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THE
ZOOLOGICAL RECORD,

VOLUME THE THIRTY-SECOND.

BEING

RECORDS OF ZOOLOGICAL LITERATURE

RELATING CHIEFLY TO THE YEAR

1895.

BY J. A. THOMSON, R. LYDEKKER, R. BOWDLER SHARPE, G. A. BOULENGER, W. A. HERDMAN, B. B. WOODWARD, R. L. POCOCK, D. SHARP, F. A. BATHER, FLORENCE BUCHANAN, R. T. GÜNTHER, R. VON LENDENFELD, W. F. HUME AND F. CHAPMAN.

EDITED (FOR THE ZOOLOGICAL SOCIETY OF LONDON) BY

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Cambridge.*

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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.

THIS, the thirty-second volume of the ZOOLOGICAL RECORD, is more voluminous than its predecessors, in consequence of including the literature of two years in the case of four of the eighteen departments.

We have had the assistance of several new Recorders: Messrs. R. T. Günther and F. Chapman, Professor von Lendenfeld, and Dr. W. Fraser Hume having kindly undertaken the work of recording in certain divisions of the so-called lower animals, the study of which is attracting more and more the attention of Naturalists. Twenty-five years ago, in 1870, the classes subsequent to *Insecta* occupied altogether only 44 pages of the volume, but in the present one 175 pages are devoted to the same groups.

Although, with increasing knowledge, there must come changes in classification, we have endeavoured to keep the general arrangement of the Record as uniform as possible; such minor changes as are from time to time introduced being made with the view of facilitating research, and of constituting the Record a complete guide in all the numerous branches of zoological study. There are some Naturalists who think that our "*Vermes*" should now be divided into several separate Records. Miss Buchanan, however, arranges the Record in question in such a way that the specialist can have no difficulty in tracing what refers to his particular department;

hence little practical advantage would result from substituting five or six separate Records for the present "*Vermes*." We therefore prefer to postpone making any change until Zoologists are thoroughly agreed as to the limits and value of the various divisions into which *Vermes* will doubtless ultimately fall. To maintain separate Records for such groups as *Mesozoa*, for which last year a dozen lines only were required and this year none at all, does not appear necessary.

D. SHARP.

CAMBRIDGE, *Sept.* 8, 1896.

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- XVII. SPONGIÆ. By R. VON LENDENFELD. (Czernowitz.)
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ALPHABETICAL INDEX OF NEW NAMES OF GENERA AND SUBGENERA.
By the EDITOR.

ALPHABETICAL LIST
OF THE
ABBREVIATIONS
USED IN THE
ZOOLOGICAL RECORD
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.

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 and Education 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.
 § 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.
Abh. Bayer. Ak.—Abhandlungen der mathematisch-physikalischen Classe der königlichen Bayerischen Akademie der Wissenschaften. (München, 4to.) N. K. R. Z. L. C, p.
Abh. Böhm. Ges.—Abhandlungen der mathematisch-naturwissenschaftlichen Classe der k. Böhmisches Gesellschaft. [Called also] Rozprawy tridy mathematicko-přírodvěcke královské 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. Górlitz—Abhandlungen der naturforschenden Gesellschaft zu Górlitz. (Górlitz, 8vo.) N. K. R.

- Abh. Ges. Götting.*—Abhandlungen der königlichen Gesellschaft der Wissenschaften zu Göttingen. (Göttingen, 4to.) N. R. Z. L. C, p.
- Abh. Ges. Halle.*—Abhandlungen der naturforschenden Gesellschaft zu Halle. (Halle, 4to.) N. K. R. Z. L. C.
- 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.) Nz. 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.
- Abh. Senckenb. Ges.*—Abhandlungen herausgegeben von der Senckenbergischen naturforschenden Gesellschaft. (Frankfort a.-M., 4to.) N. K. R. Z. L. C.
- Abh. Ver. Bremen.*—Abhandlungen herausgegeben vom naturwissenschaftlichen Vereine 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.
- 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 regiae 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 regiae 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.*]
- Act. Soc. Helvet.*—Actes de la Société Helvétique des Sciences naturelles. [Called also] Verhandlungen der schweizerischen Naturforschenden Gesellschaft. (Basel, &c., 8vo.) N. K. R. L. C.
- 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.
- Amer. J. Sci.*—The American Journal of Science. (New Haven, 8vo.) N. K. R. Z. C, p.
- Amer. Micr. J.*—The American Monthly Microscopical Journal. (Washington, 8vo.) N.
- Amer. Natural.*—The American Naturalist. (Philadelphia, 8vo.) N. K. Z. L. C, b.
- Anat. Anz.*—Anatomischer Anzeiger. Centralblatt für die gesamte wissenschaftliche Anatomie. Antliches Organ der anatomischen Gesellschaft. (Jena, 8vo.) Nz. K. Z. (C) b.
- Anat. Hefte. Arb.*—Anatomische Hefte. Referate und Beiträge zur Anatomie und Entwicklungsgeschichte. Erste Abteilung. Arbeiten aus Anatomischen Instituten. (Wiesbaden, 8vo.) K. C, b.
- Anat. Hefte. Ergebn.*—Anatomische Hefte. . . . Zweite Abteilung. Ergebnisse der Anatomie und Entwicklungsgeschichte. (Wiesbaden, 8vo.) K. C, b.
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THE ZOOLOGICAL RECORD

FOR 1895.

I. GENERAL SUBJECTS.*

BY

J. ARTHUR THOMSON, M.A.

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ABELSDORFF, G. [See KÖTTGEN & ABELSDORFF (358).]

- AGASSIZ, A. A visit to the Bermudas in March, 1894. Bull. Mus. Harvard, xxvi, pp. 209-281, 30 pls.

* 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.

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

2. AHLBORN, F. Ueber die Bedeutung der Heterocerkie und ähnlicher unsymmetrischer Schwanzformen schwimmender Wirbelthiere für die Ortsbewegung. *Zeitschr. wiss. Zool.* lxi, pp. 1-15, 1 pl.
3. *ALBRECHT, E. Der Untergang der Kerne in den Erythroblasten der Säugetiere. *SB. Ges. Munchen*, xi, pp. 17-20, 1 pl.
4. ALLEN, GRANT. The mystery of Birth. *Fortnightly Review*, July, 1895, pp. 113-120.
5. ALTMANN, R. Einiges über die Mikrologie. *Arch. Anat.* 1895, pp. 225-234.
Cf. HIS, W. Bemerkungen zu Prof. Altmann's Aufsatz über Mikrologie. *T. c.* pp. 235-237, and Zusatz von Prof. Altmann, pp. 237-239.
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7. ANDRÉ, E. Le pigment mélanique des Limnées. *Rev. suisse Zool.* iii, pp. 429-431.
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8. APFELBECK, V. Changements de forme chez les Coléoptères des régions alpines. *Bull. Soc. zool. France*, xx, pp. 79 & 80.
9. APPELLÖF, A. Ueber einige Resultate der Kreuzbefruchtung bei Knochenfischen. *Bergens Mus. Aarbog.* 1894-95, No. 1, 15 pp., 1 pl.
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12. ARTHUR, J. C. The distinction between Animals and Plants. *Amer. Natural.* xxix, pp. 961-972.
13. *AUBERT, E. Histoire naturelle des êtres vivants. T. II. Fasc. 1: Reproduction, etc. Fasc. 2: Classifications zoologiques et botaniques. Paris: 8vo, 108 & 629 pp.
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 (1) Die Samenelemente von *Paludina vivipara*. (2) Die Samenkörperchen von *Astacus fluviatilis*. (3) Die Samenelemente von *Ascaris megaloccephala*.
15. AURIVILLIUS, C. W. S. Litoralfaunans förhållanden vid tiden för hafvets islågning. *Ofv. Ak. Forh.* lii, pp. 133-150.
- 15A. AURIVILLIUS, C. Das Plankton des Baltischen Meeres. *Bih. Svenska Ak.* xxi, 83 pp., 1 pl., 1 map.
16. BAKOUNINE, SOPHIE. Sur l'évolution des fonctions embryonnaires. *Arch. ital. Biol.* xxiii, pp. 420-423. [Respiration.]
17. BALBIANI, E. G. Sur la structure et la division du noyau chez le *Spirochona gemmipara*. *Ann. Microgr.* vii, pp. 289-312, 1 pl.

18. BALLOWITZ, E. Die Doppelspermatozoen der Dyticiden. Zeitschr. wiss. Zool. lx, pp. 458-499, 5 pls.
19. BARBOUR, A. H. FREELAND. Some aspects of Heredity. Edin. Med. Journ. 1895, pp. 602-611.
20. BARFURTH, D. Regeneration and Involution. Anat. Hefte. Ergebn. iv, pp. 458-501.
21. —. Versuche über die parthenogenetische Furchung des Hühner-eios. Arch. Entwicklmech. ii, pp. 303-351, 2 pls.
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23. BATESON, W. On the colour-variations of a Beetle of the family *Chrysomelidae*, statistically examined. P. Zool. Soc. London, 1895, pp. 850-860.
24. BATHER, F. A. The Swedish Marine Zoological Station. Nat. Sci. vii, pp. 407-415, 1 pl., 2 figg.
25. BAUR, G. The differentiation of species on the Galapagos Islands, and the origin of the Group. Lect. iv. Biol. Lect. Wood's Hall, pp. 67-78.
26. BEARD, J. On the phenomena of reproduction in Animals and Plants, on antithetic alternation of generations, and on the conjugation of the *Infusoria*. (1) On antithetic alternation of generations ; (2) The reducing division of Metazoan reproduction, by J. BEARD & J. A. MURRAY ; (3) The conjugation of the *Infusoria* and the meaning of the processes involved. Anat. Anz. xi, pp. 234-255, 5 figg.
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35. BENNETT, A. W. What is a tendency? *Sci. Progress*, iii, pp. 143-146.
36. BERGH, R. S. Vorlesungen über allgemeine Embryologie. Wiesbaden: 8vo, x & 289 pp., 126 figg.
37. —. Ueber die relativen Theilungspotenzen einiger Embryonalzellen. *Arch. Entwicklmech.* ii, pp. 281-297, 1 pl., 3 figg.
38. BERNARD, F. Sur un Lamellibranche nouveau (*Scioberetia australis*) commensal d'un Echinoderme. *C.R. Ac. Sci.* cxxi, pp. 569-571.
39. —. Éléments de Paléontologie. II Partie. Paris: 8vo, viii & 1168 pp.
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781. ZSCHOKKE, F. Die Fauna hochgelegener Gebirgsseen. Ein Beitrag zur Kenntniss der vertikalen Verbreitung niederer Tiere. Verh. Ges. Basel, xi, pp. 36-133, 1 pl.
782. ZUCKERKANDL, E. Zur Anatomie und Entwicklungsgeschichte der Arterien des Unterschenkels und des Fusses. Anat. Hefte. Arb. v, pp. 209-291, 6 pls.
Mammals, Birds, Reptiles, Amphibians.
783. ———. Zur Anatomie und Entwicklungsgeschichte der Arterien des Vorderarmes (II. Teil). T. c. pp. 159-205, 2 pls.
Including Mammals, Birds, Reptiles, Amphibians.

II. SUBJECT-INDEX.

1. TEXT-BOOKS AND GENERAL.

Books of Reference :—BRONN'S *Thierreich*, *Mammalia*, *Tunicata*, *Mollusca*, *Crustacea*, *Echinoderma*, *Vermes* (73).—Naples Monographs (88).—"Challenger" Reports (484). Plankton Expedition (569, 655).

Text-books :—Cambridge Natural History; HARMER & SHIPLEY (285) [*Mollusca*, COOKE; *Brachiopoda*, REED, SHIPLEY; *Peripatus*, SEDGWICK; *Myriopoda*, SINCLAIR; *Insecta*, SHARP.]—Systematic Phylogeny of *Vertebrata*; HÆCKEL (274).—Third edition of text-book of Zoology; HERTWIG, R. (305).—Outlines of Zoology; THOMSON (690).—Introduction to the study of Zoology, general principles, the chief classes, advice to students as to books, etc.; LINDSAY (392).—Elements of Zoology; PERRIER (521).—Comparative Anatomy and Physiology; RETTGERER (573).—Aide-mémoire of Zoology; GIRARD (247).—Practical Zoology, fourth edition; MARSHALL & HURST (429).—Elementary Biology, German translation of PARKER'S text-book (510).—Elements of Zoology; GUTTMANN (267).—Translation of text-book on the Cell; HERTWIG (302).—Practical Physiology; SCHIENK (629).—Atlas of fertilisation and Karyokinesis; WILSON (761).—Wall diagrams; LEUCKART (390).—Introduction to histological methods; RAWITZ (561).—Electro-physiology; BIEDERMANN (43).—Physiological chemistry; NEUMEISTER (488).—Nervous system; LENNOSSEK (387).—Comparative Pathology of man and domestic animals; SCHNEIDEMUHL (634).—Elements of Palæontology; BERNARD (39).—Text-book of Palæontology; VON ZITTEL (773).—French translation of handbook; ZITTEL (774).—"Vertebrate animals of the Past"; WINKLER (764).—Palæontology in new edition of *Erdgeschichte*; NEUMAYR (486).—Manual dealing with general biology and ætiology; DELAGE (145).—Medical and Agricultural Zoology; RAILLIET (547).—Text-book of stock-breeding; KRAFFT (361).—Handbook to study of fishes; BASHFORD DEAN (141).—Illustrations of Zoology, new edition; SMITH & NORWELL (660).

Popular Books :—Royal Natural History; LYDEKKER (414).—Natural History; AUBERT (13).—Popular History of Animals; SCHERREN (630).—Birds, beasts, and fishes of Norfolk Broadland; EMERSON (179).—London birds and beasts; VALENTINE (705).—Revised edition of "Aus dem Geistesleben der Thiere"; BÜCHNER (87).—Summer studies of birds and books; FOWLER (212).—Natural History of Aquatic Insects; MIALL (446).—Natural History: Butterflies; SCUDDER (643).—The Life of the Sea; KELLER (337).—New edition of White's *Selborne* (751).—Life at the Zoo; CORNISH (117).

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5. PROTOPLASM AND THE CELL.

a. *Protoplasm.*

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Stimulus exerted by pseudopodia in contact. Behaviour of excised pseudopodia. Qualitative (chemical) differences between cells of same species, and experiments with *Orbitolites* and *Amphistegina* ; JENSEN (330).

b. *Cell, Structure and Function.*

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Inadequacy of cell-theory : Exaggeration of the apartness of cell-units. Mesenchyme not composed of separate branched cells, but has rather a spongy or reticulate structure, and is continuous both with ecto-

derm and endoderm; nerves arise in it *in situ*; SEDGWICK (644).—Adequacy of the cell theory: Answer to Sedgwick's criticism. In many cases, as in *Nereis* and *Unio*, the distinctness of the embryonic cells is quite clear. Cell-lineage is often demonstrable; a syncytial character seems exceptional. Cell-formation, in short, is a very general phenomenon in organic life, a characteristic expression of the formative forces which reside in organic substance; BOURNE (58).—That organisms have a constitution which may be described as cellular is a statement of fact, not a theory. Theory comes in when we try to account for the fact. In many cases the division of the ovum is not complete. In many cases embryonic processes are not marked by the formation of distinct cells. Cell-formation is certainly very general, but is it primitive; or was the differentiation of the Metazoa effected in a continuous multinucleated plasmatic mass? In any case, what is the meaning of the predominance of the structure called cellular? SEDGWICK (645).

Definition of cell, as a corpuscle of protoplasm which contains a specialized element, nuclein; BOURNE (58).—Classification of cells: Discrete and independent, *e.g.*, leucocytes; discrete and coherent, *e.g.*, many blastomeres. Conrescent and conjunct, united by bridges of protoplasm, *e.g.*, in many tissues; conrescent and continuous, with protoplasm fused, but nuclei distinct, *e.g.*, plasmodia; BOURNE (58).

Organic structure: Account of Bütschli's further demonstration of web-like or vacuolar structure in many kinds of organic substance. That of cellulose and chitinous membranes may be due to the coagulation or precipitation of soluble membrane-making substances; DREYER (157).—Minute structure of red-blood corpuscles; DEHLER (142).—Structure of leucocytes; SIEDLECKI (653).—All cells have a protective limiting membrane; NIESSING (491).—All cells agree in being readily permeable by solutions of simple alcohols, ether, chloroform, simple aldehydes, acetone, and many other compounds; OVERTON (505).—Protoplasmic continuity of cnidoblasts in *Physalia*; GOTO (254).—Intercellular connections between endothelial cells, and between them and the connective tissue between the smooth muscle-fibres; NICOLAS (490).—Intercellular bridges; FLEMMING (203).—Nature and function of intercellular bridges in epithelium; GARTEN (235).—Chromatin has in it some assimilated iron compound as a constant constituent; MACALLUM (415).

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typical fuchsinophilous granulations, &c. ; KOTSOVSKY (357).—Osmotic pressure in cells, explanation of ; OVERTON (505).—Intracellular nutrition ; DUCLAUX (164).—Functional adaptations of the epidermic cells of insects ; CHATIN (103).—Cell-degenerations, recent work on ; FLEMMING (203).—Cell-degeneration in testes ; BOUIN (53).—Vacuolation of fat-cells, a normal process, vacuoles pass from nucleus into cell-substance ; SACK (610).—Cell-degeneration in secretion ; RUS (601).—Rejuvenescence of cells, marked by preponderance of nucleus over cytoplasm, by the undifferentiated state of the latter, and by the capacity for rapid multiplication ; MINOT (449).—The vegetable cell defined as a cellulose chamber inhabited by an energid ; SACHS (609).

c. *Nucleus, Nucleolus, Centrosome.*

Nucleus, recent work regarding ; FLEMMING (203).—Relation of nucleus to protoplasmic function. Assimilation in freshwater Rhizopods only when nucleus is present ; it conserves the chemical equilibrium and structural integrity of the protoplasm ; LE DANTEC (383).—Peculiarly-branched nuclei in "house-forming" oikoblasts or glandular epidermic cells of *Appenticularia* ; previously described by Seeliger ; KLAATSGH (343).—Action of chrom-osmic acid on nucleus ; FLEMMING (204).—Chromatophilous character of nuclei ; ROSEN (591).—Four forms or stages of nuclei in the Foraminifer *Calcutuba polymorpha* ; SCHAUDINN (625).—Nuclear changes in cuticularisation ; CHATIN (103).—Vacuolated nuclei of fat-cells ; SACK (610).—Nucleus and paraplast of the epidermic cells of insects ; CHATIN (104).—Structure and division of nucleus in *Spirochona*. Centrosome and nucleolus are homologous structures, which vary in function according as they become intraprotoplasmic or remain intranuclear. They consist of microsomes of chromatin ; BALBIANI (17).—Independent movement of chromosomes ; SACHAROFF (607).—Chromatin cannot be regarded as a substance of constant molecular structure even in the same organism ; MACALLUM (415).—Nuclear division in *Benedenia* ; LABBÉ (371).—Nuclear polymorphism. Irregularly contoured and lobed nuclei in some of the epithelial cells of larval Salamanders, apparently associated with final stage of mitosis ; VAN DER STRICHT (675).—Paranuclear body, in blood-cells of Fishes, Amphibians, Reptiles, and Birds—an unstainable sphere with a small stainable centre ; BREMER (70).—Accessory nuclei in various tissues of larval Salamander. The occurrence interpreted as an abnormal variation in connection with amitosis ; VOM RATH (555).—Accessory nuclei, one or more, occurring abnormally, in the cells of various tissues (epithelial, cartilaginous, connective, &c.) of larval Salamander, arising by constriction from nucleus. A contribution to cellular variation and to our knowledge of amitosis ; RABL (544).—Homology of Protozoon and Metazoon nucleus. Except in Sporozoa, the Protozoon nucleus retains its membrane during mitosis. The division of nuclear structures and functions in *Ciliata* is unique ; LABBÉ (370).—Structure of nucleus in *Benedenia* ; LABBÉ (371).—Rôle

of nucleus in secretory processes; TRAMBUSTI (696).—Disappearance of nuclei in Mammalian erythroblasts; ALBRECHT (3).

Centrosomes and attraction sphere: recent work; FLEMMING (203).—Consideration of centrosomes in general; BOVERI (61).—The centrosome is an independent and permanent organ of the cell. It divides into two: dynamic centres for the daughter cells. Centrosomes usually lie in the cytoplasm, but may be intra-nuclear; BOVERI (61).—On the central corpuscle; PRENANT (535).—Centrosome and central spindle; HERTWIG, R. (306).—Attractive sphere in fixed cells of the connective tissue of the liver and gonad of *Paludina vivipara*; it is a mass near the nucleus, and the centre of a plexus of filaments radiating out into the cytoplasm; DE BRUYNE (82).—Centrosome and attraction sphere in the maturation of spermatozoa and ova; RAWITZ (562).—In sea-urchin ovum; WILSON (760).—Centrosomes in developing ova of Teleosteans; RAFFAELE (546).—Central corpuscles in embryonic red-blood cells of chick; DEHLER (142).—Secure proof of the occurrence of centrosomes in nerve-cells, *i.e.*, in cells which have long since ceased to divide. In spinal ganglion-cells of the frog; VON LENIHOSSEK (388).—Denial of Heidenhain's conclusion that every centrosome comes from a centrosome. The centrosome is the insertion centre of the protoplasmic fibrils; NIESSING (401).—Nucleolus and centrosome homologous; BALBIANI (17).—Quadrille of the centres; WILSON & MATHEWS (762).—Refusal to regard Fol's statements as to a quadrille of the centres as disproved; REINKE (572).—A specific archoplasm composes the astrosphere, but it is no permanent structure, merely that transitory complex of rays which is centered around the centrosome; BOVERI (61).—Centrosomes in fertilised egg of *Myzostoma glabrum*; WHEELER (749).—Central-corpuscle groups and centered structure of cytoplasm demonstrated in sympathetic ganglion cells of frog. Thus a corroboration of von Lenhossek.—Also a suggestion as to the existence of motor and sensory nerve-cells in sympathetic ganglia; DEHLER (143).—Centrosome and attraction sphere in the resting-cell of Salamander's testes; RAWITZ (562).—Centrosomes and spheres in resting cells; VOM RATH (555).—Attractive sphere in pigment-cells of the cat's eye; VAN DER STRICHT (677).—Ovum centrosome in *Ascaris megalcephala*; SALA (615).—Behaviour of centrosomes in fertilisation of Echinoderm ovum; BOVERI (61).—The astrosphere is a mere region, a fibrillar system with special material in the interfilar spaces; NIESSING (401).—Origin of attractive spheres; GUIGNARD (263).—Paranuclear body in nucleated erythrocytes of Fishes, Amphibians, Reptiles, and Birds. It lies near nucleus, from which it seems to arise; is spherical and only stainable in a minute central point; BREMER (70, 71).—Origin of the centrosome; WATASE (734A).

d. *Cell-Division.*

Mitosis in *Protozoa*, plants, and *Metazoa*: summary of recent work; FLEMMING (203).—Karyokinesis: general account; WILSON (759).—General; ZIEGLER (772), McMURRICH (419A).

Karyokinetic problems ; STRASBURGER (673).—Atlas ; WILSON (761).—Relation between mitosis and amitosis ; KROMPECHER (364).—Multiple indirect division ; KROMPECHER (365).—Mitosis of multinucleate cells ; KROMPECHER (364).—On the nature of the spindle-figure in karyokinesis ; EISMOND (178).—Retrogression of the karyokinetic spindle : observed in spermatogonia and spermatocytes of the snail. A compact body unites the daughter cells, and the bridges may persist for several successive cell generations ; BOLLES LEE (51).—Mechanism of cell-division ; DRÜNER (161), FLEMMING (206).—Confirmation of Heidenhain's theory of "cellular mechanics" ; REINKE (572).—The question of amitosis ; VOM RATH (555).—Cells which once divide by amitosis never again divide by mitosis. The number of successive amitoses is narrowly limited. Regeneration by amitosis has not been proved. Amitoses are especially common in intensely assimilating, secreting, or excreting cells. Amitosis indicates more or less degeneration, and though simpler than mitosis cannot be regarded as primitive ; VOM RATH (555).—Amitosis : summary of recent work ; FLEMMING (203).—Amitoses ; BRAUS (69).—Mitosis and amitosis : an attempt to explain the phenomena of division ; KOBELT (348).—Amitosis plays an important part in the multiplication of cells, both in the young stages and in the older ovarian follicles of *Nepa cijerea* and other *Hemiptera*. In the younger egg-chambers abundant mitoses, but no transitional forms. Other cases of functional importance of amitoses ; PREUSSE (537).—Amitotic division, along with karyokinesis, in the intestinal epithelium of *Ophryotrocha* ; KORSCHULT (352).—Amitotic division in germinal vesicle of hedgehog ; FLODERUS (208).—Regression of karyokinetic spindle ; BOLLES LEE (51).—Chromosome reduction : essentially similar in plants and animals ; MOORE (467).—Intercellular ligament ; BOLLES LEE (51).—Intercellular bodies in developing ova of Teleosteans ; RAFFAELE (546).—Variation in cell-division in one and the same species ; FARMER & MOORE (187).—Division of nucleus in vegetative state of *Spherozoa* ; MITROPHANOW (451).—Heterotypic nuclear divisions in animals and plants, *e.g.*, in spermatogenesis of *Triton*, and in pollen mother-cells of lilies : their essential similarities ; FARMER & MOORE (187).—Peculiar mitosis in young oocytes of Salamander, observed when captive specimens were leaving the water : possibly the phenomena represent the introductory phases of premature and abnormal directive divisions ; MEVES (443).—Multiple cell-division is not uncommon nor abnormal : the indirect nuclear division may be linear (binary), in a plane (into three), in three dimensions (multiple), but always regularly and definitely : hypertrophy seems to favour multiple division ; KROMPECHER (365).—Peculiar division of *Ceratium hirundinella*, neither direct, nor mitotic : no longitudinal cleavage of chromatin elements, nor an achromatin spindle ; LAUTERBORN (380).—Proliferation of cells ; FOA (210).—Stimulus to cell-multiplication, minute quantities of lecithin added to the medium ; DANILEWSKY (135).—In *Amœba binucleata* ; SCHAUDINN (627).—In *Ophryotrocha puerilis* ; KORSCHULT (352).—In

leucocytes; SIEDLECKI (653).—In ovum of newt; BRAUS (69).—In developing ova of Teleosteans; RAFFAELE (546).—In early development of Teleosteans; FUSARI (221).—Atypical mitoses; JÜRGENS (332).—Nuclear division in *Euglena viridis*; KEUTEN (341).—Heterotypic nuclear divisions; FARMER & MOORE (187).—Multiple nuclear division, quite a normal occurrence, especially in highly-nourished cells: the nucleus may divide into from 2-20 parts, but always regularly; KROMPECHER (365).—Nuclear division without cell division: LOEB (405).

6. OÖGENESIS, SPERMATOGENESIS, MATURATION, FERTILISATION.

a. *Ovum.*

Ovarian ova: structure of; CRETY (123).—Ovum of *Amphioxus*: minute description of; SOBOTA (662).—Oögenesis of *Dytiscus*; SAINT-HILAIRE (611).—Oögenesis in Nemerteans; BÜRGER (88).—Oögenesis, &c., in *Tomopterus*; FULLARTON (220).—Ovum of hedgehog: amitotic division of germinal vesicle; FLODERUS (208).—Polarisation of ova: "morphological," "general," and "special"; ROUX (596).—Polarity in Echinoderm ovum; WILSON & MATHEWS (762).—Isotropy of the germ is inconsistent with fact; it is ælotropic, *i.e.*, different along each radius; RYDER (602).—Varying degrees of isotropy in ova; NUSSBAUM (495).—Nucleoli of lobster eggs fall by their own weight to the lower side of the nuclei; HERRICK (301).—Amitosis in ovaries of *Hemiptera*; PREUSSE (537).—Vitelline nucleus in *Salticus* and *Scutigera*; BISOGNI (44).—Yolk-nucleus in *Lumbricus*-ovum consists of chromatin in granular form and is of nuclear origin; CALKINS (92).—Abnormal fusion of ova in *Ophryotrocha*; KORSCHOLT (352).

b. *Spermatozoon.*

In Selachians (*Scyllium catulus*) nuclei of germinal band multiply amitotically and form plasmodial nests of germ-cells. Secondary nests formed by amitotic multiplication of the nuclei of the membrana propria of the testicular cavity, &c.; SABATIER (605).—In Elasmobranchs; MOORE (465).—Spermatogenesis of *Caloptenus femur-rubrum*, *Orthoptera*, and *Cicada tibicen*, *Hemiptera*; WILCOX (758).—In the modification of spermatid into spermatozoon in *Bufo vulgaris*, the nucleus forms the head and middle portion, but the central corpuscle lengthens out to form the most important part of the tail; BÜHLER (85).—In birds; MOORE (466).—Spermatogenesis of silkworm; TOYAMA (695).—In *Lumbricus*; CALKINS (91).—In Copepods, *Gryllotalpa* and Salamander; VOM RATH (556).—The cells of the earthworm's testes, which arise directly from the peritoneal covering, are Urkeimzellen; all the rest are spermatogonia; ERLANGER (184).—Spermatogenesis in *Telphusa fluviatilis* very like that of crayfish, probably in part adaptive to similar conditions; MARI (426).—Spermatogenesis, &c., in *Tomopterus*; FULLARTON (220).—In earthworm:

description of peritoneal covering of testes, liberation of spermatogemmæ at 8-cell stage, the occasional *apparent* presence of nucleus or nuclei in the cytophore, the occurrence of twin spermatogemmæ, &c. ; VOIGT (717).—In *Ophryotrocha* ; KORSCHULT (352).—Echinoderm spermatozoon, its morphology and physiology ; FIELD, G. W. (199).—Spermatogonia and spermatocytes of snail ; BOLLES LEE (51).—Remarkable spermatozoa of *Paludina vivipara* ; AUERBACH (14).—Double, coupled, or “dejugated” spermatozoa of *Dyticus*, *Acilius*, *Hydaticus*, and *Oolymbetes* ; BALLOWITZ (18).—Seminal cells ; MOSER (482).—Chromatin reduction in the maturation of spermatozoa ; MOORE (465).—A note on dimorphism of spermatozoa ; GIARD (245).—Cell degeneration in testes of young Mammals ; BOVIN (53).

c. *Maturation.*

General summary ; KORSCHULT (353), RAWITZ (562).

Atlas ; WILSON (761).—The initial stages ; HÆCKER (275).—Peculiar mitosis in young oocytes of Salamander, possibly premature and abnormal maturation divisions ; MEYER (443).—In *Cunthocamptus staphylinus*, Jur. : in the second division of the maturation process in Arthropods and the Salamander, there is a suppression of doubling by longitudinal division of chromosomes. Thus a reduction-division occurs. Comparison of maturation in Invertebrates with that in Vertebrates ; HÆCKER (275).—Both maturation divisions are reducing divisions ; VOM RATH (556).—Discrepancies between Strasburger's account of the reduction of chromosomes in plant sex-cells and the observations of zoologists. Are the reductions observed by botanists only “pseudo-reductions” ? HÆCKER (277, 278).—Chromatin reduction in maturation ; VOM RATH (556).—Reducing divisions in Metazoan reproduction ; BEARD & MURRAY (29).—Maturation in *Chaetopterus pergamentaceus* ; MEAD (435).—In Nemertean ; BÜRGER (85).—In *Amphioxus* ; VAN DER STRICHT (676).—Maturation and fertilisation in *Amphioxus* ; SOBOTTA (662).—Maturation in Echinoderm ova ; WILSON & MATHEWS (762).—In *Phallusia mammillata* ; HILL (308).—In *Lumbricus* ; CALKINS (92).—In *Macrobiotus macronyx* ; ERLANGER (185).—In *Amphorina cærulea* ; TRINCHESE (697).—In *Seps chalcides* ; TODARO (693).—In *Ophryotrocha puerilis* ; KORSCHULT (352).—In mouse ; SOBOTTA (663).

d. *Fertilisation.*

General summary ; KORSCHULT (353), WILSON (759).—Atlas ; WILSON (761).—Process of fertilisation ; RÜCKERT (599).—Present state of knowledge as to ; ROSENSTADT (592).—Import of fertilisation ; HAACKE (270).—Investigations on fertilised ova of Echinoderms ; KOSTANECKI (356).—In Echinoids : only the sperm-nucleus has a centrosome which divides into two. Probably the ovum-centrosome, which was not seen, degenerates. Fol's quadrille a misinterpretation. Criticism of

Heidenhain's views; BOVERI (61).—Fertilisation of non-nucleated fragments of Echinoderm eggs. Cleavage to 16-cell stage observed. Some pieces were apparently large enough to form minute larvæ. The spermatozoa of *Echinus* penetrate with difficulty into non-nucleated ovum-fragments of *Sphærechinus*, as into nucleated fragments or entire ova. The hybrid larvæ of *Sphærechinus-Echinus* and of *Sphærechinus-Strongylocentrotus* are very variable in skeleton-forming. Among the former some of the pure *Echinus*-type turn up. Boveri's conclusions non-proven; MORGAN (479).—In Echinoderm ova; REINKE (572).—In Echinoderms: when nucleus of spermatozoon with indistinguishable chromosomes and caryolymph has passed outer portion of ovum it increases in size; caryolymph and chromosomes reappear. History of sperm-centrosome and mitosome; FIELD (199).—In *Cyclops*: do both centrosomes come from the spermatozoon, or from the ovum, or have they a paternal and a maternal origin, or does their origin differ in different cases? In *Cyclops*, neither polar bodies nor germinal vesicle show centrosomes, attraction-spheres, or rays. The spheres of the segmentation-nucleus are derived solely from those of the sperm-nucleus; RÜCKERT (598).—In Nematodes, movements of the two nuclei before fertilisation seem to be due to streamings in the ovum; ZIEGLER (770).—In Nemertean; BÜRGER (88).—Fertilisation in *Seps chalcides*; TODARO (693): in *Ophryotrocha puerilis*; KORSCHULT (352): in ova of *Sphærechinus* and *Phallusia* there is no egg-astrosphere nor egg-centrosome. Both are brought into the ovum by the spermatozoon, and give rise by division to all subsequent astrospheres and centrosomes. The astrosphere and centrosome are elaborated out of, or under the influence of, the middle piece of the spermatozoon; HILL (308, 309): in Echinoderm ovum; WILSON & MATHEWS (762): in *Macrobotus macronyx*; ERLANGER (185): in Isopod Crustaceans; McMURRICH (419): in *Amphioxus*; VAN DER STRICHT (676), SOBOTTA (662): in *Chaetopterus pergamentaceus*; MEAD (435): in mouse; SOBOTTA (663).

Polyspermy; BRAUS (69), DUVAL (167).—Polyspermy, resulting in abnormalities, seems frequent in *Amphioxus*; VAN DER STRICHT (676).—Polyspermy, resulting in abnormalities, in *Ophryotrocha*; KORSCHULT (352).

Independence of paternal and maternal nuclear substance in the early development of *Cyclops*; RÜCKERT (600), HÆCKER (276).—Independence of paternal and maternal chromatin; ZOJA (778).

Hybridisation in Echinoderms; BOVERI (62).

7. EMBRYOLOGICAL.

General:—Lectures; BERGH (36).—Elements of embryology; PRENANT (534).—Aide-mémoire of embryology; GIRARD (248).—Proposal of a typical series of embryological figures for *Vertebrata*; KEIBEL (335).

Catalogue of the processes concerned in Ontogeny: I. In migratory protoplasmic bodies (mesenchyme). II. In elongated protoplasmic bodies

(fibres, threads, cords, tubules). III. In protoplasmic layers. IV. In protoplasmic masses. Processes are classified as (a) taxic (free, migratory, or flowing); (b) tropic (turning of protoplasmic bodies in different directions); and (c) general growth processes; DAVENPORT (138).

Conditions of development. Fundamental properties of protoplasm. Individuality and division of labour. Environmental influence on form, heredity, &c.; PFEFFER (523).—Growth and differentiation, mathematical analysis of the process; BRUCKER (80).—Gradual loss of many-sidedness on the part of the somatic cells; in the course of differentiating cell-division, functions and potentialities are restricted. This restriction is in proportion to the grade of phyletic and ontogenetic development; NUSSBAUM (495).—Aggregation and differentiation; CATTANEO (95).—Embryological criterion of homologies; WILSON (760A).

Recapitulation:—Sedgwick's emphasis on embryonic phases as an aid to phylogenetic theory. The earliest well-marked larval stage is the blastula. The ancestral blastula was presumably uniform. But movement in a definite direction would result in elongated form. The posterior cells, least suited for locomotion, and best situated for catching food-particles, become specially digestive. An increase in number, if the form of the colony be retained, involves invagination. Anterior cells, most stimulated, become specially sensitive; MACBRIDE (416).—Opposition to the recapitulation doctrine; BEARD (26).—The recapitulation doctrine scarcely half true; MINOT (449).—Embryo and larva, the difference between them, and its meaning; MINOT (449).—Periodicity in cleavages of Nematode ovum; ZIEGLER (770).—What is a germinal layer? History of opinion. Difficulty of establishing a homology throughout. The morphological and physiological conceptions of a germinal layer are often confused; BRAEM (63).—Homology of the germinal layers; CHUN (107).—Formation of the germinal layers in *Vertebrata*; SAMASSA (617, 619).

Evolution of embryonic functions, respiration; BAKOUNINE (16).

Particular organs:—The ectoderm and the nervous system; MITROPHANOW (453).—Origin of the peripheral nervous system; MITROPHANOW (454).—Ectodermic origin of branchial cartilages of Ammocoetes; VON KUPFFER (369).—Early stages in the development of the head and the brain in *Vertebrata*; HIS (311).—Development of the hypophysis; VALENTI (703).—Discovery of Thymus rudiments in larval Lamprey; four associated with each of the seven branchial sacs; SCHAFFER (624).—Hypochorda of frog, a dorsal constriction from gut, in part composed of a series of segmental tubes, eventually degenerating without rôle; STÖHR (670).—Pancreas of frog has three rudiments; a second dorsal process is the root of the Schwanzdarm, and forms nothing. Perhaps the alleged fourth rudiment in the sturgeon (v. Kupffer) is of the same nature; STÖHR (670, 671).—First stages of the main outgrowths from the gut of the frog; WEYSSE (748).—On cell-lineage of Ascidian egg; CASTLE (94).—Reversal of cleavage in a sinistral Gasteropod; CRAMPTON (122).

Experimental Embryology.

Problems and methods of developmental mechanics ; ROUX (596A).—Summary of researches on experimental embryology ; bearing on teratology ; general significance ; BENDA (34).—Reprint of papers ; ROUX (595).—Results of experimental investigations bearing on ætiology ; DREYER (157).—Rearing of half-embryos from either of first two blastomeres of *Rana fusca* ; the occurrence of post-generation, corroboration of Roux's results ; ENDRES (181).—In Ascidians : an isolated blastomere of 2-cell stage of *Phallusia mammillata* may form a complete larva of about half the normal size. The sensory and adhesive organs may be defective, as in larvæ reared from whole eggs in adverse conditions ; DRIESCH (160).—The first two blastomeres of the newt ovum are equal to one another, and complete ; each forms a perfect and symmetrical embryo ; HERLITZKA (298).—The difference between the results of Roux and Hertwig due to the difference in the position of the blastomere after operation ; reasons ; MORGAN (474).—Development of individual blastomeres of *Ctenophora* ; DRIESCH & MORGAN (159).—Note on the experiments of Driesch & Morgan on the development of Ctenophore-blastomeres ; CHUN (108).—On experiments and observations on fertilised and unfertilised ova of *Ctenophora*, by Chun, Driesch, and Morgan ; ROUX (597).—Development of isolated blastomeres in Medusæ, &c. ; ZOJA (779).—Development of double organisms from one ovum ; LOEB (403).—Relative dividing power of individual embryonic cells ; BERGH (37), DRIESCH (160).—Puncturing experiments on frog ova ; ENDRES (180), ENDRES & WALTER (181).—Partial larvæ of *Sphærechinus* ; MORGAN (477).—One embryo from two blastulæ ; MORGAN (475).—Pressure on Echinoid ova greatly increased the rapidity of mitosis, but nuclear division often occurs without cell-division ; macromeres and micromeres are usually differentiated ; the spindles are always at right angles to the direction of pressure, and, generally, as Hertwig has shown, in the line of the largest plasma-masses ; REINKE (572).—Mechanical influences on development ; WESTHOFF (744).—Influence of chloride of lithium on the development of the eggs of frog and toad ; similar in the two cases ; probably has to do with the re-absorption of yolk-granules in the large yolk-cells ; GURWITSCH (266).—Influence of lithium-salts and various organic salts on development ; HERBST (296).—Ova of frog subjected to 1·6 per cent. salt solution form monstrosities. The vegetative half is more inhibited and injured. Gastrulation is modified, and approaches that in meroblastic ova. Other effects are anencephaly, hemicrania, &c. ; HERTWIG (303).—Influence of diluted sea water on the development of Echinoid ova ; RAWITZ (564).—Influence of increased and diminished oxygen supply on cleavage ; LOEB (401).—Influence of cold on maturation and fertilisation of ova of *Ascaris megalocephala*. Cold renders polyspermy possible, tends to prevent fertilisation, affects the yolk-substance, inhibits the formation of the vitelline membrane, alters the disposition and number of the chromatin-elements,

modifies directive-divisions and cleavage ; SALA (615).—Action of gases, &c., on eggs of insects ; PERRONCITO & BOSSO (522).—Experimental studies of the blastula and gastrula stages of *Echinus* ; MORGAN (478).—Influence of yolk on gastrulation and the formation of the germinal layers ; SAMASSA (617, 618).—Grafting Amphibians : when a tadpole is cut into two, the pieces may unite if kept close. Two tail ends may unite and live for eight days. The anterior part of one larva may be united to the posterior part of another. Two may be united by ventral surfaces. Larvæ of different genera may be united ; BORN (57).—Influence of cold on development of hen's eggs ; KAESTNER (333).—Development of denucleated Echinoderm ova ; BOVERI (62).—Fertilisation of non-nucleated fragments. Shaking ova induces development in larva of characters belonging to another form ; MORGAN (479).—Experiments on teratogeny ; FÉRÉ (190).—Influence of electricity on developing embryo of fowl ; DARESTE (137).—Action of various substances on the developing egg of the hen ; FÉRÉ (191).—Influence of injection of nicotin on the development of fowl's egg ; FÉRÉ (192).—The experimental study of meroblastic Vertebrate eggs possible ; MITSUKURI (455).

Epigenesis aut Evolutio.

Evolution and epigenesis ; WHITMAN (752).—Palingenesis ; WHITMAN (754).—Problems and methods of developmental mechanics ; ROUX (596A).

Epigenesis and Evolution :—Epigenesis, argued for. The disposal of cell-material is determined in the course of developmental processes according to the various conditions and relations ; HERTWIG (303).—Theory of epigenetic development ; the three-fold rhythmic harmony in ontogeny ; GARBOWSKI (230).—Evolution or epigenesis ; HILLER (310).—Theory of development. Preformation in the germ has no foundation in fact. Corpuscular evolutionist theories mistake effects for causes ; thus "ids," "idants," &c., "are produced as passing shadows, so to speak, in the operation of the perfectly continuous processes of metabolism incident to development." The germ-cell is a dynamic system, a unity, not isotropic, but ælotropic, whose molecular mechanism determines initial steps which determine others. Throughout, of course, external forces sustain the moving equilibrium. The germ is an automatic mechanism in virtue of its molecular structure and its store of potential energy. Each step in its development is dynamically, metabolically, conditioned by its antecedents, and conditions within limits what follows ; RYDER (602).—Theory of development. Criticism of Hertwig's "Neo-epigenetismus." Each step in development is the necessary result of the specific organisation of the germ-plasm. In early cleavages there is unequal partition of the hereditary qualities. External conditions are simply stimuli, not directly operative factors ; they allow the nature of the *Anlage* to assert itself ; NUSBAUM (494).—Hertwig's theory of development ; WAGNER (723).—External stimuli in development ; VON

WAGNER (722), HERBST (295).—Theory of development: The real causes of development are all internal, in the constitution of the fertilised ovum, which is an *Ursachen-depôt*; the environment is only a condition of development, not a cause; WAGNER (723).—Bonnet's theory of evolution; WHITMAN (753).—Theories of development, criticisms and suggestions; HAACKE (272).—Theory of development: argument that Weismann's theory of determinants leads to the old preformationist "emboîtement," and this to creationist dogma. So Hertwig reflects on the *anlage* the high organisation of its result; HAACKE (272).—Epigenesis and evolution; HAACKE (272).—The *anlage*: not necessary or justifiable to postulate a highly organised *anlage* for a highly organised result. Specification of cells is a function of their position and relations; HAACKE (269, 272).—Against the mosaic theory; GARBOWSKI (232).—Classification of external and internal formative stimuli; HERBST (295).

Phylogensis of the amnion: possibility that the Protamniota were viviparous Amphibians, in which a pseudo-meroblastic blastodermic vesicle arose by a collection of fluid between the cells of the hypoblast. Suggestion that the amnion began to be formed from the covering layer of the Amphibian epiblast. Amnion and trophoblast are closely associated in their phylogensis, and are to be regarded as products formed by separation from the outer epiblast layer; HUBRECHT (316).

8. REPRODUCTION, SEX, AND HEREDITY.

a. *Reproduction and Sex.*

Some problems in the physiology of reproduction; KLEBS (345).—Reproductive organs, development of. Summary of recent work; BORN (55).—Very simple mode of reproduction, like fragmentation or rupture, in the Foraminifer *Calcituba polymorpha*; SCHAUDINN (625).—Plastogamy in *Foraminifera*; SCHAUDINN (628).

Meaning of conjugation phenomena in *Infusoria*; BEARD (26, 28).

Theory that alternation of generations, with aposporous formation of the sexual generation, is of general occurrence in *Metazoa*; BEARD (26, 27).—Criticism of Beard's theory; MACMILLAN (418).—Law of budding in *Medusæ*; CHUN (107).—Budding in *Syllis ramosa*, intercalary and regenerative; OKA (499).—Non-simultaneous production of the two sexes in colonies of exotic social bees; PÉREZ (520).—Mystery of birth; GRANT ALLEN (4).

Determination of sex: Conditions inducing appearance of males in *Daphnids*: tendency of unfavourable conditions to induce unsexuality; KERHERVÉ (339).—Determination of sex; STRATZ (674), GESSNER: in bee; SHARP (285), p. 499.—Queen-bee incapable of producing drone-eggs, *i.e.*, on the usual theory, unfertilised eggs. The defect may have been in the innervation of the muscular ring closing the duct of the receptaculum seminis, or in the musculature itself, or in the size of the tube, or in over-abundant glandular secretion; GROBEN (262).

Influence of lecithin on growth and reproduction ; DANILEWSKY (135).—The rôle of sex ; the utility of conjugation ; HAYCRAFT (290).—Sexual selection ; DOUGLASS (156).

