMBERGER gives a note on the biology of *Foraminifera*.

SHEVYAKOV monographs the Aspirotrich *Ciliata*, and adopts the following classification:—

## Group A. GYMNOSTOMATA.

Div. I. *Prostomata*.

Subdiv. 1, *Holophryina*; 2, *Actinobolina*; 3, *Colepina*; 4, *Cyclodinina*; 5, *Prorotrichina*.

Div. II. *Pleurostomata*.

Subdiv. 6, *Amphileptina*; 7, *Trachelina*; 8, *Nassulina*.

Div. III. *Hypostomata*.

Subdiv. 9, *Chlamydotonta*; 10, *Dysterina*; 11, *Onychodactylina*.

## Group B. TRICHOSTOMA.

(i). Subdiv. 12, *Chilifera*.

(ii). Subdiv. 13, *Microthoracina*; 14, *Paramœcina*; 15, *Urocetrina*; 16, *Pleuronemina*; 17, *Plagiopylina*.

(iii). Subdiv. 18, *Isotrichina*.

## Group C.

Subdiv. 19, *Opalinina*.

VILLET maintains that the *Gregarinidea* are not *Protozoa* but related to the *Cestoda*.

WILDEMANN publishes a systematic essay on the *Volvocaceæ*.

## 5. CULTIVATION, PREPARATION, &amp;c.

BEYERINCK, and CASAGRANDE & BARBAGALLO-RAPISARDI discuss the cultivation of *Amœbæ*.

SCHARDINGER describes the making of pure cultures of *Protozoa*.

SHATTOCK & BALLANCE give an account of the cultivation of parasitic *Protozoa* from tumours.



## 6. PATHOLOGY.

[N.B.—This list only contains such papers as bear on the zoological side of diseases caused by parasitic *Protozoa*.]

Amœb-enteritis : BOAS, CELLI & FIOCCA, FAJARDO.

Bovine *Hæmaturia* : SANFELICE & LOI.

Cancer : PODVISSOTZKY.

*Hæmatozoa* in Tsetse-fly disease; BRUCE.

*Hæmatozoa* in malaria : BOISSON; CRAY; FERRIER (morphological and histochemical characters); GAUTIER; KUPKE (larval form); LAVERAN; LAWRIE; MANSEN (life-history outside the human body); MOSER; ROSS (1) Crescent sphaero-flagella metamorphosis; (2) Practical points; (3) Observations. SACHAROFF (1) Morphology; (2, 3) Varieties; (4) Origin of malarial pigments. THIN (method of observation). WHITE (changes undergone in mosquito).

Parasitic maladies generally : BLANCHARD.

Pathogenic *Coccidia* : DANTEC & BÉRARD.

Parasitic *Protozoa* in tumours : SHATTOCK & BALLANCE.

*Trichomonas* in pathology : RUTA.

## 7. DISTRIBUTION.

## A. PARASITIC.

## GENERAL.

See GALLI, "Manuale di parassitologia."

## COCCIDIIDEA.

For list of hosts and seats, see LABBÉ, p. 562. In gut of mouse; SCHUBERG (1). See also DANTEC & BÉRARD.

## GREGARINIDEA.

In *Arthropoda*; LÉGER.

## MYXOSPORIDIA.

In pike and perch; COHN.

## SARCOSPORIDIA.

In cattle and sheep; SANFELICE & LOI.

## FLAGELLATA.

*Trichomonas* in man; DOCK. *T. pulmonalis* in expectorations; SCHMIDT.

## CILIATA.

In cœcum of horse; BUNDLE. *Balantidium coli*; CASAGRANDE & BARBAGALLO-RAPISARDI, DEHIO, SIEVERS. Parasitic *Vorticellæ*; LINDNER.

## ACINETARIA.

SAND (1).

## B. FAUNISTIC.

*Azores*.—Inland waters, *Protozoa*; IMHOF.

*Baltic*.—Plankton, *Protozoa*; AURIVILLIUS.

*Budapesth*.—Rhizopods; SZELENYI.

*Christiana*.—*Protozoa*; WILLE.

*Ealing*.—Ponds, *Protozoa*; Rep. Ealing Soc. 1895.

*Falmouth Harbour*.—*Protozoa*; VALLENTIN.

*France*.—*Protozoa*; GRANGER.

*Funafuti*.—*Foraminifera*; HEDLEY.

- Illinois River.*—Protozoa ; HEMPEL.  
*Irish Sea.*—Foraminifera ; Rep. Brit. Ass. 1896.  
*Khadgibei.*—Salt Lake, Protozoa ; BOUTCHINSKY.  
*Michigan Lake and Charleroi.*—Protozoa ; KOFOID.  
*Pacific.*—Foraminifera: Bathymetrical Distribution Tables, pp. 92-98 ;  
 GOËS. Plankton distribution ; ZACHARIAS (1).  
*Rhine, Upper.*—Protozoa ; LAUTERBORN.  
*Scotland, W. Coast.*—Protozoa ; SCOTT.  
*Warsaw.*—Protozoa ; EISMOND.

## C. GEOLOGICAL.

- Ardèche.*—Radiolaria ; CAYEUX (2).  
*Atlantic Bottom.*—Foraminifera ; MACKAY, A. H.  
*Africa, S.*—Limestone : Nummulites ; NEWTON.  
*Barcelona.*—Pliocene : Foraminifera ; ALMERA.  
*Barbadoes.*—Radiolaria ; CARTER, SUTTON.  
*Blackpool and Great Crosby.*—Boulder Clay : Foraminifera ; READE.  
*Brittany.*—Precambrian : Radiolaria and Foraminifera ; BIGOT.  
*Como.*—Miocene : Foraminifera ; CORTI (1). Radiolaria ; CORTI (2).  
*Cornwall.*—Chert : Radiolaria ; FOX.  
*Crag.*—Foraminifera ; JONES.  
*Chalk.*—Foraminifera compared with living ; BURROWS & HOLLAND.  
*Dévoluy.*—Nummulites ; LORY.  
*Folkestone.*—Gault : Foraminifera ; CHAPMAN.  
*Gulov.*—Chalk : Foraminifera ; SCHACKO.  
*Italy.*—Foraminifera : DERVIEUX (1) & (2), FORNASINI (1).—Tertiary :  
 Foraminifera ; FORNASINI (2).  
*Jura, &c.*—Tertiary and Quaternary ; RÜHL.  
*Java and Madeira.*—Foraminifera ; VERBEEK & FENNEMA.  
*Maltese Is.*—Limestone : Globigerina ; COOKE.  
*Mecklenburg.*—Chalk : Foraminifera ; FOERSTER.  
*Roumania.*—Nummulites ; POPONCI.

## III. SYSTEMATIC.\*

## A.—GYMNOMYXA.

## Class 2.—LABYRINTHULIDEA.

- Chlamydomyxa montana*, on Sphagnum, Switzerland, p. 233, pls. xiv & xv,  
 LANKESTER, Quart. J. Micr. Sci. xxxix, n. sp.

## Class 3.—LOBOSA.

- Amæba proteus*, Helsingfors, p. 8 ; *A. crystalligera*, Helsingfors, p. 9 ; *A. villosa*, Helsingfors, p. 10, pl. i, fig. 2 ; *A. verrucosa*, Helsingfors, p. 11, pl. i, fig. 1 ; LEVANDER, Acta Soc. Faun. Fenn. xii.  
*Amphitrema rhenanum*, Upper Rhine district, p. 14, LAUTERBORN, Zool. Anz. xix, n. sp.  
*Arcella vulgaris*, p. 12 ; *A. discoides*, p. 13 ; LEVANDER, Acta Soc. Faun. Fenn. xii.  
*Centropyxis aculeata*, Helsingfors, p. 18, pl. i, figg. 14-17 ; LEVANDER, t. c.  
*Cyphoderia margaritacea*, Helsingfors, p. 21, pl. i, figg. 19 & 20 ; LEVANDER, t. c.

\* The species recorded in Levander's Paper, Acta Soc. Faun. Fenn. xii, were accidentally omitted from Zool. Rec. Systematic for 1895, and are therefore included here.

- Dactylospharium radiosus*, Helsingfors, p. 11; LEVANDER, *t. c.*  
*Diffugia pyriformis*, p. 13, pl. i, figg. 3-6; *D. acuminata*, p. 15, pl. i, figg. 7-9; *D. lobostoma*, p. 16, pl. i, figg. 10-13; *D. globulosa*, p. 17; *D. solowetzki*, p. 18, pl. i, fig. 13, Helsingfors; LEVANDER, *t. c.*  
*D. tuberculosa*, Illinois, p. 331, pl. xxv, figg. 9 & 10, HEMPEL, Bull. Illinois Lab. iv, n. sp.  
*Hyalodiscus rubicundus*, Helsingfors, p. 11; LEVANDER, Acta Soc. Faun. Fenn. xii.  
*Leydenia*, n. g., *gemmipara*, p. 439, pl. iv, figg. 1-11, LEYDEN & SCHAUDINN, SB. Ak. Berlin, 1896, n. sp.  
*Nekla lageniformis*, Helsingfors, p. 20, pl. i, fig. 18; LEVANDER, Acta Soc. Faun. Fenn. xii.  
*Paramœba*, n. g., *eilhardi*, p. 25; SCHAUDINN, SB. Ak. Berlin, 1896, n. sp.

## Class 5.—HELIOZOA.

For synopsis of the Class, see SCHAUDINN, Das Thierreich, *Heliozoa*.

## Class 6.—RETICULARIA.

- Alveolina javana*, Java, p. 1137, pl. ii, figg. 27-36, pl. iii, figg. 37 & 38; *A. timorensis*, Batavia, p. 1140, pl. ii, fig. 39; *A.*, undetermined species: (1) p. 1141, pl. ii, figg. 40 & 41; (2) p. 1141, pl. ii, fig. 42; (3) p. 1142, pl. ii, fig. 43; (4) p. 1142, pl. ii, fig. 44; VERBEEK & FENNEMA, Descrip. Geol. Java et Madoura.  
*Astrorhiza furcata*, p. 19, pl. i, figg. 4 & 5, *tenuis*, p. 20, pl. i, figg. 6-8, Pacific, *A. vermiformis*, Caribbean Sea, p. 20, pl. i, fig. 9, GOËS, Bull. Mus. Harvard, xxix, n. spp.  
*Baculogypsina floresiana*, p. 88, pl. iii, figg. 1-3, pl. iv, fig. 7; SCHLUMBERGER, Feuille Natural. 1896.  
*Bathysiphon filiformis*, Pacific, p. 23; *B. rufus*, Pacific, p. 23, pl. i, fig. 10; GOËS, Bull. Mus. Harvard, xxix.  
*Biloculina abyssorum*, Caribbean Sea, p. 85, pl. ix, figg. 1 & 2; *B. obesa*, Gulf of Mexico, p. 88, pl. ix, figg. 3 & 4; *B. saccata*, pl. ix, figg. 5-8, *quadrangularis*, p. 88, pl. ix, figg. 9-12, Caribbean Sea; GOËS, *t. c.*  
*Cristellaria circumcidanea*, p. 2, pl. i, figg. 2a, b; *C. subalata*, p. 3, pl. i, figg. 3a, b; *C. nodosa*, p. 4, pl. i, figg. 5a, b; *C. convergens*, p. 4, pl. i, figg. 6a, b; *C. gibba*, p. 4, pl. i, figg. 7a, b; *C. rotulata*, p. 5, pl. i, figg. 8a, b; *C. rotulata*, var. *macrodiscus*, p. 6, pl. i, figg. 9a, b; *C. gaultina*, p. 7, pl. i, figg. 10a, b, & 11; *C. sternalis*, p. 8, pl. ii, figg. 1a, b; *C. diademata*, p. 8, pl. ii, figg. 2a, b; *C. secans*, var. *angulosa*, nov., p. 3, pl. i, figg. 4a, b; *C. turgidula*, p. 1, pl. i, figg. 1a, b, Folkestone Gault; CHAPMAN, J. R. Micr. Soc. 1896. *C. coltrata*, Crag, p. 239, pl. i, figg. 24 & 25; *C. gibba*, Crag, p. 247, pl. vii, figg. 19a, b; *C. reniformis*, Crag, p. 248, pl. vii, figg. 18a, b; JONES, Pal. Soc. Mon. 1896. *C. cassis*, var. *marginata*, p. 55, pl. v, figg. 13 & 14; *C. aculeata*, var. *marginuloides*, p. 56, pl. v, figg. 15 & 16, Caribbean Sea; *C. subarcuatula*, p. 57, pl. v, figg. 19-24; GOËS, Bull. Mus. Harvard, xxix.  
*Crithonina pisum*, Gulf of Mexico, p. 24, pl. ii, figg. 1 & 2; *C. rugosa*, Pacific, p. 24, pl. ii, figg. 3 & 4; *C. lens*, p. 24, pl. ii, figg. 5-8; GOËS, *t. c.*: n. spp.  
*C. granum*, var. *subsimplex*, nov., p. 25, GOËS, *t. c.*  
*Carpenteria proteiformis*, Caribbean Sea, p. 74, pl. vi, figg. 8-17; GOËS, *t. c.*  
*Clavulina communis*, pl. iv, figg. 9-15, *cocœna*, pl. iv, figg. 16-25, p. 36, *textularioidea*, pl. iv, figg. 26-38, *soldanii*, pl. iv, figg. 39-46, p. 37, Caribbean Sea, GOËS, *t. c.*  
*C. rudis*, n. sp., p. 35, pl. iv, figg. 4-8, GOËS, *t. c.*