Hermaphroditism ; LANDOIS (374).—Hermaphroditism in Molluscs. Evidence in favour of the view that hermaphroditism is derived from separate sexes ; PELSENER (517).—Hermaphroditism in the newt, *Triton taeniatus* ; St. GEORGE VON LA VALETTE (669).—Successive, protandric, and proterogynic hermaphroditism ; MONTGOMERY (461).—Hermaphroditism and dioecism in *Myzostomata* ; PROUHO (539).

Parthenogenesis : IMPARATI (324), DUVAL (167) : in *Hymenoptera* ; SHARP (285), p. 497.—Parthenogenetic cleavage of hen's egg ; BARFURTH (21).—Parthenogenetic segmentation in egg of hen ; LAU (379).—Parthenogenetic cleavage, hints of this in *Amphioxus* ; VAN DER STRICHT (676).—Parthenogenesis in *Insecta* ; PAULDEN (513A).

Hybridisation experiments with fishes ; even when no embryo develops or is conceivable, a regular cleavage may still occur. That is to say, a blastoderm may be formed, but no more ; APPELLÖF (9).—Hybridisation of *Rana esculenta* and *R. arvalis*. First cleavages are normal ; then vegetative half lags, and gastrulation is peculiar ; GEBHARDT (240).

In-breeding, its consequences ; HAAOKE (270).

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Habits of *Gobius ruthensparri* ; GUITEL (264).—On the reproduction of the eel ; WILLIAMSON (757).—Reproduction of wasps ; MARCHAL (421).—Reproduction of bats ; ROLLINAT & TROUËSSART (585).—Morphology and physiology of the ovaries in worker ants ; BICKFORD (42).—Stockbreeding and heredity ; KELLER (336).

Regeneration : summary of recent work ; BARFURTH (20).—Facts and theory ; LOEB (402).—Experiments on regeneration ; O. HERTWIG (304).—Regeneration of the supra-œsophageal ganglia, &c., of earthworm. An accumulation of leucocytes forms a "Regenerationsgewebe," which is at least the seat of the regenerative process ; FRIEDLÄNDER (215).—Experiments by Joest, under Korschelt's direction, on the union of wounded portions of earthworms, in normal position, or upside down, or reversed. Even united portions of *Lumbricus rubellus* and *L. communis* may live. Two united head-ends lived for 16 days, though this was unusual ; but two tail-ends united may live for months. Tail-ends may regenerate a complete worm ; KORSCHOLT (354).—Grafting experiments with Hydra ; fixing the head of one to the foot of another ; strong tendency to restore normal form. Fusion of two forms with poles reversed ; regenerative processes still point to theory of definite polarities ; WETZEL (747).—Brain regeneration : new formation of cells and fibres in the brain of an ape after removal of occipital lobes ; VITZOU (713).—Reparative processes in cerebrum and cerebellum ; SANARELLI (620).—Remarkable grafting experiments on tadpoles of various Amphibians, see EMBRYOLOGY ; BORN (57).—Regeneration of crystals : a morphological study ; RAUBER (559).

b. *Heredity.*

General discussion of ; DELAGE (145), PFEFFER (523), ROMANES (586): exposition ; HAYCRAFT (289).—Sketch of the various theories of heredity ; ROHDE (583).—Heredity once more ; WEISMANN (738), SPENCER (665).—Study of heredity ; MARTIÈRE (431).—Independence of paternal and maternal elements in the early development of *Cyclops* ; HÆCKER (276).—Dynamical hypothesis of inheritance ; RYDER (602).—Dynamics of heredity ; GASSER (237).—Theories of heredity : criticisms and suggestions ; HAACKE (272), OSBORN (503).—The general theory of heredity ; ORCHANSKY (500).—Energid theory and heredity ; SACHS (609).—Heredity, regression, &c., mathematically discussed ; PEARSON (515).—Some aspects (medical and ethical) of heredity ; BARBOUR (19).—Inheritance of disease ; ORCHANSKY (500).—Transmissibility of nervous diseases :—There is no secure case of the transmission of a nervous disease which originated solely in an external influence on a normal individual. What is transmitted is a “psychopathic predisposition,” “a sensitive weakness,” “an easy exhaustibility,” in short, a constitutional peculiarity of germinal origin. While clinical experience does not furnish any absolute negation of the transmissibility of acquired pathological characters, it seems most likely that all transmissible diseases and malformations have a germinal origin ; ROHDE (583).—Insanity in royal families ; BODINGTON (48).—Degenerative heredity ; DENISON (147).—Tendency and predisposition : their ill-defined nature ; BENNETT (35).—Heredity considered in connection with stock-breeding ; KELLER (336).—Pangenesis : theory that diverse hereditary qualities have materially different bearers, pangenes, idioblasts, or biophors, as the hypothetical particles are called ; DE VRIES (719).

Teratogenic influence of alcohol, &c., on ova ; compare facts of heredity as to alcoholism ; FÉRE (191).—Inherited effects of toxins ; CHARRIN (99).—The effect on offspring (rabbits) of inoculating the parents with toxins ; malformations, &c. ; CHARRIN & GLEY (100, 101, 102).

Albinism, inheritance of ; HAACKE (269).—Experiments on congenital deformities ; CHARRIN & GLEY (101).

Inheritance of acquired characters :—General discussion of hereditary and acquired characters ; ROMANES (586), COUTAGNE (120).—Inheritance of characters assumed to have been acquired during the lifetime of Lepidopterous larvæ ; PACKARD (507).—Neuro-pathology furnishes no certain case of their transmissibility, but it is undeniable that they have a secondary influence on the variable germ plasm, disturbing it to varying degrees, from minimal effects to absolute inhibition ; ROHDE (583).—Proof of the necessity for the inheritance of acquired characters. The necessity follows from a conception of the organism as an equilibrated system ; HAACKE (273).—“Is there any real and essential difference between the transmission of functionally-acquired modifications to offspring, and their registration or persistence in the individual organism ;” GRANT ALLEN

(4).—Inheritance of acquired characters may not be directly demonstrable, nor physiologically explicable, but indirect evidence of it is cumulative; HAACKE (273).—In acquired characters there is still an hereditary factor which renders it impossible to draw any satisfactory distinction between them and non-acquired characters; BENNETT (35).—Suggestion that organ-arrangement, colour-marking, &c., is rather individually acquired in the course of metabolism than hereditarily fixed; GRAF (255).—Formation of a structural character, a fifth toe on a guinea pig, and its inheritance; SAINT-LOUP (612, 613).—General considerations on heteromorphic heredity; HANOT (283).

9. EVOLUTION.

a. *General.*

DELAGE (145), DORMAN (155).—A primer of evolution; CLODD (113).—First principles of evolution; NICATI (489).—The Darwinism of Darwin, and of the post-Darwinian schools; ROMANES (586).—The method of organic evolution; WALLACE (727).—“*Artung und Entartung*”; ARNDT (10).—Lord Salisbury’s address on evolution; SPENCER (664).—Present problems of organic evolution; COPE (116).—The present phase of the theory of evolution; THOMSON (691).—Mathematical contributions to the theory of evolution. Skew variation in homogeneous material; PEARSON (514).—What is a tendency? BENNETT (35).—Utility of specific characters; ROMANES (586).—“The questions raised by the Darwinian hypothesis are purely statistical, and the statistical method is the only one at present obvious, by which that hypothesis can be experimentally checked; WELDON (742).—Darwinism and race progress; HAYCRAFT (289).—Teratogenic experiments; FÉRÉ (190).—Collection to illustrate evolution; CARPENTER (93).—Palæontology and the biogenetic law; VON ZITTEL (775).

For question as to “*Epigenesis or Evolution*” in development, see under *Embryology*, p. 69.

b. *Variation.*

Classification of variations: (a) fluctuating, individual or continuous variation, modifying the relative number of the different kinds of pangenes; (b) specific variation, in which the division of pangenes is qualitatively diverse; DE VRIES (719, 720).—I. Primary, or somatogenic, due to external influences (environment and functional) on the body. II. Secondary or germinal, arising either (a) apart from amphimixis and selection, or (b) in association with these; ROHDE (583).—Classification and analysis of variations; EIGENMANN (172, 173).

Variation, exposition of; BRANDT (65).—Causes of variation: Variations arise by the blending of molecular dynamical systems of different initial potential strengths, by the conjugation of sex-cells (reciprocal

integration), and by means of variations in the interactions of such resultant systems with their surroundings; RYDER (602).

Discontinuous variation: Evidence of discontinuous saltatory variation which itself varies continuously; DE VRIES (719).—Discontinuous variations from one position of organic stability to another (Galton), will tend to be frequent, recurrent, and not readily swamped; PERRY COSTE (118).—Dimorphism of *Foraminifera*; LISTER (395), RHUMBLER (575), SCHAUDINN (626).—Questions bearing on specific stability; GALTON (226, 227).

Variation and specific stability; THISELTON DYER (169). The law of compensation; EIMER (176)

Individual variations in environmentally determined lines; HENSLOW (294).—To estimate the effect of a small variation it is necessary to measure the percentage of young animals and of adults in which it occurs. Knowing the rate of destruction the advantage or disadvantage of the variation may be estimated; WELDON (741A).—Variation-curve with two apices; DE VRIES (721).—Variation in cleavage; MORGAN (476).

Amphimixis is the condition for new combinations of the variable determinants, it tends to mitigate disadvantageous variability, and it affords scope for the action of natural selection; ROUDE (583).—An inherent error in the views of Galton and Weismann. They are based on the unfounded assumption that each sexual act brings together two totally dissimilar sets of factors, instead of factors which are identical in innumerable features for one in which they differ. The occurrence of a variation is due to the direct action of external conditions, but its precise character is not; BROOKS (74).

Panmixia, an hypothesis founded on nothing!; MINOT (449).

Varieties of the human species; SERGI (648).—Individual variations of Vertebrate embryos; MEHNERT (436).—A study in variation, *Leuciscus balleatus*; EIGENMANN (172).—Variation of *Pleuronectes flesus* and *Pl. platessa*; DUNCKER (165).—Variation of *Etheostoma caprodes*; MOENKHAUS (457).—Colour-variations of a beetle: "Its several varieties exhibit that kind of definiteness and constancy to their respective types that we associate with the idea of species; but for supposing that this constancy is in any way dependent on adaptation to environment, we have no warrant"; BATESON (23).—Variation and aberration in imago stage of butterflies, due to temperature and food; STANDFUSS (667).—Variation of *Halicystus octoradiatus*; BROWNE (79).—Variation of Tentaculocysts of *Aurelia aurita*: Of *Ephyrae* about 22.6 per cent. were abnormal (6-13 Tentaculocysts); of adults about 22.8 per cent. showed similar variation; BROWNE (78).—Variability of calices in masses of coral; BELL (33).

Numerous variations, nine thoracic abnormalities, in one individual; HELM (292).—Various forms of double monstrosity in embryos of trout, &c.; WINDLE (763).—Significance of anomalies; DWIGHT (170).—Albinism; HAACKE (269), ROTH (593).

Variety, form, race and aberration; OTTOLENGUI (504), MANSBRIDGE (420).

c. *Environment and Function.*

General physiology of environmental stimuli ; HERBST (295).—Environmental influence is oftenest important merely as a stimulus inducing the development of particular determinants ; WEISMANN (739).—External conditions have a direct influence on development, and are more than mere stimuli ; HERTWIG (303).—Influence of environment on development ; PFEFFER (523).—Influence of surroundings on development of men and animals ; SCHÜSSLER (639).—Action of gravity on nucleoli of lobsters' eggs. The nucleolus always falls from its own weight to the lower side of the nucleus ; HERRICK (301).—Compression and the reverse ; their effects on animals ; PHILIPPON (525).

Light promotes oxidation-processes in animal cells ; QUINCKE (543).—Action of light on animal life. Masella's experiments. [Possible action on anti-toxins. See *Physiological.*]; FRANKLAND (214).—Influence of light in "producing" pigments on the lower side of flat-fishes ; additional evidence ; CUNNINGHAM (128).—Influence of light on colour of pelagic Gasteropods ; SIMROTH (656).—Influence of colour on colour of caterpillars ; SCHRÖDER (638).—Influence of surrounding colour on caterpillars, critical summary ; GARBOWSKI (231).

Influence of food on developing ants ; against Spencer's theory of *direct* influence ; WASMANN (733).—Influence of starving on brain growth of young animals ; BECHTEREW (30).

Effect of nutrition, temperature, &c., on growth of fishes ; MASTERMAN (432).—Influence of temperature on incubation ; the time for the same species varies with the temperature, high temperature increases rate ; but development takes place even below zero, when the specific gravity of the water is sufficiently high to prevent it freezing ; DANNEVIG (136).—New experiments on seasonal dimorphism ; WEISMANN (739).—Influence of cold and warmth on pupæ affecting colour of butterflies ; WEISMANN (739).—Experiments on influence of change of temperature on butterflies ; FISCHER (201).—Influence of cold on pupæ, producing glacial varieties (?) ; critical summary of Fischer ; GARBOWSKI (231).—Food and temperature causing variation in butterflies ; STANDFUSS (667).—Action of heat, various chemical reagents, &c., on bivalves ; PIÉRI (526).—Influence of low temperature on aquatic animals ; REGNARD (567).—Effect of hard winter (1894–95) on the shore fauna ; JOURDAIN (331).—Influence of cold winter (1894–95) on the marine fauna ; FAUVEL (188).—Effect of variations in external temperature on output of carbonic acid and on temperature of young animals ; PEMBREY (518).—Acclimatisation of organisms to high temperatures ; DAVENPORT & CASTLE (139).—Thermotropism of *Protozoa* ; experiments with *Paramecium aurelia* and *Euglena viridis*. To temperatures under 24° C., the Infusorians are positively thermotropic, and above 28° C., negatively ; MENDELSON (437).

Injurious influence of chlorine vapour, bromine vapour, carbon disulphide, coal gas, carbonic acid, &c., on eggs of insects ; PERRONCITO &

Bosso (522).—Action of bases on vegetable and animal cells; BOKORNY (50).—Teratogenic influence of alcohol, &c., on ova; FÉRÉ (191, 192, 196, 197).—Lecithin, though not directly organoplastic, does, even in minute quantity, stimulate rapid multiplication; DANILEWSKY (135).—Action of distilled water on *Tubifex* and tadpoles, due to minute traces of injurious substances, cf. Nägeli's "oligodynamik"; LOCKE (397).—Influence of lack of oxygen: Segmentation of *Ctenolabrus-ovum*, &c., without oxygen; fusion of cells in lack of oxygen; influence of pure oxygen on cleavage; lack of oxygen on heart action of fish-embryos, on pigment-cells, and in turning negatively heliotropic animals into positively heliotropic; LOEB (401).

Galvanotropism: experiments on influence of galvanic current on movements and form of *Paramecium*; LUDLOFF (411).—Galvanotropism of tadpoles; WALLER (729).—Galvanotaxis; experiments on gold-fish, *Mollusca*, *Arthropoda*, *Oligochæta*, and *Protozoa*; NAGEL (485).

Prolongation of larval state in albino newt; ROLLINAT (584).

Revivification: experiments with mud 10 years old; species of *Diaptomus*, like Phyllopods and Ostracods, survive desiccation in the ovum stage, but species of *Cyclops* survive only in the Cyclopid stages and as adults; CLAUS (110).

Change of form, shortening and broadening of parts, in beetles of Alpine regions; APFELBECK (8).—Adaptation of fishes to aquatic life; DEAN (141).—Degeneration through disuse in connection with long claws and hairs; HAACKE (271).—The origin of all plant structures issues from self-adaptation to the environment (directly or indirectly) without the aid of natural selection; HENSLOW (293).

Turkey Lake as a unit of environment; EIGENMANN (173).

Functional adaptation, reprint of papers on; ROUX (595).

d. *Elimination, Selection, and Isolation.*

A. R. Wallace and the discovery of natural selection; MEYER (444).—Enormous importance of human race of elimination by *Bacteria*; HAYCRAFT (289).—Selection and its results; MEUNIER (441).—Nature versus natural selection; COE (114).—"Darwin's fundamental error," arguing from artificial to natural selection; HENSLOW (293).—Evolution of plant structures by action of environment on responsive protoplasm without the aid of natural selection; HENSLOW (293).

Non-utility of specific characters in many abyssal Echinoderms; VERRILL (710).

Post-selection; MINOT (449).

Criticism of the Theory of Sexual Selection:—I. General. (a) Sexual dimorphism in colour, &c., occurs in cases where artistic discrimination cannot be invoked; (b) the very general correlation between polygamous habits and brilliancy of plumage is difficult to explain, since in the majority of cases the females who are fought for do not and cannot choose; (c) analogous variability in widely separated forms is another difficulty; (d) the specially decorated parts are sometimes invisible to the

females; (*e*) the evidence for artistic discrimination even in higher animals, such as the Argus pheasant, is very weak; (*f*) even in man deliberate artistic selection seems much rarer than is usually supposed.

II. Special criticism from the case of the wall-lizard:—The variability of ornamental design is not adaptive to environment, nor is preferential mating (on an æsthetic basis) known to occur. “The severe struggle for existence, and the predominance which forms like *nigriventris* have been able to assert over less pigmented forms, afford demonstrative evidence that abundant pigmentation, the expression of intense metabolism, must be associated with superior physical vigour”; DOUGLASS (156).—Extinction of species, factors in; not hostile aggression, not lack of food, probably adverse natural changes and competition. Perhaps giant reptiles yielded to egg-destroying mammals; MORRIS (480).—Struggle for existence in the Alps; GALLI-VALERIO (225).—Casual variations in abyssal Echinoderms, conserved by isolation and in some cases by natural selection, but many non-utilitarian; VERRILL (710).

Studies of nature in relation to the struggle for life; RODWAY (581).—An attempt to measure the death-rate due to the selective destruction of *Carcinus mænas* with respect to two particular dimensions; WELDON (741).

Altruistic impulse in man and animals; GAVANESCU (239).

Isolation; THOMSON (689).—Differentiation of species on the Galapagos Is.; BAUR (25).

e. Particular Problems.

Structure of man: an index to his past history; WIEDERSHEIM (756).—The origin of man; HAACKE (268).

Phylogeny of *Vertebrata*; HÆCKEL (274), GASKELL (236), GOETTE (249).

Rudimentary eyes of Vertebrates illustrate an inhibited development where function is in part retained, or degeneration where the function of the whole or part is lost. But degeneration is preceded by inhibition. The direct or indirect condition is the absence or lack of light; KOHL (351).

Polydactylism, with special reference to its ætiology; HARMS (and others not recorded) (286).

Joints, origin of; HAMMAR (281).

Archenteron, &c., origin of; MACBRIDE (416).

Ætiological problems illustrated in relation to *Lepidoptera*; GARBOWSKI (231).—Evolution of species in *Lepidoptera*; EIMER (174).—The uses of colour to insects in the struggle for existence; POULTON (533).—Colour-marking of *Hirudinea* not hereditarily fixed, but individually acquired in the course of metabolism; GRAF (255).—Pigmentation of wall-lizard; the variability of ornamental design, even from one locality, shows that the designs are not adaptive; nor is their explanation to be found in sexual selection, for no æsthetic choice of males occurs; abundant pigmentation seems correlated with superior physical vigour; DOUGLASS (156).—

Coloration of Mammals: stripes supposed to be derived from fusion of spots in lines, and spots supposed to correspond to (hypothetical) armour-plates in ancestral forms. The evolution of markings supposed to be primarily independent of utility; **BONAVIA** (52).—So-called attractive coloration in animals; **REEKER** (565).

Seasonal Dimorphism: renewal of experiments. Distinction between *direct* seasonal dimorphism, referable to the direct action of variable environment, and *adaptive* seasonal dimorphism, the outcome of a process of selection. An example of the former is *Chrysophanus phlaas*, of the latter, the caterpillar of *Lycana pseudargiolus*, and perhaps *Vanessa prorsa-levana*. On the forms which illustrate adaptive dimorphism, the changes of temperature act only as "Auslösungsreize." In *P. napi* both kinds are probably mixed; **WEISMANN** (739).—Seasonal dimorphism of *Rhopalocera*; **BARKER** (22).

Origin of larval markings and armature of Bombycine larvæ; **PACKARD** (507).

Albinism; **ROTH** (593): Causes and transmission of; **HAACKE** (269).
Colour variation, see p. 77.

Ergatogynous forms of ants. Theory that the ovum includes a double *Anlage* (of queen and worker), this responds differently to developmental stimuli, such as food; **WASMANN** (733).

Forel's observation of intermediate forms between fertile females and workers in one nest but not in adjacent nests: facts favour Weismann's view that the differences are due to germinal variation; **WAGNER** (722).

Origin and evolution of web-spinning: First a case for eggs, then a tube to conceal the mother, then evolution along two main lines—the trap-door nest and the snare-net; **POCOCK** (530).

The origin of species among flat-fishes; **CUNNINGHAM** (127).

Heterocercy of bottom-fishes and pseudo-heterocercy of surface-fishes interpreted as adaptations to sculling in (dangerous) proximity to the limits of the water; **AHLBORN** (2).

Darwinism illustrated in reference to the birds of New Zealand; **BULLER** (89).

Adaptation of insects to new conditions; **BEHR** (32).

The case of the cuckoo; **REY** (574).

Electric organ of skate; **PURVIS** (541) [*cf.* **FRITSCH** (217)].

Migration, problem of; **GÄTKE** (223).—Influence of light on the periodical depth-migrations of pelagic animals; **LOEB** (404).

Mimicry in insects; **SCUDDER** (643); see also XIII, *Insecta*, p. 87.

Problems in connection with instincts of social insects; **HARTOG** (287).

The origin of food of marine animals—the micro-organisms of the surface; **BROOKS** (76).

Natural history of aquatic insects; **MIALL** (446).

For associations of animals, parasites and similar subjects, see 4, p. 61.

II. MAMMALIA.

BY

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

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INTRODUCTION.

THE event of the year, so far as Mammals are concerned, is the discovery, in South America, of a living representative (*Cenolestes*) of the *Epanorthidae*, hitherto known only from the Tertiaries of Patagonia. THOMAS—to whom we are indebted for this advance in knowledge—also contributes a large number of other papers, dealing, as usual, with Mammals from all parts of the world. His joint work with SCLATER on *Autelopes* is continued. Important work on the smaller Mammals of North America—more especially the Shrews and certain groups of Rodents—has been published during the year; ALLEN, BAILEY, BANGS, MERRIAM, MILLER, and RHOADS being the chief contributors to this branch of the subject. An increasing tendency to the multiplication of genera, species, and subspecies may here be noticed. Among other monographic work, reference may be made to LAHILLE'S revision of the Argentine Armadillos; while MORENO'S memoir on the Cetaceans of the same district is both descriptive and faunistic in its scope. In connection with Cetaceans, the PRINCE OF MONACO'S discovery that the food of the Sperm Whale consists of huge pelagic Cephalopods, is full of interest. From a morphological point of view, the first part of GÜLD-BERG & NANSEN'S memoir on the development of the same group (which should have been included in the last RECORD) is of the highest importance; as are the observations of the former, and also of KÜKENTHAL on the vestiges of hind limbs in foetal Whales.

In Australia considerable attention has been directed to the development and structure of *Ornithorhynchus*, by HILL, MARTIN, TIDSWELL, and WILSON.

The so-called *Pithecanthropus* has been a fruitful subject of discussion, and the general concensus of opinion inclines to the view that the remains cannot in any way be regarded as indicating a real "missing link."

In distribution, GREVÉ'S memoir on the *Carnivora* is likely to prove of the highest value; while MATSCHIE'S work on the Mammalian fauna of German East Africa, as well as that of MOBIUS, are likewise noteworthy. Many other minor faunistic papers will be found in the sequel.

In dentition, LECHE'S elaborate memoir cannot fail to attract attention; and among papers on anatomy notice may be directed to BEDDARD'S study of the brain of Lemurs and other forms, and SMITH'S description of that of *Notoryctes*.

Turning to extinct forms, the memoirs of WINGE on the *Primates* and *Carnivora* of Lagoa Santa deserve especial mention, on account of their including a new classification of the two orders. In the Argentine, AMEGHINO, MERCERAT, and ROTH have continued their investigations of the Tertiary faunas of Argentina proper and Patagonia; and in the papers of the two former it is noteworthy that the flow of new generic

and specific names continues without check. In North America, OSBORN, SCOTT, and WORTMAN have been working steadily at the reconstruction of extinct types, with the skill and accuracy that mark all their efforts. Australian forms continue to attract the attention of DE VIS.

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Brisson, 1762.		Linnæus, 1758.
<i>Pholidotus</i>	=	<i>Manis</i>
<i>Tardigradus</i>	=	<i>Bradypus</i>
<i>Cutaphractus</i>	=	<i>Dasypus</i>
<i>Hircus</i>	=	<i>Capra</i>
<i>Aries</i>	=	<i>Ovis</i>
<i>Musaraneus</i>	=	<i>Sorex</i>
<i>Prosimia</i>	=	<i>Lemur</i>
<i>Philander</i>	=	<i>Didelphys</i>
<i>Cetus</i>	=	<i>Physeter</i>
<i>Ceratodon</i>	=	<i>Monodon</i>

The remaining 11 are introduced by Brisson for the first time, and are entitled to recognition. They are :—

Odobenus, *Giraffa*, *Tragulus*, *Hydrochærus*, *Tapirus*, *Cuniculus*, *Glis*, *Pteropus*, *Hycna*, *Meles*, *Lutra*.

Most of these are now in current use, but are attributed to later writers, and in several cases wrong species are taken as types. Carrying the date back to 1762 not only gives them greater stability, but also establishes the types in a satisfactory manner. All but one of the genera take Linnæan species for types.

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Lophocolobus, n. subg. for *Colobus verus*, Van Beneden; POUSARGUES, Bull. Mus. Paris, 1895, p. 98, Kong.

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- The fossil species of *Cebidæ* and *Hapalidæ* from the Brazilian caves, WINGE, Afh. Mus. Lund. ii, art. 3.
 †*Eriodes protopithecus*, n. nom., WINGE, *l. c.* p. 6, Pleistocene, Brazil; = *Protopithecus brasiliensis*, Lund. [The proper name should be *Eriodes brasiliensis*.—R. L.]

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 †*Dinolemur*, n. g., for *D. grevei*, n. sp., FILHOL, *l. c.*, *ibid.*
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 †*Archæolemur*, n. g., for *A. majori*, n. sp., FILHOL, *l. c.*, *ibid.*
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- †*Microsypops uintensis*, n. sp., OSBORN, Bull. Amer. Mus. vii, p. 77, Uinta beds.

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- Pteropus modiglianii*, n. sp., THOMAS, Ann. Mus. Genova (2) xiv, p. 106, 1894, Engano I.; *P. medius*, pituitary fossa and interparietal of young, MAGGI (116).
Megaloglossus [= *Trygonycteris*] *woermanni*, described and figured, SJÖSTEDT, Svenska Ak. Handl. xxi, sect. 4, No. 1.

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- Atalapha borealis seminola*, n. subsp., RHOADS, P. Ac. Philad. 1895, p. 32, Florida.
- Lichonycteris*, n. g., for *L. obscura*, n. sp., THOMAS, Ann. Nat. Hist. (6) xv, p. 55, Nicaragua.

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- Tupaia splendidula lucida*, n. subsp., THOMAS & HARTERT, Nov. Zool. ii, p. 490, Natuna Is.
- Sorex*: revision of N. American forms; MILLER, North Amer. Fauna, No. 10, p. 35, & MERRIAM, *t. c.* p. 57. *S. fumeus*, n. sp., MILLER, *t. c.* p. 50, New York. *S. personatus streatoris*, p. 62, Alaska, *amanus*, p. 69, California, *vancouverensis*, p. 70, Vancouver I., *orizaba*, p. 71, Mexico, *nevadensis*, p. 71, Nevada, *obscurus longicauda*, p. 74, Alaska, *obscurus ventralis*, p. 75, Mexico, *obscurus alascensis*, p. 76, Alaska, *bairdi*, p. 77, Oregon, *montereyensis* and *ornatus*, p. 79, California, *californicus*, p. 80, California, *tenellus*, p. 81, California, *tenellus nanus*, p. 81, Colorado, *macrodon*, p. 82, Mexico, *saussurei caudatus*, p. 84, Mexico, *fisheri*, p. 86, Virginia, *pribilofensis*, p. 87, Pribyloff Is., *bendiri palmeri*, p. 97, Oregon, *bendiri albiventer*, p. 97, Washington, *stizodon*, p. 98, n. spp. & subsp., MERRIAM, *t. c.* *S. vulgaris* and *S. pygmaeus*, should be amended to *S. araneus* and *S. minutus*; THOMAS, Zoologist (3) xix, p. 62. *S. raddei*, n. sp., SATURNIN, Arch. Naturg. 1895, p. 108, Caucasus.
- Blarina*: revision of genus; MERRIAM, North Amer. Fauna, No. 10, p. 1. *B. carolinensis peninsulae*, p. 14, Florida, *telmalestes*, p. 15, Virginia, *floridana*, p. 19, Florida, *soricina*, p. 22, Mexico, *obscura*, p. 23, Mexico, *mexicana peregrina*, p. 24, Mexico, *mexicana goldmani*, p. 25, Mexico, *mexicana machetes*, p. 26, Mexico, *nelsoni*, p. 26, Mexico, *alticola*, p. 27, Mexico, *fossor*, *mugna*, p. 28, Mexico, n. sp. & subsp., MERRIAM, *t. c.* *B. (Soriciscus) nigrescens*, p. 339, Costa Rica, *orophila*, p. 340, Volcan de Irazú, n. spp., ALLEN, Bull. Amer. Mus. vii.
- Notiosorex*, revision of; MERRIAM, *op. cit.* p. 31.
- Crocidura smithi*, p. 51, *somalica*, p. 52, Somaliland, *silacea*, p. 53, Transvaal, *crossei*, p. 54, Niger, *varilla*, p. 54, Kaffraria, n. spp., THOMAS, Ann. Nat. Hist. (6) xvi. *C. nigrofusca*, n. sp., MATSCHIE, Säugeth. Deutsch-Ost-Afrikas, p. 33, German E. Africa.

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- Scalops parvus*, n. sp., RHOADS, P. Ac. Philad. 1895, p. 157, Florida.
Talpa europæa, its popular names; STRONG (216).
Erinaceus sclateri, n. sp., ANDERSON, P. Zool. Soc. London, 1895, p. 415,
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 p. 19, as distinct from *G. raffleri*, and confined to Borneo, where it
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- †*Uncia mercerii*, n. sp., COPE, P. Ac. Philad. 1895, p. 448, Pleistocene,
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 †*Dinictis fortis*, p. 574, *bombifrons*, p. 577, n. spp., COPE, Amer. Natural.
 xxix, White River Beds, N. America.
Crossarchus somalicus, n. sp., THOMAS, Ann. Nat. Hist. (6) xv, p. 531,
 Somaliland.
Genetta vulgaris: its reproduction; MINGAUD, Bull. Soc. Nimes, 1894,
 p. 137.
Herpestes parvus, n. sp., JENTINK, Notes Leyden Mus. xvii, p. 48, Cala-
 mianes Group, Philippines, = *H. brachyurus*, Everett, *nee* Gray.
Cryptoprocta ferox, its anatomy and external form; BEDDARD, P. Zool.
 Soc. London, 1895, p. 430, pl. xxvi.

HYÆNIDÆ and CANIDÆ.

- Hyæna striata*, recorded by HARLÈ (81), from French Pleistocene. *H.*
crocota, its voracity in the Sudan; SUARD (217). †*Crocota in-*
expectata, n. sp., COPE, P. Ac. Philad. 1895, p. 449, Pleistocene,
 N. America. It is suggested that the tooth on which the species
 is founded may prove to belong to the feline *Nimravus*.
 Domestic dogs; HAMMERAN (80). *Canis holubi*, n. sp., LORENZ, Verh.
 Ges. Wien, 1895, p. 100, S. Africa; allied to *C. adustus*. *Urocyon*
cinereo-argentatus floridanus, n. subsp., RHOADS, P. Ac. Philad. 1895,
 p. 42, Florida.

† *Ichtyon pacivorus*, LUND, regarded by WINGE, *Afh. Mus. Lund.* ii, Art. 4, p. 28, as distinct from *I. venaticus*; remains of both occurring in the Brazilian caves.

PROCYONIDÆ and MUSTELIDÆ.

- † *Amphinasua*: considered distinct from *Cynonasua*; MERCERAT (127).
Mustela vulgaris, its proper name *Putorius nivalis*; THOMAS, *Zoologist* (3) xix, p. 177. *M. putorius*, its varieties; DRION (52). *Putorius peninsulae*, n. sp., RHOADS, *P. Ac. Philad.* 1895, p. 152, Florida. *P. hibernicus*, n. sp., THOMAS, *Nat. Sci.* vi, p. 377, Ireland. See also THOMAS & BARRETT-HAMILTON (214). *P. africanus* and *boccamela*, their habitats; THOMAS, *P. Zool. Soc. London*, 1895, p. 128. *P. ermineus algiricus*, p. 451, *ermineus freghanae*, p. 452, n. subsp., THOMAS, *Ann. Nat. Hist.* (6) xv, N. Africa. *P.* sp., Isle of St. Thomas, BOGAGE, *J. Sci. Lisb.* (2) xiii, p. 24 (? = *P. africanus*). *P. (Lutreola) vulgivagus*, n. sp., BANGS, *P. Boston Soc.* xxvi, p. 536, Louisiana. *P. auriventer (Cuthia)*, seasonal variation in pelage; TROUËSSART, *Bull. Mus. Paris*, 1895, pp. 235 & 236.
Mephitis mephitica elongata, n. subsp., BANGS, *P. Boston Soc.* xxvi, p. 531, Florida.
Helictis everetti, n. sp., THOMAS, *Ann. Nat. Hist.* (6) xv, p. 331, Mt. Kina Balu, N. Borneo.
Meles taxus arenarius, n. subsp., SATURNIN, *Arch. Naturg.* 1895, p. 111, Caucasus.
Mydaus schadenbergii, n. sp., JENTINK, *Notes Leyden Mus.* xvii, p. 46, Calamianes Group, Philippines; identified by MEYER, *Abh. Mus. Dresden*, 1894-95, No. 13, with *M. marchei*, Huet, 1887, of Palawan.
Gulo, brain; BEDDARD, *P. Zool. Soc. London*, 1895, p. 139.
Latax lutris: from notes supplied by a correspondent, LYDEKKEK, *P. Zool. Soc. London*, 1895, p. 421, points out that in walking this animal has the hind feet doubled.

† MIACIDÆ and MESONYCHIDÆ.

- † *Miacis uintensis*, n. sp., OSBORN, *Bull. Amer. Mus.* vii, p. 77, Uinta Beds.
 † *Mesonyx uintensis*, n. sp., OSBORN, *l. c.* p. 79, Uinta Beds. (See also SCOTT (204).)

PHOCIDÆ.

- † *Phoca rugosidens*, from Maltese Miocene, jaw described by COOKE, *Geol. Mag.* (4) ii, p. 215. *P. vitulina*, its vascular plexuses; BOULART (23).
Halichærus grypus, recorded by JOYEUX-LAFFUIE from Normandy (93).

V. RODENTIA.

Distribution of *Spermophilus*, *Cricetus*, and *Myoxus*, in Bohemia; WURM (258).

ANOMALURIDÆ and SCIURIDÆ.

Anomalurus cinereus, n. sp., THOMAS, Ann. Nat. Hist. (6) xv, p. 188, Borrema R., E. Africa.

Sciurus vulgaris: autumnal variation in colour of tail; CAMBRIDGE & THOMAS, Zoologist (3) xix, pp. 103 & 104. *S. melanogaster*, p. 668, *fraterculus*, p. 669, n. spp., THOMAS, Ann. Mus. Genova (2) xiv, Sipora. *S. notatus orestes*, n. subsp., THOMAS, Ann. Nat. Hist. (6) xv, p. 530, Mt. Dulit, Borneo. *S. pyrrhomerus*, n. sp., THOMAS, *ibid.* xvi, p. 242, China. *S. emini*, n. sp., DE WINTON, *t. c.* p. 197, Monbutta, E. Africa.

S. (n. subg. *Microsciurus*) *alfuri*, n. sp., ALLEN, Bull. Amer. Mus. vii, p. 333, Costa Rica. *S. lowi natunensis*, n. subsp., THOMAS, Nov. Zool. ii, p. 26, Natuna Is. *S. bicolor nanogigas*, THOMAS & HARTERT, *t. c.* p. 491, *ibid.*

Sciuropterus lugens, n. sp., THOMAS, Ann. Mus. Genova (2) xiv, p. 666, Sipora. *S. everetti*, n. sp., THOMAS, Nov. Zool. ii, p. 27, Natuna Is.

Tamias lateralis saturatus, P. Ac. Philad. 1895, p. 43, Washington, *T. quadrivittatus felix*, Amer. Natural. xxix, p. 951, Brit. Columbia, n. subsp., RHOADS. *T. pricei*, p. 333, California, *wortmani*, p. 335, Wyoming, n. spp., ALLEN, *op. cit.*

Anisonyx, Rafinesque, 1817, to replace *Spermophilus*, Cuv., 1825; MERRIAM, Science (2) i, p. 18.

Spermophilus tridecemlineatus olivaceus and *parvus*, n. subsp., ALLEN, *op. cit.* p. 337, Dakota and Utah.

†*Paramys uinutensis*, n. sp., OSBORN, Bull. Amer. Mus. vii, p. 81, Uinta Beds.

Leithia, n. g. for *Myoxus melitensis*, L. Adams; LYDEKKER, P. Zool. Soc. London, 1895, p. 802. Although differing in two points—notably the ankylosis of the tibia and fibula—from existing *Sciuromorpha*, this genus is considered to be allied to the *Sciuridæ*, but it is quite probable that it may indicate a new family (*Leithiidæ*).

CASTORIDÆ and MURIDÆ.

Castor fiber: hepatic vascular system NEUVILLE (153); occurrence in the Rhine, and habits, MINGAUD (141); in Norway, OLSEN (158).

Gerbillus (*Dipodillus*) *pæcilops*, p. 549, *lixa*, p. 550, (*Hendecapleura*) *fumulus*, p. 551, n. spp., YERBURY & THOMAS, P. Zool. Soc. London, 1895, Aden. *Meriones rex*, n. sp., YERBURY & THOMAS, *t. c.* p. 552, *ibid.*

Pithechirus melanurus, its alimentary canal; POUSSARGUES (174).

- Chrotomys*, n. g. for *C. whiteheadi*, n. sp., THOMAS, Ann. Nat. Hist. (6) xvi, p. 161, N. Luzon.
- Xeromys* (?) *silaceus*, n. sp., THOMAS, *l. c.*, *ibid.*
- Crateromys*, n. g., THOMAS, *t. c.* p. 163, *ibid.* for *Phlæcomys schadenbergi*, Meyer.
- Rhynchomys*, n. g. for *R. soricoides*, n. sp., THOMAS, Ann. Nat. Hist. (6) xvi, p. 160, N. Luzon.
- Carpomys*, n. g. for *C. melanurus* and *phæurus*, n. spp., THOMAS, *t. c.* pp. 161 & 162, *ibid.*
- Batomys*, n. g. for *B. granti*, n. sp., THOMAS, *t. c.* p. 162, *ibid.*
- Mus luzonicus*, n. sp., THOMAS, *t. c.* p. 163, *ibid.* *M. siporanus*, n. sp., THOMAS, Ann. Mus. Genov. (2) xiv, p. 670, Sipora. *M. exulans*, note on this Polynesian species; THOMAS, P. Zool. Soc. London, 1895, p. 338. *M. hebridensis*, n. sp., DE WINTON, Zoologist (3) xix, p. 369, Outer Hebrides. *M. minutus*, habits, etc.; HARTING, *t. c.* p. 418.
- Arvicanthis variegatus*, recorded by YERBURY & THOMAS, P. Zool. Soc. London, 1895, p. 553, from Aden. The name *Arvicanthis* is used, on account of priority, to supersede *Isomys*.
- Peromyscus insignis*, n. sp., RHOADS, P. Ac. Philad. 1895, p. 33, S. California. *P. attwateri*, n. sp., ALLEN, Bull. Amer. Mus. vii, p. 330, Texas.
- Sitomys megacephalus*, p. 254, Alabama, *insolatus*, p. 256, California, *herroni nigellus*, p. 257, California, *keeni*, p. 258, Queen Charlotte Is., *macrorhinus*, p. 259, Brit. Columbia, *americanus artemisiae*, p. 260, Brit. Columbia, RHOADS, *t. c.*
- Oryzomys princeps*, p. 58, *childi*, p. 59, *laniger*, p. 60, *instans*, p. 369, n. spp., THOMAS, Ann. Nat. Hist. (6) xvi, Bogota, S. America. *O. cherriei*, n. sp., ALLEN, Bull. Amer. Mus. vii, p. 329, Costa Rica.
- Acodon bogotensis*, p. 369, *hirtus*, p. 370, n. spp., THOMAS, *t. c.*, Bogota.
- Rhithrodontomys merriami*, p. 119, Texas, *dychei*, p. 120, Kansas, *dychei nebrascensis*, p. 122, Nebraska, *megalotis deserti*, p. 127, California, *arizonensis*, p. 134, Arizona, *mexicanus intermedius*, p. 136, S. Texas and Mexico, *mexicanus aurantius*, p. 137, Mexico, *costaricensis*, p. 139, Costa Rica, *australis*, p. 328, Costa Rica, n. spp. & subspp., J. A. ALLEN, Bull. Amer. Mus. vii; *humilis dizouï*, n. subsp., RHOADS, Amer. Natural. xxix, p. 590, Florida.
- Microtus principalis*, n. sp., RHOADS, Amer. Natural. xxix, p. 940, Brit. Columbia.
- Phenacomys oramontis*, n. sp., RHOADS, *t. c.* p. 941, *ibid.*
- Myodes lemmus*, habits; COLLETT, Forh. Selsk. Christian. 1895, Art. 3.
- Fiber zibethicus rivalicus*, n. subsp., BANGS, P. Boston Soc. xxvi, p. 541, Alabama and Louisiana.
- Neotoma magister*: *N. pennsylvanica*, Stone, 1893, identified by RHOADS, P. Ac. Philad. 1895, p. 213, with this Pleistocene form, described by Baird in 1857. *N. cinnamomea*, n. sp., ALLEN, Bull. Amer. Mus. vii, p. 331, Wyoming.
- Eliurus majori*, n. sp., THOMAS, Ann. Nat. Hist. (6) xvi, p. 164, Madagascar.

SPALACIDÆ and GEOMYIDÆ.

For habits, distribution, and injury to agriculture of the *Geomyidæ*, see BAILEY (10); for a full monograph, MERRIAM (133).

Georychus leacheri, n. sp., THOMAS, Ann. Nat. Hist. (6) xvi, p. 241, Mombutta, E. C. Africa.

Heterocephalus glaber, its distinctness from *H. phillipsi*, THOMAS, Ann. Mus. Genova (2) xv, p. 3.

Geomys tuza mobilensis, p. 119, S. Alabama, *breviceps sagittalis*, p. 134, Texas coast, *breviceps attwateri*, p. 135, parts of Texas, *texasensis*, p. 137, Texas, *arenarius*, p. 139, Rio Grande, *personatus fullax*, Nueces Bay, Texas, n. spp. and subsp., MERRIAM, *op. cit.*

Pappogeomys, n. g., MERRIAM, *t. c.* p. 145, for *Geomys bulleri*, THOMAS. *P. albinus*, n. sp., MERRIAM, *t. c.* p. 149, Guadalajara.

Cratogeomys, n. g., MERRIAM, *t. c.* p. 150, for *Geomys merriami*, THOMAS. *C. perotensis*, p. 154, *estor*, p. 155, Cofre de Perote, *oreocetes*, p. 156, Mt. Popocatepetl, *peregrinus*, p. 158, Mt. Iztaccihuatl, Mexico, *castanops goldmani*, p. 160, Mexico, *fulvescens*, p. 161, Puebla, Mexico, n. spp. and subsp., MERRIAM, *t. c.*

Platygeomys, n. g., MERRIAM, *t. c.* p. 162; for *Geomys gymnurus*, MERRIAM. *P. tylosrhinus*, p. 167, Hidalgo, Mexico, *planiceps*, p. 168, Volcano of Toluca, Mexico, *fumosus*, p. 170, Colima, Mexico, n. spp., MERRIAM, *t. c.*

Orthogeomys, n. g., MERRIAM, *t. c.* p. 172, for *Geomys scalops*, THOMAS. *O. nelsoni*, p. 176, Mt. Zempoaltepec, Mexico, *latifrons*, p. 178, Guatemala, n. spp., MERRIAM, *t. c.*

Heterogeomys, n. g., MERRIAM, *t. c.* p. 179, for *Geomys hispidus*, Le Conte. *H. torrilus*, n. sp., MERRIAM, *t. c.* p. 183, Vera Cruz.

Macrogeomys, n. g., MERRIAM, *t. c.* p. 185, for *Geomys heterodus*, Peters. *M. dolichocephalus*, p. 189, *costaricensis*, p. 192, n. spp., MERRIAM, *t. c.* Costa Rica.

Zygogeomys, n. g. for *Z. trichopus*, n. sp., MERRIAM, *t. c.* p. 195, Michoacan, Mexico.

Thomomys altivallis, p. 34, *botte pallescens*, p. 36, *fulvus nigricans*, p. 36, n. sp. and subsp., RAOADS, P. Ac. Philad. 1895, S. California. *T. cervinus*, n. sp., J. A. ALLEN, Bull. Amer. Mus. vii, p. 203, Arizona.

DIPODIDÆ, HYSTRICIDÆ, and CAVIIDÆ.

†*Protoptychus*, n. g. for *P. hatcheri*, n. sp., SCOTT, P. Ac. Philad. 1895, p. 269, Uinta Beds. This genus is regarded as the ancestral type of the *Dipodidæ*, and indicates that the latter are true *Myomorpha*. The *Geomyidæ* probably form a lateral offshoot from the same stock.

Atherura centralis, n. sp., THOMAS, Ann. Nat. Hist. (6) xv, p. 89, Mombutta, Cent. Africa.

Dolichotis patagonica, its anatomy, ST. LOUP (198).

LEPORIDÆ.

Notes on distribution and variation of *Lepus americanus*, *sylvaticus*, and *washingtoni*, J. A. ALLEN, Bull. Amer. Mus. vii, p. 264, BANGS, P. Boston Soc. xxvi, p. 404, and RHOADS, P. Ac. Philad. 1895, p. 241.

Lepus sylvaticus grangeri, ALLEN, t. c. p. 264, Black Hills, Dakota; *aquaticus altwateri*, ALLEN, t. c. p. 327, Texas; *sylvaticus transitionalis*, BANGS, t. c. p. 405, Connecticut; *americanus columbianus*, RHOADS, t. c. p. 242, Brit. Columbia; n. subsp., *L. edwardsi*, n. sp., ST. LOUP, Bull. Mus. Paris, 1895, p. 5, Ilo d'Espiritu Santo. *L. martirensis*, n. sp., STOWELL, P. Calif. Ac. 1895, p. 50, Lower California. *L. europæus*, abnormal skull, KERVILLE (29).