- Dentalina*, p. 220; *D. obliqua*, p. 221, pl. i, fig. 9, pl. v, fig. 6, *obliquestrina*, p. 224, pl. i, fig. 19, *pauperata*, p. 224, pl. i, figg. 13-18 & 20, Crag; JONES, Pal. Soc. Mon. 1896.
- Dimorphina*, p. 274; *D. tuberosa*, p. 274, pl. i, fig. 61, pl. vii, fig. 21, *compacta*, p. 276, pl. i, fig. 66, pl. vii, fig. 17, Crag; JONES, t. c.
- Discorbina*, p. 290; JONES, t. c.
- D. globularis*, Gault, p. 590, pl. xiii, figg. 11a-c; CHAPMAN, J. R. Micr. Soc. 1896: Crag, p. 292, pl. vii, figg. 28a-c; JONES, Pal. Soc. Mon. 1896. *D. orbicularis*, Gault, p. 591, pl. xiii, figg. 12a, b; CHAPMAN, J. R. Micr. Soc. 1896: Crag, p. 295, pl. vii, figg. 31a-c; JONES, Pal. Soc. Mon. 1896. *D. rugosa*, p. 590, pl. xiii, figg. 10a-c, *turbo*, pl. xiii, figg. 13a, b, *pileolus*, p. 591, pl. xiii, figg. 14a, b, Gault; CHAPMAN, J. R. Micr. Soc. 1896. *D. turbo*, p. 291, pl. vii, figg. 29a-c, *rosacea*, p. 293, pl. i, figg. 17a-c, *parisiensis*, p. 296, pl. ii, figg. 13-15, Crag; JONES, Pal. Soc. Mon. 1896.
- D. lingulata*, p. 297, pl. vii, figg. 33a-c, JONES, t. c. n. sp.
- Fusulina granum*, Sumatra, p. 1131, pl. i, figg. 1-10; VERBEEK & FENNEMA, Descrip. Geol. Java et Madoura.
- Globigerina*, p. 279; JONES, Pal. Soc. Mon. 1896.
- G. bulloides*, Crag, p. 280, pl. ii, figg. 1 & 2, JONES, t. c.: Gault, p. 587, pl. xiii, fig. 4, CHAPMAN, J. R. Micr. Soc. 1896. *G. linxiana*, Crag, p. 285, pl. vii, figg. 2 & 3a, b, c; JONES, Pal. Soc. Mon. 1896. *G. cretacea*, p. 588, pl. xiii, figg. 5 & 6; *G. equilateralis*, p. 589, pl. xiii, fig. 7, Gault; CHAPMAN, J. R. Micr. Soc. 1896.
- G. cambrica*, pl. i, figg. 5a-c, *didyma*, pl. i, figg. 7a, b, *grandis*, pl. i, fig. 6, Hanford Brook, *turrita*, Assize, pl. i, figg. 8a, b, MATTHEW, p. 111, Tr. N. York Ac. xiv, n. spp.
- Gypsina vesicularis*, var. *discus*, Caribbean Sea, p. 74, pl. vii, figg. 4-6; GOËS, Bull. Mus. Harvard, xxix.
- Haplophragmium latidorsatum*, Pacific, p. 29; *H. nitidum*, Caribbean Sea, p. 30, pl. iii, figg. 8 & 9; *H. turbinatum*, n. var. *helicoideum*, Pacific, p. 30, pl. iii, figg. 10-13; *H. obsoletum*, Caribbean Sea, p. 31, pl. iii, figg. 14-16; *H. lituolinoideum*, Gulf of Mexico, p. 32, pl. iii, figg. 17-20; GOËS, t. c.
- Hormosina ovicula*, Pacific, p. 34, pl. iv, figg. 1-3; GOËS, t. c.
- Jaculella obtusa*, Pacific, p. 23; GOËS, t. c.
- Marginulina glabra*, pl. i, fig. 26, p. 233, *costata*, p. 235, pl. i, fig. 21, Crag; JONES, Pal. Soc. Mon. 1896.
- Miliolina procera*, Pacific, p. 82, pl. vii, figg. 7-9; *M. contorta*, var., p. 82, pl. vii, figg. 10-12, pl. viii, figg. 1-7; *M. polygonu*, p. 83, pl. viii, figg. 11-18; *M. bicostata*, p. 83, pl. viii, figg. 19-21, Caribbean Sea; GOËS, Bull. Mus. Harvard, xxix.
- Möbiusspongia parasitica*, p. 317; JENNINGS, J. Linn. Soc. xxv.
- Nodosaria communis*, Pacific, p. 61, pl. vi, fig. 1; *N. boueana*, p. 62, pl. vi, fig. 2; *N. raphanistrum*, var. *obsoleta*, p. 63, pl. vi, fig. 3; *N. seminuda*, p. 64, pl. vi, figg. 4 & 5; *N. striolata*, p. 64, pl. vi, figg. 6 & 7, Caribbean Sea; GOËS, Bull. Mus. Harvard, xxix.
- N. raphanus*, Crag, p. 213, pl. i, figg. 45, 22 & 23, pl. vi, figg. 9 & 10; *N. ambigua*, Crag, p. 211, pl. vi, fig. 11; *N. raphanistrum*, Crag, p. 216, pl. i, figg. 6-8; *N. proxima*, Crag, p. 219, pl. iv, fig. 8, pl. vii, fig. 15; JONES, Pal. Soc. Mon. 1896.
- Nummulites*, p. 1143, VERBEEK & FENNEMA, Descrip. Geol. Java et Madoura. The following species of this genus are catalogued by the authors:—
- N. javanus* and varieties, Java, p. 1143, pl. iii, figg. 45-57, pl. iv, figg. 58-68, pl. v, figg. 69-73, pl. vii, fig. 94; *N. baguelensis*, I, Baguelen, p. 1147, pl. iii, fig. 74, pl. vi, figg. 76-81, pl. vii, figg. 95-97; *N. baguelensis*, II, Baguelen, p. 1148, pl. iii, fig. 75, pl. vi, figg. 82-85; *N. spira*,

- Java, p. 1149, pl. v, fig. 86, pl. vi, figg. 81-89; *N. leymeriei* and n. var., Java, p. 1150, pl. vii, figg. 90-93; *N. lavigata*, Ioguitkarta, p. 1150, pl. vii, figg. 98-105, 107 & 108, pl. viii, figg. 104-106, 109 & 110; *N. nanggoulani*, Nanggoulan, p. 1152, pl. viii, figg. 111-113; *N. loquiakarta*, Nanggoulan, p. 1152, pl. viii, figg. 114-119; *N. pengaronensis*, Java, p. 1153; *N. sub-bronguarti*, Java, p. 1154; *N. biaritzensis*, Java, p. 1154; *N. striata*, var., Java, p. 1154; *N. niassi*, I, Java, p. 1155, pl. ix, figg. 120-122; *N. niassi*, II, Java, p. 1155, pl. ix, figg. 123-125.
- Operculina granulosa*, Java, p. 1158, pl. ix, figg. 128-131; *O. javana*, Java, p. 1159, pl. ix, figg. 132 & 133; VERBEEK & FENNEMA, Descrip. Geol. Java et Madoura.
- Orbitoides papyracea*, var. *javana*, Java, p. 1171, pl. ix, figg. 144-147, pl. x, figg. 155-157; *O. dispansa*, Borneo, p. 1173, pl. ix, figg. 148 & 149, pl. x, figg. 158-160; *O. papyracea*, var. *javana*, minor, Nanggoulan, p. 1166, pl. ix, pp. 136 & 137, pl. x, figg. 150 & 151; *O. ephippium*, var. *javana*, Java, p. 1168, pl. ix, figg. 138-143, pl. x, figg. 152-154; VERBEEK & FENNEMA, Descrip. Geol. Java et Madoura.
- Orbitolites martini*, Java, p. 1159, pl. ix, figg. 134 & 135; VERBEEK & FENNEMA, Descrip. Geol. Java et Madoura.
- Orbitolina concava*, Java, p. 1136, pl. ii, figg. 23-26; VERBEEK & FENNEMA, t. c.
- Orbulina ovalis*, Hanford Brook, p. 110, pl. i, fig. 20, pl. ii, fig. 7; *O. ingens*, Hanford Brook, p. 110, pl. i, fig. 4; *O. intermedia*, Hanford Brook, p. 110, pl. i, fig. 3, MATTHEW, Tr. N. York Ac. xiv: n. spp.
- O. universa*, Hanford Brook, p. 109, pl. i, figg. 13 & 15; MATTHEW, t. c.
- Planorbulina mediterraneanensis*, Crag, p. 298, pl. ii, fig. 3, pl. v, fig. 30; JONES, Pal. Soc. Mon. 1896.
- Polymorphina*: CHAPMAN, J. R. Micr. Soc. 1896, catalogues the following species of this genus for the Gault of Folkestone:—
- P. lactea*, pl. ii, figg. 3 & 4, *gibba*, pl. ii, figg. 5 & 6, p. 9, *gutta*, p. 10, pl. ii, figg. 7 & 8, *fusiformis*, p. 11, pl. ii, figg. 9 & 10, *sororia*, p. 12, pl. ii, figg. 11 & 12, *sororia*, var. *cuspidata*, pl. ii, fig. 13, *angusta*, pl. ii, fig. 14, *communis*, pl. ii, fig. 15, p. 13, *compressa*, p. 14, pl. ii, fig. 16.
- JONES, Pal. Soc. Mon. 1896, gives the following species for the Crag:—
- P. lactea*, p. 250, pl. i, fig. 48, *gibba*, p. 253, pl. i, figg. 49-51, *gutta*, p. 256, pl. i, figg. 46 & 47, *sororia*, p. 257, pl. vi, figg. 13a, b, *compressa*, p. 258, pl. i, figg. 54, 65, & 77-80, pl. v, figg. 26 & 28, *thouini*, p. 261, pl. i, fig. 59, *nodosaria*, p. 262, pl. i, figg. 55-58, *cylindroides*, p. 263, pl. vi, figg. 15a, b, *concava*, p. 264, pl. v, fig. 22, *communis*, p. 265, pl. v, fig. 24, pl. vi, figg. 16a, b, *problema*, p. 267, pl. i, fig. 64, pl. v, fig. 23, pl. vi, figg. 12a, b, *turgida*, p. 268, pl. v, fig. 25, *complanata*, p. 270, pl. i, figg. 52, 53, & 60, *frondifrons*, p. 271, pl. i, figg. 62, 63, & 69, pl. iv, figg. 11-14, pl. vii, fig. 20, *frondifrons*, var. *brevis*, p. 271, var. *lineata*, p. 272, *variata*, p. 272, pl. i, figg. 67 & 68, pl. v, fig. 27, *tuberculata*, p. 273, pl. v, fig. 29, *hirsuta*, p. 273, pl. vi, figg. 14a, b.
- Pullenia sphaeroides*, Crag, p. 286, pl. ii, figg. 31 & 32; JONES, Pal. Soc. Mon. 1896.
- Ramulina levis*, p. 582, pl. xii, fig. 2; *R. globulifera*, p. 582, pl. xii, figg. 3-6; *R. aculeata*, p. 583, pl. xii, figg. 7-9; *R. cervicornis*, p. 584, pl. xii, figg. 10 & 11, Gault of Folkestone; CHAPMAN, J. Linn. Soc. xxv.
- Reophax procerus*, Caribbean Sea, p. 28, pl. iii, figg. 1-5.
- R. insectus*, p. 28, pl. iii, figg. 6 & 7, *armatus*, p. 29, pl. i, fig. 1, Pacific, *turbo*, Caribbean Sea, p. 29, pl. i, figg. 2 & 3, GOËS, Bull. Mus. Harvard, xxix, n. spp.
- Rhabdammina discreta*, Caribbean Sea, p. 21, pl. i, figg. 13 & 14; GOËS, t. c.