VI. UNGULATA.

A. ARTIODACTYLA.—BOVIDÆ.

For African Antelopes, see ELLIOT (58), RENDALL (178), and SWAYNE (218); Antelopes in general, SCLATER and THOMAS (202). For Goats, see LANGKAVEL (104); Pleistocene Artiodactyles of Algeria, POMEL (173A).

Bos bison, distribution, LANGKAVEL (105); *B. americanus*, distribution in Pennsylvania, RHOADS (184); †*B. (Bison) appalachicolus*, n. sp., RHOADS, P. Ac. Philad. 1895, p. 248, Pleistocene, N. America; *B. (Anoa) mindorensis*, note on, OUSTALET (163).

Ovibos moschatus, distribution, FEILDEN (62).

†*Ibex priscus*, n. sp., WOLDRICH, SB. Bohmisch. Ges. 1894, art. xxiv, p. 3, pl. x.

Oreamnos, Rafinesque, 1817, to supersede *Mazama*, Raf.; MERRIAM, Science (2) i, p. 18.

Cobus penricei, n. sp., ROTHSCHILD, Nov. Zool. ii, p. 52, pl. iv, Kuvuli River, E. Africa; *C. thomasi*, n. sp., Neumann, SCLATER, P. Zool. Soc. London, 1895, p. 870, E. Africa.

Cervicapra chanleri, n. sp., ROTHSCHILD, op. cit. p. 53, Cent. E. Africa.

Neotragus haggardi, n. sp., THOMAS, Ann. Nat. Hist. (6) xv, p. 187, E. Africa.

Gazella loderi, its habits, BRAMLEY (26).

†*Bos opisthonomus*, p. 15, *curvidens*, p. 95, n. spp.; POMEL, Bœufs Taureaux, Carte geol. Algerie—Pal. Mon. 1894, Pleistocene, Algeria. *Connochætes prognu*, p. 10, *Boselaphus probubalis*, p. 27, *B. saldensis*, p. 48, *B. ambiguus*, p. 52, n. spp., Les Boselaphes; RAY, *ibid.* 1894. *Antilope (Dorcas) subgazella*, p. 10, *A. (D.) setifensis*, p. 15, *A. (D.) nodicornis*, p. 18, *A. (D.) crassicornis*, p. 19, *A. (D.) mas-sæssilia*, p. 21, *A. (D.) cranensis*, p. 25, *A. (D.) triquetricornis*,

p. 28, *A.* (*Egoceros*) *troglodytorum*, p. 35, *A.* (*E.*) *lanata*, p. 36, *A.* (*Nagor*) *maupassii*, p. 38, *A.* (*Oreas*) *brevicornis*, p. 45, *A.* (*Grimmia*) *leporina*, p. 47, *A.* (?) *preeminens*, p. 49, n. spp., Les Antilopes, PALLAS, *ibid.* 1895.

CERVIDÆ.

Cervus sica, placenta; BEAUREGARD (14). *C. eldi*, habits; EVANS (60). *C. brachyceros*, n. sp., Philippi, An. Mus. Chile, 1895, Chilean Andes; identified by NEHRING, SB. Ges. naturf. Berlin, 1895, p. 12, with *Cariacus*, in its restricted sense. *Furcifer antisiensis* and *F. chilensis*, distinctive characters; NEHRING, *t. c.* p. 9.⁴
Mazama, Rafinesque, 1817, to replace *Coassus*, Gray, 1843; MERRIAM, Science (2) p. 1.
Alces machlis, its extermination in Europe; GREVÉ (75), MANGOLD (118).

†PROTOCERATIDÆ and †OREODONTIDÆ.

†*Protoceras*, its relations and osteology; SCOTT (203). Considered to be a lateral offshoot allied to the ancestral stock of the *Tragulidæ*; the latter being evidently an Old World group.
 †*Agriochærus*, its osteology; WORTMAN, Bull. Amer. Mus. vii, p. 145.

†ANTHRACOTHERIIDÆ and †CHÆROPOTAMIDÆ.

†*Brachyodus*, n. g., DEPÉRET, SB. Ak. Berlin, civ, p. 397, for *Anthracootherium onoideum*, Gerv., Miocene, Eggenburg. *Hypopotamus indicus*, Lyd., referred to same genus.
 †*Elotherium uintense*, OSBORN, Bull. Amer. Mus. vii, p. 102, Uinta Beds.

SUIDÆ and HIPPOPOTAMIDÆ.

Sus longirostris and *S. verrucosus*, distinctive characters; NEHRING, Zool. Garten, xxxvi, p. 44. *Nyctochærus hassana*, Heuglin, identified by NEHRING, *l. c.*, with *Potamochoærus larvatus*. *Sus* sp., skeleton from Liu-Kiu; NEHRING, Zool. Anz. 1895, p. 405.
Hippopotamus amphibius, from Pleistocene of Portugal; CHOFFAT (31).

B. PERISSODACTYLA.—EQUIDÆ.

The various forms of the suborder from the White River Miocene described, with reconstructions of the skeleton, by OSBORN & WORTMAN (162). Existing *Equidæ*, TEGETMEIER & SUTHERLAND (219).
Equus caballus, dentition and dates of appearance of teeth; RIDWOOD (188). *E. burchelli*, variety from Henga country; SCLATER & CRAWSHAY, P. Zool. Soc. London, 1895, p. 688. †*E. intermedius*, n. sp., COPE, P. Amer. Phil. Soc. xxxiv, p. 463, Pleistocene, Louisiana.

†*Hippidium bolivianum*, n. sp., Philippi, Zeitschr. Deutsch. geol. Ges. xlv, p. 88 (1893), Pleistocene, Bolivia.

†PALÆOTHERIIDÆ and †LOPHIODONTIDÆ.

Meshippys shown to pass into *Anchitherium*; OSBORN & WORTMAN, Bull. Amer. Mus. vii, p. 353. *M. intermedius*, p. 354, *copei*, p. 356, n. spp., OSBORN & WORTMAN, *t. c.*, White River Miocene.

N. American *Lophiodontidæ* described by OSBORN & WORTMAN, *op. cit.* p. 358. *Helealetes* and *Colodon* identified in Europe, p. 360. *Colodon dakotensis*, p. 362, *procuspidatus*, p. 364, n. spp., OSBORN & WORTMAN, *t. c.*, White River Miocene.

RHINOCEROTIDÆ and †TITANOTHERIIDÆ.

N. American Miocene Rhinoceroses (*Hyrcodontidæ* and *Amyndodontidæ*) described by OSBORN & WORTMAN, *op. cit.* p. 367.

†*Aceratherium platydon*, n. sp., MERMIER, Ann. Soc. Linn. Lyon, xlii, p. 29, Miocene, Royans, France.

†*Rhinoceros etruscus*, from Dusino; SACCO (196).

†*Telmatotherium diploconum*, p. 85, *cornutum*, p. 90, n. spp., OSBORN, Bull. Amer. Mus. vii. Skulls figured. Reconstruction of skeleton and synonymy; OSBORN & WORTMAN, *t. c.* p. 346.

†*Sphenocœlus*, n. g. for *S. uintensis*, n. sp., Uinta Beds, OSBORN, Bull. Amer. Mus. vii, p. 98.

c. †TOXODONTIA.—TOXODONTIDÆ.

ROTH, Revist. Mus. La Plata, vi, p. 335, redescribes the dentition of *Toxodon*, which he states may be represented by the formula, $i \frac{2}{3}$, $c \frac{2}{1}$, $p \frac{(2-4)}{(2-4)}$, $m \frac{2}{3}$. He believes the number of species of the genus to be very small. MERCERAT, Ann. Mus. Buenos Aires, iv, pp. 207-215, has observations on the same subject, and also, *t. c.* pp. 257-306, monographs the group.

†*Dinotoxodon*, n. g., MERCERAT, *t. c.* p. 208, for *Toxodon paranensis*, Burmeister, 1891.

†*Hyperoxotodon*, n. g., MERCERAT, *t. c.* p. 305, for *Stenotéphanos speciosus*, Ameghino, 1887.

†TYPOTHERIIDÆ.

†*Prœedium*, n. g. for *P. solitarium*, n. sp., AMEGHINO, Bol. Inst. Geogr. Argent. xv, p. 32, Pyrotherium Beds, Patagonia.

†*Clorinda*, n. g. for *C. cliva*, n. sp., AMEGHINO, *t. c.* p. 24, *ibid.*

†*Proadnotherium*, n. g. for *P. leptognathum*, n. sp., AMEGHINO, *op. cit.* p. 25, *ibid.*

- †*Pronesodon*, n. g. for *P. cristatus*, p. 26, *robustus*, p. 27, n. spp., AMEGHINO, *t. c. ibid.*
 †*Senodon*, n. g. for *S. platyarthrus*, n. sp., AMEGHINO, *t. c. p. 28, ibid.*
 †*Scaphops*, n. g. for *S. grypus*, n. sp., AMEGHINO, *t. c. p. 29, ibid.*
 †*Coresodon*, n. g. for *C. scalpridens*, n. sp., AMEGHINO, *t. c. p. 30, ibid.*

D. †LITOPTERNA.—MACRAUCHENIIDÆ.

- †*Coniopternium*, n. g. for *C. candinum*, n. sp., AMEGHINO, Boll. Inst. Geogr. Argent. xv, p. 32, *Pyrotherium Beds, Patagonia.*

†PROTEROTHERIIDÆ.

- †*Deuterotherium*, n. g. for *D. distichum*, n. sp., AMEGHINO, *t. c. p. 33, ibid.*
 †*Culiphrium*, n. g. for *C. simplex*, n. sp., AMEGHINO, *l. c., ibid.*

E. †ASTRAPOTHERIA.—ASTRAPOTHERIIDÆ.

- †*Parastrapotherium*, n. g., p. 35, for *P. holmbergi*, p. 36, *trouessarti*, p. 38, *lemoinei* and *cingulatum*, p. 40, n. spp., AMEGHINO, Bol. Inst. Geogr. Argent. xv, *Pyrotherium Beds, Patagonia.*
 †*Traspoatherium*, n. g. for *T. convexidens*, n. sp., AMEGHINO, *t. c. p. 41, ibid.*
 †*Liarthrus*, n. g. for *L. copei*, n. sp., AMEGHINO, *l. c., ibid.*
 †*Proustrapotherium*, n. g. for *P. holmburgi*, n. sp., AMEGHINO, *t. c. pp. 35 & 36, ibid.*

†HOMALODONTOTHERIIDÆ.

- †*Asmodeus*, n. g. for *A. scotti*, p. 43, *osborni*, p. 44, n. sp., AMEGHINO, *t. c., ibid.*
 †*Pleurocelodon*, n. g. for *P. wingei* and *cingulatus*, n. sp., AMEGHINO, *t. c. p. 45, ibid.*
 †*Trimerostephanos*, n. g. for *T. scabrus*, n. sp., AMEGHINO, *t. c. p. 46, ibid.*
 †*Leontinia*, p. 47, n. g. for *L. gaudryi*, p. 48, *lapidosa*, p. 48, *garzoni*, p. 50, n. spp., AMEGHINO, *t. c.* This and the following genera are regarded as indicating a separate family, on account of an alleged reduction in the dentition.
 †*Ancylocælus*, n. g. for *A. frequens*, n. sp., AMEGHINO, *t. c. pp. 50 & 52, ibid.*
 †*Rodiotherium*, n. g. for *R. armatum*, n. sp., AMEGHINO, *t. c. p. 53, ibid.*
 †*Lowocælus*, n. g. for *L. carinatus*, n. sp., AMEGHINO, *l. c., ibid.*

INCERTÆ SEDIS.

- †*Stenogenium*, n. g. for *S. sclerops*, n. sp., AMEGHINO, *t. c. p. 54, ibid.*
 †*Eurygenium*, n. g. for *Eu. latirostris*, n. sp., AMEGHINO, *t. c. p. 55, ibid.*

F. †PYROTHERIA.—PYROTHERIIDÆ.

Characters of this new suborder given by AMEGHINO, Bol. Inst. Geog. Argent. xv, p. 8. †*Pyrotherium sorodoi*, n. sp., AMEGHINO, *l. c.* p. 13, Tertiary, Patagonia.

G. PROBOSCIDEA.—ELEPHANTIDÆ.

Distribution of living and fossil ; GREVÈ (74).

Elephas africanus, its domestication ; LATASTE (106).

†*Mastodon americanus (ohioticus)*, recorded by PAVLOW, Mem. Ac. St. Petersb. (8) i, p. 8, from the Government of Kamenez-Podolsk (Podolia), Western Russia.

†*Mastodon chilensis*, n. sp., PHILIPPI, Zeitschr. Deutsch. geol. Ges. xlv, p. 88 (1893), Pleistocene, Chili.

H. HYRACOIDEA.—PROCAVIIDÆ.

Procapia syriaca, its habits ; NASSONOW (147).

VII. SIRENIA.—MANATIDÆ and HALITHERIIDÆ.

Hydrodamalis, Retzius, 1794, supersedes *Rhytina*, Illiger, 1811 ; PALMER, Science (2) ii, p. 449.

Dugong, Lacépède, has priority over *Halicore*, Illiger, 1811 ; PALMER, *op. cit.* p. 450.

Manatus latirostris : most of the few remaining individuals in the Florida rivers exterminated by the cold of the winter 1894-95 ; BANGS, Amer. Natural. xxix, p. 783.

†*Metaxytherium krahuletzki*, n. sp., DEFÉRET, SB. Ak. Wien, civ, p. 408, Miocene, Eggenburg.

VIII. CETACEA.

Whaling ; SOUTHWELL (214).

Notes on the species found on the Argentine coast ; MORENO, An. Mus.

La Plata—Zool. ii : development ; GULDBERG & NANSEN (79) : rudimental limbs ; GULDBERG (78), KÜKENTHAL (99) : stomach ; PILLIET & BOULART (73) : evolution ; PAQUIER (167). In the last memoir the author considers that the group may be diphyletic, and that the *Odontoceti* are certainly derived from carnivorous mammals.

BALÆNIDÆ.

COPE, P. Amer. Phil. Soc. xxxiv, p. 139, would derive the group from Cetaceans allied to the *Squalodontidæ*.

†*Siphonocetus*, n. g., COPE, *t. c.* p. 140, for *Balæna prisca*, LEIDY.
S. clarkianus, n. sp., *t. c.* p. 140,

†*Ulias*, n. g. for *U. moratus*, n. sp., p. 141,

†*Tretulias*, n. g. for *T. buccatus*, n. sp., p. 143,

†*Cetotherium megalophysum*, n. sp., p. 146, *crassangulum*, n. sp., p. 148,
Balanoptera sursiplana, n. sp., p. 151, *Mesocetus siphunculus*, n. sp.,
p. 153, Miocene, N. America.

Balæna biscayensis, see BUCHET (33); *B. mystacocetus*, its osteology,
STRUTHERS (216A, B).

PHYSETERIDÆ and DELPHINIDÆ.

Physeter macrocephalus, PRINCE OF MONACO (145), shows that its food consists of very large pelagic Cephalopods.

†*Paracetus mediatlanticus*, n. sp., COPE, P. Amer. Phil. Soc. xxxiv, p. 135, Miocene-Maryland. [The species is identified with the genus *Hypocetus*, LYD., 1893, but, owing to a slip in the description of the latter, COPE concluded that the name *Paracetus* was intended to be used.—RECORDED.]

Choneziphius: identified by COPE, *t. c.* p. 137, with *Ziphius*, which is preoccupied.

Pelycorhamphus, n. g. for *P. pertortus*, n. sp., COPE, *t. c.* p. 137, Miocene, U. S.

Hyperödon planifrons, described and figured; MORENO, *op. cit.* *H. rostratus*, its renal circulation; GERVAIS (70).

Delphinapterus, its anatomy; STRUTHERS (216C).

IX. EFFODIENTIA.—ORYCTEROPODIDÆ.

Plesiorycteropus, n. g., for *P. madagascariensis*, n. sp., FILHOL, Bull. Mus. Paris, 1895, p. 14, Pleistocene, Madagascar.

Trichomanis hoevenii, Hubrecht, = *Arctonyx collaris*; HUBRECHT, P. Zool. Soc. London, 1895, p. 522.

X. EDENTATA.—BRADYPODIDÆ.

Development, RITTER (190).

†MEGATHERIIDÆ.

†*Megatherium sundti*, n. sp., PHILIPPI, Zeitschr. Deutsch. geol. Ges. xlv, p. 91 (1893), Pleistocene, Bolivia.

†*Scelidotherium* (?) *compressum* and *bolivianum*, n. spp., PHILIPPI, *op. cit.* p. 94, *ibid.*

- †*Myiodon revidens*, p. 460, *sulcidens*, p. 462, n. spp., COPE, P. Amer. Phil. Soc. xxiv, Pleistocene, Louisiana.
- †*Octodontotherium*, n. g. for *O. grande*, n. sp., AMEGHINO, Bol. Inst. Geogr. Argent. xv, p. 56, Pyrotherium Beds, Patagonia.
- †*Orophodon*, n. g. for *O. hapaloides*, n. sp., AMEGHINO, t. c. p. 58, *ibid*.

DASYPODIDÆ.

- The Argentine forms monographed, with figures of the head-shield and details of the sculpture; LAHILLE, An. Mus. La Plata, Zool. ii.
- The author divides the group into several families.
- Dasyppus villosus*, its anatomy; FAUVEL (61).
- †*Palæopeltis*, n. g. for *P. inornatus*, n. sp., AMEGHINO, Bol. Inst. Geogr. Argent. xv, p. 39, Pyrotherium Beds, Patagonia.

XI. MARSUPIALIA.

Dentition; MANGOLD (119).

MACROPODIDÆ, †DIPROTODONTIDÆ, and PHALANGERIDÆ.

- Australian fossil *Macropodidæ*, DE VIS, P. Linn. Soc. N. S. Wales, x, pp. 75-133.
- Dendrolagus bennettianus*, visceral anatomy; BEDDARD, P. Zool. Soc. London, 1895, p. 131. *D. dorianus*, skull described by WAITE, Rec. Austral. Mus. ii, p. 85, pls. xviii & xix, and shown to be larger than that of any other species.
- †*Palorchestes parvus*, p. 84, *Sthenurus pales* and *oreas*, p. 94, *Halmaturus vincens*, p. 100, *thor*, p. 102, *dryas*, p. 109, *odin*, p. 111, *indra*, p. 112, *siva*, p. 113, *vishnu*, p. 114, *Macropus magister*, p. 120, *pan*, p. 124, *faunus*, p. 127, n. spp., DE VIS, *op. cit*.
- Zygomaturus*: its mandible contrasted with that of *Nototherium*, and both genera regarded as belonging to the same family as *Diprotodon*; DE VIS (46).
- Pseudochirus dahlîi*, n. spp., COLLETT, Zool. Anz. 1895, p. 464, N. W. Australia; differs from other kinds in dwelling among rocks.

EPANORTHIDÆ, DIDELPHYIDÆ, and NOTORYCTIDÆ.

- Cenolestes*, n. nom., THOMAS, Ann. Nat. Hist. (6) xvi, p. 367, to replace *Hyracodon*, TOMES, 1863, *rec. Leidy*, 1856. *C. obscurus*, n. sp., THOMAS, l. c., Bogota; see also P. Zool. Soc. London, 1895, p. 870.
- Didelyphys*: presence of five tarsalia in the smaller forms; EMERY (59).
- Notoryctes*: its brain; SMITH (210).

INCERTÆ SEDIS and †BORHYÆNIDÆ.

†*Burramys*, n. g., for *B. parvus*, n. sp., BROOM, Abstracts P. Linn. Soc. N. S. Wales, June 26, p. 2, Pleistocene, Australia.

†*Borhyæna antiqua*, n. sp., AMEGHINO, Bol. Inst. Geogr. Argent. xv, p. 55, Pyrotherium Beds, Patagonia.

XII. *MONOTREMATA*.—ECHIDNIDÆ and ORNITHORHYNCHIDÆ.

Superficial muscles and their relation to Mammary and Marsupial organs in the order, RUGE (195); general notes on the group, LAVOCAT (107), Jacobson's organ, BROOM (29A): do. of *Ornithorhynchus*, SMITH (211A); embryo of *Ornithorhynchus*, HILL & MARTIN (84); muzzle of *Ornithorhynchus*, WILSON & MARTIN (252); young, WILSON, *l. c.*; femoral gland, MARTIN & TIDSWELL (121); Mammary organs and marsupium of *Echidna*, KLAATSCH (96).

Proechidna, according to PALMER, *Science* (2) i, p. 518, the synonymy of the genus should stand:—*Zaglossus*, Gill, May 5, 1877. *Acanthoglossus*, Gervais, Nov. 5, 1877 (date of reading, not of publication). *Proechidna*, Gervais, Nov. 30, 1877 (date of prefatory footnote). *Bruynia*, Dubois, —, 1882. The evidence seems to show that *Zaglossus* was published as early as May, 1877, and antedates *Acanthoglossus* by six, and *Proechidna* by nearly seven months.

XIII. *MULTITUBERCULATA*.

SEELEY, *Phil. Trans. R. Soc.* clxxxv, p. 1019, doubts the Mammalian affinities of *Tritylodon* and certain other Ethiopian Mesozoic forms.

III. AVES.

BY

R. BOWDLER SHARPE, LL.D., &C.

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ANATOMY AND MISCELLANEOUS.

ANATOMY. See Hector, Lucas, Thébault.

OSTEOLOGY. See Mitchell, Mivart, Parker, Sharpe, C. F., Shufeldt.

OOLOGY. See Baker, Kuschel, Meyer, North, Poynting.

PTERYLOGRAPHY. See Pycraft, Sányál.

FOSSIL BIRDS. See Ameghino, Andrews, Hill, Hurst, White.

MIGRATION OF BIRDS. Report of the Committee, consisting of Professor A. Newton (Chairman), Mr. John Cordeaux (Secretary), Mr. J. A. Harvie-Brown, Mr. Wm. Eagle Clarke, Mr. R. M. Barrington, and the Rev. E. Ponsonby Knubley, appointed to make a digest of the observations on the Migration of Birds at Lighthouses and Light-vessels. Rep. Brit. Ass. 1895, p. 473.

III. SYSTEMATIC.

Subclass SAURURÆ.

Order ARCHÆOPTERYGES.

Archæopteryx: claws; HEADLEY, Nat. Sci. vi, p. 72. Structure and habits; HURST, *t. c.* pp. 112-122, pl. i; pp. 180-186, pl. iii; pp. 244-248.

Subclass RATITÆ.

Order RHEIFORMES.

Ratite: Catalogue; T. SALVADORI, Cat. B. Brit. Mus. xxvii, pp. 570-612.

Order STRUTHIONIFORMES.

Ostriches and Ostrich-hunting in S. Africa; NOLTE (249).

Order ÆPYORNITHIFORMES.

Æpyornis, notes on the osteology; P. C. MITCHELL, P. Zool. Soc. London, 1895, p. 1. On some remains; ANDREWS, Nov. Zool. ii, pp. 23-25.

Order DINORNITHIFORMES.

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Order APTERYGIFORMES.

Apteryx haasti, notes on; W. ROTHSCHILD, Bull. B. O. C. iii, p. xxxvi.

Subclass CARINATÆ.

Order TINAMIFORMES.

Suborder TINAMI.

Crypturi, catalogue of; T. SALVADORI, Cat. B. Brit. Mus. xxvii, pp. 494-569, pls. vi-xix.

Pterylography of *Tinamiformes*; PYCRAFT (287).

Tinamus fuscipennis, n. sp., Central America; T. SALVADORI, Cat. B. Brit. Mus. xxvii, p. 500. *T. solitarius*, figured; *id. t. c.* pl. vii. *T. latifrons*, n. sp., W. Ecuador; *id. t. c.* p. 506. *T. castaneiceps*, n. sp., Panama; *id. t. c.* p. 507, pl. vi.

Nothocercus nigricapillus, figured; *id. t. c.* pl. viii. *N. intercedens*, n. sp., Colombia; *id. t. c.* p. 513.

- Crypturus griseiformis*, n. sp., Amazonia; *id. t. c.* p. 521. *C. castaneus*, figured; *id. t. c.* pl. ix. *C. scolopax*, figured; *id. t. c.* pl. xii. *C. simplex*, n. sp., British Guiana; *id. t. c.* p. 531. *C. balstoni*, figured; *id. t. c.* pl. xiii. *C. erythropus*, figured; *id. t. c.* pl. x. *C. salvini*, n. sp., Ecuador; *id. t. c.* p. 537. *C. bartletti*, figured; *id. t. c.* pl. xi. *C. dissimilis*, n. sp., British Guiana; *id. t. c.* p. 541. *C. columbianus*, n. sp., Colombia; *id. t. c.* p. 545. *C. mexicanus*, n. sp., N.E. Mexico; *id. t. c.* p. 545. *C. occidentalis*, n. sp., N.W. Mexico; *id. t. c.* p. 546.
- Rhynchotus maculicollis*, figured; *id. t. c.* pl. xiv.
- Nothoprocta coquimbica*, n. sp., Chili; *id. t. c.* p. 554, pl. xv. *N. pentlandi*, figured; *id. t. c.* pl. xvi. *N. ornata*, figured; *id. t. c.* pl. xvii.
- Nothura nigroguttata*, n. sp., Argentina; *id. t. c.* p. 560. *N. boliviana*, n. sp., Bolivia; *id. t. c.* p. 561. *N. marmorata*, figured; *id. t. c.* pl. xviii. *N. darwini*, figured; *id. t. c.* pl. xix: ♂ smaller than ♀; P. L. SCLATER, Bull. B. O. C. iv, p. xix.
- Rhynchotus rufescens*, its breeding habits in captivity; F. E. BLAAUW, Bull. B. O. C. iv, pp. xlii & xliii.

Order GALLIFORMES.

Suborder PHASIANI.

Family TETRAONIDÆ.

See OGILVIE-GRANT, W. R. (258).

Lagopus scoticus, migration in winter; J. E. HARTING, Zoologist, 1895, pp. 69, 108 & 109.

Tympanuchus americanus, figured; W. BREWSTER, Auk, xii, pl. ii, pp. 99 & 100.

Family PHASIANIDÆ.

Caccabis spatzi, n. sp., Tunis; A. REICHENOW, J. Ornith. 1895, p. 110.

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Rhizothera dulitensis, n. sp., Mt. Dulit, Borneo; *id. t. c.* p. xxvii.

Galloperdia spadiceus, number of spurs; C. F. SHARPE, J. Bombay Soc. ix, p. 487.

Arboricola distinct from *Tropicoperdia*; W. R. OGILVIE-GRANT, Bull. B. O. C. iv, p. xxiii.

Callipepla gambelli deserticola, n. subsp., Colorado Desert, California; F. STEPHENS, Auk, xii, p. 371.

Lophortyx leucoprosopon, n. sp., hab.?, A. REICHENOW, Ornith. Monber. iii, pp. 10 & 11.

Family TURNICIDÆ.

Turnix leucogaster, n. sp., Central Australia; A. J. NORTH, Ibis, 1895, p. 342.

Order PTEROCLETES.

Pteroclorurus senegalus, figured ; A. KOENIG, J. Ornith. 1895, tab. xii.

Order COLUMBIFORMES.

Ptilopus marchi, notes on ; W. R. OGILVIE-GRANT, Ibis, 1895, pp. 468 & 469.

P. lewisii vicinus, n. subsp., Fergusson I.; E. HARTERT, Nov. Zool. ii, pp. 62 & 63.

Columba arquatrix, from the Cameroons, notes on ; Y. SJÖSTEDT, Ornith. Monber. iii, pp. 156-158. *C. palumbus*, nesting on the ground ;

H. F. WITHERBY, Zoologist, 1895, p. 232. *C. livia*, figured ; LILFORD, Col. Fig. Brit. B., pt. xxx. *C. œnops*, n. sp., Peru ; O. SALVIN, Nov. Zool. ii, p. 20. *C. tucumana*, n. sp., San Pablo, Tucuman ; T. SALVADORI, Boll. Mus. Torino, x, No. 208, pp. 22 & 23.

Chalcophaps stephanie mortoni, n. subsp., Solomon Is. ; W. ROTHSCHILD, Nov. Zool. ii, p. 64.

Leptoptila decolor, n. sp., Peru ; O. SALVIN, Nov. Zool. ii, p. 21.

Goura cinerea, n. sp., Arfak Mts., N.W. New Guinea ; E. HARTERT, Nov. Zool. ii, pp. 67 & 68. *G. coronata*, variations ; *id. ibid.*

Order OPISTHOCOMIFORMES.

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Order RALLIFORMES.

Rallus aquaticus, nesting near Glasgow ; R. H. READ, Ann. Scott. Nat. Hist. iv, p. 56.

Rallina : remarks on the genus ; H. SEEBOHM, Ibis, 1895, p. 212. *R. formosana*, n. sp., Formosa ; *id. t. c.* pp. 211 & 212.

Hypotenidia owstoni, n. sp., Marianne Is. ; W. ROTHSCHILD, Nov. Zool. ii, p. 481.

Porzana cinereiceps, a contribution to the life-history, with some critical notes on its allies ; C. W. RICHMOND, Auk, xii, pp. 19-23.

Fulica atra, figured ; LILFORD, Col. Fig. Br. Birds, pt. xxxi.

Podica camerunensis, ♂ described and figured ; Y. SJÖSTEDT, Svenska Ak. Handl. xxvii, No. 1, p. 29, Taf. i.

Order COLYMBIFORMES.

Eudytes arcticus, breeding in West Prussia ; A. NEHRING, Ornith. Monber. iii, pp. 184-187.

Order SPHENISCIFORMES.

- Eudyptula minor* and *E. undina*, nesting on Albatross I., Bass's Straits ; D. LE SOUEF, Ibis, 1895, pp. 419 & 420.
Palcospheniscus robustus, n. sp., Miocene ? of Patagonia ; F. AMEGHINO, Bol. Inst. Geogr. Argent. xv, pp. 90 & 91, fig. 36.

Family CLADORNIDÆ.

- The characters of this new family are given by F. AMEGHINO, Bol. Inst. Geogr. Argent. xv, p. 85.
Cladornis, n. g. [fossil], type *C. pachypus*, n. sp., Miocene ? of Patagonia ; *id. t. c.* pp. 86-88, fig. 35.

Order PROCELLARIIFORMES.

Family PROCELLARIIDÆ.

- Petrels obtained at sea, notes on ; C. H. TOWNSEND, Bull. Mus. Harvard, xxvii, pp. 125 & 126.
Oceanodroma cryptoleucura in the Salvage Is. ; W. R. OGILVIE-GRANT, Bull. B. O. C. iv, pp. xxv & xli. *O. socorroensis*, off San Diego, California ; A. W. ANTHONY, Auk, xii, p. 387.
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E. neglecta, notes on ; W. L. BULLER, Tr. N. Zealand Inst. xxvii, pp. 132-134. *E. fisheri*, described and figured ; R. RIDGWAY, Auk, xii, pp. 319-322, pl. iv.
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Family DIOMEDEIDÆ.

- Diomedea cauta*, nesting on Albatross I., Bass's Straits ; D. LE SOUEF, Ibis, 1895, pp. 413-418. *D. melanophrys*, in the Færoes ; K. ANDERSEN, Vid. Medd. 1894, pp. 241-264.

Order ALCIFORMES.

- Alca impennis*, eggs ; E. BIDWELL, Bull. B. O. C. iv, pp. xxxii & xxxix.
Uria grylle, in Merionethshire ; J. H. CATON HAIGH, Zoologist, 1895, p. 22. *U. brunnichii*, on the Yorkshire coast ; J. E. HARTING, Zoologist, 1895, p. 70 : in Cambridgeshire ; LORD LILFORD, *t. c.* p. 109.

- Synthliborhamphus antiquus*, notes on; C. LITTLEJOHN and C. BENDIRE, *Auk*, xii, pp. 270-278.
Mergulus alle, in Scotland; W. E. CLARKE, *Ann. Scott. Nat. Hist.* iv, pp. 97-108, pl. iii (map).

Order LARIFORMES.

Family LARIDÆ.

- The Terns of Muskeget I., Massachusetts; G. H. MACKAY, *Auk*, xii, pp. 32-48, 178.
Sterna vittata, from the Bounty Is.; W. ROTHSCHILD, *Bull. B. O. C.* iv, p. xxxvii.
Micranous, n. g., type *M. tenuirostris* (Temm.); H. SAUNDERS, *t. c.* p. xix.
Rhynchops intercedens, n. sp., Paraguay, S.E. Brazil; H. SAUNDERS, *t. c.* p. xxv.
Larus melanocephalus, figured; LILFORD, *Col. Fig. Br. Birds*, pt. xxxi.
Pagophila eburnea, in Iceland; H. H. SLATER, *Zoologist*, 1895, p. 24.

Family STERCORARIIDÆ.

- Catarhactes pomatorhinus*, near Carlisle in mid-winter; H. A. MACPHERSON, *Zoologist*, 1895, p. 22.
Stercorarius pomatorhinus, its distribution in summer; H. W. FEILDEN, *t. c.* pp. 152 & 153; H. H. SLATER, *t. c.* pp. 189 & 190.
Lestris richardsoni, figured; LILFORD, *Col. Fig. Br. Birds*, pt. xxxi.

Order CHARADRIIFORMES.

Suborder CHARADRII.

Family CHARADRIIDÆ.

- Ælicnemus scolopax*, figured; LILFORD, *Col. Fig. Br. Birds*, pt. xxxi.
Cursorius gallicus, eggs figured; F. POYNTING, *Eggs. Brit. B.* pt. ii. In Belgium; E. BENEDEN, *Bull. Acad. Sci. Belg.* (3) xxix, pp. 346-352.
Streptilas interpres, eggs figured; F. POYNTING, *Eggs. Brit. B.* pt. ii.
Hematopus ostralegus, eggs figured; *id. t. c.* pt. i.
Vanellus vulgaris, eggs figured; *id. t. c.* pt. ii.
Charadrius pluvialis, eggs figured; *id. t. c.* pt. i. *C. dominicus*, eggs figured; *id. t. c.* pt. i. *C. fulvus*, eggs figured; *id. t. c.* pt. ii.
Eudromius morinellus, eggs figured; *id. t. c.* pt. i.
Ægialitis thoracica, n. sp., E. coast of Madagascar; C. W. RICHMOND, *P. Soc. Washington*, x, pp. 53 & 54. *Æ. cantiana* and *Æ. curonica*,

figured; LILFORD, Col. Fig. Br. Birds, pt. xxx. The latter supposed to be resident in Luzon; W. R. OGILVIE-GRANT, Ibis, 1895, p. 472. *Himantopus candidus*, eggs figured; F. POYNTING, Eggs Brit. B. pt. i. *Recurvirostra avocetta*, eggs figured; *id. t. c.* pt. i.

Family SCOLOPACIDÆ.

Numenius phaeopus, eggs figured; F. POYNTING, Eggs Brit. B. pt. ii. *Limosa belgica*, eggs figured; *id. t. c.* In Orkney in September; L. DUNBAR, Ann. Scott. Nat. Hist. iv, p. 56. *Macrorhamphus griseus*, eggs figured; F. POYNTING, Eggs Brit. B. pt. ii. *Totanus ochropus*, in Dumbartonshire; J. RIPLEY KER, Ann. Scott. Nat. Hist. iv, pp. 56 & 57. *T. ochropus* and *T. fuscus*, eggs figured; F. POYNTING, Eggs Brit. B. pt. i. *T. macularius* and *T. calidris*, eggs figured; *id. op. cit.* pt. ii. *T. hypoleucus*, figured; LILFORD, Col. Fig. Br. Birds, pt. xxxi. *Pseudototanus guttifer*, from the R. Amoor; H. SEEBOHM, Bull. B. O. C. iv, p. xxv. *Machetes pugnax*, in Sussex in February; J. E. HARTING, Zoologist, 1895, pp. 150 & 151. *Bartramia longicauda*, eggs figured; F. POYNTING, Eggs Brit. B. pt. i. *Tryngites rufescens*, eggs figured; *id. t. c.* pt. i. *Calidus arenaria*, eggs figured; *id. t. c.* pt. ii. In Australia; A. J. CAMPBELL, P. Soc. Victoria (2) vii, p. 201. *Eurynorhynchus pygmaeus*, from the Amoor river; H. SEEBOHM, Bull. B. O. C. iv, p. xxv. *Tringa temmincki*, figured; LILFORD, Col. Fig. Br. Birds, pt. xxxi. *T. maculata* and *T. striata*, eggs figured; F. POYNTING, Eggs Brit. B. pt. i: *T. alpina*, eggs figured: *id. op. cit.* pt. ii. *Pelidna alpina*, nesting in Merionethshire; H. S. DAVENPORT, Zoologist, 1895, p. 275. *Limicola platyrhyncha*, eggs figured; F. POYNTING, Eggs Brit. B. pt. ii. *Gallinago caelestis*, drumming in January; J. STARES, Zoologist, 1895, p. 67: figured; LILFORD, Col. Fig. Br. Birds, pt. xxxi.: eggs figured; F. POYNTING, Eggs Brit. B. pt. ii. *G. caelestis*, var. *sabini*, notes on; G. E. H. BARRETT-HAMILTON, Irish Natural. 1895, pp. 1-8. *Scolopax gallinula*, figured; LILFORD, Col. Fig. Br. Birds, pt. xxx. *S. rusticola*, eggs figured; F. POYNTING, Eggs Brit. B. pt. i. *Phalaropus fulicarius*, figured; LILFORD, Col. Fig. Br. Birds, pt. xxx.

Suborder OTIDES.

Houbara fuerteventura, notes on; W. ROTHSCHILD & E. HARTERT, Nov. Zool. ii, p. 54.

Order GRUIFORMES.

Grus sharpei, n. sp., Burma; W. T. BLANFORD, Bull. B. O. C. v, p. vi.

Order STEREORNITHES.

Family PHORORHACOSIDÆ.

- Phororhacos inflatus*, described and figured ; F. AMEGHINO, Bol. Inst. Geogr. Argent. xv, pp. 10-39, figg. 1-9.
- Phororhacos modicus*, n. sp. [fossil], Miocene ? of Patagonia ; *id. t. c.* pp. 50 & 51, fig. 15.
- P. longissimus*, described and figured ; *id. t. c.* pp. 39-47, figg. 10-14.
- Pelecyornis tabulatus*, n. sp. [fossil], Miocene ? of Patagonia ; *id. t. c.* p. 62, fig. 22.
- Brontornis platyonyx*, n. sp. [fossil], Miocene ? of Patagonia ; *id. t. c.* pp. 69-72, fig. 25.
- Lionis*, n. g. [fossil], type *L. floweri*, n. sp., Miocene ? of Patagonia ; *id. t. c.* pp. 72-76, figg. 26 & 27.
- Callornis*, n. g. [fossil], type *C. giganteus*, n. sp., Miocene ? of Patagonia ; *id. t. c.* pp. 76-78, figg. 28 & 29.
- Physornis*, n. g. [fossil], type *P. fortis*, n. sp., Miocene ? of Patagonia ; *id. t. c.* pp. 78 & 79.

Order ARDEIFORMES.

Suborder ARDEÆ.

- Ardea virescens anthonyi*, n. subsp., Lower California ; E. A. MEARNS, Auk, xii, pp. 257-259.
- Melanophox vinaceigula*, n. sp., Transvaal ; R. B. SHARPE, Bull. B. O. C. v, p. xiii. *Notophox*, n. g., type *N. novæ-hollandiæ* ; *id. t. c.* p. xiii. *Tigriornis*, n. g., type *T. leucolopha* ; *id. t. c.* p. xiv. *Heterocnus*, n. g., type *H. cabanisi* ; *id. t. c.* p. xiv. *Tigrisoma bahiæ*, n. sp., Bahia ; *id. t. c.* p. xiv.
- Botaurus stellaris*, in Berkshire in January ; A. ROBINSON, Zoologist, 1895, p. 67.

Suborder CICONIÆ.

- Pseudotantalus ibis*, on the Proventricular Crypts of ; P. CHALMERS MITCHELL, P. Zool. Soc. London, 1895, pp. 271-273, pl. xvii.

Order ANSERIFORMES.

Catalogue of ; SALVADORI, Cat. B. Brit. Mus. xxvii, pp. 1-493, pls. i-v.

Suborder PALAMEDEÆ.

- Chauna chavaria* : its anatomy ; P. CHALMERS MITCHELL, P. Zool. Soc. London, 1895, pp. 350-358.

Suborder PHÆNICOPTERI.

- Phœnicopterus roseus*, food and habits ; W. EAGLE CLARKE, Ibis, 1895, pp. 198-201.

Subfamily ANSERINÆ.

- Asarcornis*, n. g., type *A. scutulata* (S. Müll.) ; T. SALVADORI, Cat. B. Brit. Mus. xxviii, p. 60. *Pteronetta*, n. g., type *P. hartlaubi* (Cass.) ; *id. t. c.* p. 63.
- Anser albifrons*, in St. Kilda ; H. A. MACPHERSON, Zoologist, 1895, p. 348. *A. neglectus*, n. sp., ? locality ; M. MENZBIER, Bull. B. O. C. v, p. vi.
- Nesochen*, n. g., type *N. sandvicensis* (Vig.) ; T. SALVADORI, Cat. B. Brit. Mus. xxvii, p. 126.
- Elasmonetta*, n. g., type *E. chlorotis* (Gray) ; *id. t. c.* p. 287.
- Dendrocygna guttulata*, figured ; *id. t. c.* pl. i.

Subfamily ANATINÆ.

- Anas boschas* × *Querquedula crecca* ; LILFORD, P. Zool. Soc. London, 1895, pp. 2 & 3. *A. acuta*, probably nesting in the Delta of the Rhone ; W. EAGLE CLARKE, Ibis, 1895, p. 202.
- Mareca americana*, in England ; LILFORD, P. Zool. Soc. London, 1895, p. 273. *M. penelope*, breeding in Selkirkshire ; P. ADAIR, Ann. Scott. Nat. Hist. iv, pp. 231-233.
- Nettion albigulare* (fig. 1), and *N. gibberifrons* (fig. 2), figured ; T. SALVADORI, Cat. B. Brit. Mus. xxvii, pl. ii.
- Dafila eatoni*, figured ; *id. t. c.* pl. iii.
- Nesonetta auklandica*, notes on ; W. L. BULLER, Tr. N. Zealand Inst. xxvii, pp. 128 & 129.
- Spatula clypeata*, on Big Makin I., Gilbert group ; A. J. NORTH, P. Linn. Soc. N.S. Wales (2), ix, p. 584. *S. clypeata*, in Borneo ; R. B. SHARPE, Bull. B. O. C. iv, p. xxiii.
- Heteronetta*, n. g., type *H. atricapilla* (V.) ; SALVADORI, Cat. B. Brit. Mus. xxvii, p. 325.
- Nyroca innotata*, figured ; *id. t. c.* p. 350, pl. iv.
- Fuligula rufina*, nesting in the Delta of the Rhone ; W. EAGLE CLARKE, Ibis, 1895, pp. 202 & 203.
- Clangula albeola*, figured ; LILFORD, Col. Fig. Br. Birds, pt. xxx.
- Harelda glacialis*, figured ; *id. t. c.* : nesting in Iceland ; H. J. & C. E. PEARSON, Ibis, 1895, pp. 244 & 245.
- Cosmonetta histrionica*, figured ; LILFORD, Col. Fig. Br. Birds, pt. xxx : nesting in Iceland ; H. J. & C. E. PEARSON, Ibis, 1895, pp. 243 & 244.
- Elemia perspicillata*, figured ; LILFORD, Col. Fig. Br. Birds, pt. xxxi.
- Somateria spectabilis*, figured ; *id. t. c.* pt. xxx. *S. stelleri*, figured ; *id. t. c.* pt. xxxi.
- Erismatura aequatorialis*, n. sp., Ecuador ; T. SALVADORI, Cat. B. Brit. Mus. xxvii, p. 450.
- Salvadorina waigiuiensis*, figured ; W. ROTHSCHILD, Nov. Zool. ii, p. 22, pl. iii.
- Merganetta frenata*, n. sp., Chili ; T. SALVADORI, Cat. B. Brit. Mus. xxvii, p. 458, pl. v.

Megrus cucullatus, figured ; H. E. DRESSER, Suppl. Birds Europe, pt. vi, pl. dxcxvi, and LILFORD, Col. Fig. Br. Birds, pt. xxxi. *M. serrator*, breeding regularly in E. Prussia ; A. SZIELASKO, Ornith. Monber. iii, pp. 53-58.

Eoneornis, n. g. [fossil], type *E. australis*, Miocene ? of Patagonia ; F. AMEGHINO, Bol. Inst. Geogr. Argent. xv, p. 95, fig. 39.

Eutelornis, n. g. [fossil], type *E. patagonicus*, n. sp., Miocene ? of Patagonia ; *id. t. c.* pp. 96 & 97, fig. 40.

GENUS INCERTÆ SEDIS.

Loxornis, n. g. [fossil], type *L. clivus*, n. sp., Miocene ? of Patagonia ; F. AMEGHINO, Bol. Inst. Geogr. Argent. xv, pp. 97 & 98, fig. 41.

Order PELECANIFORMES.

Phalacrocorax colensoi and *P. onslowi*, notes on ; W. L. BULLER, Tr. N. Zealand Inst. xxvii, pp. 129-132. *P. rothschildi*, Forbes, = *P. colensoi*, Buller ; W. L. BULLER, Ibis, 1895, pp. 39 & 40.

Leptornis, n. g. [fossil], type *L. hesternus*, n. sp., Miocene ? of Patagonia ; F. AMEGHINO, Bol. Inst. Geogr. Argent. xv, pp. 99 & 100.

Order ACCIPITRIFORMES.

Suborder ACCIPITRES.

Monographia illustrata degli Uccelli di rapina in Italia ; G. MARCORELLI, Mem. Soc. Ital. Sci. Nat. Milano (2) i, pp. 1-215, tav. 1-4.

Further observations on the mode of carriage of the legs in the birds of prey ; E. HARTERT, Ibis, 1895, pp. 133-135.

Hawk-flights in Connecticut ; C. C. TROWBRIDGE, Auk, xii, pp. 259-270.

Hawks and Owls from the standpoint of the farmer ; A. K. FISHER, U. S. Dept. Agric. 1894, pp. 215-232, pls. i & ii.

Flight ; see HARTERT (153), BARRETT-HAMILTON (25), TALSKEY (388), ZIEMER (424).

Family FALCONIDÆ.

Subfamily ACCIPITRINÆ.

Circus cyaneus, in Sussex ; LILFORD, Zoologist, 1895, p. 189.

Astur sparsimfasciatus, n. sp., Zanzibar ; A. REICHENOW, Ornith. Monber. iii, p. 97.

Accipiter badius, figured ; H. E. DRESSER, Suppl. Birds Europe, pt. vi, pl. dxcxiii.

Hypotriorchis ophryophanes, n. sp., Colonia ; T. SALVADORI, Boll. Mus. Torino, x, No. 208, pp. 20 & 21.

Subfamily BUTEONINÆ.

Buteo borealis krideri, nesting in Minnesota ; P. B. PEABODY, Auk, xii, pp. 11-16.

Subfamily AQUILINÆ.

- Gypaetus barbatus*, in Italy ; T. SALVADORI, Boll. Mus. Torino, x, No. 207.
Aquila nœvia, figured ; LILFORD, Col. Fig. Br. Birds, pt. xxxi. *A. heliaca*
 (juv.: Tav. i, fig. 1), *A. nipalensis* (ad.: Tav. i, fig. 2), and *A. pomarina*
 (ad. et juv.: Tav. ii), figured ; G. MARTORELLI, Mem. Soc. Ital. Sci. Nat. Milano (2) i, pp. 75-89. *A. pomarina*, notes on breeding habits ; A. SZIELASKO, Ornith. Monber. iii, pp. 94 & 95.
Eutolmætus fasciatus, in Egypt ; T. PARKIN, Ibis, 1895, pp. 506 & 507.
Spilornis salvadorii, n. sp., Nias I. ; H. VON BERLEPSCH, Nov. Zool. ii, pp. 73 & 74.

Subfamily FALCONINÆ.

- Falco ernesti*, from Dutch New Guinea ; E. HARTERT, Nov. Zool. ii, p. 488: from the New Hebrides ; W. R. OGILVIE-GRANT, Ibis, 1895, p. 439. *F. atriceps*, in Negros ; W. EAGLE CLARKE, *t. c.* pp. 476 & 477 [= *F. ernesti*]. *F. gyrfalco*, figured ; LILFORD, Col. Fig. Br. Birds, pt. xxx. *F. barbarus* (Tav. iii) and *F. feldeggi* (Tav. iv), figured ; G. MARTORELLI, Mem. Soc. Ital. Sci. Nat. Milano (2) i, pp. 158-164. *F. richardsoni*, from Colorado ; P. L. SCLATER, Bull. B. O. C. iv, p. xlii. *F. tinnuculus madeirensis*, notes on ; J. B. LEAL, Ornith. Mumber. iii, pp. 158-160. *F. fasciinucha*, n. sp., Teita, E. Africa ; A. REICHENOW & O. NEUMANN, *t. c.* p. 114.
Thegornis, n. g. [fossil], type *T. musculosus*, n. sp., Miocene ? of Patagonia ; F. AMEGHINO, Bol. Inst. Geogr. Argent. xv, pp. 100-102, fig. 43. *T. debilis*, n. sp., Miocene ? of Patagonia ; *id. t. c.* p. 102, fig. 43 e.

Suborder PANDIONES.

- Pandion haliaetus*, figured ; LILFORD, Col. Fig. Br. Birds, pt. xxxi.

Order STRIGIFORMES.

- Monographia illustrata degli Uccelli di rapina in Italia, Striges ; G. MARTORELLI, Mem. Soc. Ital. Sci. Nat. Milano (2) i, pp. 181-211.

Family BUBONIDÆ.

- Bubo doerriesi*, n. sp., Vladivostock ; H. SEEBOHM, Bull. B. O. C. v, p. iv.
B. ascalaphus, figured ; H. E. DRESSER, Suppl. Birds Europe, pt. vi, pl. dxcii.
Scops whiteheadi, n. sp., Luzon ; W. R. OGILVIE-GRANT, Bull. B. O. C. iv, p. xl. *S. brucei*, figured ; H. E. DRESSER, Suppl. Birds Europe, pt. vi, pl. dxcxi. *S. hambroeki*, a second example ; H. SEEBOHM, Ibis, 1895, p. 213.
Speotyto cunicularia obscura, n. subsp., Lake County, California ; F. STEPHENS, Auk, xii, p. 272.
Nyctala tengmalmi, figured ; LILFORD, Col. Fig. Br. Birds, pt. xxx.

- Glaucidium sjöstedti*, described and figured ; Y. SJÖSTEDT, Svenska Ak. Handl. xxvii, No. 1, p. 42, taf. 2.
- Asio otus*, nesting in India ; B. A. G. SHELLEY, J. Bombay Soc. x, p. 149.
- Strix pratincola*, breeding at Washington, D. C., in winter ; C. BENDIRE, Auk, xii, pp. 180 & 181. *S. perlata*, in Chili ; F. LATASTE, Act. Soc. Chili, iv, pp. 165-176.
- Budiostes*, n. g. [fossil], type *B. patagonicus*, n. sp., Miocene ? of Patagonia ; F. AMEGHINO, Bol. Inst. Geogr. Argent. xv, pp. 102-104, fig. 44.

Order CORACIIFORMES.

Suborder PODARGI.

- Podargus intermedius*, n. sp., D'Entrecasteaux I. ; E. HARTERT, Bull. B. O. C. v, p. x.
- Batrachostomus microrhynchus*, n. sp., N. Luzon ; W. R. OGILVIE-GRANT, op. cit. iv, p. xli. *B. javensis* and *B. affinis*, from Palawan ; A. H. EVERETT, Ibis, 1895, p. 38.

Suborder CORACIÆ.

- Urutelornis*, n. g., type *U. chimara*, n. sp., Madagascar ; W. ROTHSCHILD, Nov. Zool. ii, p. 479.
- Coracias garrulus*, in Aberdeenshire ; W. EVANS, Ann. Scott. Nat. Hist. iv, p. 123.

Suborder HALCYONES.

Family ALCEDINIDÆ.

- Alcedinidæ* ; see SALVIN, O., & GODMAN, F. D. (336).
- Alcedo beavani*, from Ceylon ; J. H. GURNEY, P. Zool. Soc. London, 1895, pp. 339, 687 & 688.
- Alcyone philippensis*, after all, distinct from *A. cyanopectus* ; W. R. OGILVIE-GRANT, Ibis, 1895, pp. 112-114. Identical ; D. C. WORCESTER & F. S. BOURNS, t. c. pp. 404 & 405.
- Dacelo gigas*, semi-albino described ; A. J. NORTH, Rec. Austral. Mus. ii, No. 6.

Suborder BUCEROTES.

- Anthracoceros lemprieri*, Sharpe : this name has precedence over that of *A. marchei*, Oust. ; A. H. EVERETT, Ibis, 1895, p. 30.
- Lophoceros sibbensis*, n. sp., Western Somaliland ; R. B. SHARPE, Bull. B. O. C. iv, p. xxxii. *L. medianus*, n. sp., Somaliland, R. B. SHARPE, P. Zool. Soc. London, 1895, p. 498 ; *L. granti*, n. sp., Aruwihimi River, Congo, E. HARTERT, Nov. Zool. ii, p. 55 : n. spp.

Suborder UPUPÆ.

- Upupa epops*, in Peeblesshire ; W. EVANS, Ann. Scott. Nat. Hist. iv, p. 123.

Suborder MOMOTI.

Momotidæ ; see SALVIN, O., & GODMAN, F. D. (336).

Suborder CAPRIMULGI.

Caprimulgus donaldsoni, Somaliland, R. B. SHARPE, Bull. B. O. C. iv, p. xxix ; *C. rosenbergi*, Colombia, E. HARTERT, *op cit.* v, p. x : n. spp. *Nyctibius jamaicensis*, figured ; W. BREWSTER & F. M. CHAPMAN, Auk, xii, pl. iii : its cry ; A. B. CARR, Trinidad Field Club, ii, p. 137.

Suborder CYPSELI.

Macropterygida : additional characters ; F. A. LUCAS, Auk, xii, pp. 155-157.

Macropteryx : deep flexor tendons ; F. A. LUCAS, Ibis, 1895, p. 300.

M. comata major, n. subsp., Philippine Is. ; E. HARTERT, Nov. Zool. ii, p. 473.

Micropus kenigi, notes on ; E. HARTERT, Ornith. Monber. iii, pp. 63 & 64, and A. REICHENOW, J. Ornith. 1895, p. 110 = *M. galileensis*, Tristr., which is scarcely separable from *M. affinis* ; E. HARTERT, Nov. Zool. ii, pp. 57 & 58.

Collocalia whiteheadi, n. sp., N. Luzon ; W. R. OGILVIE-GRANT, Ibis, 1895, pp. 459-461. *C. fuciphaga* and its allies ; *id. t. c.* pp. 641 & 642.

Suborder TROCHILI.

Deep plantar tendons in the *Trochilidæ* ; F. A. LUCAS, Ibis, 1895, pp. 298 & 299.

Glaucis rojasi, n. sp., Caracas, Venezuela ; A. BOUCARD, Humming Bird, v, p. 364. *G. roraimæ*, n. sp., Roraima, British Guiana ; *id. t. c.* p. 364.

G. colombiana, n. sp., Rio Dagua, Colombia ; *id. t. c.* p. 402.

Heliangelus claudia, n. sp., Colombia ; E. HARTERT, Nov. Zool. ii, p. 484.

Cyanolesbia griseiventris (Tacz.), figured ; O. SALVIN, *t. c.* p. 15, pl. ii, fig. 1.

Urosticte ruficrissa, from Bogotà ; E. HARTERT, *t. c.* p. 69.

Anthocephala berlepschi, from Valencia, U. S. Colombia ; P. L. SCLATER, P. Zool. Soc. London, 1895, p. 521.

Doleromya pallida, n. sp., Margarita I., Venezuela ; C. W. RICHMOND, Auk, xii, pp. 369 & 370.

Amazilia alicia, n. sp., Margarita I., Venezuela ; *id. t. c.* pp. 368 & 369.

Polyerata rosenbergi, n. sp., Rio Dagua, Colombia ; A. BOUCARD, Humming Bird, v, p. 399.

Threnetes hauxwelli, ? n. sp., Pebas, Peru ; *id. t. c.* p. 371.

Eremita whitelyi, n. sp., British Guiana ; *id. t. c.* p. 390.

Oreotrochilus stolzmanni, n. sp., Peru ; O. SALVIN, Nov. Zool. ii, p. 17.

Alcidius, n. g., type *A. estellæ* (D'Orb. & Lafr.) ; A. BOUCARD, Humming Bird, v, p. 345.

- Eriocnemis lugenos*, and *E. squamata*, the differences probably sexual;
 E. HARTERT, *Nov. Zool.* ii, p. 69. *E. derbyi longirostris*, n. subsp.,
 Bogotá; *id. t. c.* pp. 69 & 70.
Selesphorus flammula, adults described; *id. t. c.* pp. 68 & 69.

Order COCCYGES.

Suborder MUSOPHAGI.

- Corytheola cristata*, eggs; A. REICHENOW, *Ornith. Monber.* iii,
 p. 180.
Turacus donaldsoni, n. sp., Western Somaliland; R. B. SHARPE, *Bull.*
B. O. C. iv, p. xxxii: figured; *id. P. Zool. Soc. London*, 1895, pl. xxviii.
T. chalcophus; O. NEUMANN, *J. Ornith.*, 1895, p. 357.

Suborder CUCULI.

- Cuculus canorus*, notes on the supposed breeding of the female; E. REY,
Ornith. Monber. iii, pp. 8-10: observations near Leipzig; *id. J.*
Ornith. 1895, pp. 30-43. *C. hepaticus*, Sparrman, notes on; J. E.
 HARTING, *Zoologist*, 1895, pp. 257-263; F. COBURN, *t. c.* pp. 321-325.
C. aurivillii, ♂ described and figured; Y. SJÖSTEDT, *Svenska*
Ak. Handl. xxvii, No. 1, p. 47, taf. iii. *C. pallidus*, its egg in
 nest of *Grallina picata*; A. J. CAMPBELL, *P. Soc. Victoria* (2) vii,
 p. 201.
Coccyzus americanus, in Dorsetshire; J. E. HARTING, *Zoologist*, 1895,
 pp. 376 & 377.
Hyetornis fieldi, n. sp., Maniel, San Domingo; C. B. CORY, *Auk*, xii,
 p. 278.
Phænicophaes microrhinus, n. sp., Borneo; A. VON BERLEPSCH, *Nov. Zool.*
 ii, pp. 70-72.

Order PSITTACIFORMES.

Family LORIIDÆ.

- The skeleton of *Lorius flavopalliatu*s compared with that of *Psittacus*
erithacus; ST. GEORGE MIVART, *P. Zool. Soc. London*, 1895, pt. i,
 pp. 312-337, pt. ii, pp. 363-399.
Loriculus aurantiifrons meeki, n. subsp., Fergusson I.; E. HARTERT, *Nov.*
Zool. ii, p. 62.
Cyclopsittacus virago, n. sp., Fergusson I.; *id. t. c.* pp. 61 & 62.
Oreopsittacus grandis, n. sp., S.E. New Guinea; W. R. OGILVIE-GRANT,
Bull. B. O. C. v, p. xv.
Psitteuteles diadema, note on; E. OUSTALET, *Bull. Mus. Paris*, 1895,
 pp. 101-103.

Family CACATUIDÆ.

- Calyptorhynchus banksi*, nesting habits ; A. J. NORTH, Victorian Natural. xii, pp. 136 & 137.
Cacatua gymnopsis, note on the habitat in Australia ; *id.* P. Linn. Soc. N. S. Wales (2), ix, pp. 37 & 38.

Family PSITTACIDÆ.

- Spathopterus*, n. g., type *S. alexandræ* (Gould) ; A. J. NORTH, Ibis, 1895, pp. 339 & 340.
Prioniturus montanus, n. sp., N. Luzon, W. R. OGILVIE-GRANT, Bull. B. O. C. iv, p. xli. *P. discurus*, notes on ; *id.* Ibis, 1895, p. 263.
Tanygnathus talautensis, n. sp., Talaut I. ; A. B. MEYER & L. W. WIGLESWORTH, Abh. Mus. Dresden, 1894-95, No. 9, p. 2.
Psittacula xanthops, n. sp., Peru ; O. SALVIN, Nov. Zool. ii, p. 19, pl. ii, fig. 2.
Palawornis intermedia, n. sp., India ; W. ROTHSCHILD, *t. c.* p. 492.
Pezoporus fairchildii, notes on ; J. HECTOR, Tr. N. Zealand Inst. xxvii, p. 285.
Agapornis zenkeri, n. sp., Cameroons ; A. REICHENOW, Ornith. Monber. iii, p. 112.

Order SCANSORES.

Suborder CAPITONES.

- Tricholamæ gabonense*, n. sp., Gaboon ; G. E. SHELLEY, Bull. B. O. C. v, p. iii : *T. ansorgii*, n. sp., Uganda ; *id. t. c.* p. iii.
Stactolamæ woodwardi, n. sp., Zululand ; *id. t. c.* p. iii.

Order PICIFORMES.

Suborder PICI.

- The tongues of Woodpeckers ; F. A. LUCAS, U. S. Dept. Agric. No. 7, pp. 35-44, pls. i-iii.
 Preliminary report on the food of Woodpeckers ; F. E. L. BEAL, U. S. Dept. Agric. Bull. No. 7, pp. 1-34.
Colaptes chrysoides brunnescens, n. subsp., San Fernando, Lower California ; A. W. ANTHONY, Auk, xii, p. 347.
Gecinus flavirostris, figured ; H. E. DRESSER, Suppl. Birds Europe, pt. vi, pl. dcxc.
Campothera teniolamæ, n. sp., Mau, E. C. Africa ; A. REICHENOW & O. NEUMANN, Ornith. Monber. iii, pp. 73 & 74. *C. tullbergi*, ♀ described and figured ; Y. SJÖSTEDT, Svenska Ak. Handl. xxvii, No. 1, p. 55, taf. iv, fig. i.
Chloronerys collopterus (pl. lix, fig. 1), *C. simplex* (pl. lix, fig. 2), *C. godmani* (pl. lixa, fig. 1), and *C. auricularis* (pl. lixa, fig. 2); figured ; O. SALVIN & F. D. GODMAN, Biol. Centr.-Amer., Aves, ii, pp. 401-453, *Melanerpes chrysauchen*, figured ; *id. t. c.* pp. 414 & 415, pl. lx.

- Picus leucopterus*, figured; H. E. DRESSER, *Suppl. Birds Europe*, pt. vi, pl. dclxxxvii. *P. polzami*, figured; *id. t. c.* pl. dclxxxviii. *P. minor*, figured; *id. t. c.* pl. dclxxxix, fig. 1. *P. danfordi*, figured; *id. t. c.* pl. dclxxxix, fig. 2. *P. mauritanus*, figured; *id. t. c.* pl. dclxxxix, fig. 3. *P. numidicus*, figured; *id. t. c.* pl. dclxxxix, fig. 4.
- Dendropicus reichenowi*, ♂ described and figured; Y. SJÖSTEDT, *Svenska Ak. Handl.* xvii, No. 1, p. 57, taf. iv, fig. 2.
- Campophilus leucopogon* (Valenc.), young described; T. SALVADORI, *Boll. Mus. Torino*, x, No. 208, p. 14.
- Thriponax hargilli*, notes on; W. R. EAGLE CLARKE, *Ibis*, 1895, pp. 474-476.

Order PASSERIFORMES.

Section A. OSCINES.

Family CORVIDÆ.

- Corone corone*, in Islay; R. S. SKIRVING, *Ann. Scott. Nat. Hist.* iv, pp. 53 & 54.
- Corvus edithæ*, n. sp., Somaliland; E. LORT PHILLIPS, *Bull. B. O. C.* iv, p. xxxvi. *C. frugilegus*, var.; TEGETMEIER, *P. Zool. Soc. London*, 1895, p. 401. *C. cornix*, position of the feet in flight; A. VON HOMEYER, *Ornith. Monber.* iii, pp. 71 & 72. *C. cornix* and *C. corone*, notes on distribution; B. ALTUM, *t. c.* pp. 137 & 138. *C. americanus*, life-history; W. B. BARROWS & E. A. SCHWARZ, *Bull. U. S. Dep. Agric.* No. 6, pp. 1-78, cum tab.
- Garrulus hyrcanus*, figured; H. E. DRESSER, *Suppl. Birds Europe*, pt. vi, pl. dclxxxvi. *G. minor*, notes on; E. HARTERT, *Ornith. Monber.* iii, pp. 169-172.
- Dendrocitta frontalis*, its nest; E. C. STUART BAKER, *Ibis*, 1895, pp. 41 & 42.
- Podoces panderi*, figured; H. E. DRESSER, *Suppl. Birds Europe*, pt. vi, pl. dclxxxv.

Family PARADISEIDÆ.

See ROTHSCHILD, W., *Bull. B. O. C.* iv, pp. xxi & xlii.

Monograph of the *Paradiseidæ*, or Birds of Paradise, and *Ptilonorhynchidæ* [q. v.], or Bower Birds. Pts. IV & V. By R. B. SHARPE. London: 1895, folio. The following species are figured: *Drepanornis bruijnii*, *D. cervinicauda*, *Uranornis rubra*, *Diphyllodes chrysoptera*, *Lophorhina superba*, *Phonygama keraudreni*, *Cnemophilus macgregorii*, pt. iv. *Drepanornis albertisi*, *Semioptera wallacii*, *Trichoparadisea gulielmi*, *Diphyllodes hunsteini*, *Lophorhina minor*, *Parotia sexpennis*, *Lycocorax morotensis*, pt. v.

- Parotia carolæ*, ♂ described and figured; A. B. MEYER, *Abh. Mus. Dresden*, 1894-95, No. 5, pp. 8-11, pl. ii.
- Drepanornis albertisi*, ♂ ♀ figured; G. S. MEAD, *Amer. Natural.* xxix, pl. vii.

- Astrupia splendidissima*, n. sp., ? Charles Louis Mountains, New Guinea; W. ROTHSCHILD, Nov. Zool. ii, pp. 59 & 60.
- Paradisea apoda*, its moulting and habits in captivity; R. B. SÁNYÁL, P. Zool. Soc. London, 1895, pp. 541 & 542.
- Pteridophora alberti*, ♂ described and figured; A. B. MEYER, Abh. Mus. Dresden, 1894-95, No. 5, pp. 4-7, pl. i: remarks on; E. OUSTALET, Bull. Mus. Paris, 1895, pp. 47-50.
- Cnemophilus mariae* is a *Loria*; P. L. SCLATER, Ibis, 1895, pp. 343 & 344, pl. viii.

Family PTILONORHYNCHIDÆ.

- Monograph of the *Paradiseidæ*, or Birds of Paradise, and *Ptilonorhynchidæ*, or Bower Birds. Pts. iv & v. By R. B. SHARPE. London: 1895, folio. The following species of the latter are figured: *Ælurædus arfakianus*, *Æ. melanotis*, *Æ. buccooides*, pt. iv. *Sericulus melinus*, *Ælurædus maculosus*, *Æ. geislerorum*, pt. v.
- Chlamydodera recondita*, eggs figured; A. B. MEYER, Abh. Mus. Dresden, 1894-95, No. 10, pp. 1 & 2, pl. i, figg. 1-4. *C. orientalis*, notes on; A. J. NORTH, Victorian Natural. xii. pp. 104-107 & 139.
- Ælurædus jobiensis*, n. sp., Jobi; W. ROTHSCHILD, Bull. B. O. C. iv, pp. xxvi & xxvii.
- Amblyornis flavifrons*, n. sp., Dutch New Guinea; W. ROTHSCHILD, Nov. Zool. ii, p. 480. *A. inornata*, ♂ ad., described; A. B. MEYER, Bull. B. O. C. iv, p. xviii.
- Xanthochlamys* [Zool. Rec. xxxi, *Aves*, p. 40] = *Amblyornis*; *id. t. c.* p. xviii.

Family STURNIDÆ.

- Sturnus vulgaris*: increase in distribution in Scotland; J. A. HARVIE-BROWN, Ann. Scott. Nat. Hist. iv, pp. 2-22, pl., map: in Solway; R. SERVICE, *t. c.* pp. 92-96. *S. vulgaris intermedius*, n. subsp., Central Europe; J. F. PRAZAK, Ornith. Monber. iii, p. 144.
- Calornis maxima*, n. sp., Bugotu I.; H. B. TRISTRAM, Ibis, 1895, pp. 375 & 376. *C. dichroa*, nom. emend. pro *C. minor*, Sharpe, *nec* Ramsay; *id. t. c.* p. 376.

Family EULABETIDÆ.

- Onycognathus intermedius*, n. sp., Aruwimi River, Upper Congo; E. HARTERT, Nov. Zool. ii, p. 57: = *O. hartlaubi*; A. REICHENOW, Ornith. Monber. iii, pp. 62 & 63.
- Sarcops lowi*, distinct from *S. calvus*; W. R. OGILVIE-GRANT, Ibis, 1895, pp. 258-260.

Family ORIOLIDÆ.

- Oriolus consobrinus*, notes on; H. VON BERLEPSCH, Nov. Zool. ii, pp. 74 & 75.

Family ICTERIDÆ.

The Cowbirds ; C. BENDIRE, Rep. U. S. Mus. 1895, pp. 587-624, pls. i-iii.
Quiscalus quiscula, its food ; F. E. L. BEAL, U. S. Dep. Agric. 1894,
 pp. 233-248.

Family PLOCEIDÆ.

- Ploceipasser donaldsoni*, n. sp., E. Africa ; R. B. SHARPE, Bull. B. O. C.
 v, p. xiv.
Nigrita kretschmeri, n. sp., Kilimandjaro ; A. REICHENOW, Ornith.
 Monber. iii, p. 187.
Munia fuscans, from the Natuna Is. ; E. HARTERT, Nov. Zool. ii, p. 469.
Lagonosticta minima and *L. carulescens*, figured ; A. G. BUTLER, Foreign
 Finches in Captivity, pt. iv.
Stictospiza formosa, figured ; *id. t. c.* pt. iv.
Amadina fasciata, figured ; *id. t. c.* pt. vi.
Steganopleura guttata, figured ; *id. t. c.* pt. vi.
Zonæginthus bellus, figured ; *id. t. c.* pt. v.
Emblema picta, figured ; *id. t. c.* pt. v.
Pytelia afra and *P. phanicoptera*, figured ; *id. t. c.* pt. v.
Teniopygia castanotis, figured ; *id. t. c.* pt. vi.
Sporæginthus melpodus, *S. subflavus*, and *S. amandava*, figured ; *id. t. c.* pt. iv.
Ægitha temporalis, figured ; *id. t. c.* pt. v.
Poephila mirabilis, and var. *P. gouldice* and *P. cincta*, figured ; *id. t. c.* pt. vi.
Erythrura psittacea and *E. prasina*, figured ; *id. t. c.* pt. vi.
Neochmia phaeton, figured ; *id. t. c.* pt. v.
Estrilda phaenicotis, *E. cinerea*, and *E. astrild*, figured ; *id. t. c.* pt. v.
Granatina granatina, figured ; *id. t. c.* pt. iv.
Hyphantospiza kilimensis, n. sp., Kilimandjaro ; A. REICHENOW & O.
 NEUMANN, Ornith. Monber. iii, p. 74.
Malimbus rachelia, ♀ described and figured ; Y. SJÖSTEDT, Svenska Ak.
 Handl. xxvii, No. 1, p. 83, taf. vii.
Symplectes auricomus, n. sp., Cameroons ; Y. SJÖSTEDT, Svenska Ak.
 Handl. xxvii, No. 1, pp. 86 & 87, taf. viii. *S. croconotus*, ♂ described
 and figured ; *id. t. c.* p. 88, taf. ix.

Family TANAGRIDÆ.

- Calliste*, *Aglaiia*, and *Calospiza* : the priority of the names and their use
 in Ornithology ; W. STONE, P. Acad. Phil. 1895, pp. 251 & 252.
Rhamphocelus dunstalli, n. sp., ? Central America ; W. ROTHSCHILD,
 Nov. Zool. ii, p. 481.
Buarremon baroni and *B. rufigenis*, n. spp., Peru ; O. SALVIN, *t. c.* p. 5,
 pl. i, figg. 1 & 2.

Family DREPANIDÆ.

- Loxops wolstenholmei*, Rothsch., from Oahu, = *L. rufa* (Bloch.) ; W.
 ROTHSCHILD, Nov. Zool. ii, p. 54.

Family FRINGILLIDÆ.

Subfamily COCCOTHAUSTINÆ.

- Coccothraustes carneipes*, figured; H. E. DRESSER, Suppl. Birds Europe, pt. iv, pl. dclxxi.
- Cardinalis robinsoni*, n. sp., Margarita I., Venezuela; C. W. RICHMOND, Auk, xii, p. 370.
- C. cardinalis*, figured; A. G. BUTLER, Foreign Finches, pt. iii.
- Spermophila plumbeiceps*, n. sp., San Pablo, Tucuman; T. SALVADORI, Boll. Mus. Torino, x, No. 208, p. 5.
- S. albigularis* and *S. carulescens*, figured; A. G. BUTLER, Foreign Finches, pt. iii.
- Spermophilopsis*, nom. emend. pro *Drepanorhynchus*, Dubois, nec Reichen.; W. ROTHSCHILD, Bull. B. O. C. iv, p. xxxvii.
- Loxigilla chazaliei*, n. sp., Barbuda, Antilles; E. OUSTALET, Bull. Soc. France, xx, p. 184.
- Geospiza pachyrhyncha*, Tower I., Galapagos; R. RIDGWAY, P. U. S. Mus. xviii, p. 293; *G. fatigata*, Indefatigable I., *id. t. c.* p. 293; n. spp.
- Camarhynchus bindloei*, Bindloe I., Galapagos, *id. t. c.* p. 294; *C. compressirostris*, Jervis I., *id. t. c.* p. 294; *C. incertus*, James I., *id. t. c.* p. 294; n. spp.

Subfamily FRINGILLINÆ.

- Cocornis*, n. g., type *C. agassizi*, n. sp., Cocos I.; C. H. TOWNSEND, Bull. Mus. Harvard, xxvii, pp. 123 & 124, pl. i.
- Fringilla palmæ*, figured; H. E. DRESSER, Suppl. Birds Europe, pt. iv, pl. dclxxiv.
- Montifringilla nivalis*, figured; H. E. DRESSER, *t. c.* pl. dclxxiii, fig. 1.
- M. alpicola*, figured; *id. t. c.* pl. dclxxiii, fig. 2.
- Chrysomitris icterica*, figured; A. G. BUTLER, Foreign Finches, pt. ii.
- Bucanetes obsoletus*, figured; H. E. DRESSER, Suppl. Birds Europe, pt. v, pl. dclxxv. *B. mongolicus*, figured; *id. t. c.* pl. dclxxvi.
- Uragus sibiricus*, figured; *id. t. c.* pt. v, pl. dclxxviii.
- Carduelis caniceps*, figured; *id. t. c.* pt. iv, pl. dclxx.
- Pinicola enucleator*, a remarkable flight; W. BREWSTER, Auk, xii, pp. 245-256, maps i & ii.
- Loxia curvirostra minor*, nesting habits; F. H. KENNARD, Auk, xii, pp. 304 & 305. *L. bifasciata*, in Orkney; A. BRIGGS, Ann. Scott. Nat. Hist. iv, p. 54. *L. rubrifasciata*, figured; H. E. DRESSER, Suppl. Birds Europe, pt. v, pl. dclxxix. *L. pytiopsittacus*, notes on; C. FLOERICKE, Ornith. Monber. iii, pp. 58-60.
- Pyrrhula leucogenis*, n. sp., N. Luzon; W. R. OGILVIE-GRANT, Bull. B. O. C. iv, p. xli; figured; *id.* Ibis, 1895, pl. xiv. *P. cassini*, figured; H. E. DRESSER, Suppl. Birds Europe, pt. v, pl. dclxxvii. *P. major*, on the Yorkshire coast in November; L. H. IRBY, P. Zool. Soc. London, 1895, p. 691.

- Passer domesticus*, notes on eggs ; E. REY, Ornith. Monber, iii, pp. 179 & 180. *P. montanus*, in Aberdeenshire ; G. SIM, Ann. Scott. Nat. Hist. iv, p. 122. *P. ammodendri*, figured ; H. E. DRESSER, Suppl. Birds Europe, pt. iv, pl. delxxii.
- Alario alario*, figured ; A. G. BUTLER, Foreign Finches, pt. ii.
- Crithagra rendalli*, n. sp., Transvaal ; H. B. TRISTRAM, Ibis, 1895, pp. 129 & 130 : = *C. crassirostris*, Peters. ; G. E. SHELLEY, Bull. B. O. C. iv, p. xxviii.
- Serinus donaldsoni* and *S. maculicollis*, n. spp., Western Somaliland ; R. B. SHARPE, t. c. p. xli : figured ; *id.* P. Zool. Soc. London, 1895, pl. xxvii, figg. 1 & 2.
- S. flaviventris*, *S. icterus*, and *S. leucopygius*, figured ; A. G. BUTLER, Foreign Finches, pt. ii.
- Acanthis hornemanni* [*potius*, *C. exilipes*] in the Humber district ; J. CORDEAUX, Zoologist, 1895, pp. 58 & 59 : figured ; LILFORD, Col. Fig. Brit. Birds, pt. xxx.

Subfamily EMBERIZINÆ.

- Melospiza insignis* : notes on ; C. W. RICHMOND, Auk, xii, pp. 144-150.
- Emberiza luteola*, figured ; H. E. DRESSER, Suppl. Birds Europe, pt. v, pl. delxxx. *E. huttoni*, figured ; *id.* t. c. pl. delxxxii. *E. saharæ*, figured ; *id.* t. c. pl. delxxxii. *E. cioides*, figured ; *id.* t. c. pl. delxxxiii.
- Calcarius lapponicus*, in Venice ; F. CAMILLO, Atti Soc. Ital. xxxv, pp. 27-32.
- Fringillaria saharæ*, figured ; A. KOENIG, J. Ornith. 1895, tab. xi.
- Cyanospiza ciris* and *C. cyanea*, figured ; A. G. BUTLER, Foreign Finches, pt. ii.
- Coryphospingus pileatus* and *C. cristatus*, figured ; *id.* t. c.
- Pipilo fuscus senicula*, n. subsp., San Fernando, Lower California ; A. W. ANTHONY, Auk, xii, p. 111.
- Passerella iliaca stephensi*, n. subsp., San Jacinto Mts., California ; A. W. ANTHONY, Auk, xii, p. 348.
- Hæmophila leta*, *H. personata*, n. spp., Peru ; O. SALVIN, Nov. Zool. ii, p. 8.
- Poospiza alticola*, *P. rubecula*, n. spp., Peru ; O. SALVIN, t. c. p. 7.
- Ammodramus princeps*, its summer home ; J. DWIGHT, Mem. Nutt. Orn. Club, No. ii.
- Phonipara canora*, figured ; A. G. BUTLER, Foreign Finches, pt. iv.
- Paroaria capitata*, *P. larvata*, and *P. cucullata*, figured ; *id.* t. c. pt. iii.
- Gubernatrix cristata*, figured ; *id.* *ibid.*

Family ALAUDIDÆ.

- Otocorys bilopha*, figured ; A. KOENIG, J. Ornith. tab. x. *O. alpestris*, in Gloucestershire ; H. J. CHARBONNIER, Zoologist, 1895, p. 67. *O. penicillata balcanica*, n. subsp., Balkan Mts. ; A. REICHENOW, Ornith. Monber, iii, p. 42.
- Rhamphocorys clot-bey*, nest and eggs figured ; A. KOENIG, J. Ornith. 1895, tab. xiv.

- Alauda gulgula*, figured ; H. E. DRESSER, Suppl. Birds Europe, pt. v, pl. dclxxxiv. *A. arborea cherneli*, n. subsp., Hungary ; J. F. PRAZAK, Ornith. Monber. iii, p. 143. *A. cristata thecklæ*, notes on ; *A. cristata pallida*, n. sp., Tunis ; J. I. S. WHITAKER, Ibis, 1895, pp. 99-102.
- Alaudula somalica*, n. sp., The Haud, Somaliland ; R. B. SHARPE, P. Zool. Soc. London, 1895, p. 472.
- Mirafra gilletti*, n. sp., Somaliland ; *id.* Bull. B. O. C. iv, p. xxix.
- Spizocorys personata*, n. sp., Sassabane, Somaliland ; *id.* P. Zool. Soc. London, 1895, p. 471.
- Ammomanes algeriensis*, figured ; A. KOENIG, J. Ornith. 1895, tab. viii. *A. cinctura*, figured ; *id.* t. c. tab. ix.
- Galerita isabellina*, figured ; *id.* t. c. tab. vii.
- Chersophilus margaritæ*, notes on ; J. I. S. WHITAKER, Ibis, 1895, pp. 98 & 99.

Family MOTACILLIDÆ.

- Motacilla personata*, figured ; H. E. DRESSER, Suppl. Birds Europe, pt. iii, pl. dclxiii. *M. xanthophrys*, figured ; *id.* t. c. pt. iv, pl. dclxiv.
- Anthus spipoletta*, at Tetney Haven ; C. H. CATON HAIGH, Zoologist, 1895, p. 348. *A. similis*, figured ; H. E. DRESSER, Suppl. Birds Europe, pt. iii, pl. dclxv.

Family MNIOTILTIDÆ.

- Basileuterus nigrivertex*, n. sp., Peru ; O. SALVIN, Nov. Zool. ii, p. 3.
- Dendroica olivacea*, its nest and eggs ; W. W. PRICE, Auk, xii, pp. 17-19.
- Helminthoherus swainsoni*, an inhabitant of the swampy woods of S.E. Missouri ; O. WIDMANN, t. c. pp. 112-117.
- Geothlypis flavovelatus*, n. sp., Eastern Mexico ; R. RIDGWAY, P. U. S. Mus. xviii, pp. 119 & 120.

Family CERTHIIDÆ.

- Rhabdornis*, probably allied to *Arachnothera* ; W. R. OGILVIE-GRANT, Ibis, 1895, pp. 256 & 257.
- Climacteris superciliosa*, n. sp., Central Australia ; A. J. NORTH, Ibis, 1895, p. 341.
- Certhia americana*, nesting in S.E. Missouri ; O. WIDMANN, Auk, xii, pp. 350-355.

Family SITTIDÆ.

- Sitta whiteheadi*, figured ; H. E. DRESSER, Suppl. Birds Europe, pt. iii, pl. dclxii. *S. casia homeyeri*, Seeb., = *S. advena*, Brehm. ; A. REICHENOW, Ornith. Monber. iii, p. 141.

Family MELIPHAGIDÆ.

- Meliornis novæ-hollandiæ*, nesting habits ; A. J. NORTH, P. Linn. Soc. N. S. Wales (2) ix, pp. 186 & 187.
- Anthreptes griseigularis*, note on ; E. HARTERT, Nov. Zool. ii, p. 65.

- Melipotés atriceps*, n. sp., S.E. New Guinea; W. R. OGILVIE-GRANT, Bull. B. O. C. v, p. xiv.
- Myza*, n. g., type *M. sarasinorum*, n. sp., Matinang Mt., S. Celebes; A. B. MEYER & L. W. WIGLESWORTH, Abh. Mus. Dresden, 1894-95, No. 8, pp. 11 & 12.
- Ptilotis analoga*, its nest and eggs; A. J. NORTH, P. Linn. Soc. N. S. Wales (2) ix, pp. 39 & 40.
- P. kearlandi*, n. sp., Central Australia; A. J. NORTH, Ibis, 1895, pp. 340 & 341.

Family NECTARINIIDÆ.

- Æthopyga minuta*, BOURNS & WORCESTER = *Æ. flavipectus*; D. C. WORCESTER & F. S. BOURNS, Ibis, 1895, p. 405.
- Cinnyris excellens*, n. sp., Luzon; W. R. OGILVIE-GRANT, Bull. B. O. C. iv, p. xviii.
- Arachnothera longirostris*, figured; C. E. STUART BAKER, J. Bombay Soc. x, pl. d.

Family DICÆIDÆ.

- Dicaeum talautense*, n. sp., Talaut I.; A. B. MEYER & L. W. WIGLESWORTH, Abh. Mus. Dresden, 1894-95, No. 9, p. 5.
- Prionochilus inexpectatus*, n. sp., Mindoro; W. ROTHSCHILD, Nov. Zool. ii, pp. 64 & 65. *P. xanthopygius*, from the Natuna Is.; E. HARTERT, t. c. p. 468.

Family ZOSTEROPIDÆ.

- Zosterops auriloris*, n. sp., N. Luzon, W. R. OGILVIE-GRANT, Bull. B. O. C. iv, p. xl; *Z. luzonica*, n. sp., Luzon, *id. t. c.* p. xxii; *Z. bubelo*, n. sp., Talaut I., A. B. MEYER & L. W. WIGLESWORTH, Abh. Mus. Dresden, 1894-95, No. 9, p. 6 : n. spp.
- Z. meyeri* and allies; W. R. OGILVIE-GRANT, Ibis, 1895, p. 452. *Z. simplex*, nesting; E. C. STUART BAKER, t. c. p. 222.

Family PARIDÆ.

- Melanochlora sultanea*, nesting; E. C. STUART BAKER, Ibis, 1895, pp. 224-226.
- Parus phaeonotus*, figured, H. E. DRESSER, Suppl. Birds Europe, pt. ii, pl. delvii; *P. atriceps*, *id. t. c.* pt. iii, pl. delvi, fig. 1; *P. bokharensis*, *id. t. c.* pl. delvi, fig. 2; *P. cypriotes*, *id. t. c.* pl. delviii; *P. pleskii*, *id. t. c.* pl. delix; *P. palmensis*, *id. t. c.* pl. delx, fig. 1; *P. teneriffæ*, *id. t. c.* pl. delx, fig. 2; *P. ombriosus*, figured, *id. t. c.* pl. delxi. *P. palustris*, in Scotland; J. A. HARVIE BROWN, Tr. Perthsh. Soc. ii, pt. iii, pp. 97-100. *P. holsti*, n. sp., Formosa; H. SEEBOHM, Ibis, 1895, p. 211, pl. vi.
- Xerophila nigicincta*, n. sp., Central Australia; A. J. NORTH, Ibis, 1895, p. 340.

- Acredula macedonica*, figured ; H. E. DRESSER, Suppl. Birds Europe, pt. iii, pl. dclv, fig. 1. *A. caucasica*, figured ; *id. t. c.* pl. dclv, fig. 2.
Ægithalus pendulinus, nesting ; W. EAGLE CLARKE, Ibis, 1895, p. 190.

Family LANIIDÆ.

- Dryoscopus rufinuchalis*, n. sp., Somaliland ; R. B. SHARPE, P. Zool. Soc. London, 1895, p. 479.
Nilaus minor, n. sp., Somaliland ; *id. t. c.* p. 479.
Lanius grimmi, figured : H. E. DRESSER, Suppl. Birds Europe, pt. iv, pl. dclxvi ; *L. funereus*, *id. t. c.* pls. dclxvii & dclxviii, fig. 1 ; *L. leucopterus*, *id. t. c.* pl. dclxviii, fig. 2 ; *L. raddii*, *id. t. c.* pl. dclxix.
L. elaeagni, n. sp., Emba river ; P. SUSCHKIN, Bull. Soc. Moscou, 1895, pp. 1-12.
Gymnorhina dorsalis, n. sp., W. Australia ; A. J. CAMPBELL, P. Soc. Victoria (2) vii, pp. 206-213.
Bradyornis pumilus, n. sp., Somaliland ; R. B. SHARPE, P. Zool. Soc. London, 1895, p. 480. *B. woodwardi* = *Sylvia simplex* [*S. hortensis*, auct.] ; *id.* Bull. B. O. C. v, p. iii.
Melanornis schistacea, n. sp., Somaliland ; *id.* P. Zool. Soc. London, 1895, p. 481.

Family SYLVIIDÆ.

- Sylvia minuscula*, figured : H. E. DRESSER, Suppl. Birds Europe, pt. ii, pl. dclxvi, fig. 1 ; *S. althæa*, *id. t. c.* pl. dclxvi, fig. 2 ; *S. mystacea*, *id. t. c.* pl. dclxvii ; *S. nana*, *id. t. c.* pl. dclxviii. *S. atricapilla*, peculiar eggs ; W. R. OGILVIE-GRANT, Bull. B. O. C. iv, p. xxii. *S. deserti*, ♂ ♀, and *S. nana*, ♂ figured ; A. KOENIG, J. Ornith. 1895, taf. i, figs. 1-3.
Melizophilus deserticolus, figured ; H. E. DRESSER, Suppl. Birds Europe, pt. ii, pl. dclxix, and A. KOENIG, J. Ornith. 1895, p. 290, taf. ii.
Acrocephalus palustris, date of arrival in England ; W. W. FOWLER, Zoologist, 1895, p. 304.
Luciniola seebohmi, n. sp., N. Luzon ; W. R. OGILVIE-GRANT, Bull. B. O. C. iv, p. xl.
Phylloscopus neglectus, figured ; H. E. DRESSER, Suppl. Birds Europe, pt. ii, pl. dcl, fig. 1. *P. proregulus*, figured ; *id. t. c.* pl. dcl, fig. 2. *P. viridanus*, figured ; *id. t. c.* pt. iii, pl. dcli, fig. i. *P. nitidus*, figured ; *id. t. c.* pl. dcli, fig. 2.
Locustella straminea, figured ; *id. t. c.* pl. dclii.
Daulias hafizi, figured ; *id. t. c.* pl. dclxlv.
Eremomela flavicrissalis, n. sp., Somaliland ; R. B. SHARPE, P. Zool. Soc. London, 1895, p. 481.
Drymæa sahare, nest and eggs figured ; A. KOENIG, J. Ornith. 1895, pp. 264-271, taf. xiii.
Dryodromas smithii, n. sp., Somaliland ; R. B. SHARPE, Bull. B. O. C. iv, p. xxix.

- Camaroptera dorcadichroa*, n. sp., Kilimandjaro ; A. REICHENOW & O. NEUMANN, Ornith. Monber. iii, p. 76.
- Camaroptera chloronota*, n. sp., Misa Heights, E. Africa ; A. REICHENOW, t. c. p. 96.
- Apalis porphyrolama*, n. sp., Mau, C. E. Africa ; A. REICHENOW & O. NEUMANN, t. c. p. 75. *A. griseiceps*, Kilimandjaro, *id.* t. c. pp. 75 & 76 ; *A. binotata* and *A. cervicalis*, Cameroons, A. REICHENOW, t. c. p. 113 : n. spp.
- Burnesia melanops*, n. sp., Mau, C. E. Africa ; A. REICHENOW & O. NEUMANN, t. c. p. 75.
- Phyllergates riedeli*, n. sp., Minahassa Mt., S. Celebes ; A. B. MEYER & L. W. WIGLESWORTH, Abh. Mus. Dresden, 1894-95, No. 8, p. 13.
- Bradypterus rufosulvidus*, n. sp. ; A. REICHENOW & O. NEUMANN, Ornith. Monber. iii, p. 75.
- Cisticola dodsoni*, Somaliland, R. B. SHARPE, Bull. B. O. C. iv, p. xxix ; *C. somalica*, Somaliland, *id.* P. Zool. Soc. London, 1895, p. 483 : n. spp.
- Scotocerca saharæ*, figured ; H. E. DRESSER, Suppl. Birds Europe, pt. ii, pl. delliii, fig. 1. *S. inquieta*, figured ; *id.* t. c. pl. delliii, fig. 2.

Family TURDIDÆ.

- Geocichla davisoni* distinct from *G. sibirica* ; H. SEEBOHM, Bull. B. O. C. iv, p. xix. *G. navia*, nesting in British Columbia ; W. E. BROOKS, Ibis, 1895, pp. 512 & 513.
- Turdus pallasi*, figured ; H. E. DRESSER, Suppl. Birds Europe, pt. i, pl. dxxxiv, fig. 1. *T. swainsonii*, figured ; *id.* t. c. pl. dxxxiv, fig. 2. *T. alpestris*, figured ; *id.* t. c. pl. dxxxv. *T. pilaris*, probably nesting in the Pyrenees ; H. M. WALLIS, Ibis, 1895, pp. 64 & 65. *T. alpestris*, a good species ; J. YOUNG, Zoologist, 1895, pp. 66 & 67.
- Merula ludovicæ*, n. sp., Somaliland ; E. LORT PHILLIPS, Bull. B. O. C. iv, p. xxxvi. *M. albiceps*, notes on ; H. SEEBOHM, Ibis, 1895, p. 213.
- Erithacus hyrcanus*, figured ; H. E. DRESSER, Suppl. Birds Europe, pt. i, pl. dxxlv.
- Ruticilla semirufa*, habits and song ; W. T. VAN DYCK, Ibis, 1895, pp. 505 & 506.
- R. ochrura*, figured ; H. E. DRESSER, Suppl. Birds Europe, pt. i, pl. dxxlii. *R. erythronota*, figured ; *id.* t. c. pl. dxxliii.
- Myrmecocichla yerburyi*, n. sp., Palestine ; R. B. SHARPE, Bull. B. O. C. iv, p. xxxvii.
- Cossypha donaldsoni*, n. sp., Western Somaliland ; *id.* t. c. p. xxviii.
- Brachypteryx poliogyna*, n. sp., N. Luzon ; W. R. OGILVIE-GRANT, Bull. B. O. C. iv, p. xl. ♀, figured ; *id.*, Ibis, 1895, pl. xii, fig. 1.
- Callene pyrroptera*, Mau, E. C. Africa, A. REICHENOW & O. NEUMANN, Ornith. Monber. iii, p. 75 ; *C. albigularis*, Usagura, E. Africa, A. REICHENOW, t. c. p. 96 : n. spp.