- Rhabdognium tricarinatum*, Crag, p. 232, pl. vii, figg. 16a, b ; JONES, Pal. Soc. Mon. 1896.
- Rhapidoscene*, n. g., for *R. conica*, on *Botellina labyrinthica*, p. 320, pl. x ; JENNINGS, J. Linn. Soc. xxv, n. sp.
- Sagrina asperula*, Gault, p. 581, pl. xii, fig. 1 ; CHAPMAN, J. R. Micr. Soc. 1896.
- Schwagerina verbeeki*, Java, p. 1134, pl. i, figg. 11-22 ; VERBEEK & FENNEMA, Descrip. Geol. Java et Madoura.
- Sphaeroilina bulloides*, Gault, p. 589, pl. xiii, fig. 8 ; CHAPMAN, J. R. Micr. Soc. 1896.
- Spirillina tuberculata*, Gault, p. 590, pl. xiii, figg. 10a-c ; CHAPMAN, J. R. Micr. Soc. 1896. *S. vivipara*, var. *minima*, Crag, p. 288, pl. vi, fig. 22, n. var. *complanata*, Crag, p. 290, pl. iii, fig. 20 ; JONES, Pal. Soc. Mon. 1896.
- Textularia solita*, n. var. *inflata*, Pacific, p. 42, pl. v, figg. 1-3 ; *T. rugosa*, Caribbean Sea, p. 43, pl. v, figg. 4 & 5 ; GOËS, Bull. Mus. Harvard, xxix.
- Thurammia erinacea*, Pacific, p. 26, pl. ii, figg. 9 & 10, GOËS, t. c. n. sp.
- Truncatulina*, p. 301, *T. refulgena*, p. 302, pl. v, figg. 31a, b ; *T. lobulata*, p. 304, pl. ii, figg. 4-10, pl. iv, fig. 19 ; *T. variabilis*, p. 309, pl. vi, fig. 23 ; *T. hardingeri*, p. 310, pl. iv, fig. 18, Crag ; JONES, Pal. Soc. Mon. 1896.
- Virginulina*, p. 226, *V. levigata*, p. 227, pl. iv, fig. 9, pl. v, fig. 8 ; *V. linearis*, p. 229, pl. i, figg. 10-12, pl. v, fig. 7 ; *V. obliquistriata*, p. 231, pl. v, figg. 9-11, Crag ; JONES, t. c.
- Verneuilina pusilla*, Pacific, p. 39, pl. v, figg. 6-8, GOËS, Bull. Mus. Harvard, xxix, n. sp.
- Verrucina rudis*, Caribbean Sea, p. 25, pl. i, figg. 15 & 16 ; GOËS, t. c.
- Vitriwebbina*, p. 326, CHAPMAN, Ann. Nat. Hist. xviii ; *V. levis*, p. 585, pl. xii, fig. 12 ; *V. sollasi*, p. 586, pl. xiii, fig. 1 ; var. *gonoidea*, p. 586, pl. xiii, fig. 2 ; *V. tuberculata*, p. 586, pl. xiii, fig. 3 ; CHAPMAN, J. R. Micr. Soc. 1896.
- Webbina*, p. 326 ; CHAPMAN, Ann. Nat. Hist. xviii.
- Uvigerina angulosa*, p. 277, pl. vii, fig. 26 ; *U. canariensis*, p. 278, pl. vii, fig. 27, Crag ; JONES, Pal. Soc. Mon. 1896.

## Class 7.—RADIOLARIA.

- † *Amphirrhopalum bifidum*, n. sp., Barbadoes, p. 57, CARTER, Amer. Micr. J. xvii.
- † *Astractura digitata*, n. sp., Barbadoes, p. 98, CARTER, t. c.
- † *Astrococcura*, n. g., *concinna*, n. sp., Barbadoes, p. 138 ; SUTTON, Amer. Micr. J. xvii.
- Aulacantha scolymantha*, Russia, p. 350, pl. vi, figg. 1-7 ; KARAWAEW, Zapiski Kiev. Obshch. xv.
- † *Dicoccura*, n. g., *brevibrachia*, n. sp., Barbadoes, p. 163 ; CARTER, Amer. Micr. J. xvii.
- † *Pentinastrum pentacephalum*, Barbadoes, p. 25, CARTER, t. c. ; *P. irregulare*, Barbadoes, p. 58, SUTTON, t. c. : n. spp.
- † *Phacotriactis*, n. g., *triangula*, n. sp., Barbadoes, p. 61 ; SUTTON, t. c.
- † *Rhopalastrum anomalum*, n. sp., Barbadoes, p. 59, SUTTON, t. c.
- Spongodictyon spongiosum*, Russia, p. 364, pl. vi, figg. 10-13 ; KARAWAEW, Zapiski Kiev. Obshch. xv.

- †*Stauralastrum trispinosum*, n. sp., Barbadoes, p. 241, CARTER, Amer. Micr. J. xvii.  
 †*Staurococcurea*, n. g., *quaternaria*, p. 96, *clavigera*, p. 164, n. spp., CARTER, t. c.; *S. cuneata*, p. 162, *loculata*, p. 161, Barbadoes, n. spp., SUTTON, t. c.  
*Thalassicolla pelagica*, p. 361, pl. vi, figg. 8 & 9; KARAWAEW, Zapiski Kiev. Obshch. xv.  
*Thalassolampe margarodes*, p. 363; KARAWAEW, t. c.