Saxicola seebohmi, figured ; H. E. DRESSER, Suppl. Birds Europe, pt. i, pl. dcxxxvi. *S. vittata*, figured ; *id. t. c.* pl. dcxxxvii. *S. chrysopygia*, figured ; *id. t. c.* pl. dcxxxviii, fig. 1. *S. albonigra*, figured ; *id. t. c.* pl. dcxxxviii, fig. 2. *S. picata*, figured ; *id. t. c.* pl. dcxxxix. *S. seebohmi*, figured ; A. KOENIG, J. Ornith. 1895, p. 315, taf. iii, figg. 1 & 2 (♂, ♀), taf. v, fig. 2 (♂ juv.). *S. lugens*, figured ; *id. t. c.* tab. iv & v. *Pratincola caprata*, figured ; H. E. DRESSER, Suppl. Birds Europe, pt. i, pl. dexli. *P. dacotiæ*, figured ; *id. t. c.* pl. dexli.

Family CINCLIDÆ.

Cinclus aquaticus, in Scotland ; W. H. M. DUTHIE, Tr. Perthsh. Soc. iii, pt. iii, pp. 120-123.

Family TROGLODYTIDÆ.

Thryothorus leucophrys, n. sp., San Clemente I., California ; A. W. ANTHONY, Auk, xii, p. 52.
Heleodytes brunneicapillus affinis, n. subsp., Lower California ; *id. t. c.* p. 280.

Family MIMIDÆ.

Harpornhynchus cinereus mearnsi, n. subsp., San Quintin, Lower California ; A. W. ANTHONY, Auk, xii, p. 53. *H. lecontei*, figured and geographical distribution given ; C. H. MERRIAM, *t. c.* pp. 54-60, pl. i.

Family TIMELIIDÆ.

See REICHENOW, A. (302).

Suthora atosuperciliaris, nesting ; E. C. STUART BAKER, Ibis, 1895, pp. 44 & 45.
Paradoxornis flavirostris, nesting ; *id. t. c.* pp. 42-44.
Dryocataphus tickelli, nesting ; *id. t. c.* p. 55-57.
Gamporhynchus rufulus, nesting ; *id. t. c.* p. 53.
Dromolaea leucura, nest and eggs figured ; A. KOENIG, J. Ornith. 1895, tab. vi.
Sphenæacus caudatus, n. sp., Snares I. ; W. L. BULLER, Tr. N. Zealand Inst. xxvii, p. 128.
Orthotomus chloronotus, n. sp., Cape Engano, N.E. Luzon ; W. R. OGILVIE-GRANT, Bull. B. O. C. v, p. ii.
Argya chalybea, distinct from *A. squamiceps* ; R. B. SHARPE, Bull. B. O. C. iv, p. xxxvi. *A. saturata*, n. sp., Zanzibar ; *id. P. Zool. Soc. London*, 1895, p. 488.
Garrulax gularis, nesting ; E. C. STUART BAKER, Ibis, 1895, pp. 46-48.
Dryonastes sennio, nesting ; *id. t. c.* pp. 45 & 46.
Trochalopteryx virgatum, nesting ; *id. t. c.* pp. 48 & 49.
Crateropus smithii, n. sp., Somaliland ; R. B. SHARPE, Bull. B. O. C. iv, p. xli.
Pomatorhinus phayrii, nesting ; E. C. STUART BAKER, Ibis, 1895, pp. 51 & 52. *P. macclellandi*, nesting ; *id. t. c.* pp. 52 & 53.
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- Grammatoptila austeni*, nesting; E. C. STUART BAKER, *Ibis*, 1895, pp. 49 & 50.
- Lanioturdinus*, n. g.; type *L. crassus* (Sharpe); J. BÜTTIKOFER, *Notes Leyden Mus.* xvii, pp. 72 & 73.
- Mülleria*, n. g.; type *M. bivittata* (Bonap.); *id. t. c.* p. 96.
- Ophrydornis*, n. g.; type *O. albigularis* (Blyth); *id. t. c.* p. 101.
- Malacopteron palawanense*, nom. emend. pro *M. rufifrons*, Tweed. (*nec* Cab.); *id. t. c.* p. 104.
- Zosterornis dennistouni*, n. sp., Cape Engano, Luzon; W. R. OGILVIE-GRANT, *Bull. B. O. C.* v, p. ii. *Z. striatus*, figured; *id. Ibis*, 1895, pl. iv, fig. 1.
- Proparus austeni*, n. sp., Manipur; *id. Bull. B. O. C.* v, p. iii.
- Schœniparus mandellii*, nesting; E. C. STUART BAKER, *Ibis*, 1895, pp. 60-62.
- Sittiparus cinereus*, nesting; *id. t. c.* pp. 62-64.
- Corythocichla striata*, nesting; *id. t. c.* pp. 57 & 58.
- Stactocichla merulina*, nesting; *id. t. c.* pp. 50 & 51.
- Pellorneum palustre* and *P. ignotum*, nesting; *id. t. c.* pp. 53-55.
- Stachyris natunensis*? = *S. davisoni*; E. HARTERT, *Nov. Zool.* ii, p. 467.
- Stachyris assimilis*, nesting; E. C. STUART BAKER, *Ibis*, 1895, pp. 58 & 59.
- Stachyridopsis rufifrons*, nesting; *id. t. c.* pp. 59 & 60.
- Mixornis erythronota*, n. sp., Java, A. REICHENOW, *J. Ornith.* 1895, p. 306.
- Turdinulus guttaticollis*, n. sp., Miri Hills; W. R. OGILVIE-GRANT, *Ibis*, 1895, pp. 432 & 433.
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- Iole virescens*, nesting; *id. t. c.* pp. 232-234.
- Spizixus cumifrons*, nesting; *id. t. c.* pp. 231 & 232.

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Cotile riparia, in Borneo ; R. B. SHARPE, Bull. B. O. C. iv, p. xxiii.

Ptyonoprogne obsoleta, its nest and eggs ; P. L. SCLATER, t. c. p. xlii.

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Empidonax traillii alnorum, n. subsp., Upton, Maine ; W. BREWSTER, Auk, xii, p. 161.

Elainea cherriei, n. sp., Calare, San Domingo ; C. B. CORY, Auk, xii, p. 279.

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Family COTINGIDÆ.

Chnipolegus anthracinus, young described ; T. SALVADORI, Boll. Mus. Torino, x, No. 208, p. 9.

Family PITIDÆ.

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Family XENICIDÆ.

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Section C. TRACHEOPHONÆ.

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IV. REPTILIA AND BATRACHIA.

BY

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

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SQUAMATA.

- COPE remarks on the temporal part of the skull in the *Squamata*, and on the morphology of the skull in the Mosasaurs, and characterizes the three suborders *Lacertilia*, *Pythonomorpha*, and *Ophidia*. *Amer. Natural.* xxix, pp. 855-859, pl. xxxi, and pp. 1003-1005.
- Criticism of Cope's views by BAUR, *t. c.* pp. 998-1002, and BOULENGER, *Ann. Nat. Hist.* (6) xvi, p. 366, fig.
- O. GROSSER & E. BREZINA, *Morphol. Jahrb.* xxiii, pp. 289-325, pls. xx & xxi, investigate the development of the veins of the head and neck in Lizards and Snakes.
- On the changes in colour in Chameleons and certain Lizards ; R. KELLER, *Arch. Physiol.* lxi, pp. 123-168, figg., pl. iv.

LACERTILIA.

- On the axial- and limb-skeleton in the *Scincidae*, *Anguidæ*, and *Gerrhosauridae* ; SIEBENROCK, *Ann. Hofmus. Wien*, x, pp. 17-41, pl. iii.
- On the early development of *Chalcides tridactylus* ; F. TODARO, *Atti Acc. Lincei* (4) vii, pp. 233-247, 1 pl.
- On gastrulation in *Lacerta* ; L. WILL, *SB. Ak. Berlin*, 1895, pp. 335-341, and *Zool. Jahrb. Anat.* ix, pp. 1-91, figg.
- On starvation in Lizards ; G. MANCA, *Giorn. Acc. Medic. Torino*, lviii, No. 1, and *Arch. ital. Biol.* xxiii, pp. 243-251.

GECKONIDÆ.

- Stenodactylus guttatus*, Cuv. : præanal pores are sometimes present ; ANDERSON, *P. Zool. Soc. London*, 1895, p. 643.
- Ceramodactylus dameus*, n. sp., LUCAS & FROST, *P. Soc. Victoria* (2) viii, p. —, Central Australia.
- Gymnodactylus caspius*, Eichw. : notes by ZANDER, *Zool. Garten*, xxxvi, p. 373. *G. mättogrossensis*, n. sp., BERG, *An. Mus. Buenos Aires*, iv, p. 191, Matto Grosso. *G. africanus*, n. sp., WERNER, *Verh. Ges. Wien*, xlv, p. 190, pl. v, fig. 5, Usambara, E. Africa : is a *Gonatodes* ; BOULENGER, *Ann. Mag. Nat. Hist.* (6) xvi, p. 173.

- Pristurus flavipunctatus*, Rüpp. : notes on specimens from Aden ; ANDERSON, P. Zool. Soc. London, 1895, p. 638. *P. phillipsii*, n. sp., BOULENGER, Ann. Nat. Hist. (6) xvi, p. 165, pl. vii, fig. 1, Somaliland.
- Diplodactylus byrnei*, n. sp., LUCAS & FROST, P. Soc. Victoria (2) viii, p. —, Central Australia.
- Phyllodactylus unctus*, Cope, described by VAN DENBURGH, P. Calif. Ac. (2) v, p. 86. *P. stumpffii*, Bttgr.: note by MOCQUARD, t. c. p. 117. *P. madagascariensis*, n. sp., MOCQUARD, t. c. p. 95, Madagascar.
- Ebenavia horni*, n. sp., LUCAS & FROST, P. Soc. Victoria (2) vii, p. 264, Central Australia.
- Hemidactylus benguellensis*, Bocage, and *bayonii*, Bocage, figured by BOCAGE, Herp. Ang. pl. i, figg. 1 & 2. *H. sinaitus*, Blgr.: notes by ANDERSON, P. Zool. Soc. London, 1895, p. 639. *H. yerburii*, n. sp., *id. ibid.* p. 640, pl. xxxvi, fig. 1, Aden. *H. isolepis*, p. 531, and *smithii*, p. 532, n. spp., BOULENGER, P. Zool. Soc. London, 1895, W. Somaliland.
- Blesodactylus*, Bttgr. *Hemidactylus sakalava*, Grand. = *H. boivini*, A. Dum. ; MOCQUARD, Bull. Soc. Philom. (8) vii, p. 94.
- Lygodactylus*, Gray. *Hemidactylus tolampyæ*, Grand., belongs to this genus ; MOCQUARD, l. c. *L. verticillatus*, n. sp., *id. ibid.* p. 95, Madagascar. *L. thomensis*, Ptrs., recorded from E. Africa by WERNER, Verh. Ges. Wien, xlv, p. 191.
- Gehyra marginata*, Bttgr. = *G. marginata*, Blgr. ; BËTTGER, Zool. Anz. xviii, p. 157.
- Tarentola ephippiata*, O'Sh., recorded from Somaliland by BOULENGER, Ann. Nat. Hist. (6) xvi, p. 166.
- Geckonia*, n. g., allied to *Tarentola*, Gray, for *G. chazalix*, n. sp., Cape Blanco, W. Sahara ; MOCQUARD, Bull. Mus. N. H. 1895, p. 311.
- Platydactylus mutabilis*, Grand. = *Phelsuma madagascariensis*, Gray ; MOCQUARD, t. c. p. 94.

EUBLEPHARIDÆ.

- Holodactylus africanus*, Bttgr. referred to this family and redescribed and figured by BOULENGER, Ann. Nat. Hist. (6) xvi, p. 166, pl. vii, fig. 2.

UROPLATIDÆ.

- Uroplatus phantasticus*, Blgr. = *U. ebenauï*, Bttgr. ; MOCQUARD, Bull. Soc. Philom. (8) vii, p. 117.

AGAMIDÆ.

- On the osteological characters ; SIEBENROCK, Anz. Ak. Wien, 1895, pp. 201-205, and SB. Ak. Wien, civ, i, pp. 1089-1196, 6 pls.
- Draco affinis*, n. sp., E. BARTLETT, Crocod. and Liz. of Borneo, p. 80, Sarawak.

- Gonycephalus papuensis*, Macleay : notes by MÉHELÿ, Termes. Fuzetek, xviii, p. 130.
- Agama sanguinolenta*, Pall. ; notes by ZANDER, Zool. Garten, xxxvi, pp. 214, 232, & 377. *A. colonorum*, Daud., recorded from Somaliland by BOULENGER, Ann. Nat. Hist. (6) xvi, p. 167. *A. planiceps*, Ptrs., figured by BOGAGE, Herp. Ang. pl. ii. *A. gregorii*, Gthr. : notes by GÜNTHER, Ann. Nat. Hist. (6) xv, p. 523. *A. caucasica*, Eichw. : notes by ZANDER, t. c. p. 237. *A. stellio*, L. : feigns death when captured; W. T. VAN DYK, Nature, lii, p. 148. *A. philipsii*, n. sp., BOULENGER, Ann. Nat. Hist. (6) xvi, p. 167, pl. vii, fig. 3, Somaliland. *A. zonura*, n. sp., BOULENGER, P. Zool. Soc. London, 1895, p. 533, pl. xxix, fig. 3, W. Somaliland.
- Xenagama*, n. subg. of *Agama*, for *Uromastix bailliferus*, Vaill. ; BOULENGER, P. Zool. Soc. London, 1895, p. 534.
- Phrynocephalus helioscopus*, Pall., *raddei*, Bitgr., *interscapularis*, Licht., and *mystaceus*, Pall. : notes by ZANDER, Zool. Garten, xxxvi, pp. 258-262 & 379.
- Diporophora winneckeii*, n. sp., LUCAS & FROST, P. Soc. Victoria (2) viii, p. —, Central Australia.
- Tympanocryptis tetraporophora*, n. sp., LUCAS & FROST, P. Soc. Victoria (2) vii, p. 265, Central Australia.

IGUANIDÆ.

- Anolis holotropis*, n. sp., BOULENGER, Ann. Nat. Hist. (6) xv, p. 522, Matto Grosso, Brazil.
- Anisolepis bruchi*, p. 417, pl. i [= *A. undulatus*, Wgm.—REC.], and *argentinus*, p. 419, pl. ii [= *Aptycholæmus longicauda*, Blgr.—REC.], n. spp., KOSLOWSKY, Rev. Mus. La Plata, ii, Buenos Ayres.
- Hoplurus montanus*, Grand. = *H. quadrimaculatus*, A. Dum.; MOCQUARD, Bull. Soc. Philom. (8) vii, p. 96. *H. saxicola*, Grand., and *ferinensis*, Grand., are valid species, *id. ibid.* pp. 96 & 97.
- Ctenosaura hemilopha*, Cope, described by VAN DENBURGH, P. Calif. Ac. (2) v, p. 88.
- Crotaphytus copii*, Yarrow, described by VAN DENBURGH, t. c. p. 93.
- Uma*, Baird : synopsis of the species by COPE, Amer. Natural. xxix, p. 938. *U. rufopunctata*, Arizona, and *inornata*, Colorado Desert, California, n. spp., *id. ibid.*
- Callisaurus draconoides*, Blainv., and *ventralis*, Hallow., described by VAN DENBURGH, t. c. pp. 95 & 97.
- Uta thalassina*, Cope, described by VAN DENBURGH, t. c. p. 99. *U. stansburiana*, B. & G. (= *elegans*, Yarr.), *microscutata*, Van Denb., and *nigricauda*, Cope ; notes, *id. ibid.* pp. 104 & 106. *U. repens*, n. sp., *id. ibid.* p. 102, pls. vii & viii, Lower California. *U. mearnsi*, n. sp., STEJNEGER, P. U. S. Mus. xvii, p. 589, South California.
- Sceloporus zosteromus*, Cope : notes by VAN DENBURGH, t. c. p. 108. *S. licki*, n. sp., *id. ibid.* p. 110, pl. x, Lower California.
- Phrynosoma coronatum*, Blainv., described by VAN DENBURGH, t. c. p. 115.

ZONURIDÆ.

- Zonurus angolensis*, n. sp. (?), BOCAGE, Herp. Ang. p. 25, Angola
[= *Z. jonesii*, Blgr.—REC.].
Chamæsauro tenuior, n. sp., GÜNTHER, Ann. Nat. Hist. (6) xv, p. 524,
pl. xxi, fig. B, Uganda.

VARANIDÆ.

- On the presence of rudimentary præanal pores in *Varanus*; ANDERSON,
P. Zool. Soc. London, 1895, p. 643.
Varanus griscus, Daud.: notes on the habits; ZANDER, Zool. Garten,
xxxvi, p. 298. *V. gilleni* and *eremius*, n. spp., LUCAS & FROST,
P. Soc. Victoria (2) vii, pp. 266 & 267, Central Australia.

XANTUSIIDÆ.

- Xantusia*, Baird: A revision of the species by J. VAN DENBURGH,
P. Calif. Ac. (2) v, p. 523. *X. gilberti*, n. sp., *id. ibid.* pp. 121 & 529,
pl. xi, Lower California. *X. picta*, n. sp., COPE, Amer. Natural.
xxix, pp. 859 & 939, California.

This family is divided into five genera by COPE, *t. c.* p. 758.

- Zablepsis*, n. g., for *Xantusia henshavi*, Stejn., and *Amæbopsis*, n. g., for
X. gilberti, Van Denb., COPE, *l. c.*

TEIIDÆ.

- Cnemidophorus maximus*, Cope, and *rubidus*, Cope, described by VAN
DENBURGH, P. Calif. Ac. (2) v, pp. 122 & 126.
Verticaria hyperythra, Cope, described by VAN DENBURGH, *t. c.* p. 128.
V. sericea, n. sp., *id. ibid.* p. 132, pl. xii, San José I., Gulf of
California.

AMPHISBÆNIDÆ.

- Euchirotis biporus*, Cope: note by VAN DENBURGH, P. Calif. Ac. (2) v,
p. 135.
Monopeltis anchieta, Bocage, figured by BOCAGE, Herp. Ang. pl. viii, fig. 1.

LACERTIDÆ.

- Lacerta praticola*, Eversm.: remarks by BEDRIAGA, Zool. Anz. xviii, p. 261,
and MÉHELÿ, *t. c.* p. 473. *L. peloponnesiaca*, Bibr.: remarks by
BEDRIAGA, *l. c.*, and WERNER, *t. c.* p. 469.
Latastia, Bedr. *Philochortus neumanni*, Matschie, belongs to this genus;
described and figured by ANDERSON, P. Zool. Soc. London, p. 643,
pl. xxxvii, fig. 1.
Acanthodactylus boskianus, Daud., and *cantoris*, Gthr.: notes on speci-
mens from Aden; ANDERSON, *t. c.* pp. 645 & 646.
Ophiops elegans, Mén.: notes by ZANDER, Zool. Garten, xxxvi, p. 375.

- Eremias spekii*, Gthr. : Note by WERNER, Verh. Ges. Wien, xlv, p. 191.
E. smithii, n. sp., BOULENGER, P. Zool. Soc. London, 1895, p. 534,
 pl. xxix, fig. 4, W. Somaliland.
Scaptira scripta, Str., p. 303, and *grammica*, Licht., p. 327 : notes by
 ZANDER, l. c.
Pachyrhynchus anchieta, Bocage, figured by BOCAGE, Herp. Ang. pl. iii,
 fig. 1.
Holaspis guentheri, Gray, n. subsp., *lævis*, WERNER, l. c. p. 191, pl. v,
 fig. 4, Usambara, E. Africa.

GERRHOSAURIDÆ.

- Gerrhosaurus bottegoi*, n. sp., DEL PRATO, Atti Soc. Ital. xxxv, p. 19, fig.,
 Ghinda, Erithrea.
Zonosaurus quadrilineatus, Grand., p. 97, *karstenii*, Grand., p. 98, *lati-*
caudatus, Grand., p. 98, and *æneus*, Grand., p. 99; notes by MOCQUARD,
 Bull. Soc. Philom. (8) vii.

SCINCIDÆ.

- Tiliqua scincoides*, White : on the changes in the dentition with age ;
 PERACCA, Boll. Mus. Torino, x, No. 217, pl.
Mabuia septemlineata, Reuss : notes by ZANDER, Zool. Garten, xxxvi,
 p. 328. *M. bayonii*, Bocage, pl. iii, fig. 2, *maculilabris*, Gray, pl. iv,
 fig. 2, *petersii*, Bocage, pl. iv, fig. 1, and *ivensii*, Bocage, pl. v, fig. 1,
 figured by BOCAGE, Herp. Ang. *M. brevicollis*, Wgm. : notes
 by ANDERSON, P. Zool. Soc. London, 1895, p. 646, who points out
 that *M. pulchra*, Matschie, is based on a young specimen of this
 species. *M. tessellata*, n. sp., *id. ibid.* p. 649, pl. xxxvi, fig. 2, Aden.
M. lewisi, pp. 87 & 93, *rubricollis*, p. 89, and *saravacensis*, p. 94, n. spp.,
 E. BARTLETT, Crocod. and Liz. of Borneo, Sarawak.
Euprepes bilineatus, Grand. = *Mabuia gravenhorstii*, D. & B.; MOCQUARD,
 Bull. Soc. Philom. (8) vii, p. 99. *E. sakalava*, Grand., is a distinct
 species ; *id. ibid.*
Lygosoma anchieta, Bocage, figured by BOCAGE, *op. cit.* pl. vi. *L. miotis*,
 p. 29, and *tetratenia*, p. 30, n. spp., BOULENGER, Ann. Nat. Hist. (6)
 xvi, Fergusson I., Brit. New Guinea. *L. longiceps*, n. sp., *id. ibid.*
 p. 408, Trobriand Is., Brit. New Guinea. *L. kinabaluensis*, p. 94, and
bampfyldei, p. 96, n. spp., E. BARTLETT, Crocod. and Liz. of Borneo,
 Borneo.
Rhodona tetradactyla, n. sp., LUCAS & FROST, P. Soc. Victoria (2) vii,
 p. 268, Central Australia.
Ablepharus cabindæ, Bocage, and *wahlbergii*, Smith, figured by BOCAGE,
op. cit. pl. v, figg. 2 & 3. *A. lineo-ocellatus*, D. & B., n. var *ruficaudus* ;
 LUCAS & FROST, P. Soc. Victoria (2) vii, p. 269, Central Australia.
Eumeces lagunensis, n. sp., VAN DENBURGH, P. Calif. Ac. (2) v, p. 134,
 pl. xiii, Lower California.

- Scincus hemprichii*, Wgm. : notes by ANDERSON, P. Zool. Soc. London, 1895, p. 650.
- Scelotes bellyi*, Mocq. = *Sc. mouroundavae*, Grand. ; MOCQUARD, C.R. Soc. Philom. 1895, p. 36. *S. poensis*, n. sp., BOCAGE, J. Sci. Lisb. (2) iv, p. 16, Fernando Po.
- Sepsina copii*, Bocage, and *bayonii*, Bocage, figured by BOCAGE, Herp. Ang. pl. vii, figg. 1 & 2.
- Typhlacontias punctatissimus*, Bocage, figured by BOCAGE, *op. cit.* pl. vii, fig. 3.

RHIPTOGLOSSA.

- On the mechanism of the projection of the tongue in the Chameleon ; DEWÈVRE, J. Anat. Physiol. xxxi, pp. 343-360.
- Chamæleon calcarifer*, Ptrs. : MOCQUARD now regards this species as distinct from *C. calypttratus*, A. Dum. ; CR. Soc. Philom. 1895, p. 36. Notes by ANDERSON, P. Zool. Soc. London, 1895, p. 651. *C. anchietæ*, Bocage, figured by BOCAGE, Herp. Ang. pl. viii, fig. 2. *C. oustaleti*, Mocq., *pardalis*, Cuv., and *boettgeri*, Blgr. : notes by MOCQUARD, Bull. Soc. Philom. (8) vii, pp. 113 & 114. *C. fischeri*, Reichen., redescribed and figured by WERNER, Verh. Ges. Wien, xlv, p. 192, pl. v, fig. 2. *C. spinosus*, Matschie, noticed and figured by WERNER, *t. c.* fig. 3. *C. matschiei*, n. sp., WERNER, *t. c.* p. 192, E. Africa [= *C. fischeri*, Reichen.—REC.]. *C. ellioti*, n. sp., GÜNTHER, Ann. Nat. Hist. (6) xv, p. 524, pl. xxi, fig. A, Uganda.
- Brookesia ebenaui*, Btgr., and *tuberculata*, Mocq. : notes by MOCQUARD, *t. c.* p. 115.

PYTHONOMORPHA.

- On the affinities and systematic position of the Mosasaurs ; COPE, Amer. Natural. xxix, pp. 855 & 1004 ; BAUR, *t. c.* p. 1001.
- Remarks on various characters, and figures of the skulls of *Clidastes*, *Tylosaurus*, and *Platecarpus* : WILLISTON, Kansas quart. iii, p. 165, pl. xvii.
- Mosasaurus horridus*, sp. n., *id. ibid.* p. 166, pls. xiv-xvi, Cretaceous of Dakota.

OPHIDIA.

- E. D. COPE, Tr. Amer. Phil. Soc. xviii, p. 186, proposes a new classification of the Snakes, the minor groups being established mainly on characters derived from a study of the lungs and copulatory organs :
- Subord. I. CATODONTA (*Glauconiidae*).
- „ II. EPANODONTA (*Typhlopidae*).
- „ III. TORTRICINA (*Ilysiidae*, *Rhinophidae*).
- „ IV. COLUBROIDEA (*Peropoda*, *Aglyphodonta*, *Glyphodonta*, *Proteroglyphæ*, *Platyserca*).
- „ V. SOLENOGLYPHA (*Atractaspidae*, *Causidae*, *Viperidae*, *Crotalidae*).

The *Peropoda* are divided into 3 families: *Boidea*, *Charinidae*, *Ungualidae*; the *Aglyphodonta* also into 3: *Xenopeltidae*, *Acrochordidae*, *Colubridae*; the *Glyphodonta* contain a single family: *Dipsadidae*; the *Proteroglypha* contain 3: *Najidae*, *Elapidae*, *Dendraspididae*; and the *Platyserca* 1: *Hydrophidae*. The *Colubridae* are divided into 8 subfamilies: *Calamarinae*, *Xenodontinae*, *Dromicinae*, *Colubrinae*, *Leptognathinae*, *Anoplophallinae*, *Lycodontinae*, *Natricinae*; and the *Dipsadidae* into 4: *Dipsadinae*, *Scytalinae*, *Erythrolamprinae*, *Homalopsinae*.

G. S. WEST, Rep. Brit. Ass. 1895, p. 737, remarks on the poison apparatus of opisthoglyphous Colubrines and Hydrophids.

On Snake poison; H. V. IHERING, Riv. Mus. Paul. i, pp. 195-206.

M. BRUNNING brings out a book on the same subject (Stuttgart: 1895).

Remarks by WERNER, Biol. Centralbl. xv, p. 526.

F. WERNER has critical remarks on J. Zenneck's paper on the markings of *Tropidonotus natrix*; Biol. Centralbl. xv, pp. 345-347.

Notes on the habits of various European Snakes in confinement; LACHMANN, Zool. Garten, xxxvi, pp. 310-317, 343-350, & 360-367, figg.

On exotic Snakes escaped in the Province Saxony; SCHNEE, Zeitschr. Naturw. (5) vi, p. 269.

TYPHLOPIDÆ.

On the eye of *Typhlops vermicularis* and *T. braminus*; C. KOHL, Bibl. Zool. v, pp. 231-240.

Typhlops hottentotus, n. sp., BOCAGE, Herp. Ang. p. 69, Angola. *T. somalicus*, n. sp., BOULENGER, P. Zool. Soc. London, 1895, p. 536, pl. xxx, fig. 1, W. Somaliland.

BOIDÆ.

Python molurus, L.: note on and figure of a specimen in the act of killing a monkey; O. CHANNER, J. Bombay Soc. ix, p. 491, pl.

P. anchieta, Bocage, figured by BOCAGE, Herp. Ang. pl. ix, fig. 1.

Enygrus carinatus, Schn., and *asper*, Gthr.: notes by MÉHELÏ, Termes. Fuzetek, xviii, pp. 132 & 133.

Eryx jaculus, L.: notes by ZANDER, Zool. Garten, xxxvi, p. 329.

COLUBRIDÆ.

Aglyphæ.

Polyodontophis, Blgr. *Henicognathus venustissimus*, Gthr.; figured by GÜNTHER, Biol. Centr.-Amer., Rept., pl. li, fig. c.

Tropidonotus fuscatus, L. and *tigrinus*, Boie: notes on habits in confinement; WERNER, Zool. Garten, xxxvi, p. 242.

Eutænia radix, B. & G., *vagrans*, B. & G., *marciana*, B. & G., *megalops*, Kenn., and *macrostemma*, Kenn.; described and figured by BOCOURT, Miss. Sc. Mex., Rept., pp. 781-788, pls. lviii & lix.

- Thamnophis butleri*, Cope : note by STEJNEGER, P. U. S. Mus. xvii, p. 593.
- Natrix sipedon*, L., *cyclopion*, D. & B., and *leberis*, L. : notes by RHOADS, P. Ac. Philad. 1895, pp. 387-390. *N. celæno*, Cope : note by VAN DENBURGH, P. Calif. Ac. (2) v, p. 154. *N. compressicauda teniata*, n. subsp., COPE, Amer. Natural. xxix, p. 676, Florida. *N. fasciata pictiventris*, n. subsp., *id. ibid.* p. 677, Florida.
- Seminatrix*, n. g. for *Contia pygæa*, Cope; COPE, Amer. Natural. xxix, p. 678.
- Limnophis septemvittatus*, Fisch., described and figured by BOCOURT, *t. c.* p. 809, pl. lx, fig. 1.
- Tretanorhinus variabilis*, D. & B., *mocquardi*, Bocourt, *nigroluteus*, Cope, and *lateralis*, Bocourt, described and figured by BOCOURT, *t. c.* pp. 793-800, pl. lii.
- Simocephalus crossii*, n. sp., BOULENGER, Ann. Nat. Hist. (6) xvi, p. 33, Niger.
- Pseudoxyrhopus ambreensis*, Mocq., and *heterurus*, Jan : notes by MOCQUARD, Bull. Soc. Philom. (8) vii, pp. 123 & 136.
- Pseudaspis cana*, L. : note on a specimen from British Central Africa ; GÜNTHER, Ann. Nat. Hist. (6) xv, p. 525.
- Ophirhina anchieta*, Bocage [= *Pseudaspis cana*, L.], figured by BOCAGE, Herp. Ang. pl. x.
- Stegonotus guentheri* and *reticulatus*, n. spp., BOULENGER, Ann. Nat. Hist. (6) xvi, p. 31, Fergusson I., Brit. New Guinea.
- Zamenis flagelliformis*, auctor. nec Catesby, should be called *Bascanion flagellum*, Shaw ; STEJNEGER, P. U. S. Mus. xvii, p. 595. *Z. rhodorhachis*, Jan : notes by ANDERSON, P. Zool. Soc. London, 1895, p. 654. *Z. lateralis fuliginosus*, n. subsp., COPE, Amer. Natural. xxix, p. 679, St. Margarita I., Lower California. *Z. stejnegerianus* and *conirostris*, n. spp., *id. ibid.* pp. 678 & 679, Texas and N. Mexico. [= *Z. constrictor*, L.—REC.]. *Z. smithii*, n. sp., BOULENGER, P. Zool. Soc. London, 1895, p. 536, pl. xxx, fig. 2, W. Somaliland.
- Acanthocalyx*, n. g., for *Zamenis ventrimaculatus*, Gray ; COPE, Tr. Amer. phil. Soc. xviii, p. 204.
- Tylanthera*, n. g., for *Zamenis florulentus*, Geoffr. ; COPE, *t. c.* p. 205.
- Salvadora grahamiæ*, B. & G. : notes by VAN DENBURGH, P. Calif. Ac. (2) v, p. 146.
- Coluber obsoletus*, Say : notes by RHOADS, P. Ac. Philad. 1895, p. 391. *C. quadrivirgatus*, Boie : notes on its habits in confinement ; WERNER, Zool. Garten, xxxvi, p. 243. *C. schmackeri*, n. sp., BÆTTGER, Zool. Anz. xviii, p. 268, and Ber. Offenb. Ver. xxxiii-xxxvi, p. 108, Loo Choo Is.
- Epiglottophis*, n. g., for *Coluber pleurostictus*, D. & B. ; COPE, Tr. Amer. phil. Soc. xviii, p. 204.
- Dendrophis meeki*, n. sp., BOULENGER, Ann. Nat. Hist. (6) xvi, p. 32, Fergusson I., Brit. New Guinea.
- Dendrelaphis papuensis*, n. sp., BOULENGER, *t. c.* p. 409, Trobriand Is., Brit. New Guinea.

- Chlorophis*, Hallow., and *Philothamnus*, Smith : synopsis of the species by GÜNTHER, Ann. Nat. Hist. (6) xv, p. 527.
- Philothamnus dorsalis*, Bocage, and *ornatus*, Bocage, figured by BOCAGE, Herp. Ang. pl. xiii, figg. i & xii, fig. 1.
- Leptophis ahaetulla*, L., p. 821, pl. lxii, fig. 2, *liocercus*, Wied, p. 823, pl. lxii, fig. 3, *marginatus*, Cope, p. 824, pl. lxiii, fig. 4, *nigromarginatus*, Gthr., p. 826, pl. lxiii, fig. 3, and *occidentalis*, Gthr., p. 827, pl. lxiii, fig. 1, described and figured by BOCOURT, Miss. Sc. Mex., Rept.
- Coronella austriaca*, Laur. : on its variation and distribution in Sweden ; LÖNNBERG, Biol. Centralbl. xv, p. 672, figg. *C. girondica*, Daud. : on a specimen stated to have been captured near Vienna ; STEINDACHNER, Ann. Hofmus. Wien, x, Not., p. 77.
- Lampropeltis nitida*, n. sp., VAN DENBURGH, P. Calif. Ac. (2) v, p. 143, pl. xiv, Lower California.
- Prosymna ambigua*, Bocage, figured by BOCAGE, t. c. pl. xi, fig. 1.
- Chilomeniscus stramineus*, Cope : notes by VAN DENBURGH, P. Calif. Ac. (2) v, p. 138.
- Pseuderyx plicatilis*, L., p. 802, pl. lx, fig. 7, *martii*, Wagl., p. 805, pl. lx, fig. 4, and *triangularis*, Wagl., p. 806, pl. lx, fig. 5, described and figured by BOCOURT, Miss. Sc. Mex., Rept. *P. plicatilis*, n. var. *anomalepis*, BOCOURT, t. c. p. 804, pl. lx, fig. 6, Colombia.
- Oligolepis*, n. g., allied to *Xenurophis*, Gthr., for *O. macrops*, n. sp., BOULENGER, Ann. Nat. Hist. (6) xvi, p. 171, Usambara, E. Africa.
- Cyclophis vernalis*, Dekay, described and figured by BOCOURT, Miss. Sc. Mex., Rept., p. 815, pl. lxi, fig. 2.
- Opheodrys aestivus*, L., described and figured by BOCOURT, t. c. p. 817, pl. lxi, fig. 3
- Ablabes herminæ*, n. sp., BËTTGER, Zool. Anz. xviii, p. 269, and Ber. Offenb. Ver. xxxiii-xxxvi, p. 110, Loo Choo Is.
- Calamaria brachyura*, N. Borneo, and *mindorensis*, Mindoro, Philippine Is., n. spp., BOULENGER, Ann. Nat. Hist. (6) xvi, p. 481.

Opisthoglyphæ.

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- Alluaquidina bellyi*, Mocq. : note by MOCQUARD, Bull. Soc. Philom. (8) vii, p. 124.
- Turbophis guentheri*, n. sp., ANDERSON, P. Zool. Soc. London, 1895, p. 656, pl. xxxvi, fig. 3, S. Arabia.
- Trimorphodon lyrophanes*, Cope : note by VAN DENBURGH, P. Calif. Ac. (2) v, p. 155.
- Dipsas irregularis*, Merr. : notes by MÉHELÿ, Termes. Fuzetek, xviii, p. 133.
- Dipsadoboa assimilis*, Matschie : note by BOCAGE, J. Sci. Lisb. (2) iv, p. 17.

- Himantodes*, D. & B. *Dipsas splendida*, p. 176, pl. lvi, fig. A, Yucatan [= *H. gemmistratus*, Cope.—REC.], and *gracillima*, p. 177, pl. lvi, fig. B, S. Mexico, n. spp., GÜNTHER, Biol. Centr.-Amer., Rept.
- Leptodira affinis*, p. 170, C. America [= *L. albofusca*, Lacép.—REC.], *splendida*, p. 171, pl. liii, fig. B, Mexico [= *L. personata*, Cope.—REC.], *polysticta*, p. 172, pl. lv, fig. A, Mexico and C. America [= *L. albofusca*, Lacép.—REC.], and *ocellata*, p. 172, pl. lv, fig. B, Nicaragua and Costa Rica, n. spp., GÜNTHER, l. c. *L. personata*, Cope, and *rhombifera*, Gthr., figured by GÜNTHER, *op. cit.* pl. liv.
- Philodryas baroni*, n. sp., BERG, An. Mus. Buenos Aires, iv, p. 189, fig., Tucuman, Argentina.
- Rhagerrhis tritaniata*, Gthr., and *acuta*, Gthr., figured by BOCAGE, Herp. Ang., pl. xa, figg. 1 & 2.
- Coclopetlis moilensis*, Reuss (= *producta*, Gerv.): note on specimens from Aden; ANDERSON, P. Zool. Soc. London, 1895, p. 356.
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- Taphrometopon lineolatum*, Brdt.: notes by ZANDER, Zool. Garten, xxxvi, p. 334.
- Psammophis*, Boie: synopsis of the species by BOULENGER, P. Zool. Soc. London, 1895, p. 538. *P. lacrymans*, Reuss: notes by ANDERSON, l. c. p. 655. *P. bocagii*, p. 538, Angola, and *pulcher*, p. 537, pl. xxx, fig. 3, W. Somaliland, n. spp., BOULENGER, l. c.
- Amphiophis angolensis*, Bocage, figured by BOCAGE, Herp. Ang. pl. xi, fig. 3.
- Mimophis mahfaleensis*, Grand. = *M. madagascariensis*, Gthr.; MOCQUARD, Bull. Soc. Philom. (8) vii, p. 103.
- Erythrolamprus*, Wagl. *Tachymenis decipiens*, Gthr., figured by GÜNTHER, Biol. Centr.-Amer., Rept., pl. liii, fig. A.
- Hydrocalamus quinquevittatus*, D. & B., described and figured by BOCOURT, Miss. Sc. Mex., Rept., p. 811, pl. lx, fig. 3.
- Homalocranium virgatum*, Gthr., *atriceps*, Gthr., *armillatum*, Gthr., *juni*, Gthr., *mæstum*, Gthr., and *boulengeri*, Gthr., figured by GÜNTHER, Biol. Centr. Amer., Rept., pl. lii.
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- Microsoma collare*, Ptrs., head figured by BOCAGE, Herp. Ang. pl. xiv, fig. 1.
- Calamelaps polylepis*, Bocage, head figured by BOCAGE, *op. cit.* pl. ix, fig. 2.
- Rhinocalamus*, Gthr., is an opisthoglyphous Snake; GÜNTHER, Ann. Nat. Hist. (6) xv, p. 526.
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- Diemenia muelleri*, Schleg.: notes by MÉHELÿ, Termes. Fuzetek, xviii, p. 135.
- Naja nigricollis*, Reinh.: note on the habits, by BAVAY, Bull. Soc. zool. France, xx, p. 210, and L. PETIT, *t. c.* p. 239. *N. anchieta*, Bocage, figured by BOCAGE, Herp. Ang. pl. xvi, fig. 2. *N. goldii*, n. sp., BOULENGER, Ann. Nat. Hist. (6) xvi, p. 34, Niger.
- Elapsoidea guentheri*, Bocage, figured by BOCAGE, Herp. Ang. pl. xiv, fig. 3: notes by GÜNTHER, Ann. Nat. Hist. (6) xv, p. 525, pl. xxi, fig. c.
- Elaps eurysanthus*, Kenn., figured by STEJNEGER, Rep. U. S. Mus. f. 1893, pl. ii. *E. ruatanus*, n. sp., GÜNTHER, Biol. Centr.-Amer., Rept., p. 185, pl. lvii, fig. b, Ruatan I., Honduras [= *E. fulvius*, L., var.—REC.].

AMBLYCEPHALIDÆ.

- Mesopeltis dimidiatus*, Gthr., figured by GÜNTHER, Biol. Centr.-Amer., Rept., pl. li, figg. A & B.
- Neopareas*, n. g., allied to *Leptognathus*, but chin-shields not divided in the middle, for *N. bicolor*, n. sp.; GÜNTHER, Biol. Centr.-Amer., Rept., p. 178, pl. lvi, fig. c.

VIPERIDÆ.

- PHISALIX & BERTRAND, Bull. Mus. H. N. 1895, pp. 66 & 67, have ascertained that the virulence of Viper-poison in France increases from spring to autumn. The same authors, *t. c.* pp. 129–131, have further notes on Viper-poison.
- Vipera berus*, L., and *ursinii*, Bp., described and figured by MÉHELÿ, Math. term. Kozlem. Magyar Ak. xxvi, p. 373, 2 pls. *V. berus*, L.: on Portuguese specimens; J. DE BEDRIAGA, Ann. Sci. nat. Porto, ii, p. 114. *V. heraldica*, Bocage, figured by BOCAGE, Herp. Ang. pl. xvi, fig. 1.
- Atheris ceratophora*, n. sp., WERNER, Verh. Ges. Wien, xlv, p. 194, pl. v, fig. 1, Usambara, E. Africa.
- Clothelaps*, n. g., for *Atractaspis hildebrandtii*, Ptrs.; COPE, Tr. Amer. phil. Soc. xviii, p. 211.
- Ancistrodon contortrix*, L., and *piscivorus*, Lacép., figured by STEJNEGER, Rep. U. S. Mus. f. 1893, pls. iii & iv. *A. bilineatus*, Gthr., figured by GÜNTHER, Biol. Centr.-Amer., Rept., pl. lviii, figg. A & B.
- Lachesis lanceolatus*, Lacép., figured by STEJNEGER, *l. c.* pl. xix.
- Bothriechis godmani*, Gthr., figured by GÜNTHER, *op. cit.* pl. lvii, fig. A.
- Trimeresurus luteus*, n. sp., BÖTTGER, Zool. Anz. xviii, p. 269, and Ber. Offenb. Ver. xxxiii–xxxvi, p. 111, Loo Choo Is.
- Sistrurus catenatus*, Raf. (*kirtlandii*, Holbr.): on its habits in confinement; P. SELOUS, Bull. Soc. zool. France, xx, p. 204. *S. miliarius*, L., figured by STEJNEGER, *t. c.* pl. vii.

Crotalus horridus, L., pl. ix, *adamanteus*, Pal. de Beauv., pl. x, *lepidus*, Kenn., pl. xvi, and *mitchelli*, Cope, figured by STEJNEGER, *t. c.* *C. enyo*, Cope, and *mitchelli*, Cope : notes by VAN DENBURGH, P. Calif. Ac. (2) v, pp. 157 & 159. *C. omillemanus*, p. 192, pl. lviii, fig. c, *guerrero*, Mexico [= *C. triseriatus*, Wagl.—REC.], *pallidus*, p. 193, pl. lix, fig. B, City of Mexico [= *C. triseriatus*, Wagl.—REC.], and *salvini*, p. 193, pl. lix, fig. A, Huamantla, Mexico [= *C. scutulatus*, Kenn.—REC.], n. spp., GÜNTHER, *op. cit.* *C. pricei*, n. sp., VAN DENBURGH, P. Calif. Ac. (2) v, p. 856, Arizona.

On formation and loss of segments of the caudal appendage in Rattlesnakes ; MOLE, J. Trinidad Club, ii, p. 189.

ORNITHOSAURIA.

Pterodactylus elegans, Wagn. : on variations in the proportions of the fore-arm and metacarpus ; BOULE, Bull. Mus. H. N. 1895, p. 172.

Ornithostoma ingens, Willist. : on the mandible ; WILLISTON, Kansas quart. iv, p. 61, pl. i.

DINOSAURIA.

O. C. MARSH, Amer. J. Sci. (3) l, p. 491, proposes the following modification of his previous classification of the Dinosaurs, which are divided into 3 Orders :—

I. THEROPODA. *Megalosauridæ*, *Dryptosauridæ*, *Labrosauridæ*, *Plateosauridæ*, *Anchisauridæ*.

A. CÆLURIA. *Cœluridæ*.

B. COMPSOGNATHA. *Compsognathidæ*.

C. CERATOSAURIA. *Ceratosauridæ*, *Ornithomimidæ*.

D. HALLOPODA. *Hallopodæ*.

II. SAUROPODA. *Atlantosauridæ*, *Diplodocidæ*, *Morosauridæ*, *Pleurocelidæ*, *Titanosauridæ*.

III. PRÆDENTATA.

A. STEGOSAURIA. *Stegosauridæ*, *Scelidosauridæ*, *Nodosauridæ*.

B. CERATOPSIA. *Ceratopsidæ*.

C. ORNITHOPODA. *Camptosauridæ*, *Laosauridæ*, *Hypsilophodontidæ*, *Iguanodontidæ*, *Trachodontidæ*, *Claosauridæ*, *Nanosauridæ*.

MARSH, *t. c.* p. 407, pls. v–viii & x, gives restorations of the principal types of Dinosaurians of America and Europe. Also Rep. Brit. Ass. 1895, pp. 685–688.

Iguanodon, Mant. : on a tooth from the Wealden of Schude near Lehrte, N. Germany ; STRUCKMANN, Zeitschr. Deutsch. geol. Ges. xlvi, p. 828, figg. *I. bernissartensis*, Blgr. : on the cast exhibited in the British Museum ; H. WOODWARD, Geol. Mag. (4) ii, p. 289, pl. x.

Bothriospondylus madagascariensis, n. sp., LYDEKKE, Quart. J. Geol. Soc. li, p. 329, figg., Jurassic, Madagascar.

- H. E. SAUVAGE, Bull. Soc. geol. France (3) xxii, pp. 465-470, remarks on the Upper Jurassic Dinosaurs of the Boulonnais.
 On three-toed Dinosaurian tracks in the Newark Group, New Jersey ;
 J. B. WOODWORTH, Amer. J. Sci. (3) 1, p. 481.

EMYDOSAURIA.

- On the development of the teeth ; C. RÖSE, Morphol. Arbeit. iii, 1894, pp. 195-228, figg.
 F. E. BEDDARD & P. C. MITCHELL, P. Zool. Soc. London, 1895, pp. 343-349, figg., write on the structure of the heart in *Alligator mississippiensis*.
Crocodylus vicetinus, Liroy (foss.), described and figured by SACCO, Mem. Acc. Torino (2) xlv, p. 81, pl. *C. bolcensis*, n. sp. (foss.), *id. ibid.*, p. 77, pl., Eocene, Monte Bolca.
Purussaurus, n. g. (= ? *Caiman*) for *P. brasiliensis*, n. sp. (foss.) ; RODRIGUES, Vellosia, ii, p. 50 (1892), Amazon Valley.
 On the recently discovered *Dakosaurus* from the Jurassic of Württemberg ; E. FRAAS, Jahresh. Ver. Wurttemb. li, p. cxvii.

CHELONIA.

- J. F. VAN BEMMELN, Handel. Nederl. Nat. Congr. 1895, discusses the phylogeny of the Chelonians.
 A. BIENZ, Rev. Suisse Zool. iii, pp. 125-133, remarks on the structure of the shell of Chelonians.
 On the development, structure, and function of the amnion and its canal in *Emys* ; MEHNERT, Morphol. Arbeit. iv, pp. 207-274, pls. ix-xii.
Trionyx capellinii, Negr. (foss.), n. varr. *gracilina* and *perexpansa* ; SACCO, Atti Acc. Torino, xxx, pp. 542 & 544, Oligocene, Monteviale, Italy.
T. bambolii, p. 5, pl. i, figg. 1-4, and pl. ii, fig. 9, *senensis*, p. 21, pl. i, figg. 5 & 6, and pl. ii, figg. 7 & 10, and *portisi*, n. spp. (foss.) ; RISTORI, Chelon. foss. Montebamboli ; Montebamboli and Casteani, Italy.
T. propinquus, n. sp. (foss.), *id. ibid.*, p. 88, pl. ii, fig. 11, and pl. v, fig. 27, Castino, Italy.
Chelys, Dum. : on fossil remains from the Amazon Valley ; RODRIGUES, Vellosia, ii (1892), p. 48.
Podocnemis luta, n. sp. (foss.), RISTORI, Atti Soc. Toscana, Mem. xiv, p. 7, pl. i, Miocene, Malta.
Testudo daudinii, D. & B. : T. SAUZIER describes and figures a living specimen from the Six Islands, N.W. of Madagascar, La Nature, xxiii, p. 273, figg., and C.R. Ac. Sci. cxxi, p. 430. On a gigantic tortoise now living in the Seychelles ; W. ROTHSCHILD, Nov. Zool. ii, p. 483. *T. yniphora*, Vaill. ; note by VAILLANT, C.R. Soc. Philom. 1895, p. 42. *T. elegans*, Schoepff : on individual variations in Ceylonese specimens ; HALY, J. As. Soc. Ceylon, xiii, p. 123, figg. *T. verreauxii*, Smith : notes by OUDEMANS, t. c. p. 323. *T. iberica*, Pall. : on the pairing habits ; KATHARINER & ESCHERICH, Biol. Centralbl. xv, p. 815 ; on the rate of growth in captivity : P. EADE, Tr.

- Norfolk Soc. v, 1893, p. 368. *T. horsfieldii*, Gray : notes by ZANDER, Zool. Garten, xxxvi, pp. 211 & 376. *T. pyrenaica*, n. sp. (foss.), DEPÉRET, Mem. Soc. geol. France, Pal. v, No. 3, p. 155, pl. xvi, Pliocene, Roussillon.
- Colossoemys*, n. g. (= ? *Testudo*) for *C. macrococcygeana*, n. sp. (foss.) RODRIGUES, Vellozia, ii (1892), p. 44, Brazil.
- Homopus areolatus*, Thunb. : notes by OUDEMANS, Zool. Anz. xviii, p. 321.
- Terrapene*, Merr. (*Cistudo*, Flem.) : revision of the species, by W. E. TAYLOR, P. U. S. Mus. xvii, p. 573, figg. *T. bauri*, n. sp., *id. ibid.* p. 576, Florida.
- Pariemys*, n. g. for *Terrapene bauri*, Taylor, and *Toxaspis*, n. g. for *Cistudo major*, Ag. ; COPE, Amer. Natural. xxix, p. 757.
- Emys quarternaria*, n. sp. (foss.), RODRIGUES, Vellozia, ii (1892), p. 42, Amazon valley. *E. depressa*, p. 41, pl. iii, figg. 14 & 15, pl. v, figg. 24-26, *campanii*, p. 64, pl. iv, figg. 18-22, and *parva*, p. 78, pl. iii, figg. 16 & 17, pl. iv, figg. 19 & 23, and pl. vi, fig. 30, n. spp. (foss.), RISTORI, Chelon. foss. Montebamboli ; Montebamboli and Casteani, Italy.
- Clemmys caspica*, Gm. : notes by ZANDER, Zool. Garten, xxxvi, p. 372. *C. gaudryi*, Depéret (foss.), described and figured by DEPÉRET, Mem. Soc. geol. France, Pal. v, No. 3, p. 161, pl. xvii.
- Chrysemys nebulosa*, n. sp., VAN DENBURGH, P. Calif. Ac. (2) v, p. 84, pls. iv-vi, Lower California.
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- Dermatemys maviï*, Gray : a study of the skeleton by A. BIENZ, Rev. Suisse Zool. iii, p. 61, pls. ii & iii.
- Aromochelys carinatus*, Gray : description of a specimen from Tennessee, referred with doubt to this species; RHODS, P. Ac. Philad. 1895, p. 384.
- Desmochelys*, n. g., type of a new family, *Desmochelyidae*, near *Chelonidae*, for *D. lowii*, n. sp. (foss.) ; WILLISTON, Kansas quart. iii, 1894, p. 5, figg., pls. ii-vi, Benton Cretaceous, Nebraska.
- Pygmoëchelys*, n. g. (*Thalassemyd.* ?) for *P. michelobona*, n. sp. (foss.) ; LAUBE, Iotos (2) xvi, p. —, 1 pl., Cretaceous, Bohemia.
- Protostega gigas*, Cope (foss.) : on the plastron and nuchal bone ; O. P. HAY, Publ. Field Columb. Mus. i, p. 57, pls. iv & v.

ICHTHYOSAURIA.

- W. DAMES, SB. Ak. Berlin, 1895, pp. 493-498, remarks on the Ichthyosaurians of the Trias.
- G. BRANDES, Zeitschr. naturw. (5) vi, pp. 138-140, remarks on the affinities of the group.
- Ichthyosaurus platyodon*, Conyb. : on the discovery of remains at Arlon, Belgium; DOLLO, Bull. Soc. Belge Geol. viii, P. v. p. 75, and LECHIEN, *t. c.* p. 76.
- Schastasaurus*, n. g., of doubtful Ichthyosaurian affinities, for *S. pacificus*, n. sp. ; J. C. MERRIAM, Amer. J. Sci. (3) 1, p. 55, figg., Triassic Northern California.

PLESIOSAURIA.

- On the structure of the skull in *Peloneustes philarchus*, Seeley ; C. W. ANDREWS, *Ann. Nat. Hist.* (6) xvi, pp. 242-256, figg., pl. xiii.
- On the pectoral and pelvic girdles of *Murenosaurus plicatus* ; C. W. ANDREWS, *t. c.* pp. 429-434, figg.
- Cryptoclidus oxoniensis*, Phillips : description and figure of a young specimen ; C. W. ANDREWS, *Geol. Mag.* (4) ii, p. 241, pl. ix.
- Cimoliosaurus*, Leidy : on a cervical vertebra ; WILLISTON, *Kansas quart.* iii, 1894, p. 2, pl. i, figg. 1 & 2.
- Nothosaurus*, v. Mey. : on some remains from Halberstadt, Germany ; DEECKE, *Zeitschr. Deutsch. Geol. Ges.* xvii, p. 303, fig. On a mandible and isolated teeth, and on the bones of the trunk and limbs in specimens from Bayreuth ; GEISSLER, *t. c.* p. 337, pl. xiii, figg. 2 & 3, and xiv. *N. baruthicus*, n. sp., GEISSLER, *t. c.* p. 333, pl. xiii, fig. 1, Muschelkalk, Bayreuth. *N. (Oligolyceus) hecki*, n. sp., K. v. FRITSCH, *Zeitschr. Naturw.* (5) vi, p. 141, Muschelkalk, Thuringia.
- Oligolyceus*, n. subg. for *Nothosaurus mirabilis* ; K. v. FRITSCH, *t. c.* p. 140.
- Cymatosaurus fridericianus*, n. sp., K. v. FRITSCH, *t. c.* p. 141, Muschelkalk, Thuringia.
- On Nothosaurian remains recently discovered in the Province Saxony ; K. v. FRITSCH, *t. c.* p. 140.

RHYNCHOCEPHALIA.

- A. PERRIN, *Ann. Sci. Nat.* (7) xx, pp. 33-102, pls. ii-v, describes the osteology and myology of the limbs in *Sphenodon punctatus*.
- On the dentition of *Sphenodon* ; BAUR, *Anat. Anz.* xi, p. 436.

ANOMODONTIA.

- E. D. COPE, *P. Amer. Phil. Soc.* xxxiv, p. 436, redefines his order *Cotylosauria*, with which he unites Seeley's *Pariasauria*, and which he divides into 4 families : *Elginiidæ*, *Pariasauridæ*, *Diadectidæ*, and *Pariotichidæ*.
- Pariotichus*, Cope : generic characters discussed, and synopsis of the species ; COPE, *t. c.* p. 443. *P. agesti*, Cope, figured, *l. c.* pl. vii. *P. isolomus* and *hamatus*, n. spp., *id. ibid.* p. 446, Permian, Texas.
- Isodectus*, n. g. (*Pariotichid.*) for *Pariotichus megalops* ; COPE, *t. c.* p. 442.
- Captorhinus*, n. g. (*Pariotich.*) for *C. angusticeps*, n. sp., COPE, *t. c.* p. 443, Permian, Texas.
- Pantylus coicodus*, n. sp., COPE, *t. c.* p. 450, Permian, Texas.
- Hypopnous*, n. g. (*Pariotich.*), COPE, *t. c.* p. 450, for *H. squaliceps*, *id. ibid.* p. 451, pl. viii, figg. 3-5, Permian, Texas.

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- L. DOLLO, Bull. Soc. Belge Geol. ix, Mem. p. 112, regards the Batrachians as derived from the Crossopterygian Ganoids, not from the *Dipnoi*.
- A. DAVISON, dealing with the position of *Amphiuma*, gives a phylogenetic table of the various groups of Batrachians; J. Morphol. xi, p. 407.
- On a collection illustrating the morphology of the Batrachians; W. G. RIDEWOOD, Nat. Sci. vii, pp. 258-269, pl. xix.
- On the development of the occipital region in Batrachians; A. SEVERTZOFF, Bull. Moscou, 1895, pp. 186-284, pl. v.
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- H. H. FIELD, Morphol. Jahrb. xx, pp. 340-356, pls. xii & xiii, remarks on the development of the vertebral column in Batrachians.
- E. GÖPFERT, Morphol. Jahrb. xx, pp. 441-448, figg., has a preliminary communication on the development of the ribs in Batrachians.
- O. SEYDEL, Morphol. Jahrb. xxiii, pp. 453-543, figg., writes on the nose and Jacobson's organ in Batrachians.
- On the morphology of the bladder in Batrachians; H. H. FIELD, Morphol. Arbeit. iv, pp. 30-52, pl. i.
- On the adipose bodies of Batrachians; GIGLIO-TOS, Atti Acc. Torino, xxx, pp. 853-858, pl., and Boll. Mus. Torino, x, No. 211.
- P. MATHES, Morphol. Jahrb. xxiii, pp. 256-288, figg., pl. xix, contributes to the morphology of mesenteric structures in Batrachians.
- On successful experiments of grafting or fusion of parts of different individuals of Batrachian larvæ; G. BORN, Verh. Anat. Ges. ix, pp. 153-159.
- On the histology of the brain of Batrachians; L. NEUMAYER, SB. Ges. Munchen, xi, pp. 60-70, figg.

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V. PISCES.

BY

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

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- The fossil Fishes of the Talbragar Beds (Jurassic?). *Mem. geol. Surv. N. S. Wales, Pal.*, No. 9, 27 pp., 6 pls.
- On the Liassic Fish *Osteorachis macrocephalus*. *Geol. Mag.* (4) ii, pp. 204-206, pl. vii, fig. 10.
- A synopsis of the remains of Ganoid Fishes from the Cambridge Greensand. *T. c.* pp. 207-214, pl. viii.
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- YUNG, E. Phénomènes de la digestion chez les Squales. *Arch. Sci. Nat.* (3) xxxiv, pp. 464-468.

II.—GENERAL SUBJECT.

B. DEAN publishes a text book entitled, "Fishes, Living and Fossil"; New York : 1895, 8vo.

E. HAECKEL, in his "Systematische Phylogenie der Wirbelthiere," reviews the structural characters of Fishes, which fall into 4 Classes : *Acrania*, *Cyclostoma*, *Pisces*, *Dipneusta*. A large number of new names for systematic divisions are proposed, further reference to which need not be made in this Record.

On the origin of Vertebrates; GOETTE, Verh. Deutsch. Zool. Ges. v, pp. 12-30.

L. DOLLO, Bull. Soc. Belge Geol. ix, Mem. pp. 79-128, in dealing with the phylogeny of the *Dipnoi*, discusses the value of various morphological characters used in the classification of Fishes.

On the labial cartilages of Fishes, regarded as homologous with the cirri of *Amphioxus*; POLLARD, Verh. Anat. Ges. ix, pp. 232-235, figg. : the same, Zool. Jahrb. Anat. viii, pp. 379-424, pls. xxiv & xxv, writes on the oral cirri of Siluroids and the origin of the head in Vertebrates.

T. W. BRIDGE, P. Zool. Soc. London, 1895, pp. 307-310, pl. xxii, compares certain points in the cranial osteology of *Osteoglossum* and *Lepidosteus*.

C. GEGENBAUR, Morphol. Jahrb. xxiii, pp. 1-20, figg., shows that the bone termed *clavicula* in Fishes is not homologous with that of higher Vertebrates, which is represented by the so-called *infraclavicula*. The two bones are now called *clavicula* and *cleithrum*.

E. GÖPERT, Morphol. Jahrb. xxiii, pp. 145-217, figg., pls. xiii-xvi, deals with the morphology of the ribs of Fishes.

F. MAURER deals with the epidermis and its productions on pp. 1-123 of his work "Die Epidermis" (Leipzig : 1895).

On the nerves of the chromatophores; EBERTH & BUNGE, Arch. mikr. Anat. xlvi, pp. 370-378, pls. xvii & xviii.

On the nerves of the alimentary canal; R. MONTI, Rend. Ist. Lombardo (2) xxviii, pp. 688-695.—French translation in Arch. ital. Biol. xxiv, pp. 188-195.

On an arrangement of the retinal cells in the eyes of Fishes, partially simulating compound eyes; J. A. RYDER, P. Ac. Philad. 1895, pp. 161-166, figg.

On rudimentary eyes in Fishes; C. KOHL, Bibl. Zool. v, pp. 181-274.

H. KLAATSCH, Morphol. Jahrb. xxii, pp. 514-560, pls. xxii & xxiii, writes on the phylogeny and transformations of the notochord.

On the development of the occipital region; A. SEVERTZOFF, Bull. Soc. Moscou, 1895, pp. 186-284, pls. iv & v.

W. A. LOGY, J. Morphol. xi, pp. 497-594, figg., pls. xxvi-xxx, writes on metamerism and sense-organs of the head.

On gastrulation ; SAMASSA, Verh. Deutsch. Zool. Ges. v, pp. 130-142.

On double malformations ; WINDLE, P. Zool. Soc. London, 1895, pp. 423-429, pl. xxv.

On the relations of the generative organs and of the sexes in some British Fishes ; J. T. CUNNINGHAM, J. Mar. Biol. Ass. (2) iv, p. 28.

On the relation of the asymmetrical caudal fin to the mode of locomotion ; AHLBORN, Zeitschr. wiss. Zool. lx, pp. 1-15, pl. i.

On the sense of hearing ; A. KREIDL, Arch. Physiol. lxi, pp. 450-464.

Observations on circulation and respiration in some marine Fishes ; WILLEM & SCHOENLEIN, Zeitschr. Biol. (2) xiv, pp. 511-547, figg.

On hydrostatic ; DEI, Riv. ital. Sci. Nat. xv, pp. 97-99, 133-136.

On the gases in the swim-bladder ; J. RICHARD, C.R. Ac. Sci. cxx, pp. 745-747.

On the action of very low temperature, and on the static functions of the swim-bladder ; P. REGNARD, C.R. Soc. Biol. (10) ii, pp. 652-654 ; P. BONNIER, *t. c.* pp. 745-747.

On maximum temperatures endured by German Fishes ; KNAUTH, Biol. Centralbl. xv, p. 752.

On atmospheric and other influences on the migration of Fishes ; J. J. ARMISTEAD, Bull. U. S. Fish Comm. xiii, 1894, pp. 93-99.

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On pelagic ova, larvæ, and young Fishes procured in the Firth of Forth, St. Andrews Bay, and the Moray Firth ; C. WILLIAMSON, Rep. Fish. Board Scotland, xiii, pt. 3, pp. 258-275.

List of pelagic ova, larvæ, and young Fishes obtained on the East Coast of Scotland in 1894 ; H. C. WILLIAMSON & J. R. TOSH, Rep. Fish. Board Scotland, xii, pt. 3, 1894, p. 298.

On the rate of growth of some Scottish Fishes ; MASTERMAN, Rep. Fish. Board Scotland, xiii, pt. 3, pp. 289-296, pl. xiv.

On the food and distribution of young Fishes on the West Coast of England ; HERDMAN & SCOTT, P. Biol. Soc. Liverp. ix, pp. 106-142.

On the Fish thrown up by artesian wells in the Algerian Sahara ; G. ROLLAND, C.R. Ass. Franc. xxiii, ii, pp. 665-672.

III.—FAUNÆ

J. PALACKY publishes a second, revised and enlarged, edition of his essay on the geographical distribution of Fishes.

E. HULL, Quart. J. Geol. Soc. li, p. 93, remarks on the physical conditions of the Mediterranean basin, which have resulted in a community of some species of freshwater Fishes in the Nile and the Jordan.

EUROPE.

Scandinavia. F. A. SMITT completes his revised edition of Fries & Ekström's "Scandinavian Fishes." (Cf. Zool. Rec. xxx, Pisc. p. 13.) On some rare Fishes on the Bergen Coast; GRIEG, Berg. Mus. Aarb. 1894-95, No. 5, 20 pp.

Denmark. On the Fishes of Stege and Frederikssund; PETERSEN, Rep. Dan. Biol. Stat. 1894, pp. 37-42.

England. Additions to the list of Norfolk Fishes. J. LOWE, Tr. Norfolk Soc. v, 1894, pp. 634-642.

Ireland. On rare or little-known Fishes from the west coast of Ireland; HOLT & CALDERWOOD, Tr. Dublin Soc. (2) v, pp. 360-512, pls. xxxix-xliv.

France. On the Fishes of the environs of Amiens; M. DUBOIS, Bull. Soc. Nord France, xi, pp. 37 & 38, 52-54, 168 & 169, 246-248, 276-279, & xii, pp. 38 & 39. List of the freshwater Fishes of the Department Tarn; CARAVEN-CACHIN, C.R. Ass. Franc. xxiii, ii, pp. 656-659.

Germany. L. BUXBAUM, Zool. Garten, xxxvi, pp. 294-297, records some observations on the Fishes of the Main.

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Maine. On the freshwater Fishes of Washington County; W. C. KENDALL, *t. c.*, pp. 43-54.

North Carolina. List of the Fishes of the Neuse River Basin; EVERMANN & COX, Bull. U. S. Fish Comm. 1895, pp. 303-310.

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Indiana and Ohio. On the Fishes of the Eel River and Maumee River Basin; KIRSCH, *t. c.* pp. 31-40 & 315-337.

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California. On the freshwater Fishes of San Luis Obispo County; D. S. JORDAN, *t. c.* pp. 141 & 142. List of the Fishes inhabiting Clear Lake; JORDAN & GILBERT, *t. c.* pp. 139 & 140.

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IV.—PALÆONTOLOGY.

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J. V. ROHOŇ, Mem. Ac. St. Petersb. xli, 1893, 124 pp., 3 pls., continues his account of the Upper Silurian Fishes of Oesel. Supplement, Bull. Ac. St. Petersb. (2) iv. 1894, pp. 201-225, 2 pls.

A. S. WOODWARD, Geol. Mag. (4) ii, pp. 207-214, pl. viii, gives a synopsis of the remains of Ganoid Fishes from the Cambridge Greensand.

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Jurassic (?) of New South Wales. On the fossil Fishes of the Talbragar Beds; A. S. WOODWARD, Mem. geol. Surv. N. S. Wales, Pal. No. 9, 27 pp., 6 pls.

V.—REFERENCES ARRANGED SYSTEMATICALLY.

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TELEOSTEI.

On the function of the Weberian ossicles; SÖRENSEN, J. Anat. Physiol. norm. path. xxix, pp. 399-423.

On the pancreas of *Orenilabrus melops*; LAGUESSE, Rev. Biol. Nord France, vii, pp. 343-363, pl. x.

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On the larval and post-larval development of the brain of *Ammodytes tobianus*; FULLARTON, Rep. Fish. Board Scotland, xiii, pt. 3, pp. 276-288, pls. xi-xiii.

H. VIRCHOW, Verh. Anat. Ges. ix, pp. 201-218, figg., has a second paper on the early development of the Trout.

On the development of the fins in the Salmon; R. G. HARRISON, Arch. mikr. Anat. xlvi, pp. 500-578, pls. xxiv-xxvii.

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On the ectoderm of the blastoderm in the Teleostean embryo; RAFFAËLE, Mt. Stat. Noapel, xii, pp. 169-207, pl. vii.

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ACANTHOPTERYGII.

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Acerina cernua, L. : on development and growth; EHRENBAUM, Wiss. Meeresunt. Kiel Helgol. (2) i, 1894, p. 63.

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SERRANIDÆ.

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- Serranus*, Cuv. : on Eocene remains from Calabria ; BASSANI, Atti Acc. Napoli (2) vii, No. 7, p. 10. pl., fig. 4. *S. validus* and *stiriacus*, n. spp. (foss.), GORJANOVIĆ-KRAMBERGER, Pisc. foss. pp. 59 & 60, pl. x, figg. 2 & 3, Oligocene, Tüffer, Styria.
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PRISTIPOMATIDÆ.

- Lythrulon opalescens*, n. sp., JORDAN & STARKS, P. Calif. Ac. (2) v, p. 459, Mazatlan.
- Hæmulon eckmani*, n. sp., LÖNNBERG, Ofv. Ak. Forh. 1895, p. 658, Hayti.
- Plectorhynchus paulayi* and *saidæ*, n. spp., STEINDACHNER, Anz. Ak. Wien, 1895, pp. 180 & 181, Mauritius.
- Ulema*, n. g., for *Gerres lefroyi*, Jord. ; JORDAN & EVERMANN, P. Calif. Ac. (2) v, p. 471.

SQUAMIPINNES.

- Chatodon hoeferi*, n. sp. (foss.), GORJANOVIĆ-KRAMBERGER, Pisc. foss. p. 60, Oligocene, Tüffer, Styria.
- Chatodipterus* (= *Ephippus*) *lippei*, n. sp., STEINDACHNER, Anz. Ak. Wien, 1895, p. 180, Liberia.

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- Acanthophoria*, n. g. for *Pagellus libanicus*, Pict. (foss.), which is figured ; GORJANOVIĆ-KRAMBERGER, Pisc. foss. p. 45, pl. viii, fig. 1.

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- Sebastodes*, Gill: on the osteological specific characters ; CRAMER, t. c. pp. 573-610, pls. lvii-lxix. *S. hopkinsi*, n. sp., *id. ibid.* p. 594, Pacific Grove, California.
- Sebastichthys brevispinis*, n. sp., T. H. BEAN, P. U. S. Mus. xvii, p. 627, Alaska.

BERYCIDÆ.

- Beryx stachei*, n. sp. (foss.), GORJANOVIĆ-KRAMBERGER, *Pisc. foss.* p. 43, pl. i, figg. 3 & 4, Cretaceous, Comen.
Lobopterus, n. g. for *L. pectinatus*, n. sp. (foss.), GORJANOVIĆ-KRAMBERGER, *t. c.* p. 44, pl. viii, fig. 5, Cretaceous, Comen.
Hoplostethus mediterraneus, C. & V., figured by ALCOCK, *Ill. Zool. Investig.*, *Fish.* iii, pl. xiv, fig. 3.

SCIENIDÆ.

- Plagioscion ternetzii*, n. sp., BOULENGER, *P. Zool. Soc. London*, 1895, p. 523, Paraguay.
Sagenichthys, n. n. for *Ancylodon*, Cuv., *nec Ill.*; BERG, *An. Mus. Buenos Aires*, iv, p. 52.
Polyclemus, n. n. for *Polycirrhus*, Boc., *nec Grube*; BERG, *t. c.* p. 54.
Umbrina canosai, n. sp., BERG, *t. c.* p. 56, coasts of Uruguay and Argentina.

XIPHIIDÆ.

- Xiphias gladius*, L.: note on and figure of a specimen caught at the mouth of the Loire; L. BUREAU, *Bull. Soc. Ouest France*, v, p. 53, pl. ii.

TRICHIURIDÆ.

- Thyrstites bengalensis*, Alc., figured by ALCOCK, *Ill. Zool. Investig.*, *Fish.* iii, pl. xv, fig. 10.

ACRONURIDÆ.

- Acanthurus*, Bl.: the name *Teuthis*, L., should be employed for this genus; GILL, *P. U. S. Mus.* xviii, p. 179.

PALÆORHYNCHIDÆ.

- Palæorhynchus riedlii*, n. sp. (foss.), GORJANOVIĆ-KRAMBERGER, *Pisc. foss.* p. 61, pl. xi, fig. 1, Oligocene, Trifail, Styria.

CARANGIDÆ.

- Caranx medusicola*, n. sp., JORDAN & STARKS, *P. Calif. Ac.* (2) v, p. 430, pl. xxxiv, W. coast of Mexico.
Hynniss hopkinsi, n. sp., JORDAN & STARKS, *t. c.* p. 435, pl. xxxv, Mazatlan.
Trachynotus paloma, p. 437, and *culveri*, p. 439, pl. xxxvi, n. spp., JORDAN & STARKS, *t. c.*, Gulf of Mexico.
Parona, n. n. for *Paropsis*, Jen., *nec Oliv.*; BERG, *An. Mus. Buenos Aires*, iv, p. 39.

Aipichthys pretiosus, Stdr. (foss.), described and figured by GORJANOVIĆ-KRAMBERGER, *Pisc. foss.* p. 46, pl. ii, fig. 3.

STROMATEIDÆ.

Zenopsis figueirai, n. sp., BERG, *An. Mus. Buenos Aires*, iv, p. 43, coast of Uruguay.

SCOMBRIDÆ.

Thynnus vulgaris, Cuv. : on the skeleton ; A. T. MASTERMAN, *Rep. Fish. Board Scotland*, xii, pt. 3, 1894, p. 272, pls. xi & xii. *T. planovatus*, n. sp. (foss.), GORJANOVIĆ-KRAMBERGER, *Pisc. foss.* p. 63, pl. xi, fig. 2, Oligocene, Trifail, Styria.

Auxis stiriacus, n. sp. (foss.), GORJANOVIĆ-KRAMBERGER, *t. c.* p. 64, pl. xi, fig. 4, and xii, fig. 2, Oligocene, St. Georgen, Styria.

Scomberomorus sierra, n. sp., JORDAN & STARKS, *P. Calif. Ac.* (2) v, p. 428, W. coast of Mexico.

Rachicentron, Kaup, 1826, should supersede *Elacate*, Cuv. ; GILL, *P. U. S. Mus.* xviii, p. 217.

Luvarus imperialis, Raf. : note on a specimen from the Atlantic coast of Brittany ; VAILLANT, *Bull. Mus. H. N.* 1895, p. 238, fig.

Zeus robustus, Gorj.-Kramb. (foss.), figured by GORJANOVIĆ-KRAMBERGER, *Pisc. foss.* pl. xii, fig. 1.

TRACHINIDÆ.

Phricus, n. n. for *Aphritis*, Cuv., *nec* Latr. ; BERG, *An. Mus. Buenos Aires*, iv, p. 65.

Centropercis, n. g. (*Percophiin.*) for *C. nudivittis*, n. sp., DOUGLAS-OGILBY, *P. Linn. Soc. N. S. Wales* (2) x, p. 320, Maroubra Bay, New South Wales.

Pinguipès somnambula, n. sp., BERG, *t. c.* p. 61, coast of Argentina.

BATRACHIDÆ.

Thalassothia, n. g. for *Thalassophryne montevidensis*, Berg ; BERG, *An. Mus. Buenos Aires*, iv, p. 67, pl. i, fig. 1.

PSYCHROLUTIDÆ.

Gilbertina, n. g. for *G. sigalutes*, n. sp., JORDAN & STARKS, *P. Calif. Ac.* (2) v, p. 811, pl. lxxxvi, Puget Sound.

PEDICULATI.

Lophius lugubris, Alc., figured by ALCOCK, *Ill. Zool. Investig.*, Fish. iii, pl. xiv, fig. 1.

Halieutæa fumosa, Alc., figured, *t. c.* fig. 2.

TRIGLIDÆ.

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- Trigla gurnardus*, L.: on the anatomy of the pectoral arch; H. C. WILLIAMSON, Rep. Fish. Board Scotland, xii, pt. 3, 1894, p. 322, pls. xiii-xv. *T. lyra*, L.: n. var. *propontidis*; STEINDACHNER, Anz. Ak. Wien, 1895, p. 183, Sea of Marmora.
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ICOSTEIDÆ.

Ronquihus jordani, Gilb., figured by JORDAN & STARKS, P. Calif. Ac. (2) v, pl. xcix.

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- Xiphistes*, n. g., allied to *Xiphidion*, for *X. chirus*, Jord. & Gilb., and *X. ulvæ*, n. sp. ; JORDAN & STARKS, t. c. p. 847, pl. cii, Puget Sound.
- Scytalina cerdale.*, Jord. & Gilb., figured by JORDAN & STARKS, t. c. pl. civ.
- Enneanectes*, n. g. for *Tripterygium carminalis*, Jord. & Gilb. ; JORDAN, P. Calif. Ac. (2) v, p. 501 ; figured, pl. liii.
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- Lumpenus lampetraformis*, Walb. : remarks by McINTOSH, Rep. Fish. Board Scotland, xii, pt. 3, 1894, p. 225, pl. iii, fig. 10.

MASTACEMBELIDÆ.

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- Thyrina*, n. g., allied to *Atherinella*, Stdr., for *T. evermanni*, n. sp. ; JORDAN & CULVER, t. c. p. 419, pl. xxxiii, Mazatlan. *T. crystallina*, n. sp., *id. ibid.* p. 420, Rio Presidio, near Mazatlan.
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MUGILIDÆ.

Mugil hospes, n. sp., JORDAN & CALVER, P. Calif. Ac. (2) v, p. 422, pl. xxxi, W. coast of Mexico.

GOBIESOCIDÆ.

Gobiesox muscarum, n. sp., MEEK & PIERSON, P. Calif. Ac. (2) v, p. 571, Monterey Bay, California.

TEUTHIDIDÆ.

Teuthis crestonis, n. sp., JORDAN & STARKS, P. Calif. Ac. (2) v, p. 485, pl. xvii, W. coast of Mexico.

Xesurus punctatus, Gill, described and figured by JORDAN, t. c. p. 486, pl. xlv.

ACANTHOPTERYGII PHARYNGOGNATHI.

POMACENTRIDÆ.

Microspathodon bairdii, Gill, described and figured by JORDAN, P. Calif. Ac. (2) v, p. 476, pl. xliii. *M. azurissimus*, n. sp., JORDAN & STARKS, t. c. p. 478, pl. xlv, Venados Is., Gulf of Mexico.

LABRIDÆ.

Halichæres dispilis, Gthr., described and figured by JORDAN, P. Calif. Ac. (2) v, p. 481, pl. xlv.

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ANACANTHINI.

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MACRURIDÆ.

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- Ctenacanthus* (?) *erectus*, n. sp. (foss.), A. V. KOENEN, Abh. Ges. Gotting. xl, No. 2, p. 3, Devonian of Budesheim, near Gerolstein.
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- Thelolepis volborthi* and *tulensis*, n. spp. (foss.), *id. ibid.* pp. 36 & 37, pl. i, figg. 14 & 15, Upper Silurian, Oesel.
- Ancistrodus*, n. g. for small teeth allied to *Monopleurodus*. *A. gracilis*, n. sp., *id. ibid.* p. 51, pl. i, figg. 31 & 32, Upper Silurian, Oesel.

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- On the epithelium of the branchial cavity in *Ammocætes*; J. SCHAFFER, Arch. mikr. Anat. xlv, pp. 294-338, pls. xix & xx.
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- Geotria chilensis*, Gray, noticed and figured by BERG, An. Mus. Buenos Aires, iv, p. 122, pl. ii, figg. 2 & 3.

LEPTOCARDII.

- On the chorda of *Amphioxus*; H. JOSEPH, Zeitschr. wiss. Zool. lix, pp. 511-536, pls. xxviii & xxix.: V. v. ERNER, Anz. Ak. Wien, 1895, pp. 263 & 264.
- On the posterior termination of the spinal cord of *Amphioxus*; RETZIUS, Biol. Untersuch. (2) vii, pp. 26-28, pl. viii, figg. 1-9 [Reprint].
- On the fecundation of the *Amphioxus* egg; SOBOTTA, Anat. Anz. xi, pp. 129-137, figg.
- On fecundation and maturation of the ovum of *Amphioxus lanceolatus*; VAN DER STICHT, Bull. Ac. Belgique (3) xxx, pp. 539-570, 2 pls.
- Remarks on the generic characters by T. GILL, Amer. Nat. xxix, p. 457.
- Amphioxides*, n. g., for *Branchiostoma pelagicum*, Gthr.; GILL, t. c.

VI. TUNICATA.

BY

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

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INTRODUCTION.

AMONGST the more important papers of the year are CAULLERY'S "Contributions," in which he discusses the formation of the colony, and the phenomena of growth, reproduction, degeneration, and rejuvenescence in the compound Ascidians. SEELIGER'S continuation of the *Tunicata* in Bronn's Thierreich is always an important event, and is a worthy addition to a standard work. Noteworthy embryological papers have been published by KOROTNEFF (on *Salpa*), and by SALENSKÏ on the compound Ascidians. SEELIGER gives us an anatomical and distributional paper on the *Pyrosomas*, and SLUITER a systematic report on Australian *Tunicata*.

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- DRIESCH, HANS. Von der Entwicklung einzelner Ascidien Blastomeren. Arch. Entwicklmech. i, pp. 398-413, taf. xvii.
- GARSTANG, W. Budding in *Tunicata*. Sci. Progress, vol. ii, pp. 43-67.
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- HJORT, J., & BONNEVIE, FRL. Ueber die Knospung von *Distaplia magnilarva*. Anat. Anz. x, No. 12, pp. 389-394.
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- LEFEBRE, GEO. On budding in *Perophora*. Johns Hopkins Univ. Circ. xiv, pp. 75-77.
- METCALF, M. M. Notes on Tunicate Morphology. Anat. Anz. xi, pp. 277-280 & 329-340.
- PIZON, A. Évolution du système nerveux et de l'organe vibratile chez les larves d'Ascidies Simples. C.R. Ac. Sci. cxx, pp. 462-464.
- . Contributions à l'embryogénie des Ascidies Simples. *Op. cit.* cxxi, pp. 270-273.
- RITTER, W. E. On budding in *Goodsiria* and *Perophora*. Anat. Anz. x, No. 11, pp. 364-368.
- . Some facts and reflections drawn from a study of budding in Compound Ascidians. Rep. Brit. Assoc. Ipswich, 1895, pp. 715-718.

- SALENSKY, W. Beiträge zur Entwicklungsgeschichte der Synascidien. II. Ueber die Entwicklung von *Didemnum niveum*. III. Allgemeiner Theil. Mt. Stat. Neapel, xi, pp. 488-630, 4 pls.
- SCHNEIDER, R. Die neuesten Beobachtungen über natürliche Eisenresorption in thierischen Zellkernen. *Op. cit.* xii, pp. 208-216, pl. viii.
- SEELIGER, O. *Tunicata* (Mantelthiere), in Bronn's Klassen und Ordnungen. Bd. iii, Suppl. Lief. 4-5. Leipzig.
- Die "Segmentation" des Ruderschwanzes der Appendicularien. Zusammenfassende Uebersicht. Zool. Centralbl. ii, pp. 609-614.
- Die Pyrosomen der Plankton-Expedition. *Ergeb. Plankton-Exped.* ii, E b., 95 pp., vii pls.
- SLUITER, C. PH. Tunicaten. In Semon, Zool. Forsch. i. Australien, &c. Jena. Deutsch. viii, 163-186, taf. vi-x.
- WINIWARTER, H. v. Note sur la glande annexe du tube digestif des *Ascidies simples*. *Arch. Biol.* xiv, pp. 261-273, pl. xi.

II. BIOLOGY.

ANATOMY, EMBRYOLOGY, PHYSIOLOGY, AND GENERAL.

A. GENERAL.

SEELIGER gives, in his Plankton report, what is practically a monograph or revision of the *Pyrosomida*. He deals both with the structure and the systematic of the group, and recognises in all 6 species, 2 of which are new.

SLUITER, in the introduction to his account of the *Tunicata* collected in Australian Seas by Prof. Semon, discusses the various proposed classifications of the *Tunicata*. He adheres to the old established division of the group into 1, *Larvacea*; 2, *Thaliacea*; and 3, *Ascidacea*; but establishes 3 new suborders as divisions of the *Ascidacea*. They are A, *Ascidacea socialia*; B, *Asc. merosomata*; and C, *Asc. simplicia*. His chief point is that the *Polystyelidæ* and the *Botryllidæ* should be detached from the compound Ascidiaceans, and linked to the simple.

CAULLERY gives a number of general observations on the structure and life of compound Ascidiaceans of the English Channel. He deals with such subjects as seasonal changes and the effects of mutilation.

CAULLERY, in another paper, discusses the structure and systematic position of Savigny's genus *Sigillina*, and places it with *Polyclinopsis* in a new family, the *Polyclinopsidæ*.

SCHNEIDER discusses the presence of iron in the nuclei of various tissues of *Clavelina rissoana*; Mt. Stat. Neapel, xii, p. 211, pl. viii, fig. 1.

B. ANATOMY.

WINIWARTER gives his observations on the structure of the gland ramifying on the walls of the digestive tube in *Corella* and *Phallusia*. He confirms the statement of previous observers that the gland opens into the stomach, and has no connection with the blood system. In some species there are multiple ducts. He considers it a digestive gland.

SEELIGER, in his account of the *Pyrosomas* of the Plankton Expedition, gives a good description of the structure of a *Pyrosoma* colony, and full anatomical and histological details of all the systems in the body of an Ascidiozoid.

SLUITER gives various anatomical details in his descriptions of both simple and compound Ascidians from Australia.

KLAATSCH has an account of the Appendicularian ectoderm, and of the activities of the nuclei of the remarkable cells which produce the modified test known as the Appendicularian "Haus."

METCALF gives a set of studies on various interesting points in Tunicate morphology—such as the subneural gland and its relation to the ganglion, pharyngeal and cloacal glands in *Cynthia*, development of testis in *Salpa*, &c.

C. EMBRYOLOGY.

In *Goodsiria dura*, n. sp., RITTER finds that the budding is pallial, as in *Botryllus*, but is not found in the adults, as the bud becomes severed very early. He finds that the neuro-hypophysis is formed from the dorsal endoderm.

In *Perophora annectens*, according to RITTER, the cavity of the partition of the stolon is connected with the left peribranchial cavity. There is no epicardium, and the nervous system and hypophysis are formed from the endoderm.

DRIESCH, in investigating the effect of experiments on developing embryos, has found that he gets from isolated blastomeres of the second stage not half embryos, but whole embryos of half the usual size.

HILL states that in the egg of *Phallusia mammillata* there are neither egg astrospheres nor egg centrosomes; both these structures are brought into the egg by the spermatozoa, and are derived from its middle piece. There is consequently no "quadrille" in the early development. The nucleus of the ovocyte starts with 8 chromosomes, which then divide, and 8 pass out with each polar body.

LEFEVRE, in his account of the budding of *Perophora*, supports Ritter in the view that the bud is attached to the stolon by its left peribranchial sac, but differs from Ritter in his account of the duration of that attach-

ment. He finds that the pericardium is formed by the concrescence of free mesenchyme cells. He finds that the common rudiment of the dorsal tube and the nerve ganglion is formed by free mesenchyme cells. No epicardium is present. In this respect *Perophora* differs greatly from *Clavelina*.

From his investigations of *Botryllus gouldii*, LEFEVRE is able to corroborate Hjort in his statement that all the important organs of the bud are ultimately of ectodermal origin. The ganglion is pinched off from the thickened ventral wall of the dorsal tube.

CAULLERY considers that blastogenesis in *Tunicata* (and in general) has nothing to do with the theory of germ layers, which it neither supports nor demolishes, but that it is rather of the nature of a regeneration, and is especially an "epigenetic" process, *i.e.*, it is an evolution dependent, above all, upon the conditions of environment.

HJORT & BONNEVIE give an account of the budding of *Distaplia magnilarva*, which brings that form into line with *Botryllus* and *Polyclinum*. They find that the nervous system and hypophysis develop from the inner, entodermal, vesicle.

DRIESCH finds from his experiments on the development of isolated Ascidian blastomeres that, instead of forming fractions of embryos, they become entire embryos of reduced size.

KOROTNEF discusses the formation of the germ layers in *Salpa*, and differs from Salenskÿ and Brooks in his interpretation.

SALENSKÿ, in continuing his work on the development of the *Synascidie*, treats of *Didemnum niveum* and allied forms. He regards the *Tunicata* as *Chordata*, with only one pair of gill slits. He considers that the curious condition in *Diplosoma* is no case of metagenesis, but that the double larva is formed by division of a single embryo.

PIZON has worked at the embryology of the simple Ascidians, *Cynthia morus* and *Ascidia villosa*, chiefly at the nervous system and the peribranchial cavities (of endodermal origin), and their prolongations, the epicardium.

GEOGRAPHICAL DISTRIBUTION.

SEELIGER gives tables and a full discussion of the distribution of the species of *Pyrosoma* in the Atlantic Ocean, both horizontally and vertically, and also as to the time of year when they flourish.

SLUTER describes a number of species of *Ascidacea* from the seas to the north of Australia.

CAULLERY gives a list of the compound Ascidians of the coast round Boulogne.

RITTER describes a new species of *Goodsiria* from the coast of Santa Barbara, California.

III. SYSTEMATIC.

Classification of *Tunicata*; SLUITER.

ASCIDIACEA.

ASCIDIÆ SIMPLICES.

ASCIDIIDÆ.

Ascidia bifissa, n. sp., SLUITER, p. 176.*A. enpheres*, n. sp., SLUITER, p. 177.*A. gemmata*, n. sp., SLUITER, p. 177.*A. kreagra*, n. sp., SLUITER, p. 178.

STYELIDÆ.

Styela (Polycarpa) pneumonodes, n. sp., SLUITER, p. 179.*S. captiosa*, n. sp., SLUITER, p. 181.*S. palinorsa*, n. sp., SLUITER, p. 181.*S. phaula*, n. sp., SLUITER, p. 182.*S. solvens*, n. sp., SLUITER.

ASCIDIÆ COMPOSITÆ.

POLYSTYELIDÆ.

Goodsiria dura, n. sp., Santa Barbara, coast, RITTER.

DISTOMIDÆ.

Distoma deerrata, n. sp., SLUITER, p. 167.

POLYCLINIDÆ.

Polyclinium glabrum, n. sp., SLUITER, p. 168.*P. hospitale*, n. sp., SLUITER, p. 169.*Amaroucium ritteri*, n. sp., SLUITER, p. 170.

DIDEMNIDÆ.

- Leptoclinum psamathodes*, n. sp., SLUITER, p. 171.
L. pantherinum, n. sp., SLUITER, p. 172.
L. pustulosum, n. sp., SLUITER, p. 173.
L. torresii, n. sp., SLUITER, p. 173.
L. siphoniatum, n. sp., SLUITER, p. 174.
L. asteropum, n. sp., SLUITER, p. 175.

PYROSOMIDÆ.

Revision of *Pyrosomidæ* ; SEELIGER.

- Pyrosoma minimum*, n. sp., SEELIGER, p. 63, pl. iv, figg. 1 & 2.
P. aherniosum, n. sp., SEELIGER, p. 64, pl. iv, figg. 6-11, pls. v & vi.

VII. MOLLUSCA.

BY

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

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INTRODUCTION.

THE amount of Molluscan work done during 1895 is slightly in excess, judging from the number of Titles, of that for each of the few preceding years. Fortunately, there is a decrease at the same time, it is to be hoped not merely temporary, in the number of bad species founded on trivial characters.

Pre-eminent amongst Systematic works for the year stands Tryon's Manual, as continued by PILSBRY (448-9), who, in the marine series, carries on the monograph on the Opisthobranchiata, and in the non-marine is to be congratulated on having completed the Helices, terminating this section, which will long rank as a classic, with a very full and most useful index. He has also begun the *Bulimi*. Many will regret, however, that out of too great a deference to the fetish of 'priority,' he

has sacrificed *Aplysia* to *Tethys*, and *Bulimus* to *Strophocheilus*. The author writes that, owing to delay in issuing Part 60 of Series I, and Part 36 of Series II, several new names in these bear the date 1894 instead of 1895. SIMROTH (57) has completed Abtheilung I. of his new edition of the Molluscan portion of Bronn's celebrated work in a manner every way worthy of that standard production, and if only the parts were published more rapidly, little would be left to desire. COOKE'S Manual (87) deserves mention for the innumerable minor facts about the Mollusca there collected together, and for the admirable new illustrations. TAYLOR (433) has published another part of his monograph of British non-marine Mollusca.

A manual of comparative palæoconchology has been begun by COSSMANN (92) which is of very great interest, and when completed will form a most important work. It is prefaced by some remarks of a general nature, in which the author gives due prominence to the value of the protoconch in Gastropoda as an aid for classification and a guide to the phylogeny of the species and genera.

Amongst faunistic papers, that by Dr. CROSSE (103) on the non-marine Mollusca of New Caledonia is especially valuable; it concludes with some general remarks on geographical distribution. QUADRAS & MOELLENDORFF (342) have concluded their description of new Philippine land Mollusca; whilst PILSBRY'S Catalogue of the Mollusks of Japan (322), collected by Mr. F. Stearns, who is also the publisher, is an extremely valuable production. Some 500 more species, including 40 new ones, are here added to the fauna of this interesting country.

The phylogenetic relations of *Spirula* have been determined by Dr. Pelseener, in the report by HUXLEY & PELSENEER (206), to be with the Cægopsids; *Spirula* must have descended from a Belemnite-like form, without rostrum.

Dr. PELSENEER'S monograph on Opisthobranchs (313) contains some very important researches, and treats of the inter-relationships of the members of that group, and their affinities with the Pulmonata and the Gastropoda generally. He considers *Siphonaria* belongs to the Pulmonata.

GILCHRIST (152) points out that the organs lost in the torsion of the Gastropod body are not regained in the Opisthobranchs which have undergone secondary detorsion.