## B.—CORTICATA.

## Class 1.—SPOROZOA.

- Acanthospora polymorpha*, in larva of *Hydrous caraboides*, p. 44, pl. iii, figg. 21 & 22, *repelini*, in *Phalangium cornutum*, p. 42, pl. iii, figg. 16-18, LÉGER, Ann. Fac. Marseille, vi (3), n. spp.  
*Adelea ovata*, p. 536, pl. xvii, fig. 2, pl. xviii, figg. 14 & 15; *A. dimidiata*, p. 536; *A. simplex*, p. 537, LABBÉ, Arch. Zool. exp. (3) iv.  
*Bananella lacazei*, p. 555, pl. xii, figg. 10, 18, & 19, pl. xvii, figg. 23-26, pl. xviii, figg. 21-23; LABBÉ, t. c.  
*Barroussia ornata*, p. 537; LABBÉ, t. c.  
*Clepsidrina acridiorum*, p. 27, pl. ii, figg. 8 & 9; LÉGER, Ann. Fac. Marseille, vi (3).  
*Coccidium oviforme*, p. 451, PARKER, Tr. N. Zealand Inst. xxviii; *C. perforans*, p. 544, pl. xvii, figg. 12-15, *oviforme*, p. 544, *bigeminum*, p. 545, *hominis*, p. 545, *falciforme*, p. 546, *viride*, p. 546, *tenellum*, p. 547, *truncatum*, p. 548, *roscoviense*, p. 548, pl. xii, figg. 11-13, pl. xvii, fig. 18, *delagei*, p. 549, pl. xvii, fig. 16, *proprium*, p. 550, pl. xvii, fig. 17, *gasterostei*, p. 550, *sardinae*, p. 550, *giganteum*, p. 551; LABBÉ, Arch. Zool. exp. (3) iv.  
*C. pfeifferi*, n. sp., p. 548, LABBÉ, t. c.  
*Crystallospora thelohani*, p. 554, pl. xii, fig. 14, pl. xviii, figg. 29-31; LABBÉ, t. c.  
*Cyclospora glomericola*, p. 555; LABBÉ, t. c.  
*Diplospora lacazei*, p. 556, pl. xii, figg. 2, 4, 8-10, pl. xvii, figg. 5-11; LABBÉ, t. c.  
*Eimeria pfeifferi*, in *Geophilus*, p. 593, *bigemina*, in *Cryptops*, p. 593, LABBÉ, t. c. n. spp.  
*E. falciformis*, *hirsuta*, *nova*, *nepæ*, p. 538, *schneideri*, p. 539, pl. xiv, figg. 17 & 18; LABBÉ, t. c.  
*Eirmocystis asidae*, n. sp., in *Asida*, p. 30, pl. iii, figg. 19 & 20, LÉGER, Ann. Fac. Marseille, vi (3).  
*Gonobia colubri*, p. 541, *lacertæ*, p. 542; LABBÉ, Arch. Zool. exp. (3) iv.  
*Goussia variabilis*, p. 551, pl. xvii, fig. 21, pl. xviii, fig. 26, *lucida*, p. 552, pl. xvii, fig. 20, *cruciata*, *clupearum*, pl. xviii, figg. 24 & 25, p. 552, *motellæ*, pl. xii, fig. 15, pl. xvii, figg. 19 & 22, pl. xviii, fig. 27, *minuta*; LABBÉ, t. c.  
*G. thelohani*, p. 553, *bigemina*, p. 553, LABBÉ, t. c. n. spp.  
*Hyaloklossia*, n. g., *lieberkühni*, n. sp., in *Rana*, p. 535; LABBÉ, t. c.  
*Isospora rara*, p. 556; LABBÉ, t. c.  
*Klossia helicina*, pl. xvii, fig. 1, *soror*, p. 534, *eberthi*, pls. xv, xvi & xviii, figg. 1-12, pl. xii, fig. 20, *octopiæna*, p. 535; LABBÉ, t. c.  
*Lycosella*, n. g., *phalangii*, n. sp., in *Phalangium crassum* and *P. cornutum*, p. 36, pl. iii, figg. 1-15; LABBÉ, t. c.

- Minchinia*, n. g., *chitonis*, n. sp., in *Chiton*, p. 533, pl. xvii, fig. 3; LABBÉ, *t. c.*  
*Pfeifferia tritonis*, pl. xiii, figg. 1-15, pl. xii, figg. 1-7, *gigantea*, pl. xiv, figg. 1-7, *princeps*, pl. xiv, figg. 8-11 & 15, pl. xii, figg. 5 & 6, p. 540, *avium*, pl. xiv, figg. 12-14, p. 541; LABBÉ, *t. c.*  
*P. schubergi*, n. sp., in mice, p. 541, LABBÉ, *t. c.*  
*Rhopalonia geophili*, p. 47, pl. ii, figg. 10-21; LÉGER, Ann. Fac. Marseille, vi (3).  
*Stichospora provincialis*, p. 32, pl. ii, figg. 1-7; LÉGER, *t. c.*

## Class 2.—FLAGELLATA.

- Chrysochlorella*, n. g., *longispina*, n. sp., Upper Rhine District, p. 16; LAUTERBORN, Zool. Anz. xix.  
*Dinobryon pellucidum*, n. sp., Helsingfors, p. 31, pl. ii, fig. 1, LEVANDER, Acta Soc. Faun. Fenn. xii.  
*Gonyostomum semen*, Helsingfors, p. 31, pl. ii, fig. 2; LEVANDER, *t. c.*  
*Halobryon*, n. g., *ramosum*, n. sp., Upper Rhine, p. 17; LAUTERBORN, Zool. Anz. xix.  
*Phæocystis poucheti*, Plankton, p. 277; LAGERHEIM, Ofv. Ak. Forh. liii.  
*Thaumatonema*, n. g., *setiferum*, n. sp., Upper Rhine, p. 14; LAUTERBORN, Zool. Anz. xix.  
*Vacuolaria depressa*, n. sp., Upper Rhine, p. 15, LAUTERBORN, *t. c.*

## Class 3.—DINOFLAGELLATA.

- Ceratium hirundinella*, var. *furcoides*, Helsingfors, p. 53, pl. ii, fig. 24; *C. tripos*, Helsingfors, p. 53, pl. ii, fig. 25; LEVANDER, Acta Soc. Faun. Fenn. xii.  
*C. brevicorne*, n. sp., p. 314, pl. xxv, figg. 11 & 12, pl. xxvi, fig. 13, HEMPEL, Bull. Illinois Lab. iv.  
*Dinophysis rotundata*, p. 54, pl. ii, fig. 26; *D. acuta*, p. 54, pl. ii, fig. 27, Helsingfors; LEVANDER, Acta Soc. Faun. Fenn. xii.  
*Glenodinium balticum, foliaceum*, Helsingfors; LEVANDER, p. 52, *t. c.*  
*Gymnodinium fissum*, n. sp., Helsingfors, p. 43, pl. ii, figg. 5-10, LEVANDER, *t. c.*  
*Peridinium*, sp.?, p. 50, pl. ii, fig. 21, *catenatum*, pl. ii, fig. 22, *divergens*, pl. ii, fig. 23, p. 51; LEVANDER, *t. c.*  
*P. palatinum*, n. sp., Upper Rhine, p. 17, LAUTERBORN, Zool. Anz. xix.

## Class 5.—CILIATA.

- [In the following list of *Ciliata* "SHEVYAKOV, Mem. Ac. St. Petersb. vii (1)," has been shortened to "SHEVYAKOV;" the references to his monograph being rather numerous.]  
*Actinobolina*, p. 158; SHEVYAKOV.  
*Actinobolus*, p. 159; *A. radians*, p. 161, pl. ii, figg. 31 & 32; SHEVYAKOV.  
*Ægyria*, p. 258; *Æ. oliva*, p. 260, pl. iv, fig. 82; SHEVYAKOV.  
*Amphileptina*, p. 190; SHEVYAKOV.  
*Amphileptus*, p. 193; *A. claparedii*, p. 195, pl. ii, fig. 45; *A. carchesii*, p. 196; *A. incurvatus*, p. 196, pl. ii, fig. 46; SHEVYAKOV.  
*Ancystrum*, p. 330, *A. mytili*, p. 331, pl. v, fig. 123; *A. veneris*, p. 331, pl. v, fig. 124; SHEVYAKOV.  
*Anoplophrya*, p. 379; *A. nardos*, p. 381; *A. nodulata*, p. 381, pl. vi, fig. 145; *A. filum*, p. 382; *A. branchiarum*, p. 382, pl. vi, fig. 146; SHEVYAKOV.  
*Balantiophorus*, p. 365; *B. minutus*, p. 367, pl. vi, fig. 138; *B. elongatus*, p. 368, pl. vi, fig. 139; *B. bursaria*, p. 368, pl. vi, fig. 140 SHEVYAKOV.