BERNARD'S most valuable preliminary paper (25) on the development and morphology of the shells, more especially the hinge, of Pelecypoda, takes up a much-neglected branch of study, and one that will have important bearings on classification. He shows that the ligament is originally internal and not external, and that its growth exercises a marked influence on the position of the umbones in the adult. His final conclusions will be looked for with great interest.

DALL'S (104) proposed new classification of the Pelecypoda commands attention on account of the eminence of its author. It differs in some respects from the preliminary scheme which he put forward in 1889.

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AGUILERA, J. G. [See CASTILLO & AGUILERA (67).]
2. ALDRICH, T. H. Descriptions of two new Eocene *Solariidæ* from Alabama. Nautilus, ix, pp. 1 & 2, 1 pl.
3. ——. New or little-known Tertiary *Mollusca* from Alabama and Texas. Bull. Amer. Pal. ii, 30 pp., 5 pls.
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5. AMAUDRUT, A. Étude comparative de la masse buccale chez les Gastéropodes et particulièrement chez les Prosobranches diotocardes. C.R. Ac. Sci. cxxi, pp. 1170–1172.
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8. ——. Description d'un Mollusque nouveau de l'Equateur [*Clausilia deyrollei*]. Op. cit. 1895, p. 25.
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12. ARBANASICH, P. (FRA PIERO). La enumerazione dei Molluschi della Sardegna. Bull. Soc. malac. Ital. xix, pp. 263–278.
13. ARTHABER, G. VON. Die Cephalopodenfauna der Reiffinger Kalke. Beitr. Pal. Oesterr.-Ung. x, pp. 1–111, 10 pls.
14. AUERBACH, L. Spermatologische Mittheilungen. 1 Die Samenelemente von *Paludina vivipara*. Jahresh. Schles. Ges. lxxii, Abth. ii, Zool. bot. Sect. pp. 12–30.
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16. BAILEY, G. Variations in Radulæ. *J. Malac.* iv, p. 52.
17. BAKER, F. C. The geographical distribution of the *Mollusca*. *Science*, ii, pp. 179-183.
18. BALDWIN, D. D. Descriptions of new species of *Achatinellidae* from the Hawaiian Islands. *P. Ac. Philad.* 1895, pp. 214-236, 3 pls.
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489. WOODWARD, B. B. Shells and their inhabitants. *Nature Notes*, vi, pp. 127-130, figg.
Review of COOKE (87).
490. WOODWARD, M. F. On the anatomy of *Natalina caffra*, Fér., with special reference to the structure of the buccal mass. *P. Malac. Soc. London*, i, pp. 270-277, 1 pl., figg.
491. ——. Note on the anatomy of the larva of the European Oyster; *Ostrea edulis*, Linn. *T. c.* pp. 297-299, 1 pl.
Criticism of WEBB (476).

II.—BIOLOGY.

A. ANATOMY, PHYSIOLOGY.

1. GENERAL.

Anatomy of *Opisthoteuthis depressa*; IJIMA & IKEDA (208).—*Eledone moschata*, physiological notes on; RUPRECHT (357).—Anatomy of *Spirula*; HUXLEY & PELSENER (206).—Anatomy of *Nautilus*; WILLEY (487).—Points in the anatomy of *Nautilus pompilius*; KERR (229).—Morphology of *Nautilus pompilius*; HALLER (173).—Anatomy of *Natalina trimeni*; PACE (308).—Anatomy of *Natalina caffra*; WOODWARD (490).—Anatomy of *Martensia mozambicensis*, *Discus trilineatus* and *bicolor*, and *Helix* (?) *conicoides*; GODWIN-AUSTEN (158).—Anatomy of *Dendrotrochus helicoides*; HEDLEY (188).—Anatomy of *Parmarion dohertyi*, n. sp.; GODWIN-AUSTEN (159).—Anatomy of *Damayantia smithi* and *Microparmarion simrothi*; COLLINGE & GOODWIN-AUSTEN (86).—Anatomy of

Thyrophorella thomensis, Greeff ; GIRARD (156).—Anatomy of *Buliminus procteri* and *Bulimulus kopelli* ; PAGE (307).—Anatomy of *Amphidromus chloris* and *interruptus* ; JACOBI (210).—Anatomy of *Chilina* ; PLATE (337).—On the torsion of the Molluscan body (or rather its detorsion in the *Opisthobranchiata*) ; GILCHRIST (152).—Anatomy of *Hedyte weberi*, n. g. & sp. ; BERGH (24).—Anatomy of *Spergo*, n. subg. ; DALL (105).—Anatomy of *Frieleia halli*, n. g. & sp. ; DALL (105).—Anatomy of some Strombidæ, especially of *Terebellum* ; BERGH (23).—Anatomy of *Homalogyra* ; VAYSSIÈRE (457).—Physiological experiments on *Pelecypoda* ; PIÉRI (321).—Anatomy of *Euciroa pacifica*, *Halicardia*, n. g., and *Lyonsiella alaskana* ; DALL (105).—Anatomy of *Cytherea meretrix* [in Japanese] ; SHIBUYE (371).—Anatomy of *Scioberetia australis*, n. g. & sp. ; BERNARD (26, 27).—Anatomy of *Chiton aculeatus*, Linn. ; PLATE (336).

2. SHELL AND INTEGUMENT.

Note on the formation of the shell ; MOYNIER DE VILLEPOIX (294).—Some causes of disintegration of shells ; HENSMAN (194).—Pearl growth ; HAYNES (178).—Shell-structure in *Ammonia* ; SCHWARZ (369).—Structure of the endosiphon of the †*Endoceratide* ; HOLM (200).—The shell of *Thyrophorella thomensis* has a prolongation of the upper portion of the aperture hinged to the rest of the shell, and capable of acting as an operculum ; GIRARD (156).—Development and morphology of the shell, especially the hinge, of *Pelecypoda* ; BERNARD (25).—On the hinge teeth of *Pelecypoda* and their notation ; MUNIER-CHALMAS (295).—Analysis of the shell of Oysters ; CHATIN & MUNTZ (72).—Structure of the cerata of *Dendronotus arborescens* ; CLUBB (78).—Histology of the mantle of *Dentalium* ; LÉON (243).—Seat of coloration in brown Oysters ; CHATIN (74).

3. MUSCULAR SYSTEM, &c.

Attractive sphere in fixed cells of connective tissue in *Paludina vivipara* ; BRUYNE (58).—Comparative study of the buccal mass in *Gastropoda* ; AMAUDRUT (5).

4. DIGESTIVE SYSTEM.

The Radula as an aid to classification ; MOSS (293).—Variations in Radulæ ; BAILEY (16).—Dentition of *Achatinellidæ* ; GWATKIN & SUTER (172).

5. CIRCULATORY SYSTEM.

Physiology of the circulation in *Cephalopoda* ; FUCHS (143).—Blood corpuscles of *Anodon* ; OWSJANNIKOW (305).—Phagocytosis in *Pelecypoda* ; BRUYNE (59, 60), CARAZZI (65, 66).

6. RESPIRATORY SYSTEM.

For important notes concerning the structure of the gills of *Pelecypoda* as employed for purposes of classification, see DALL (104, 105, under *Euciroa*, &c.).—Respiratory exchange in *Mollusca*; VERNON (462).—Air-breathing Prosobranchs and branchiated Pulmonates; PEISENER (318).

7. EXCRETORY AND SECRETORY SYSTEMS.

On the kidney in the larval *Basommatophora*; ERLANGER (135).—Organs of Bojanus in *Spharium rivicola*; TOCL (441).—Observations on the Byssus of *Pelecypoda*; BOUTAN (40).—Mode of fixation of *Pelecypoda* by the Byssus; BOUTAN (39).

8. NERVOUS SYSTEM.

Central nervous system of *Eledone moschata*; UEXKÜLL (450).—Notes on the optic ganglion of *Cephalopoda*; KOPSCHE (235), the Cephalopod retina corresponds to the rods and cones only of the vertebrate retina.—Nervous system of *Phyllobranchus borgnini*; TRINCHESE (447).—Central nervous system of *Dreissensia polymorpha* is shown by BABOR (15) to exhibit well-developed parietal ganglia.

9. SENSORY SYSTEM.

Notes on the retina of *Cephalopoda*; GRENACHER (167).—Function of the osphradium; PEISENER (315).—Researches into the olfactory organ of *Bulla*; MAZZARELLI (275).

10. GENERATIVE SYSTEM.

Hermaphroditism in the *Mollusca* is a secondary condition, and grafted on the female; PEISENER (317).—Genitalia of *Limax hedleyi*, n. sp.; COLLINGE (81).—Genitalia of *Auricula*; PEISENER (316).—Semenal elements of *Paludina vivipara*; AUERBACH (14).—Genitalia of *Unionidae*, notes with reference to classification; STERKI (416).

11. EMBRYOLOGY.

Fry of *Oppelia* with apteychi; MICHAEL (282).—Development of *Stylomatophora*; SCHMIDT (367).—Early development of *Limax*; KOFOID (233).—Mesoderm formation in *Siphonaria lepida*; FUJITA (145).—Early stages of the development of *Pholadidae*; SIGERFOOS (372).—Development of *Scioberetia australis*; BERNARD (27).—Embryology of the *Unionidae*; LILLIE (244).—*Philobrya* passes through a *Glochidium* stage; DALL (104) p. 487.—Di-myarian stage of "Native" Oyster; WEBB (476).—Development of European Oyster; WOODWARD (491).

12. PHYLOGENY AND CLASSIFICATION.

A phylogenetic tree of the *Mollusca* is given by PLATE (337), who places *Patella* on the direct line of descent from the primitive Mollusc, and *Pleurotomaria*, *Haliotis*, *Fissurella*, on a branch. *Trochidae* starting another branch gives off the higher Prosobranchs on one hand, and *Actæon* and the *Euthyneura* on the other.—The phylogenetic relations of *Spirula* are treated of by HUXLEY & PELSENEER (206), who show that it is an Cægopsid, and descended from a Belemnite-like form.—Phylogeny of the *Gastropoda*; THIELE (435).—PILSBRY (328) divides the North American *Zonitidae* into subfams. *Ariophantinae* and *Zonitinae*, according to the presence or absence of a dart sac, &c.—Pilsbry's classification of the *Helices* is criticised by MOELLENDORFF (289).—PELSENEER (313) concludes that 1. The *Tectibranchiata* are derived from the *Bulloidea*, of which *Actæon* is the most archaic; 2. The *Nudibranchiata* spring from the *Tritoniidae*, and these last from the *Tectibranchiata* near *Pleurobranchæa*; 3. The *Pulmonata Stylommatophora* arise from the *Auriculidae*, which are the most archaic of the *Basommatophora*, and these from the *Tectibranchiata* near *Actæon*.—Phylogeny of fossil Tectibranchs; COSSMANN (92).—DALL (104) as before (*Zool. Rec.* 1889, *Moll.* p. 9, No. 8) divides the *Pelecypoda* into I. *Prionodesmacea*; II. *Anomalodesmacea*; III. *Teleodesmacea*; he places the *Solemyacea* however in I, instead of in II, and makes various changes in the suborders.—Synopsis of genera of recent and tertiary *Macluridae* and *Mesodesmutidae*; DALL (109).

13. STRAY NOTES.

Period of growth in *Limnæa stagnalis*; VARIGNY (456).—Polymorphism of *Mollusca* in France; COUTAGNE (97).—Sexual dimorphism of *Nautilus*; VAYSSIÈRE (459), WILLEY (487).—Monstrosity of *Fulgur canaliculatum*; JOHNSTON & PILSBRY (215).—Albinism and the tendency to it in 1893; JONES (216).—Instinct of movement in *Bulimus decollatus*; PÉREZ, *Act. Soc. Bordeaux*, xlvii, p. 314.—Habits of young *Sepia*; BATHER (19).—Habits of *Aguatha* [*i.e.* of *Testacella*]; WEBB (477).—Habits of Limpets; DAVIS (125).—*Sciobertia australis* commensal with an Echinoderm; BERNARD (26).—*Mollusca* parasitic on, or in *Holothuria*; KOEHLER (232).—On the parasitism of the larva of *Anodonta*; FAUSSEK (136).—How snails obtain lime; BROCKMEIER (54).—Mode of fixation of *Pelecypoda* by the byssus; BOUTAN (39).—Protective coloration in British *Clausilia*; WEBB (479).—Development of coloration of *Amalia gagates*; SIMROTH (378).—Geographical distribution [*i.e.*, dispersal] of *Mollusca*; BAKER (17).—Dispersal of *Mollusca* by means of Seaweeds; VALLENTIN (453).—Distribution of land-shells; TRAVERS (445).—On the toxine of *Spondylus americanus*; ROCHEBRUNE (348).—The black pigment in the tissues of *Limnæa* is identical with the melanine, or colouring matter of Cephalopod ink; ANDRÉ (10A).—On the occurrence of a notable proportion of phosphorus in Oysters; CHATIN & MUNTZ (73).—Oysters and

typhoid ; BOYCE & HERDMANN (41).—Part played by edible *Mollusca* in the propagation of disease ; LAVIS (241).—Oysters as disseminators of disease ; THRESH (438).

14. ECONOMICS.

Helix pomatia, its treatment and conversion into cash ; SCHNEIDER (368).—Mussel culture and bait supply ; CALDERWOOD (63).—Oyster culture ; GRUVEL (168), CRESPI (101A).—*Mollusca* injurious to farmers and gardeners ; THEOBALD (434).—Chisel made out of *Cassis cornuta*, from New Guinea ; MARTENS (266).

15. COLLECTION, PRESERVATION, MUSEUMS, &c.

How to collect *Mollusca* ; BAVAY (21).—On collecting *Pisidia* ; STERKI (413).—*Ammonea* exhibited in the British Museum ; FOORD (137).—*Ipsa Draparnaudi* Conchyliæ ; LOCARD (245).

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.

British Islands :—Monograph, Pt. II (introductory portion) ; TAYLOR (433).—Species of *Testacella* ; WEBB (478).

England :—Hampshire : Transport and survival in the New Forest of 2 species ; LEIGHTON (242).—Lancashire : Southport fauna ; CHASTER (68 & 69) : collecting round Whalley ; LONG (253).—Norfolk : Fauna of West Norfolk ; PETCH (319A).—Northamptonshire : Fauna ; ADAMS (1).

Scotland :—Additions to census ; ROEBUCK (351).—Perthshire : *Mollusca* of the Tay-side ; COATES (79).—Stirlingshire : Third report ; M'LELLAN (258).

Ireland :—Notes on an excursion to the West of Ireland ; COLLIER (82) : *Limax hedleyi*, n. sp. ; COLLINGE (84).—Cork : *Pisidium hibernicum*, alleged new species ; SCHARFF (364).—Galway ; STANDEN (410).

Channel Islands :—Guernsey ; MARQUAND (259).

France :—Fauna of Allier ; DUMAS (133).—Fauna of Alleverd-les-Bains ; LOCARD (247).—Colony of Southern Helices at Nanteuil-le-Haudouin (Oise) in Northern France ; LOCARD (252).

Germany :—Notes on fauna ; HORTZSCHANSKY (202).—*Pupa ronnehensis*, Wstld., in N. Germany ; GOLDFUSS (162).—Düsseldorf-a-R.

occurrence of *Lithoglyphus naticoides* ; BROCKMEIER (54).—*Mollusca* of the neighbourhood of Plön ; BROCKMEIER (55).—Silesia : Fauna of Lähn ; GOLDFUSS (161).

Austro-Hungary :—Molluscan fauna of the gardens in Prague ; BLAŽKA (33).—Fauna of the neighbourhood of Trencsin ; BRANCSIK (44 & 45).—Tirol : *Campylaea intermedia*, Zgl. ; PAAR (306).—Bohemia : Additions to fauna ; ULIČNÝ (451).

2. Circum-Mediterranean Region.

Portugal :—Alleged new species of *Hyalinia* ; LOCARD (246) : of *Helix* ; LOCARD (248) : of *Physa* ; LOCARD (251).

France :—Haute Garonne ; GOURDON (163).

Switzerland :—On some Alpine snails ; EHRMANN (134).

Italy :—*Unio* and *Anodon*, alleged new species ; DROUET (132).—I. of Levanzo ; GREGORIO (164).—Sicily : Notes on fauna with new species of *Helix*, *Pupa*, *Cecilianella*, *Auricula*, *Pomatias* ; GREGORIO (165).

Austro-Hungary :—Fauna of Munkács ; TRAXLER (446).—Tyrol : Venetian Alps ; STOSSICH (418).—Carinthia : Bivalves ; GALLENSTEIN (147) : Fauna, in part, with *Clausilia grimmeri*, Part. ; GALLENSTEIN (148).

Graece :—*Unio*, 2 alleged new species ; DROUET (132).

Asia Minor, Syria, and Cyprus :—Alleged new species of *Zonites*, *Helix*, *Leucochroa*, *Unio*, and *Anodonta* ; KOBELT in ROSSMAESSLER (356).

Syria :—*Unio lapidosus*, n. sp. ? ; DROUET (132).

Palestine :—*Helix elide*, n. sp. ; KOBELT (321).

Algeria :—Slugs from, with 2 new species of *Amalia* ; COLLINGE (83) : *Patula martha*, n. sp. ; ANCEY (9) : *Helix*, 3 new species from Oran ; PALLARY (309).

3. Central Asiatic Region.

[None.]

4. Chinese Region.

China :—2 new species of *Clausilia* from Yunnan ; SYKES (427).

Formosa :—Fauna, list in Zool. Mag. Tokyo, vii.

5. Japanese Region.

Japan :—Freshwater *Mollusca* [in Japanese] ; IWAKAWA (209) : Shells with *Ganesella stearnsii* and *Sphaerium heterodon*, n. spp. ; PILSBRY (322) : 3 new species of *Clausilia* ; SYKES (427).

Loo Choo Is. :—Shells from, with new species of *Eulota*, *Clausilia*, and *Cyrena* ; PILSBRY (322).

6. Atlantidean Region.

Azores :—Colour adaptations of *Plutonia atlantica* ; SIMROTH (384).

Tenerife :—Land snails ; KRAUSE (237) : *Amalia parryi*, n. sp. ? ; COLLINGE (85).

b. PALÆOTROPICAL AFRICAN ZONE.

7. *Central African Region.*

Somaliland :—Non-marine with *Streptaxis bottegoi*, n. sp. ; MARTENS (263).

East Africa :—*Achatina*, 2 new species ; MARTENS (269) : 15 new species of *Ennea*, *Helicarion*, *Vitrina*, *Trochonamina*, *Helix*, *Buliminus*, *Subulina*, and *Cyclophorus* ; MARTENS (267) : 34 new species of *Ennea*, *Helicarion*, *Trochonamina*, *Helix*, *Buliminus*, *Limicolaria*, *Pseudoglossula*, *Glossula*, *Subulina*, *Succinea*, and *Paramelania* ; MARTENS (264).

East Central Africa :—New species of *Limicolaria* and *Achatina* ; SMITH (400) : *Achatina usambarensis*, n. sp. ; ROLLE (353).—Note on the fauna of Central African lakes, 1894 ; ANCEY (6).

8. *West African Region.*

Senegal :—*Unio subamygdalinus*, n. sp. ? ; DROUET (132).

Togoland :—MARTENS (262), 1893.

9. *South African Region.*

New species of *Zingis*, *Helix*, *Achatina*, and *Cyclostoma* ; MELVILL & PONSONBY (279) : *Ennea*, 5 new species from Grahamstown ; MELVILL & PONSONBY (280).—Transvaal : *Melania crawfordi*, n. sp. ; BROU (57).

10. *Malagasy Region.*

Madagascar :—*Buliminus procteri*, n. sp. ; SOWERBY (407).—Fauna of Diego-Suarez, with new species of *Gibbus*, *Macrochlamys*, *Helix*, *Limnæa*, *Planorbis*, *Pyrgophysa*, *Cleopatra*, and *Cyclostoma* ; DAUTZENBERG (119).

11. *Afro-Arabic Region.*

Arabia, South :—*Buliminus schweinfurthi*, n. sp. ; MARTENS (268).—*Buliminus luntii* and *Otopoma bentianum*, n. spp., from the Hadramaut ; MELVILL (277).

c. PALÆOTROPICAL ORIENTAL ZONE.

On the definition of the "Oriental Region" ; HEDLEY (186).

12. *Indian Region.*

India :—Notes and drawings of *Pulmonata* ; GODWIN-AUSTEN (160).

13. *Indo-Chinese Region.*

Burma :—*Helix armstrongi*, n. sp. ; SMITH (396).

Tonkin :—*Geotrochatella jourdyi*, n. sp. ; DAUTZENBERG (120).

Andaman and Nicobars :—Distribution of *Mollusca*, with list and new species of *Sitala*, *Planispira*, *Pupa*, *Vaginulus*, *Acmella*, *Cyathopoma*, and *Omphatotropis* ; GODWIN-AUSTEN (157).

14. *Indo-Malay Region.*

Sumatra :—*Vaginula schneideri*, n. sp. ; SIMROTH (385).

Borneo and its Is. :—Fauna with new species of *Xesta*, *Hemiplecta Dyakia*, *Trochonanina*, *Everettia*, *Lamprocystis*, *Sitala*, *Helix*, *Amphidromus*, *Cyathopoma*, *Pterocyclos*, *Alycaeus*, *Cyclophorus*, *Leptopoma*, *Lagochilus*, *Diplommatina*, and *Georissa* ; SMITH (395) : Shells of Dutch expedition with new species of *Parmarion*, *Microparmarion*, *Helicarion*, *Hemiplecta*, *Dyakia*, and *Unio* ; SCHEPMAN (365) : *Parmarion dohertyi*, n. sp., from Pulo Laut I. ; GODWIN-AUSTEN (159) : *Damayantia smithi* and *Microparmarion simrothi*, n. spp. ; COLLINGE & GODWIN-AUSTEN, (86) : *Unio* and *Pseudodon*, n. spp. ; DROUET (132).

15. *Philippine Region.*

Philippines :—101 new species of land *Mollusca* ; QUADRAS & MOELLENDORFF (342).

Palawan :—Fauna with new species of *Hemiplecta*, *Sitala*, *Helix* and *Cyclotus* ; SMITH (395).

d. AUSTRALIAN ZONE.

16. *Austro-Malayan Region.*

Moluccas :—*Helix kuekenthali*, n. sp. ; KOBELT (231).

New Guinea :—13 new species of *Nanina*, *Rhysota*, *Helix*, *Pupina*, *Pupinella*, and *Helicina* ; SMITH (402 & 406) : Shells from, with new species of *Planispira*, *Satsuma*, *Papuina*, *Buliminus*, *Cyclophorus*, *Cyclotus*, *Adelomorpha*, and *Helicina* ; MOELLENDORFF (290) : new species of *Helix*, *Nanina*, and *Succinea* ; STRUBELL (421) : *Papuina tuomensis*, *Hemiplecta granigera*, n. spp. ; ANCEY (10) : Shells from, with new species of *Nanina*, *Trochonanina*, *Melania*, and *Pupinella* ; BRANCSIK (46).

Bismarek Archipelago :—*Papuina tuomensis*, *Pupina beddomei*, n. spp. ; ANCEY (10).

Solomon Is. :—New varieties of *Bulinus miltocheilus*, Rve. ; BRAZIER (49).

17. *Australian Region.*

West Australia :—Notes on fauna ; HEDLEY (183).

New South Wales :—Shells from Mt. Kosciusko, with new species of *E[n]dodonta* and *Flammulina* ; HEDLEY (189).

18. *Austro-Polynesian Region.*

Loyalty Is. :—List of *Helicina* ; MELVILL & STANDEN (281).

New Caledonia :—Fauna ; SYKES (429) : fauna, with *Charopa subacanthinula*, n. sp. ; CROSSE (103).

19. *Polynesian Region.*

Hawaiian Is.:—30 new species of *Achatinellidæ*; BALDWIN (18).

Tonga Is.:—*Melania leefeii*, n. sp.; BROU (57).

20. *Neozelanian Region.*

New Zealand:—Additions and corrections to list; SUTER (422): the larger species of *Paryphanta*; TRAVERS (445): *P. hochstetteri* found at low levels; KINGSLEY (230): *Endodonta prestoni*, n. sp.; SYKES (425).

e. NEANTARCTIC ZONE.

21. *Patagonian Region.*

Paraguay:—*Mollusca* from, with *Unio paraguayanus*, n. sp.; MARTENS (265).

22. *Chilian Region.*

[None.]

f. NEOTROPICAL ZONE.

23. *Peruvian Region.*

Galapagos Is.:—*Bulimulus*, 2 new species; DALL (111).

24. *Columbian Region.*

Columbia:—*Bulimus corticosus*, n. sp.; SOWERBY (407).

Ecuador:—*Buliminus buckleyi*, n. sp.; SOWERBY (407): *Clausilia deyrollei*, n. sp.; ANCEY (8): *Ampullaria tenuissima*, n. sp.; JOUSSEAUME (222).

25. *Brazilian Region.*

Brazil:—*Hemitrichia guimarasensis*, n. sp.; THIELE (436): *Helix leopoldina*, n. sp.; STRUBELL (421): *Strophocheilus erythrosoma, oosomus*, n. spp.; PILSBRY in TRYON (449).

26. *Mexican Region.*

Central America:—Species of *Veronicella*, two possibly new; COCKERELL (81).

Mexico:—On some *Pulmonata*, with new species of *Glandina*, *Otostomus*, and *Orthalicus*; ROLLE (354): notes on W. Mexican species; COOPER (91): new species of *Holospira* and *Unio*; DALL (106): *Bythinella palomasensis*, n. sp.; PILSBRY (330).

Lower California:—Notes on a few land shells with *Bulimulus decipiens*,

n. sp., and *Plicolumna*, n. g.; COOPER (90): *Bulimulus*, 3 new species; DALL (106): new species of *Helix*, *Bulimulus*, and *Berendtia*; MABILLE (257).

27. Caribbean Region.

Grenada:—Fauna with new species of *Vitrea* and *Helicina*; SMITH (399): *Helicina keatei*; GUPPY (170).

Grenadines:—Fauna; SMITH (399).

St. Vincent:—Fauna with new species of *Stenopus*?, *Vitrea*, and *Simulopsis*; SMITH (399).

San Domingo:—*Cerion yumaensis*, n. sp.; PILSBRY & VANATTA (335).

Jamaica:—*Pleurodonte bainbridgei* and other shells; ROPER (355).

Cuba:—*Cerion*, n. spp.; PILSBRY & VANATTA (335).

I. de Pinos:—*Cerion pineria*, n. sp.; DALL (106).

Bahamas:—Land shells; BENDALL (22): *Cerion*, n. spp.; PILSBRY & VANATTA (335).

g. NEARCTIC ZONE.

North American species of *Vallonia*; STERKI (414).

28. American Region.

United States:—Eastern U. S.: *Pisidium*, 2 new species; STERKI (415).—Alabama: *Gastrodonta lateumbilicata*, *Stomatogyrus sargenti*, n. spp.; PILSBRY (323): on their occurrence and that of *Ferussacia subcylindrica*; see SARGENT (362): *Planorbis alabamensis* and *Ammicola olivacea*, n. spp.; PILSBRY (324).—Arkansas: *Unionida*; CALL (64).—Florida: *Unionida*; JHERING (212).—Illinois: *Helices* in; STRODE (420).—Maine: Shells of Aroostook co.; NYLANDER (302).—Minnesota: land shells of Clearwater, Wright co.; SARGENT (363).—New Mexico: new species of *Epiphragmophora*, *Polygyra*, and *Holospira*; DALL (106).—North Carolina: Shells of Roan Mt.; WETHERBY (481).—North Georgia and Tennessee: *Gastrodonta patuloides*, *Omphalina andrewsae*, n. spp., Gt. Smoky Range; PILSBRY (327).—Ohio: *Pisidium*, 2 new species; STERKI (412).—Pennsylvania: Fauna; HARTMAN (177): *Mollusca* of Allegheny co.; CLAPP (76): Fauna of Philadelphia; SCHICK (366).—Michigan: a month with the Fish Commission; WALKER (474).—Texas: ? SINGLEY (394): *Holospira pasonis*, n. sp.; DALL (116): *Unio mitchelli*, n. sp.; SIMPSON in DALL (106).

29. Californian Region.

United States:—Arizona: New species of *Epiphragmophora*, *Polygyra*, and *Holospira*; DALL (106).—California: *Epiphragmophora arakeimi*, n. sp.; DALL (106).—Washington Territory: *Patulastra* ? *pugetensis* and *Pyramidula* ? *randolphii*, n. spp.; DALL (112): further notes on these; PILSBRY (328): *Vitrea johnsoni*, n. sp., Puget Sound; DALL (114).

30. *Canadian Region.*

Canada :—Conchology of ; TAYLOR (431) : fauna of Alberta ; TAYLOR (432) : *Unionidæ* ; WHITEAVES (482, 483).

MARINE MOLLUSCA.

1. *Arctic Province.*

Greenland : Fauna ; POSSELT (339).—Behring Sea : new species of *Buccinum*, *Chrysodomus*, and *Beringius* ; DALL (105).

2. *Boreal Province.*

Norway : Fauna of Herløfjord ; APPELLÖF, Bergens Mus. Aarbog, 1894-95, No. 11, pp. 9 & 10.—Canada : conchology of ; TAYLOR (431).

3. *Celtic Province.*

British Islands : Alterations in nomenclature ; MARSHALL (261) : less-known species ; CHASTER (71) : new species of *Dentalium*, *Puncturella*, *Trochus*, *Eulina*, and *Actæon* from the Faroe Channel, with list of new occurrences ; JORDAN (217) : *Odostomia oblongula* and *Scintilla eddystonia*, n. spp. ; MARSHALL (260) : additions to the fauna and list of species from the Irish Sea ; HERDMAN, Rep. Brit. Ass. 1895, pp. 457 & 461.—North of England : Bibliography, 1889-92 ; ROEBUCK (352).—Lancashire : Southport fauna ; CHASTER (68).—Plymouth : additions to fauna ; J. Mar. Biol. Ass. iv, p. 166 : *Doris maculata*, n. sp. ; GARSTANG (151) : *Colpodaspis pusilla* from Plymouth ; GARSTANG (150).—Ireland : *Donax vittatus*, var., Killala Bay ; WARREN (475) : Galway ; STANDEN (410).—Belgium : Disappearance of *Mya arenaria* from the lower Escaut ; RAEYMAEKERS (343) : disappearance also of *Alderia scaldiana*, Nyst ; RAEYMAEKERS (344) : odd valve of *Eastonia rugosa* found at Knocke ; VINCENT (466).

4. *Lusitanian Province.*

North Atlantic *Cephalopoda* with 5 new species ; JOUBIN (221).—Azores : *Lepidoteuthis grimaldii*, n. g. & sp. ; JOUBIN (220).—Madeira : fauna ; NOBRE (301).—Guernsey : *Lepton sylesii*, n. sp. ; CHASTER (70).—France : *Donacidae*, *Psammobiidae*, *Solenidae*, *Mesodesmatidae* of Rousillon ; BUCQUOY, DAUTZENBERG, & DOLLFUSS (61) : *Modiola gallica*, n. sp. ; DAUTZENBERG (124) : distribution of Invertebrata near Banyuls ; PRUVOT, Arch. Zool. exp. iii, pp. 629-658.—Spain : *Mollusca* from Huelva and Aguilas ; VINCENT (468).—Balearic Is. : *Bulla roperiana*, n. sp. ; PILSBRY in TRYON (448).—Sardinia : Fauna with *Octopus monterosatoi*, n. sp. ; ARBANASICH (12).—Sicily : Notes on some species ; GREGORIO (165).—Mediterranean : Notes on living and fossil species ; GREGORIO (166).—Tunis and Algiers : Fauna of coasts : DAUTZENBERG (123).

5. *Aralo-Caspian Province.*

[None.]

6. *West African Province.*Senegal : *Polia dautzenbergi*, n. sp. ; BAVAY (20).7. *South African Province.*Natal : *Engina natalensis*, n. sp. ; MELVILL (278).8. *Indo-Pacific Province.*

Indian Ocean : *Hedyle weberi*, n. g. & sp. ; BERGH (24).—Nossibé I. : *Berthelinia* recent, with *B. schlumbergeri*, n. sp. ; DAUTZENBERG (122).—Glorioso Is. [near Madagascar] ; DAUTZENBERG (121).—Mauritius : *Mitra evelynæ*, n. sp. ; MELVILL (276).—Bay of Zeila : *Conus coxianus*, n. sp. ; SOWERBY (407).—Red Sea : *Ovula laugierii*, n. sp. ; JOUSSEAUME (223) ; *Bela erythraea*, n. sp. ; JOUSSEAUME (224) ; *Ceratosoma*, 2 new species ; ROCHEBRUNE (350).—Aden : new species of *Mitra* and *Pleurotoma* ; MELVILL (276) : new species ? of *Pectunculus*, *Arcopagia*, *Claudioncha*, and *Mesodesma* ; JOUSSEAUME (225).—Persian Gulf : *Conus elegans*, n. sp. ; SOWERBY (407).—Mekran coast : new species of *Mangilia*, *Bullia*, *Niso*, *Gibbula*, and *Meretrix* ; SOWERBY (408).—Kurachi : *Pecten townsendi* and *Sunetta kurachensis*, n. spp. ; SOWERBY (407) : new species of *Minolia* and *Spondylus* ; SOWERBY (408).—Arabian Sea and Bay of Bengal : *Mollusca* dredged in, with *Pontiothauma*, n. g., with two new species, and new species of *Pleurotoma*, *Drillia*, *Nassa*, *Columbella*, *Capulus*, *Sigaretus*, *Natica*, *Bathybembix*, *Calliostoma*, *Dentalium*, *Venus*, *Tellina*, *Abra*, *Cuspidaria*, *Cryptodon*, *Crassatella*, *Nucula*, *Nuculana*, *Malletia* and *Lima* ; SMITH (403, 404).—Ceylon : Fauna of the Gulf of Manaar ; THURSTON (439) : *Engina layardi*, n. sp. ; MELVILL (278).—Siam : *Aplysia mouhoti*, n. sp. ; GILCHRIST (153).—Singapore : *Tornatina*, 2 new species ; PILSBRY in TRYON (448) : *Teinostoma hidalgoana*, n. sp. ; PILSBRY (329).—Borneo : SCHEPMAN (365).—Banguey I. : *Clea bangueyensis*, n. sp. ; SMITH (397).—China Seas : *Engina sinensis*, n. sp. ; MELVILL (278).—Philippines : *Pleurotomidae*, with many new species ; BÆTTGER (37) : *Cerithium*, 3 new species ; KOBELT in MARTINI & CHEMNITZ (272).—Formosa : Fauna, list in Zool. Mag. Tokyo, vii.—Loo Choo Is. : Fauna with *Haminea binotata*, n. sp. ; PILSBRY (322).—Sandwich Is. : note on *Cypræa tessellata* ; STANDEN (409) : *Aglaja nuttalli*, n. sp. ; PILSBRY in TRYON (448) : deep-water *Mollusca* off Hawaiian Is. with new species of *Scaphander*, *Pleurotoma*, *Mangilia*, *Polynices*, *Margarita*, *Emarginula*, *Dentalium*, *Eucirra*, and *Pectunculus* ; DALL (105).—Solomon Is. : *Conus waterhousei*, n. sp. ; BRAZIER (53).—Loyalty Is. : Fauna with new species ; MELVILL & STANDEN (281).—New Caledonia : *Ceratosoma francoesii* ; ROCHEBRUNE (350).—New Guinea : Shells from, with new species of *Triton*, *Vertagus*

Donax, and *Batissa*; BRANCSIK (46).—Torres Straits: *Ceratosoma*, 2 new species; ROCHEBRUNE (350).—W. Australia: *Latirus walkeri*, *Mitra superbiens*, n. spp.; MELVILL (276).

9. Australo-Zelandic Province.

Southern coasts of Australia: *Lucapinella pritchardi*, n. sp., *Scyllæa pelagica*, Linn., rediscovered; HEDLEY (182): notes on some species; BRAZIER (50): occurrence of *Cryptodon flexuosus*, Mont.; BRAZIER (51).—West Australia: *Pisania bednalli* and *Murex multiplicatus*, n. spp.; SOWERBY (407).—South Australia: revision of recent *Gastropoda*; VERCO (461): new species of *Murex*, *Latirus*, and *Crassatella*; VERCO (460): *Chiton bednalli*, n. sp.; PILSBRY (332): *Teredo edax*, n. sp.; HEDLEY (181).—Victoria: *Eulimella moniliforme*, new to Victoria; HEDLEY (191).—New South Wales: *Pugnus parvus*, n. g. & sp.; HEDLEY (190): list of Port Jackson *Chitons*; COX (100): occurrence of *Cardium vertebratum*, Jonas; HEDLEY, Abs. P. Linn. Soc. N. S. Wales, June, 1895, p. iii—not *C. vertebratum* but *C. flavum*, L.; BRAZIER, *op. cit.* July, 1895, p. iii.—Bass Strait: notes on *Cytherea* from; COX (99).—Tasmania: notes on some species; BRAZIER (50): occurrence of *Cryptodon flexuosus*, Mont.; BRAZIER (51): note on species of *Acmæa* and on *Ischnochiton mayi*, n. sp.; PILSBRY (325).—New Zealand: *Anomia walkeri*, n. sp.; HECTOR (179).

10. Japonic Province.

Japan: Fauna with new species; PILSBRY (322): notes of a conchologist; HENDERSON (192): *Opisthoteuthis depressa*, n. sp.; IJIMA & IKEDA (208): *Architeuthis* sp. ?; MITSUKURI & IKEDA (288): *Defrancia japonica*, n. sp.; MELVILL (278).

11. Aleutian Province.

Aleutian Is.: *Anaplocampus borealis*, n. g. & sp.; DALL (107).—Alaska: *Lyonsiella alaskana*, n. sp.; DALL (105).—Canada: conchology of; TAYLOR (431).

12. Californian Province.

Washington Territory: *Callocardia stearnsii*, n. sp.; DALL (107).—California: *Eulimella occidentalis*, n. sp., from San Diego; HEMPHILL, Zoe, iv (1894) p. 395.—Lower California: *Solariella nuda*, n. sp.; DALL (107): new species of *Patella*, *Fissurella*, *Crepidula*, *Arca*, *Perna*, and *Anomia*; MABILLE (257).

13. Panamic Province.

Lower California: Shells collected; COOPER (89).—Gulf of California: new species of *Doris*, *Pleurobranchus*, *Avicula*, *Ostrea*, *Plicatula*, and *Chama*; ROCHEBRUNE (347): *Calliostoma*, *Solariella*, *Callocardia*, and *Periploma*; DALL (107).—Mexico, West coast: new species of *Calliostoma*, *Tractolira*,

n. g., and *Pleurotoma*; DALL (107).—Gulf of Panama: new species of *Rimula* (?), *Emarginula*, *Benthodolium*, *Cominella*, *Fusus*, *Tractolira*, n. g., *Scaphella*, *Cancellaria*, *Nucula*, *Limopsis*, *Callocardia*, *Callogonia*, and *Periploma*; DALL (107): *Tethys* [*i.e. Aplysia*] *panamensis*, n. sp.; PILSBRY in TRYON (448).—Cocos Is.: new species of *Phos* and *Cancellaria*; DALL (107).—Galapagos Is.: *Pleurotomella castanea*, n. sp.; DALL (107).

14. Peruvian Province.

[None.]

15. Antarctic Province.

[None.]

16. Patagonian Province.

Argentine coast: Species of *Voluta*, with 3 new; LAHILLE (238): *Phylobrya atlantica*, n. sp.; DALL (107).

17. Caribbean Province.

British Guiana and Trinidad: occurrence of *Purpura coronata*, Lam.; COOKE (88).—Gulf of Paria: Fauna with new species of *Crepidula*, *Barleia*, and *Emarginula*; GUPPY (171).—Gulf of Mexico: *Macoma*, 3 new species; DALL (115).—Texas: ? SINGLEY (394).—Florida: *Tethys* [*i.e. Aplysia*] *floridensis*, n. sp.; PILSBRY in TRYON (448): *Meretrix simpsoni*, n. sp.; DALL (113).—West Indies: *Cerithium subatratum*, n. sp.; KOBELT in MARTINI & CHEMNITZ (272).—St. Thomas: *Engina cumingiana*, n. sp.; MELVILL (278).

18. Transatlantic Province.

[None.]

GEOLOGICAL.

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

Comparative Palæontology, Livr. 1 [*Tectibranchiata*, *Nucleobranchiata*, *Pulmonata* (*Thalassophila*)], few new species; COSSMANN (92).—*Mollusca* in relation to ancient ocean deposits; HUME (205).

Madagascar: Lists of fossils from; NEWTON (297): note on fossils from; BOULE, Bull. Mus. Paris, i, pp. 181–187.

Missouri: Missouri Geol. Surv., Palæont. ii, pp. 108–228, figg.

1. POST-TERTIARY.

British Isles: Pleistocene *Mollusca* from Crayford, Kent; KENNARD (228): species new to Crayford; KENNARD, J. Malac. iv, p. 29: *Succinea elegans*, new to Ilford; WEBB, t. c. p. 30: Fauna of raised beach on Port-

land; SYKES (430): non-marine *Mollusca* in re-deposited Lincolnshire Oolite; THOMPSON (437).—Italy: Land-shells from the caverns in the neighbourhood of Cornedo and Valdagno in the Vicentin; GREGORIO, Ann. Geol. Pal. xv, pp. 5 & 6: Fauna of the Galatina basin, with 2 new species of *Turritella*; FRANCHIS (141): non-marine from the I. of Levanzo; GREGORIO (164).—Sicily: non-marine fossils from; GREGORIO (165).—Mediterranean: marine fossils; GREGORIO (166).—Barbados: list of *Mollusca* from the low-level reefs; GREGORY, Quart. J. Geol. Soc. li, pp. 286–293.—Argentine: Pampas formation of La Plata: marine *Mollusca*; JHERING (213, 214).

2. TERTIARY.

Tertiary *Macluridae* and *Mesodesmatidae*; DALL (109).—Belgium: new species; VINCENT (464).—Italy: *Cancellariidae*, *Cerithiidae*, *Triforidae*, *Cerithiopsidae*, *Diastomidae*, *Melaniidae*, *Littorinidae*, *Fossariidae*, *Rissoiidae*, *Hydrobiidae*, *Paludinae*, *Valvatidae*, *Turritellidae*, and *Mathildidae*, of Piedmont and Liguria, with many new subgenera, species, and varieties; SACCO (358): Fauna of Venetia; GREGORIO, Ann. Geol. Pal. xx, pp. 5–19: Fauna of the Venetian Alps, with many new species; VINASSA DE REGNY (463).—Malta: GREGORIO, Ann. Geol. Pal. xix, pp. 7–17, figg.—Greece, Albania, &c.: some new species; PHILIPPSON & OPPENHEIM (320).—Africa: *Senilia senilis*, Linn., found fossil in Angola; DREGER (131).—Java: Tertiary fossils, many new species; MARTIN (271).—Australia: marine Tertiary species of Victoria; TATE, Tr. R. Soc. S. Austral. xix, pp. 111–115: new species of *Trigonia*, *Myochama*, *Pinna*, *Cardita*, and *Chione*, from Victoria; PRITCHARD (341).—United States: diagnoses of Tertiary fossils from the southern States, with new species, and *Wakullina*, n. subg. of *Carolia* and *Abderospira*, n. sect. of *Bullina*; DALL (108): Alabama and Texas: new and little-known species; ALDRICH (3).—Texas: new and interesting species; HARRIS (174).

Upper Tertiary:—New species of *Ostrea*, *Lima*, *Avicula*, *Modiola*, *Lithodomus*, *Cardita*, and *Crassatella*; MAYER-EYMAR (273): Neocene fauna of Texas, with new species; HARRIS (176).

Pliocene:—Derivative shells of the Red Crag; HARMER, Rep. Brit. Ass. 1895, pp. 676 & 677: Southern character of the Coralline Crag fauna; HARMER, *t. c.* pp. 675 & 676: Fauna of the basin of Albenga, with *Murex*, n. sp.; ARDUINI, Atti Soc. Ligustica, vi, pp. 159–208, 1 pl.: *Pelecypoda* and *Scaphopoda* near Bologna, with few new species; FORESTI (140).

Miocene:—*Pereiraia gervaisii*, Vez., note on, showing genus belongs to *Strombidae*; HOERNES (198): Fauna of the Faluns of Orthez and Salies-de-Béarn (Basses-Pyrénées), with new species; DEGRANGE-TOUZIN (126): Faluns of Bordelais, with new species of *Plesiothyreus*, *Truncatella*, *Nystia*, *Dalliella*, n. g., *Clavatula*, and *Homatoma*; COSSMANN (95): non-marine *Mollusca* from the Upper Miocene of Württemberg; SANDBERGER (361): *Mollusca* from the Glauconian; VINASSA DE REGNY, Pr. verb. Soc. Toscana, ix, pp. 261 & 262: Upper Pontic fauna of Szegzárd with

Baglivia spinata, n. sp.; LÖRENTHEY (254): Fauna of New Jersey, with new species; WHITFIELD (486): marine fossils from Burma, many new species; NOETLING, Mem. geol. Surv. India, xxvii, pp. 7-43, figg.

Lower Oligocene:—Russia: Fauna of the Glauconite Sand near Ekaterinoslav; SOKOLOV, Trudui geol. Kom. ix, No. 3 (1894).

Lower Tertiary:—*Mollusca*, with many new species; MAYER-EYMAR (274): fossils from Seymour Is. (Antarctic regions), with *Cucullæa donaldi* and *Cytherea antarctica*, n. spp.; SHARMAN & NEWTON, Tr. R. Soc. Edinb. xxxvii, pp. 707-709, 1 pl.: *Nautili* of Carinthia with *Nautilus tumescens* and *Aturia brunlechneri*, n. spp.; FRAUSCHER (142): list of older Tertiary *Mollusca* from Victoria, Australia; HALL & PRITCHARD, P. Soc. Victoria, vii, pp. 184 & 185.

Eocene:—British Gastropoda, n. spp.; NEWTON (298).—France: Appendix to the catalogue of Eocene shells of Paris, with new species, and *Aurelianelia*, n. g., *Newtoniella*, n. n.; COSSMANN (96): Eocene *Mollusca* of Loire-Inférieure, with many new species, and *Plicobulla*, n. subg.; COSSMANN (94).—Belgium: species new to the Upper Eocene; COURTURIEAUX (98): *Niso*, 3 new species; VINCENT (469): *Poromya*, 4 new species; VINCENT (470): *Fusus serratus*, specimens so named are new species; VINCENT (471): *Crassatella*, with new species; VINCENT (472): species of *Avicula*, 9 new; VINCENT (467): the Landenian species of *Glycymeris*; VINCENT (465): Fauna of the Sables de Mons-en-Pévèle; PARENT, Ann. Soc. geol. Nord. xxii, pp. 58-69.—Italy: non-marine of Venetia, with many new species, and *Pugnellia*, *Styx*, *Mazzinia*, n. g.; OPPENHEIM (303).—United States: Claiborne fossils with few new species; HARRIS (175): Fauna of the Middle Atlantic Slope, with many new, but imperfectly defined species; CLARK (77): *Solarium*, n. var., and *S. planiforme*, n. sp., from Alabama; ALDRICH (2).