- Blepharostoma*, p. 275 ; *B. glaucoma*, p. 276, pl. iv, fig. 89 ; SHEVYAKOV.  
*Bütschlia*, p. 186 ; *B. parva*, p. 188, pl. ii, fig. 43 ; *B. neglecta*, p. 188,  
 pl. ii, fig. 44 ; *B. lanceolata*, p. 188 ; SHEVYAKOV.  
*Chaenia*, p. 154 ; *C. teres*, p. 156, pl. ii, fig. 28 ; *C. elongata*, p. 157, pl. ii,  
 fig. 29 ; *C. crassa*, p. 158, pl. ii, fig. 30 ; SHEVYAKOV.  
*Chasmatostoma*, p. 292 ; *C. reniforme*, p. 293, pl. iv, fig. 102 ; SHEVY-  
 AKOV.  
*Chilifera*, p. 272 ; SHEVYAKOV.  
*Chilodon*, p. 242 ; *C. cucillulus*, p. 245, pl. iii, fig. 73, pl. vii, fig. 199 ;  
*C. propellens*, p. 247 ; *C. caudatus*, p. 247 ; *C. dubius*, p. 248, pl. iii,  
 fig. 74 ; *C. dentatus*, p. 248, pl. iii, fig. 75 ; *C. gouraudi*, p. 249, pl. iii,  
 fig. 76 ; SHEVYAKOV.  
*Chilodochonina*, n. fam., p. 60, WALLENGREN, Acta Univ. Lund.  
 1895.  
*Chilodochona*, n. g., *C. zimmerstadtii*, n. sp. ; WALLENGREN, p. 49, pl. iii,  
 t. c., and p. 547, Biol. Centralbl. xvi.  
*C. microchilus*, n. sp., WALLENGREN, Acta Univ. Lund. 1895, p. 58, pl. iv,  
 figg. 1-3, and Biol. Centralbl. xvi, p. 551.  
*Chlamydodonta*, p. 237 ; SHEVYAKOV.  
*Chlamydodon*, p. 249 ; *mnemosyne*, p. 251, pl. iii, fig. 77 ; SHEVYAKOV.  
*Cinetochilum*, p. 324, *C. margaritaceum*, p. 325, pl. v, fig. 120,  
 SHEVYAKOV.  
*Codonella bottnica*, p. 89, pl. iii, fig. 7 ; *C. tubulosa*, p. 90, pl. iii, fig. 8 ;  
*C. ventricosa*, p. 91, pl. iii, fig. 9, Helsingfors ; LEVANDER, Acta Soc.  
 Faun. Fenn. xii.  
*Cothurnia maritima*, p. 99, pl. iii, fig. 10 ; *C. nodosa*, p. 100, pl. iii, fig. 11 ;  
*C. recurva*, p. 101, pl. iii, fig. 12, Helsingfors ; LEVANDER, t. c.  
*Colepina*, p. 163 ; SHEVYAKOV.  
*Coleps*, p. 166 ; *C. hirtus*, p. 169, pl. ii, fig. 35 ; *C. amphacanthus*, p. 169 ;  
*C. uncinatus*, p. 171 ; SHEVYAKOV.  
*Colpidium*, p. 303 ; *C. colpoda*, p. 305, pl. iv, fig. 110, pl. vii, fig. 200 ;  
 SHEVYAKOV.  
*Colpoda*, p. 306 ; *C. cucullus*, p. 307, pl. iv, fig. 111 ; *C. steinii*, p. 308, pl. iv,  
 fig. 112 ; SHEVYAKOV.  
*Cranotheridium*, p. 133 ; *C. tenuatum*, p. 134, pl. i, fig. 13 ; SHEVYAKOV.  
*Cryptochilum*, p. 284 ; *C. nigricans*, p. 286, pl. iv, figg. 94 & 95 ; *C. elegans*,  
 p. 286, pl. iv, fig. 96 ; *C. griseoleum*, p. 287, pl. iv, fig. 97 ; *C. tortum*,  
 p. 287, pl. iv, fig. 98 ; SHEVYAKOV.  
*Cyclodinina*, p. 174 ; SHEVYAKOV.  
*Cyclidium*, p. 357 ; *C. glaucoma*, p. 359, pl. v, fig. 133 ; *C. citrullus*,  
 p. 361, pl. v, fig. 134 ; *C. hepatrichum*, p. 361, pl. v, fig. 135 ; SHEVY-  
 AKOV.  
*Cyttarocyclis denticulata*, Karajak Fjord, p. 60.  
*C. edentata*, Labrador, p. 62, fig. 18, *C. media*, Davis Strait, p. 63, figg.  
 19 & 20, *C. gigantea*, Karajak Fjord, p. 63, figg. 21 & 24, BRANDT,  
 Bibl. Zool. 1896, xx, n. spp.  
*Dallasia frontata*, p. 278 ; SHEVYAKOV.  
*Dasytricha*, p. 376 ; *D. ruminantium*, p. 377, pl. vi, fig. 144 ; SHEVYAKOV.  
*Dichilum*, p. 276 ; *D. cuneiforme*, p. 277, pl. iv, fig. 90 ; *D. wrzcsniowskii*,  
 p. 277 ; SHEVYAKOV.  
*Didinium*, p. 178 ; *D. balbianii*, p. 181, pl. ii, fig. 39, pl. viii, fig. 196 ;  
*D. nasutum*, p. 182, pl. ii, fig. 40 ; SHEVYAKOV.  
*Dileptus*, p. 219 ; *D. anser*, p. 221, pl. iii, fig. 61, pl. vii, fig. 181 ; SHEVY-  
 AKOV.  
*Dinophrya*, p. 176 ; *D. lieberkühni*, p. 178, pl. ii, fig. 38 ; SHEVYAKOV.  
*Discophrya*, p. 387 ; *D. planariarum*, p. 388, pl. vi, fig. 150 ; *D. gigantea*,  
 p. 389 ; SHEVYAKOV.  
*Disematostoma*, p. 315 ; *D. bütschlii*, p. 316 ; SHEVYAKOV.

- Dysteria*, p. 263; *D. monostyla*, p. 265, pl. iv, fig. 84; *D. fluviatilis*, p. 266, pl. iv, fig. 85; *D. armata*, p. 267, pl. iv, fig. 86; *D. sulcata*, p. 268; *D. lanceolata*, p. 268, pl. iv, fig. 87; SHEVYAKOV.
- Dysterina*, p. 256; SHEVYAKOV.
- Enchelys*, p. 127; *E. pupa*, p. 129, pl. i, fig. 9; *E. farcimen*, p. 129; *E. arcuata*, p. 130, pl. x, fig. 1; SHEVYAKOV.
- Epistylis steinii*, Warsaw, p. 145, pl. iii, figg. 24 & 27, pl. iv, figg. 29-33; EISMOND, Pam. Fizyjoigr. 1895.
- E. rhabdostyla*, n. sp., Warsaw, p. 140, pl. iii, figg. 22 & 23; EISMOND, t. c.
- Folliculina elegans*, Helsingfors, p. 82, pl. iii, fig. 3; LEVANDER, Acta Soc. Faun. Fenn. xii.
- Frontonia*, p. 309; *F. leucas*, p. 312, pl. v, fig. 113, pl. vi, fig. 164, pl. vii, figg. 173, 177, 191, & 201; *F. acuminata*, p. 313, pl. v, fig. 114; *F. fusca*, p. 314, pl. v, fig. 115; SHEVYAKOV.
- Glaucoma*, p. 294; *G. scintillans*, p. 279, pl. iv, fig. 103; *G. pyriformis*, p. 298, pl. iv, fig. 104; *G. macrostoma*, p. 299, pl. iv, fig. 105; *G. reniformis*, p. 300, pl. iv, fig. 106; *G. colpidium*, p. 300, pl. iv, fig. 107; *G. setosa*, p. 301, pl. iv, fig. 108; SHEVYAKOV.
- Heliochona scheutenii*, pl. i, figg. 1, 2, 7, 9, 10, 15, & 16, pl. ii, figg. 17-21 & 23-45; *H. sessilis*, pl. i, figg. 3-6 & 11-14, pl. ii, fig. 22; WALLENGREN, Acta Univ. Lund, 1895.
- Hemispeira asteriasi*, p. 61, pl. iv, figg. 4-15; WALLENGREN, t. c.
- Holophrya*, p. 118; *H. simplex*, p. 120, pl. i, fig. 1; *H. ovum*, p. 121; *H. discolor*, p. 121, pl. i, fig. 2, pl. vi, figg. 156 & 157, pl. vii, figg. 179 & 195; *H. nigricans*, p. 122; *H. oblonga*, p. 122, pl. i, fig. 3; *H. multifiliis*, p. 123, pl. i, fig. 4; SHEVYAKOV.
- Hoplitophrya*, p. 383; *H. secans*, p. 385, pl. vi, fig. 147; *H. fastigata*, p. 385; *H. clavata*, p. 386; *H. lumbrici*, p. 386, pl. vi, fig. 148; *H. uncinata*, p. 387, pl. vi, fig. 149; SHEVYAKOV.
- Holophryina*, p. 115; SHEVYAKOV.
- Ileonema*, p. 162; *I. dispar*, p. 163, pl. ii, fig. 33; SHEVYAKOV.
- Isotrichina*, p. 371; SHEVYAKOV.
- Isotricha*, p. 373; *I. prostoma*, p. 375, pl. vi, fig. 142; *I. intestinalis*, p. 375, pl. vi, fig. 143, pl. vii, fig. 174; SHEVYAKOV.
- Kentrochona nebalie*, p. 362; DOFLEIN, Zool. Anz. xix.
- Lacrymaria*, p. 138; *L. olor*, p. 141, pl. i, fig. 17; *L. coronata*, p. 142, pl. i, fig. 18; *L. lagenula*, p. 143, pl. i, fig. 19; *L. vermicularis*, p. 143; SHEVYAKOV.
- Lagenophrys ampulla*, Warsaw, p. 137, pl. iii, figg. 20 & 21; EISMOND, Pam. Fizyjoigr. 1895.
- Lagynus*, p. 134; *L. elegans*, p. 135, pl. i, fig. 14; *L. crassicollis*, p. 136, pl. i, fig. 15; SHEVYAKOV.
- Lembadion*, p. 351; *L. bullinum*, p. 353, pl. v, fig. 131, pl. vii, figg. 171 & 172; SHEVYAKOV.
- Lembus*, p. 362; *L. verminus*, p. 364, pl. vi, fig. 136; *L. elongatus*, p. 364, fig. 137; *L. pusillus*, p. 364; SHEVYAKOV.
- Leucophrys*, p. 288; *L. patula*, p. 289, pl. iv, fig. 99; SHEVYAKOV.
- Lionotus*, p. 197; *L. folium*, p. 201, pl. ii, figg. 47 & 48; *L. fasciola*, p. 202, pl. ii, figg. 49 & 50, pl. vi, fig. 158, pl. vii, figg. 176 & 197; *L. lamella*, p. 203, pl. ii, fig. 51; *L. pictus*, p. 204; *L. obtusus*, p. 204; *L. varsoviensis*, p. 205, pl. ii, fig. 52; *L. diaphanes*, p. 205, pl. ii, fig. 53; *L. grandis*, p. 206, pl. iii, fig. 54; SHEVYAKOV.
- Loxocephalus*, p. 291; *L. granulatus*, p. 292, pl. iv, fig. 101; SHEVYAKOV.
- Loxodes*, p. 212; *L. rostrum*, p. 214, pl. iii, fig. 59; SHEVYAKOV.
- Loxophyllum*, p. 206; *L. meleagris*, p. 209, pl. iii, fig. 55; *L. armatum*, p. 210, pl. iii, fig. 56; *L. setigerum*, p. 211, pl. iii, fig. 57; *L. rostratum*, p. 211, pl. iii, fig. 58; SHEVYAKOV.

- Mesodinium*, p. 183 ; *M. acarus*, p. 184, pl. ii, fig. 41 ; *M. pulex*, p. 185, pl. ii, fig. 42 ; SHEVYAKOV.
- Microthorax*, p. 326 ; *M. sulcatus*, p. 327, pl. v, fig. 121 ; *M. pusillus*, p. 328 ; SHEVYAKOV.
- Microthoracina*, p. 322 ; SHEVYAKOV.
- Monochilum*, p. 290 ; *M. frontatum*, p. 291, pl. iv, fig. 100 ; SHEVYAKOV.
- Nassulina*, p. 222 ; SHEVYAKOV.
- Nassula*, p. 223 ; *N. aurea*, p. 231, pl. iii, fig. 62, pl. vi, figg. 161-163, pl. vii, figg. 183-185, 189, & 198 ; *N. elegans*, p. 232, pl. iii, fig. 63, pl. vi, figg. 159 & 160, pl. vii, fig. 182 ; *N. hesperidea*, p. 233, pl. iii, fig. 64 ; *N. rubens*, p. 233 ; *N. brunnea*, p. 234, pl. iii, fig. 65 ; *N. microstoma*, p. 234, pl. iii, fig. 66 ; *N. theresæ*, p. 235, pl. iii, fig. 67 ; *N. ambigua*, p. 236, pl. iii, fig. 68 ; *N. lateritia*, p. 236, pl. iii, fig. 69 ; *N. oblonga*, p. 236, pl. iii, fig. 70 ; SHEVYAKOV.
- Onychodactylina*, p. 269 ; SHEVYAKOV.
- Onychodactylus*, p. 270 ; *O. acrobates*, p. 272, pl. iv, fig. 88 ; SHEVYAKOV.
- Opalinina*, p. 378 ; SHEVYAKOV.
- Opalina*, p. 391 ; *O. ranarum*, p. 393, pl. vi, fig. 153 ; *O. obtrigona*, p. 393 ; *O. dimidiata*, p. 394, pl. vi, fig. 154 ; *O. flava*, p. 394 ; *O. intestinalis*, p. 394 ; *O. caudata*, p. 395, pl. vi, fig. 155 ; SHEVYAKOV.
- Opalinopsis*, p. 389 ; *O. elegans*, p. 390, pl. vi, fig. 151 ; *O. coronata*, p. 391 ; *O. sepiolæ*, p. 391, pl. vi, fig. 152 ; SHEVYAKOV.
- Opercularia irritabilis*, n. sp., Illinois, p. 315, pl. xxv, figg. 17 & 18, HEMPEL, Bull. Illinois Lab. iv.
- Ophryoglena*, p. 317 ; *O. flava*, p. 319, pl. v, fig. 117 ; *O. flavicans*, p. 320 ; *O. atra*, p. 321, pl. v, fig. 118 ; *O. citreum*, p. 321, pl. v, fig. 119 ; SHEVYAKOV.
- Opisthodon*, p. 255 ; *O. niemeccensis*, p. 256, pl. iv, fig. 81 ; SHEVYAKOV.
- Orthodon*, p. 240 ; *O. hamatus*, p. 241, pl. iii, fig. 71 ; *O. parvirostris*, p. 241, pl. iii, fig. 72 ; SHEVYAKOV.
- Paramæcina*, p. 333 ; SHEVYAKOV.
- Paramæcium*, p. 334 ; *P. aurelia*, p. 339, pl. v, fig. 126 ; *P. caudatum*, p. 340, pl. v, fig. 127, pl. vii, figg. 169, 170, 187, 192, 202, & 203 ; *P. bursaria*, p. 341, pl. v, fig. 128, pl. vii, fig. 204 ; *P. putrinum*, p. 342, pl. v, fig. 129 ; SHEVYAKOV.
- Perispira*, p. 153 ; *P. ovum*, p. 154, pl. ii, fig. 27 ; SHEVYAKOV.
- Phascolodon*, p. 253 ; *P. vorticella*, p. 255, pl. iv, figg. 79 & 80 ; SHEVYAKOV.
- Philaster*, p. 316 ; *P. digitiformis*, p. 317, pl. v, fig. 116 ; SHEVYAKOV.
- Plagiocampa*, p. 279 ; *P. mutabile*, p. 280, pl. iv, fig. 91 ; SHEVYAKOV.
- Plagiopogon coleps*, p. 165, pl. ii, fig. 34 ; SHEVYAKOV.
- Plagiopylina*, p. 369 ; SHEVYAKOV.
- Plagiopyla*, p. 369 ; *P. nasuta*, p. 371, pl. vi, fig. 141 ; SHEVYAKOV.
- Pleuronemina*, p. 348 ; SHEVYAKOV.
- Pleuronema*, p. 354 ; *P. chrysalis*, p. 356, pl. v, fig. 132 ; SHEVYAKOV.
- Pleurocoptes*, n. g., *hydractiniae*, n. sp., p. 553 ; WALLENGREN, Biol. Centralbl. xvi.
- Prorotrichina*, p. 186 ; SHEVYAKOV.
- Prorodon*, p. 146 ; *P. niveus*, p. 150, pl. i, fig. 21 ; *P. farcatus*, p. 153, pl. ii, fig. 26 ; *P. armatus*, p. 151, pl. i, fig. 23 ; *P. teres*, p. 151, pl. i, fig. 22, pl. vii, pp. 188 & 194 ; *P. edentatus*, p. 152, pl. i, fig. 24 ; *P. margaritifera*, p. 152, pl. i, fig. 25 ; SHEVYAKOV.
- Ptychocylis*, n. g., p. 59 ; *P. acuta*, Karajak Fjord, *P. obtusa*, Davis Str., p. 59, figg. 13 & 15 ; *P. drygalskii*, Labrador, p. 59, fig. 14 ; *P. arctica*, Davis Str., p. 60, fig. 17 ; BRANDT, Bibl. Zool. 1896, xx, n. spp.
- Ptychostomum*, p. 328 ; *P. sænuridis*, p. 329, pl. v, fig. 122 ; SHEVYAKOV.
- Scaphidiodon*, p. 251 ; *S. navicula*, p. 253, pl. iii, fig. 78 ; SHEVYAKOV.
- Spathidium*, p. 131 ; *S. spathula*, p. 132, pl. i, fig. 11 ; *S. lieberkühni*, p. 132, pl. i, fig. 12 ; SHEVYAKOV.

- Spirochona gemmipara*, Warsaw, p. 127, pl. iii, figg. 15-18 ; EISMOND Pam. Fizyjogr. 1895.
- Stegochilum*, p. 282 ; *S. fusiforme*, p. 283, pl. iv, fig. 93 ; SHEVYAKOV.
- Stentor multiformis*, p. 317 ; SCHUBERG, Zool. Anz. xix.
- Stephanopogon*, p. 173 ; *S. colpoda*, p. 174, pl. ii, fig. 35 ; SHEVYAKOV.
- Strombidium stilifer*, Helsingfors, p. 86, pl. iii, fig. 4, *S. grande*, Helsingfors, p. 87, pl. iii, fig. 5 ; LEVANDER, Acta Soc. Faun. Fenn. xii, n. spp.
- Tiarina*, p. 171 ; *T. fusus*, p. 172, pl. ii, fig. 36 ; SHEVYAKOV.
- Tintinnopsis illinoisensis*, Illinois, p. 314, pl. xxvi, figg. 14-16, HEMPEL, Bull. Illinois Lab. iv ; *T. baltica*, Kiel, p. 56 ; *T. nitida*, Karajak Fjord, p. 58, BRANDT, Bibl. Zool. 1896, xx. : n. spp.
- T. campanula*, Scandinavia, p. 55 ; *T. beroidea*, Karajak Fjord, p. 56 ; BRANDT, t. c.
- Tintinnus acuminatus*, Europe, p. 50 ; *T. subulatus*, Europe, p. 52 ; *T. quadrilineatus*, Greenland, p. 53 ; *T. bottnicus*, Karajak Fjord, p. 53, figg. 10 & 11 ; *T. norvegicus*, Norway, p. 54, fig. 7 ; BRANDT, t. c.
- T. vitreus*, n. sp., Karajak Fjord, p. 54, figg. 8 & 9 ; BRANDT, t. c.
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- Trachelocerca*, p. 144 ; *T. phœnicopterus*, p. 146, pl. i, fig. 20 ; SHEVYAKOV.
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- T. brachypharynx*, n. sp., Helsingfors, p. 66, pl. iii, fig. 1, LEVANDER, Acta Soc. Faun. Fenn. xii.
- Trichorhynchus*, p. 332 ; *T. tuamotuensis*, p. 333, pl. v, fig. 125 ; SHEVYAKOV.
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- T. crassa*, n. sp., Helsingfors, p. 72, pl. iii, fig. 2, LEVANDER, Acta Soc. Faun. Fenn. xii.
- Urocentrina*, p. 343 ; SHEVYAKOV.
- Urocentrum*, p. 344 ; *U. turbo*, p. 347, pl. v, fig. 130, pl. vi, fig. 165, pl. vii, figg. 166-168, 186, 190, & 205 ; SHEVYAKOV.
- Uronema*, p. 280 ; *U. marina*, p. 281, pl. iv, fig. 92 ; *U. ovale*, p. 282 ; SHEVYAKOV.
- Urotricha*, p. 124 ; *U. farcta*, p. 125, pl. i, fig. 5 ; *U. lagenula*, p. 126, pl. i, fig. 6, pl. vii, fig. 178 ; *U. furcata*, p. 126, pl. i, fig. 7 ; *U. globosa*, p. 127, pl. i, fig. 8 ; SHEVYAKOV.
- Urozona*, p. 301 ; *U. bütschlii*, p. 303, pl. iv, fig. 109 ; SHEVYAKOV.
- Vorticella nebulifera*, Warsaw, p. 152, pl. iv, fig. 28 ; EISMOND, Pam. Fizyjogr. 1895.
- Zoothamnium parasitica*, Warsaw, p. 143, pl. iii, fig. 19 ; EISMOND, t. c.

## Class 6.—ACINETARIA.

- Acineta jorisi*, n. sp., Portel, p. 7, SAND, Bull. Soc. Belge Micr. 1896.
- Dendrocometes paradoxus*, Warsaw, p. 109, pl. ii, figg. 1 & 3-14 ; EISMOND, Pam. Fizyjogr. 1895.
- Dendrophrya*, n. g., *gemmipara*, n. sp., Portel, p. 8 ; SAND, Bull. Soc. Belge Micr. 1896.
- Hallezia*, n. g., *multitentaculata*, n. sp., Portel, p. 7 ; SAND, t. c. The genus includes also *Podophrya buckei*, *P. compressa*, *P. bruchypoda*.
- Rhyncheta gammari*, n. sp., Warsaw, p. 107, pl. ii, fig. 2, EISMOND, Pam. Fizyjogr. 1895.
- Tokophrya francottei*, n. sp., Portel, p. 7, SAND, Bull. Soc. Belge Micr. 1896.

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END OF THE THIRTY-THIRD VOLUME.

## CORRIGENDA.

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MAMMALIA, p. 24, line 29, for "PACHERAN" read "PUCHERAN."

AVES, p. 40, line 1, for "*squatorola*" read "*squatarola*."

„ p. 41, line 6, for "*Bürgeranus*" read *Bügeranus*."

„ p. 48, line 8 from bottom, for "*Cicinurus*" read "*Cicinnurus*."

INSECTA, p. 18, Titles 262, 263, 264, should be assigned to DRUCE, H. H.,  
not to DRUCE, H.

„ p. 20, line 8, for "P. R. Soc. London" read "P. S. London Soc."

„ p. 20, FAIRMAIRE, for omitted title see p. 142 subsequently.

„ p. 49, line 1, for "PEYERIMKOF" read "PEYERIMHOF."

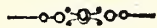
„ p. 53, line 2, for "ADRATUS" read "ADRASTUS."

„ p. 142, line 24, for "*Rhyzopaussidæ*" read "*Rhysopaussidæ*."

„ p. 242, line 13, after "*Scotinochroa*," add "n. g."



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