3. SECONDARY.

Cretaceous:—Sweden: Upper Cretaceous fauna of South Sweden, with new species; LUNDGREN (256): fossils from the Åhus sandstone, with *Mytilus scanensis*, n. sp.; HENNIG (193).—France: non-marine fauna of the Provençal Chalk, with new species, and *Nicolasia*, *Rognacia*, n. g.; OPPENHEIM (304).—Spain: new species of Neocomian *Ammonia*; NICKLÈS (299).—Germany: Upper Cretaceous of Brunswick, *Actinocamax depressus*, n. sp.; ANDRÆ (11): "Subhercyne Tourtia" (= Lower Cenomanian) of the northern borders of the Harz, with new species; TIESSSEN (440): Lower Cretaceous, with new species; MAAS, Zeitschr. Deutsch. geol. Ges. xvii, pp. 227-302, figg.: occurrence of *Belemnites minimus* in the Flammenmergel; MÜLLER, N. Jahrb. Min. 1895, ii, p. 144.—Bohemia: Fauna, lists; JAHN, Jahrb. geol. Reichsanst. xlv, pp. 125-218, figg.—Southern Alps: Fauna of the Schiosi and Calloneghe beds, with new species; BOEHM (34).—India: *Ammonia* with many new species and some new subgenera; KOSSMAT (236).—British Columbia: notes on fossils with *Heteroceras hornbyense*, *perversum* "nom. prov.";

WHITEAVES (484).—United States: Comanche Series in Texas, Kansas and Indian Territories, n. spp.; CRAGIN (101).

Jurassic:—*Ammonia*, with *Sowerbyceras*, *Lophoceras*, and *Distichoceras*, n. g.; PARONA & BONARELLI (311).—British Isles: *Gastropoda* [*Pleurotomaria*] with new species; HUDLESTON (204).—France: *Actæonida*, many new species; COSSMANN (93); fossils of the Southern Jura, with new species; RICHE, Ann. Univ. Lyon, vi, fasc. 3: new *Cephalopoda* from Normandy; BRASIL (48): species of *Opis* in Normandy, with new species; BIGOT (29, 30): Callovian fauna of Normandy; BIZET (32): Bajocien of Normandy, with new species; BRASIL, Bull. Geol. Caen, ii, pp. 223–243, figg.—Germany: Fauna of the Bavarian Alps, new species; BOESE (36).—Switzerland: *Macrocephalites*, with 2 new species; TORNQUIST (444): Fauna of the Lower Rauracian of the Bernois Jura, with new species; LORIOL (255).—Italy: Fauna of the *Posidonomya alpina* zone, with many new species; PARONA (310): Domerian fossils of Brianza; BONARELLI, Rend. Ist. Lombardo, xxviii, pp. 415–421: Callovian fauna of Acque Fredde, with many new species; PARONA, Mem. Acc. Lincei, vii, pp. 365–396, 1 pl.—Russia: on *Posidonomya buchi*, Rœmer, from the Balaclava Schists; STREMOUCHOW (419).—Madagascar: fossils from, with new species; NEWTON (297).—Mexico: Fauna of Sierra de Catorce, Potosi, with many new species, especially of *Cephalopoda*; CASTILLO & AGUILERA (67).

Liassic:—Fauna of Mt. Pisano, with many new species, and *Auseria*, n. subg. *Juliana*, n. n.; FUCINI (144): Upper Lias of Normandy, Ammonites of the *A. opalinus* zone, with new species; BRASIL (47).

Rhætic:—*Ammonia*, new species, and *Mojsvarites*, *Hesperites*, n. g.; POMPECKJ (338).

Trias:—Revision of the *Pelecypoda* of the St. Cassian beds, with *Lau-beia*, n. g.; BITNER (31): *Gastropoda* of the *Arcestes studeri* zone, with new species, and *Lepidotrochus* and *Hyperacanthus*, n. g.; KOKEN (234): *Cephalopoda* of the Reiflinger Limestone, with *Proavites* and *Spherites*, n. g.; ARTHABER (13): *Gastropoda* of the Marmolata Limestone, with many new species and some new genera; BOEHM (35).—Tirol: Fauna of the Marmolata, with many new species, and *Mysidioptera*, n. g.; SALOMON (359).—Italy: Lower Trias fauna of the southern slopes of the Alps; TOMMASI, Rend. Ist. Lombardo, xxviii, pp. 437–440: Fauna of the Muschelkalk of Lombardy, with new species; TOMMASI (442): Fauna of *Myophoria vestita* beds; DI-STEFANO, Boll. Com. geol. Ital. xxvi, pp. 4–50, 1 pl.: Fauna of the Lower Trias of the southern slopes of the Alps, with new species; TOMMASI (443).—Dalmatia: *Cephalopoda* from the Muschelkalk of Braič; BUKOWSKY (62).—Eastern Siberia: *Cephalopoda*, with new species, and *Ussuria* and *Pseudosageceras*, n. g.; DIENER (127).—India: *Ammonia* from the Ceratite beds of the Salt Range; nearly all new species, with some new genera (including new names) and families; WAAGEN (473): *Cephalopoda* of the Muschelkalk of the Himalaya, with many new species, and *Buddhaites*, n. subg.; DIENER (128).—New Caledonia: *Ammonia*; MOJSISOVICS, C.R. Ac. Sci. cxxi, pp. 741 & 742.

4. PRIMARY.

Palæozoic of Central Asia ; SUSS, Denk. Ak. Wien, lxi, pp. 431-466, figg. : palæozoic of Asia and N. Africa, with new species ; FRECH, N. Jahrb. Min. 1895, ii, pp. 47-62, figg. : palæozoic of the United States, a few new species and *Bodmania*, n. g., founded on a characterless cast ; MILLER & FABER (285-287).

Permian :—Non-marine *Pelecypoda* of Russia compared with those of the Karoo system of S. Africa, with *Palæanodonta*, n. g., and several new species ; AMALITSKY (4).—Bohemia : *Mollusca*, 3 species ; FRITSCH, SB. Bohmisch. Ges. 1894, No. xxxvi.

Permo-Carboniferous :—Queensland, fossils with new species ; ETHERIDGE, P. Linn. Soc. N. S. Wales, ix, pp. 531-537, figg.

Carboniferous :—British Isles : Coal-measure fossils of North Staffordshire ; HIND (197) : marine fossils in N. Staffordshire coal-measures ; WARD, Rep. North Staffordsh. Club, xxix, pp. 129-138 : carboniferous fossils around Liverpool ; MORTON, P. Liverp. Club, 1894 (1895), pp. 23-26 & 28 : *Prolecanites similis*, n. sp., Carboniferous limestone, Yorkshire ; CRICK (102) : British Carboniferous *Murchisonia* ; DONALD (129) : monograph on British *Carbonicola*, *Anthracomya*, and *Naiadites* ; HIND (196). United States : new species of *Goniatites* and *Trematoceras* ; MILLER & FABER (284).

Devonian :—Belgium : Fauna of the Upper Rhenan, with new species ; KAYSER (227).—Germany : *Pelecypoda*, with some new genera and many new species ; BEUSHAUSEN (28).—Canada : Fossils from St. John, New Brunswick, with *Pupa primæva*, n. sp. ; MATTHEW, Tr. R. Soc. Canada, xii, p. 98.—Missouri : *Goniatites louisianensis*, *Pleurotomaria minima*, and *Murchisonia* (?) *pygmea*, n. spp., with poor descriptions and worse figures ; BOWLEY, Amer. Geol. xvi, p. 222, figg.

Silurian :—Sweden : *Conularia loculata*, n. sp. ; WIMAN (488).—Minnesota : *Pelecypoda* ; ULRICH (452).

Ordovician :—Fossils of Trenton Limestone of Lake Winnipeg, with 3 new Cephalopoda ; WHITEAVES (485).

III.—SYSTEMATIC.†

MOLLUSCA IN GENERAL.

[Manual] ; COOKE (87).

Mollusca in relation to modern ocean deposits ; HUME (205).

Results of the 'Challenger' expedition ; PELSENER, Nat. Sci. vii, pp. 61-63, fig.

I. CEPHALOPODA.

Physiology of the circulation ; FUCHS, Arch. Ges. Physiol. lx, pp. 173-202, 3 pls.

On the optic ganglion of *Cephalopoda* ; KOPSCHE, Anat. Anz. xi, pp. 361-369, figg.

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

Notes on the retina of *Cephalopoda*; GRENACHER, Zool. Anz. xviii, pp. 280-287.

Results of the 'Challenger' expedition; HOYLE, Nat. Sci. vii, pp. 63 & 64, figg.

DIBRANCHIATA.

OCTOPODA.

Alloposus mollis, Verrill, notes on; JOUBIN, Bull. Soc. zool. France, xx, pp. 94 & 95; GUERNE, t. c. pp. 109-114, figg.

Eledone moschata, physiological notes on; RUPRECHT, Zeitschr. Naturw. lxxviii, pp. 280-284, fig. : researches on the central nervous system; UEXKÜLL, Zeitschr. Biol. xxxi, pp. 584-609, 2 pls.

Octopus alberti, North Atlantic; JOUBIN (221) p. 18, figg. : *O. monterosatoi*, Sardinia; ARBANASICH [FRA PIERO], Bull. Soc. malac. Ital. xix, p. 268 : n. spp.

Opisthotecthis depressa, Japan; IJIMA & IKEDA, J. Coll. Japan, viii, p. 323, figg. : n. sp.

Tremoctopus hironellei, North Atlantic; JOUBIN (221) p. 10, figg. : n. sp.

DECAPODA.

† *Actinocamax depressus*, Upper Chalk of Brunswick; ANDREÆ, MT. Rømer-Mus. No. 2, figg. : n. sp.

Architeuthis, gigantic species from Japan; MITSUKURI & IKEDA, Zool. Mag. Tokyo, vii, pp. 39-50, figg.

Chiroteuthis grimaldii, North Atlantic; JOUBIN (221) p. 38, figg. : n. sp.

Lepidoteuthis, n. g. for *L. grimaldii*, Azores; JOUBIN, C.R. Ac. Sci. cxxi, p. 1172, figg.

Loligo picteti [vide Zool. Rec. 1894] = *Idiosepius picteti*; JOUBIN, Rev Suisse Zool. iii, p. 459.

Sepia, habits of young; BATHIER, J. Malac. iv, pp. 33 & 34.

Spirula, report on the specimen dredged by H.M.S. 'Challenger'; HUXLEY & PELSENER, Rep. Challenger Exped., Zool. pt. lxxxiii, 32 pp., 6 pls. ; it is shown to be an *Cegopsid*, and descended from a Belemnite-like form : new data on, review of preceding, with original remarks; DALL, Science, iii, pp. 243-246. *S. peronii*, notes on; SCHWARZ, J. Marine Zool. ii, pp. 25-30, figg.

† *Spirulirostra*, note on; PRITCHARD, with rejoinder by NEWTON & HARRIS, P. Malac. Soc. London, i, p. 199.

Taonius richardi, N. Atlantic; JOUBIN (221) p. 46, figg. : n. sp.

Tracheloteuthis guernei, N. Atlantic; JOUBIN (221) p. 34, figg. : n. sp.

AMMONEA.

Shell structure; SCHWARZ (369) : On *Aptychus* and the fry of *Ammonites*; MICHAEL (233) : *Ammonites* of the Rhætic; POMPECKJ (338) : *Ammonia* exhibited in the British Museum; FOORD (137).

† *Ambites*, n. g., p. 151, for *A. discus*, p. 152, n. sp., &c., Trias, India; WAAGEN, Pal. Ind., Ser. xiii, vol. ii, figg.

- † *Aspidites*, n. g., p. 215, for *A. superbus*, p. 218, n. sp., &c., Trias, India ;
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- † *Bulldhaites*, n. subg. of *Gymnites*, type *G. rama*, n. sp., Muschelkalk,
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WAAGEN, Pal. Ind., Ser. xiii, vol. ii, figg.
- † *Discoceras*, n. g., type *Ammonites largilliertianus*, D'Orb. ; KOSSMAT,
Beitr. Pal. Oesterr.-Ung. ix, p. 179.
- † *Distichoceras*, n. g., type *Ammonites bipartitus*, Ziet. ; PARONA & BONARELLI,
Rend. Ist. Lombardo, xxviii, p. 686.
- † *Flemingites*, n. g., p. 185, for *F. glaber*, p. 188, n. sp., &c., Trias, India ;
WAAGEN, Pal. Ind., Ser. xiii, vol. ii, figg.
- † *Goniatites*, 5 new species, Carboniferous of U. S. ; MILLER & FABER,
J. Cincinnati Soc. xiv, 1892, pp. 164-167, figg.
- † *Goniodiscus*, n. g., p. 126, for *G. typus*, p. 128, n. sp., &c., Trias, India ;
WAAGEN, Pal. Ind., Ser. xiii, vol. ii, figg.
- † *Hesperites*, n. g., for *H. clara*, n. sp., Rhætic of Hoherbalp ; POMPECKJ,
N. Jahrb. Min. 1895, ii, p. 24, fig.
- † *Kingites*, n. g., p. 230, for *K. lens*, p. 232, n. sp., &c., Trias, India ;
WAAGEN, Pal. Ind., Ser. xiii, vol. ii, figg.
- † *Koninckites*, n. g., p. 258, for *K. vetustus*, p. 261, n. sp., &c., Trias, India ;
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- † *Lophoceras*, n. g., type *Ammonites pustulatus*, Rein. ; PARONA & BONARELLI,
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- † *Macrocephalites helvetiæ*, p. 8, *oxfordiensis*, p. 20, Upper Jurassic, Switzerland ;
TORNIQUIST, Abh. Schweiz. pal. Ges. xxi, figg.
- † *Mojsvarites*, n. subg. of *Monophyllites*, type *Ammonites agenor*, Münster. ;
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- † *Neoptychites*, n. g., type *Ammonites telinga*, Stolicz. ; KOSSMAT, Beitr.
Pal. Oesterr.-Ung. ix, p. 165.
- † *Oppelia steraspis*, Opperl, note on a specimen containing fry, with
aptychi, in the body-chamber ; MICHAEL, Zeitschr. Deutsch. geol.
Ges. xlvi, pp. 697-702, figg.
- † *Parakymatites*, n. g., p. 213, for *P. discoides*, p. 214, n. sp., Trias, India ;
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- † *Paranorites*, n. g., p. 157, for *P. ambiensis*, p. 158, n. sp., &c., Trias,
India ; WAAGEN, Pal. Ind., Ser. xiii, vol. ii, figg.
- † *Paroniceras*, note on the genus, with description of a new species ;
BONARELLI, Bull. Soc. malac. Ital. xix, pp. 225-239, 1 pl.
- † *Prionites*, n. g., p. 52, for *P. arenarius*, p. 55, n. sp., &c., Trias, India ;
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- † *Proovites*, n. g., p. 104, for *P. marginatus*, *avitus*, n. spp., p. 105, Trias ;
ARTHABER, Beitr. Pal. Oesterr.-Ung. x.

- † *Prolecanites similis*, Carboniferous Limestone, Yorkshire; CRICK, Tr. Manchester Geol. Soc. xxiii, p. 81, figg. : n. sp.
- † *Proptychites*, n. g., p. 162, for *P. oldhamianus*, p. 166, n. sp., &c., Trias, India; WAAGEN, Pal. Ind., Ser. xiii, vol. ii, figg.
- † *Pseudharpoceras*, n. g., p. 130, for *P. spiniger*, p. 131, n. sp., &c., Trias, India; WAAGEN, Pal. Ind., Ser. xiii, vol. ii, figg.
- † *Pseudophyllites*, n. subg. of *Lytoceras*, type *Ammonites indra*, Forbes; KOSSMAT, Beitr. Pal. Oesterr.-Ung. ix, p. 137.
- † *Pseudosagoceras*, n. g., for sp. indet. † Trias, Eastern Siberia; DIENER, Truidi geol. Kom. xiv, No. 3, p. 28, fig.
- † *Sowerbyceras*, n. g., type *Ammonites tortisulcatum*, D'Orb.; PARONA & BONARELLI, Rend. Ist. Lombardo, xxviii, p. 686.
- † *Spharites*, n. g., p. 106, for *S. globulus*, n. sp., p. 107, Trias; ARTHABER, Beitr. Pal. Oesterr.-Ung. x.
- † *Stephanites*, n. g., p. 100, for *S. superbus*, p. 101, n. sp., &c., Trias, India; WAAGEN, Pal. Ind., Ser. xiii, vol. ii, figg.
- † *Tetragonites*, n. subg. of *Lytoceras*, type *Ammonites timotheanus*, Mayor; KOSSMAT, Beitr. Pal. Oesterr.-Ung. ix, p. 131.
- † *Ussuria*, n. g., p. 23, for † *U. schamarae*, p. 26, *ivanowi*, p. 27, n. spp., Trias, Eastern Siberia; DIENER, Truidi geol. Kom. xiv, No. 3, figg.

TETRABRANCHIATA.

- † *Aturia brunlechneri*, Tertiary of Carinthia; FRAUSCHER, Jahresh. Mus. Karnten, xxiii, p. 196, figg. : n. sp.
- † *Endoceratida*, structure of the endosiphon; HOLM, Geol. Foren. Stockholm Forh. xvii, pp. 601-626, figg.
- † *Nanno*, Clarke, remarks on the genus; HYATT, Amer. Geol. xvi, pp. 1-12, 1 pl., fig. [See also letter by CLARKE, *op. cit.* xv, pp. 125-128.]
- Nautilus*, notes on the animal, its occurrence, habits and anatomy; WILLEY, Nat. Sci. vi, pp. 405-414, figg. : on the sexual dimorphism of; VAYSIÈRE, C.R. Ac. Sci. cxx, pp. 1431-1434 : *N. pompilius*, points in the anatomy of; KERR, P. Zool. Soc. London, 1895, pp. 664-686, 2 pls., considers the arms to be definitely processes of the cephalic region, and that *Nautilus* shows many strong resemblances to the *Amphineura*: contributions to its morphology; HALLER, Denk. Ges. Jena, viii, pp. 187-204, figg.
- † *N. tumescens*, Tertiary of Carinthia; FRAUSCHER, Jahrb. Mus. Karnten, xxiii, p. 190, figg. : n. sp.
- † *Trematoceras ohioensis*, Carboniferous, Ohio; MILLER & FABER, J. Cincinnati Soc. xiv, fig. : n. sp.

II. GASTROPODA.

Gastropoda of the Plankton-Expedition, mostly larval forms, with many most important observations; SIMROTH (377).

Review of new works on the distribution of *Gastropoda*; SIMROTH (382). Phylogeny; THIELE, Biol. Centralbl. xv, pp. 220-236.

PULMONATA.

Review of new works on *Pulmonata*; SIMROTH (383).

STYLOMMATOPHORA.

Development of the *Stylommatophora*; SCHMIDT, Zool. Jahrb. Anat. viii, pp. 318-341, figg.

Pulmonata Stylommatophora arise from the *Auriculide* which are the most archaic of the *Basommatophora*; PELSENER, Mem. Cour. Ac. Belgique (4to), liii, pp. 111-114.

TESTACELLIDÆ.

Ennea cimolia, farquhari, p. 478, *labyrinthea, margarettæ, wottoni*, p. 479, Grahamstown, S. Africa; MELVILL & PONSONBY, Ann. Nat. Hist. xvi, figg.: *E. (Edentulina) latula, (Uniplicaria, n.) exogonia*, p. 175, (*Gulella*) *triplicina, linguifera, foliifera*, p. 176, *conradti, (Ptychotrema) geminata, quadrinodata*, p. 177, E. Africa; MARTENS, Nachrbl. Deutsch. malak. Ges. xxvii: *E. tudes, (Carychiopsis) paradoxula*, E. Africa; MARTENS, SB. Ges. naturf. Berlin, 1895, p. 122: *E. (Diaphora) cylindrica*, Philippines, p. 73, *cuspidata*, p. 105, *Euryomphala, aptycha*, p. 106, *homalogyra, eulophia*, p. 107, *anctostoma, dilophia*, p. 108, *pleistogyra*, p. 109, Philippines; QUADRAS & MOELLEN-DORFF, Nachrbl. Deutsch. malak. Ges. xxvii: n. spp.

Gibbus (Edentulina) alluaudi, p. 91, *nitens*, p. 92, Mt. Ambre, Madagascar; DAUTZENBERG, J. Conchyl. xlii, figg.: n. spp.

Glandina solidior (? *albersi* var.), Mexico; ROLLE, Nachrbl. Deutsch. malak. Ges. xxvii, p. 129: n. sp.

Natulina trimeni, Melv. & Pons., notes on its anatomy; PACE, P. Malac. Soc. London, i, p. 232, figg.

Plutonia atlantica, colour adaptation of specimens in the Azores; SIMROTH, SB. Ges. Leipzig, xix, p. 2.

Streptaxis bottegoi, Somaliland; MARTENS, Ann. Mus. Genova, xxxv, p. 63: n. sp.

Testacella, British species; WEBB, J. Malac. iv, pp. 74-76: habits of; WEBB, t. c. pp. 50 & 51, figg.

Uniplicaria, n. sect. of *Ennea*, type *E. exogonia*, n. sp.; MARTENS, Nachrbl. Deutsch. malak. Ges. xxvii, p. 175.

LIMACIDÆ and ZONITIDÆ.

Amalia gagates, development of coloration; SIMROTH, Ann. Sci. Porto, ii, pp. 89-96.

A. ater, maculata, Algiers; COLLINGE, P. Malac. Soc. London, i, p. 336, figg.: *A. parryi*, Tenerife, supposed new species; COLLINGE, J. Malac. iv, p. 7: n. spp.

Bensonia (Glyptobensonia) diplotropis, Philippines; QUADRAS & MOELLEN-DORFF, Nachrbl. Deutsch. malak. Ges. xxvii, p. 75: n. sp.

- Coneplecta decussatula*, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii, p. 110 : n. sp.
- Damayantia smithi*, Borneo, with notes on its anatomy; COLLINGE & GODWIN-AUSTEN, P. Zool. Soc. London, 1895, p. 242, figg. : n. sp.
- Dendrotrochus*, Pilsbry, notes on its anatomy, showing that it belongs to *Trochomorpha*; HEDLEY, Rec. Austral. Mus. ii, pp. 90 & 91, 1 pl.
- Discus trilineatus, bicolor*, notes on; GODWIN-AUSTEN, P. Malac. Soc. London, i, p. 285, figg.
- Dyakia subdebilis*, Sarawak; SMITH, P. Zool. Soc. London, 1895, p. 104, fig. : *D. densestriata*, Borneo; SCHEPMAN, Notes Leyden Mus. xvii, p. 154 : n. spp.
- Euplecta unicarinata*, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii, p. 109 : n. sp.
- Everettia subimperfurata*, p. 106, *planior*, p. 107, *baramensis*, Borneo, *bangueyensis*, Banguey I., p. 108, *thalia*, Sarawak, p. 109; SMITH, P. Zool. Soc. London, 1895, figg. : n. spp.
- Gastrodonta (Pseudohyalina) lateumbilicata*, Alabama; PILSBRY, Nautilus, viii, p. 102 : *G. patuloides*, Thunderhead Mt., Great Smoky Range, U.S.; PILSBRY, Nautilus, ix, p. 151 : n. spp.
- Helicarion tanganyica*, East Africa; MARTENS, Nachrbl. Deutsch. malak. Ges. xxvii, p. 178 : *H. stuhlmanni, succulentes*, p. 123, *subangulatus*, p. 124, E. Africa; MARTENS, SB. Ges. naturf. Berlin, 1895 : *H. papillifer*, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii, p. 74 : *H. semicalcareus*, Borneo; SCHEPMAN, Notes Leyden Mus. xvii, p. 149, fig. : n. spp.
- Helix* (?) [= *Nanina*] *conicooides*, Metcalf., notes on; GODWIN-AUSTEN, P. Malac. Soc. London, i, p. 286, fig.
- Hemiplecta præcutta*, p. 101, *robongensis*, Sarawak, *egeria*, Palawan, p. 102; SMITH, P. Zool. Soc. London, 1895, figg. : *H. buettikoferi*, Borneo; SCHEPMAN, Notes Leyden Mus. xvii, p. 150, fig. : *H. granigera*, New Guinea; ANCEY, P. Linn. Soc. N. S. Wales, x, p. 378, fig. : n. spp.
- Hemitrichia velutina*, p. 75, *flavida*, p. 112, Philippines; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii : *H. guimarasensis*, Guimaraens, Brazil; THIELE, t. c. p. 131 : n. spp.
- Hyalinia algarvensis, gyrocurtopsis*, Portugal, alleged n. spp.; LOCARD, Echange, xi, p. 4.
- Inozonites bathyrhaphe, hyalinus, nemototropis*, Philippines; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii, p. 113 : n. spp.
- Kaliella microtholus, stylodonta*, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii, p. 110 : n. spp.
- Lamprocystis purpureofusca, montana, masbatica*, p. 111, *leucoclimax*, p. 112, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii : *L. balabacensis*, Balabac I.; SMITH, P. Zool. Soc. London, 1895, p. 109, fig. : n. spp.
- Limax*, memoir on early development; KOFOID, Bull. Mus. Harvard, xxvii, No. 2 : *L. maximus*, new colour variety; SIMROTH, Ber. Ges. Leipzig, 1893-94, p. 124.

- L. hedleyi*, and its anatomy, Ireland; COLLINGE, J. Malac. iv, p. 4, fig. : n. sp.
- Macrochlamys suarezensis*, Diego-Suarez, Madagascar; DAUTZENBERG, J. Conchyl. xlii, p. 93, fig. : n. sp.
- Martensia mozambicensis*, Pfr., description of animal and discussion of generic position; GODWIN-AUSTEN, P. Malac. Soc. London, i, p. 281, figg.
- Microparmarion pollonerai*, p. 244, *simrothi*, p. 246, Borneo, with notes on their anatomy; COLLINGE & GODWIN-AUSTEN, P. Zool. Soc. London, 1895, figg. : *M. litteratus*, Borneo; SCHEPMAN, Notes Leyden Mus. xvii, p. 148, fig. : n. spp.
- Natalina caffra*, Fér., notes on its anatomy; WOODWARD, P. Malac. Soc. London, i, pp. 270-277, figg.
- Nanina divergens*, *semilucida*, New Guinea; BRANCSIK, Jahresh. Ver. Trencsin, xvii, p. 222, figg. : *N. amblytropis*, *lissorhapha*, xv, p. 230, *juvensis*, xvi, p. 363, New Guinea; SMITH, Ann. Nat. Hist. figg. : *N. (Hemiplecta) strubelli*, New Guinea; STRUBELL, Nachrbl. Deutsch. malak. Ges. xxvii, p. 151 : n. spp.
- Omphalina andreusae*, and var., Thunderhead Mt., Gt. Smoky Range, U. S.; PILSBRY, Nautilus, ix, p. 14 : n. sp.
- Ouagapia*, n. g., type *Helix raynali*, Gassies; CROSSE, J. Conchyl. xlii, p. 203.
- Parmarion dohertyi*, Pulo Laut I., S.-E. Borneo; GODWIN-AUSTEN, Ann. Nat. Hist. xvi, p. 435, figg. : *P. goedhuisi*, Borneo; SCHEPMAN, Notes Leyden Mus. xvii, p. 146, fig. : n. spp.
- Paryphanta*, notes on the larger species in New Zealand; TRAVERS, Tr. N. Zealand Inst. xxvii, pp. 224-228 [Cf. BULLER, t. c. p. 670] : *P. hochstetteri* found at low levels; KINGSLEY, t. c. p. 239.
- Plutonia*, Stab., note on synonymy; (BV)², J. Malac. iv, p. 29.
- Rhysota armiti*, New Guinea; SMITH, Ann. Nat. Hist. xv, p. 231, figg. : n. sp. [Possibly a synonym for *R. flyensis*, Hedley; HEDLEY, op. cit. xvi, p. 201 : reply by SMITH, t. c. p. 351.]
- Sitala rumbangensis*, *demissa*, p. 110, *busuensis*, *cara*, *dulcis*, *accepta*, p. 111, *amussitata*, *inequisculpta*, Borneo, *infantilis*, Palawan, p. 112; SMITH, P. Zool. Soc. London, 1895, figg. : *S. homfrayi*, S. Andaman I.; GODWIN-AUSTEN, t. c. p. 448, fig. : n. spp.
- Stenopus ? insidiosus*, St. Vincent; SMITH, P. Malac. Soc. London, i, p. 303, figg. : n. sp.
- Trochomorpha (Videna) melinotropis*, *mindoroana*, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. p. 114 : n. spp.
- Trochonanina* and allied genera, notes on; GODWIN-AUSTEN, P. Malac. Soc. London, i, pp. 281-287, figg.
- T. mesogaea*, *liederi*, E. Africa; MARTENS, Nachrbl. Deutsch. malak. Ges. xxvii, p. 178 : *T. obtusangula*, *simulans*, p. 125, *T. ? rufofusca*, p. 126, E. Africa; MARTENS, SB. Ges. naturf. Berlin, 1895 : *T. alexis*, Banguay I., *heraclea*, Sarawak, *kina-baluensis*, p. 105, *whiteheadi*, p. 106, N. Borneo; SMITH, P. Zool. Soc. London, 1895,

- figg. : *T. sturanyi*, New Guinea ; BRANCSIK, Jahresh. Ver. Trencsen. xvii, p. 223, figg. : n. spp.
- Vitreia sublimpida*, St. Vincent ; SMITH, P. Malac. Soc. London, i, p. 304, figg. : *V. johnsoni*, Puget Sound ; DALL, Nautilus, ix, p. 27 : n. spp.
- Vitrina ? oleosa*, E. Africa ; MARTENS, SB. Ges. naturf. Berlin, 1895, p. 124 : n. sp.
- Vitrinoidea quadrasi*, Philippines ; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii, p. 74 : n. sp.
- Xesta themis, padasensis*, p. 100, *thisbe*, p. 101, Borneo ; SMITH, P. Zool. Soc. 1895, figg. : n. spp.
- Zingis delicata*, Knysna, S. Africa ; MELVILL & PONSONBY, Ann. Nat. Hist. xv, p. 163, figg. : n. sp.
- Zonites lycicus*, p. 26, *rollei*, p. 27, Asia Minor ; KOBELT in ROSSMAESSLER (356), figg. : n. spp.
- Zonitidæ*, North American forms placed in two subfamilies, *Ariophantinae* and *Zonitinae*, according to the presence or absence of a dart-sac, by PILSBRY, Nautilus, ix, p. 18.

ENDODONTIDÆ.

- Allodiscus*, n. sect. of *Flammulina*, type *Helix dimorpha*, Pfr. ; PILSBRY, Nautilus, vi (1892), p. 56.
- Charopa subacanthinula*, New Caledonia ; CROSSE, J. Conchyl. xlii, p. 238, fig. : n. sp.
- E[n]dodonta nivea*, Mt. Kosciusko, New South Wales ; HEDLEY, Rec. Austral. Mus. ii, p. 102, figg. : *Endodonta (Charopa) prestoni*, New Zealand ; SYKES, P. Malac. Soc. London, i, p. 218, figg. : n. spp.
- Flammulina excelsior*, Mt. Kosciusko, New South Wales ; HEDLEY, Rec. Austral. Mus. ii, p. 103, figg. : n. sp.
- Helix (Charopa) armstrongi*, Burma ; SMITH, P. Malac. Soc. London, i, p. 219, figg. : *H. (Trachycystis) alcocki*, Kowie, S. Africa ; MELVILL & PONSONBY, Ann. Nat. Hist. xv, p. 164, figg. : n. spp.
- Patula martha*, Algeria ; ANCEY, Naturaliste, 1895, p. 44 : n. sp.
- Patulastra ? (Punctum ?) pugetensis*, Puget Sound ; DALL, Nautilus, viii, p. 130 : n. sp.—proves to belong to *Zonitidæ* ; PILSBRY, *op. cit.* ix, p. 18.
- Platyrrhytida*, n. n. for *Saissetia* (a section of *Pararhytida*), preocc. ; COCKERELL in TRYON (449) ix, p. 342.
- Pyramidula ? randolphii*, Puget Sound ; DALL, Nautilus, viii, p. 130 : n. sp.—proves to belong to *Punctum* ; PILSBRY, *op. cit.* ix, p. 18.

HELICIDÆ.

Helicidæ, monograph continued by KOBELT in MARTINI & CHEMNITZ (272).

Group *Protogona*.

- Helix (Dorcasia) incauta*, Sarawak ; SMITH, P. Zool. Soc. London, 1895, p. 114, fig. : *H. subplicifera*, New Guinea ; SMITH, Ann. Nat. Hist. xv, p. 232, fig. : *H. (Solariopsis) leopoldina*, Brazil ; STRUBELL, Nachrbl. Deutsch. malak. Ges. xxvii, p. 152 : n. spp.
- Polygyra chiricahuana*, Arizona, *mearnsii*, New Mexico ; DALL, P. U. S. Nat. Mus. xviii, p. 2 : n. spp.

Group *Macroögona*.

Helix (Ampelita) lamothei, p. 94, *subatropos*, p. 97, *alluaudi*, p. 98, Mt. Ambre, Madagascar; DAUTZENBERG, J. Conchyl. xlii, figg. : n. spp.

Group *Epiphalloгона*.

Dendrotrochus, Pilsbry, notes on its anatomy, from which it appears that it belongs to *Trochomorpha*, and not to *Papuina*; HEDLEY, Rec. Austral. Mus. ii, pp. 90 & 91, 1 pl.

Ganesella stearnsii, Japan; PILSBRY (322) p. 157, fig. : n. sp.

Helix saulie, Pfr. (*non* Reeve), = *palumba*, Souv.; FULTON, Nautilus, viii, p. 125.

H. (Chloritis) kina-baluenensis, North Borneo, *euphrosyne*, Palawan; SMITH, P. Zool. Soc. London, 1895, p. 113, figg. : *H. ephamilla*, p. 232, *perambigua*, p. 233, New Guinea; SMITH, Ann. Nat. Hist. xv, figg. : *H. nephele*, British New Guinea; STRUBELL, Nachrbl. Deutsch. malak. Ges. xxvii, p. 151 : *H. (Coliolus) canefriana*, New Guinea; SMITH, Ann. Nat. Hist. xvi, p. 364, fig. : *H. (Cristigibba) musgravei*, New Guinea; SMITH, *op. cit.* xv, p. 233, fig. : *H. (Hadra) stirophora*, New Guinea; SMITH, *t. c.* p. 231, fig. : *H. (Spherospira) minnigerodei*, *anceps*, British New Guinea; STRUBELL, Nachrbl. Deutsch. malak. Ges. xxvii, p. 150 : n. spp.

Papuina kubaryi, *planogyra*, German New Guinea; MOELLENDORFF, P. Malac. Soc. London, i, p. 236, figg. : *P. tuomensis*, German New Guinea?, n. sp. ?; ANCEY, P. Linn. Soc. N. S. Wales, x, p. 375, fig. : n. spp.

Planispira wimberleyi, Nicobars; GODWIN-AUSTEN, P. Zool. Soc. London, 1895, p. 449 : *P. (Cristigibba) papuana*, German New Guinea; MOELLENDORFF, P. Malac. Soc. London, i, p. 234, figg. : n. spp.

Pleurodonte bainbridgii, note on; ROPER, Nautilus, ix, p. 13.

Rhynchotrochus, n. sect. of *Papuina*, type *P. tayloriana*, Ad. & Rve.; MOELLENDORFF, P. Malac. Soc. London, i, p. 237.

Satsuma catocyrtia, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii, p. 115 : *S. euconus*, *dasypleuris*, German New Guinea; MOELLENDORFF, P. Malac. Soc. London, i, p. 255, figg. : n. spp.

Group *Belogona Euadenia*.

Anixa, n. n. for *Axina*, Alb., *non* Kirby; PILSBRY in TRYON (449) ix, p. 223.

Aulacospira triptycha, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii, p. 76 : n. sp.

Cochlostyla (Helicostyla) leucauchen, p. 115, (*Rhymbocochlias lamellucostis*, (*Orthostylus*) *intercedens*, p. 116, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii : n. spp.

Eulota (Euhadra) yaeyamensis, Loo Choo Is.; PILSBRY (322) p. 161, figg. : n. sp.

- Helix fasciola*, Drap., note on ; LOCARD, Echange, xi, p. 85.
Leucochroa rollei, Alexandrietta ; KOBELT in ROSSMAESSLER (356) p. 29,
 fig. : n. sp.
Mastigeulota, n. sect. of *Eulota*, type *E. kiangsinensis*, Mts. ; PILSBRY in
 TRYON (449) ix, p. 211.
Platypetatus, n. sect. of *Eulota*, type *E. inominata*, Hde. ; PILSBRY in
 TRYON (449) ix, p. 207.
Rhymbocochlias, n. sect. of *Cochlostyla*, type *C. turbo*, [i.e. *turbinoides*],
 Brod. ; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii, p. 116.
Tricheulota, n. sect. of *Eulota*, type *E. spinosissima*, Semper ; PILSBRY in
 TRYON (449) ix, p. 212.

Group *Belogona Siphonadenia*.

- Campylæa intermedia*, Zgl., in the Tirol ; PAAR, Nachrbl. Deutsch. malak.
 Ges. xxvii, pp. 98 & 99.
Cylindrus, Fitz., notes on the genus and its anatomy ; MARTENS, Arch.
 Naturg. lxi, Bd. i, pp. 103-108, 1 pl. : from the details given in the
 foregoing, PILSBRY (334) shows that the genus belongs to the
Helicidae, group *Belogona Siphonadenia*, near *Helicella*.
Disculella, n. n. for *Ochtheiphila*, Beck, preocc. ; PILSBRY in TRYON (449)
 ix, p. 243.
Fridolinia, n. g., type † *Helix lucani*, Tourn. (with *Pseudoleptaxis*, n. sect.) ;
 PILSBRY in TRYON (449) ix, p. 294.
Helix cantiana, Mont., variations ; SWANTON, Natural. J. iv, pp. 189 & 190,
 figg. : *H. nemoralis* and *H. hortensis*, hybrids obtained from ; BROCK-
 MEIER (54) : *H. variabilis*, note on ; LOCARD, Echange, xi, p. 98 :
H. pomatia, its treatment and conversion into cash ; SCHNEIDER (368).
H. paulinoi, *nobrei*, p. 27, *goltzi*, p. 28, *pochi*, p. 29, Portugal, alleged
 new species ; LOCARD, Echange, xi : *H. kibiriana*, Oran ; PALLARY,
 C.R. Ass. Franc. 1894, i, p. 178 : *H. conradi*, *bukobæ*, *butumbiana*,
 E. Africa ; MARTENS, Nachrbl. Deutsch. malak. Ges. xxvii, p. 179 :
H. kilimæ, *runssorina*, E. Africa ; MARTENS, SB. Ges. naturf. Berlin,
 1895, p. 127 : *H. kuekenthali*, Moluccas ; KOBELT, Nachrbl. Deutsch.
 malak. Ges. xxvii, p. 34 : *H. indigena*, *steganella*, p. 64, *invecta*, *digueti*,
solidens, p. 65, *triangularis*, p. 66, Lower California ; MABILLE, Bull.
 Soc. Philom. vii : *H. (Levantina) elice*, Palestine ; KOBELT, Nachrbl.
 Deutsch. malak. Ges. xxvii, p. 33 : *H. (L.) cilicica*, p. 33, *elice*, p. 34,
arnoldi, *gerstenbrandti*, p. 35, *ramlensis*, p. 36, Asia Minor ; KOBELT
 in ROSSMAESSLER (356), figg. : *H. (Pomatia) stenarochila*, *æraethia*,
 p. 44, *trixenostoma*, p. 46, Cyprus, *baristata*, Syria, *cornarde*, p. 46,
pediava, *chassyana*, p. 47, Cyprus, *racopsis*, *achidæa*, p. 48, Syria,
 alleged new species ; KOBELT in ROSSMAESSLER (356), figg. : † *H.*
luparellensis, Quaternary of Luparello ; GREGORIO, Natural. Sicil. xiv,
 p. 192 : n. spp.
Klikia, n. sect. of *Helicodonta*, type *H. osculum*, Thomae. ; PILSBRY in
 TRYON (449) ix, p. 289.

- Mesodontopsis*, n. subg. of *Helicigona*, type *H. chaixii*, Mich. ; PILSBRY in TRYON (449) ix, p. 310.
- Metacampylæa*, n. sect. of *Helicigona*, type *H. rahtii*, A. Braun. ; PILSBRY in TRYON (449) ix, p. 310.
- Platytheba*, n. n. for *Nummulina*, Kob., non D'Orb. ; PILSBRY in TRYON (449) ix, p. 268.
- Pseudoleptaxis*, n. sect. of *Fridolinia*, n. g. [*q.v.*], type †*Helix corduensis*, Sandb. ; PILSBRY in TRYON (449) ix, p. 294.
- Tropidomphalus*, n. subg. of *Helicigona*, type †*Helix lepidotricha*, A. Braun. ; PILSBRY in TRYON (449) ix, p. 309.
- Vallonia*, note on North American species ; STERKI, Nautilus, ix, pp. 16 & 17.
- Xerophila mortilleti, berberica*, Oran ; PALLARY, C.R. Ass. Franc. 1894, i, p. 179 : n. spp.

BULIMIDÆ.

- Bulimus*, Scopoli, 1777, non 1786, must stand for *Succinea*, *Limnaea*, or *Bythinia*, and preferably the last ; PILSBRY in TRYON (449) x, p. 4.
- B. miltocheilus*, Rye., new varieties of ; BRAZIER, P. Linn. Soc. N. S. Wales, ix, pp. 569 & 570.
- B. (Eurytus) corticosus*, Bogota ; SOWERBY, P. Malac. Soc. [London, i, p. 214, fig. : n. sp.
- Strophocheilus*, Spix, 1827, must stand for the genus hitherto known as *Bulimus*, Scopoli, 1786, non Scopoli, 1777 ; PILSBRY in TRYON (449) x, p. 4.
- S. erythrosoma*, p. 10, *oosomus*, p. 27, Brazil ; PILSBRY in TRYON (449) x, figg. : n. spp.

ORTHALICIDÆ and BULIMULIDÆ.

- Amphidromus*, anatomy of *A. chloris* and *interruptus* ; JACOBI, Arch. Naturg. lxi, Bd. i, pp. 293-318, 1 pl.
- A. hosei*, Sarawak ; SMITH, P. Zool. Soc. London, 1895, p. 115, fig. : n. sp.
- Bulimulus (Drymaeus) binominis*, n. n. for *B. indistinctus*, Guppy, preocc. ; SMITH, P. Malac. Soc. London, i, p. 316, figg.
- B. (Leptobyrus) spirifer, lapidivagus*, p. 66, *dentifer, subspirifer, dismenicus*, p. 67, (*Scutalus*) *acholus, cosmicus*, p. 68, *cacotycus, digueti*, (*Globulus*) *recognitus*, p. 69, Lower California ; MABILLE, Bull. Soc. Philoin. vii : *B. levis, cooperi, beldingi* [Lower California] ; DALL, P. U. S. Mus. xviii, p. 5 : *B. decipiens*, Lower California ; COOPER, P. Calif. Ac. v, p. 164 : *B. (Drymaeus) buckleyi*, Ecuador ; SOWERBY, P. Malac. Soc. London, i, p. 214, fig. : *B. (Nesiotus) reibischii*, p. 126, *fanneri*, p. 127, Galapagos Is. ; DALL, Nautilus, viii : n. spp.
- Orthalicus elegans, nobilis (colimensis)*, n. sp. ?, Mexico ; ROLLE, Nachrbl. Deutsch. malak. Ges. xxvii, p. 131 : n. spp.
- Ostomus colimensis*, Mexico ; ROLLE, t. c. p. 130 : n. sp.

- Plicolumna*, n. g., type *Columna ramentosa*, Cooper ; COOPER, P. Calif. Ac. v, p. 164.
Pseudorhodea, n. subg. of *Bulimulus*, type *Columna ramentosa*, Cooper ; DALL, P. U. S. Mus. xviii, p. 5.
Simpulopsis vincentina, St. Vincent ; SMITH, P. Malak. Soc. London, i, p. 305, figg. : n. sp.

BULIMINIDÆ and PUPIDÆ.

- Berendtia digueti*, *minorina*, Lower California ; MABILLE, Bull. Soc. Philom. vii, p. 70 : n. spp.
Buliminus kopelli, G. B. Sow., notes on its anatomy ; PACE, P. Malac. Soc. London, i, p. 230, figg.
B. lunti, Hadramaut ; MELVILL, P. Malac. Soc. London, i, p. 224, fig. : *B. schweinfurthi*, S. Arabia ; MARTENS, SB. Ges. naturf. Berlin, 1895, p. 129 : *B. retivugis*, *stuhlmanni*, E. Africa ; MARTENS, t. c. p. 128 : *B. liederi*, (*Conulinus*, n.) *ugandæ*, *hillebrandti*, *metula*, p. 180, (*Rhachis*) *boehmi*, p. 181, E. Africa ; VON MARTENS, Nachrbl. Deutsch. malak. Ges. xxvii : *B.* (*Leucotinus*) *procteri*, Madagascar ; SOWERBY, P. Malac. Soc. London, i, p. 214, fig.—notes on its anatomy ; PACE, t. c. p. 229, figg. : *B.* (*Emu*) *colonus*, German New Guinea ; MOELLEN-DORF, t. c. p. 237, fig. : n. spp.
Cerion (*Paracerion*) *tridentatum*, *basistriatum*, Cuba, (*Maynardia*) *felis*, Bahamas, p. 206, *johnsoni*, hab. ?, *columna*, Inagua, p. 207, *regina*, Turks I., p. 208, *abacoensis*, Abaco I., *incanoides*, Turks I., p. 209, *maynardi*, Abaco I., *yunaensis*, San Domingo, p. 210 ; PILSBRY & VANATTA, P. Ac. Philad. 1895 : *C.* (*Maynardia*) *pineria*, I. of Pines [= I. de Pinos, Cuba] ; DALL, P. U. S. Mus. xviii, p. 6 : n. spp.
Clausilia, geographical distribution ; STÖLL, Vierteljahrschr. Ges. Zurich, xl, pp. 297–316 : protective coloration in British spp. ; WEBB, Sci. Gossip, 1895, pp. 227 & 228.
C. (*Hemiphædusa*) *schmackeri*, *ignobilis*, p. 261, (*Megalophædusa*) *fultoni*, p. 262, Japan, (*Pseudonenia*) *bocki*, *yunnanensis*, p. 263, Yunnan ; SYKES, P. Malac. Soc. London, i, figg. : *C.* (*Stereophædusa*) *stearnsii*, Japan ; PILSBRY (322), p. 163, fig., already described, v. Zool. Rec., 1894, *Moll.*, p. 62 : *C.* (*Nenia*) *deyrollei*, Ecuador ; ANCEY, Naturaliste, 1895, p. 25 : n. spp.
Cælostemma, n. subg. of *Holospira*, type *H. elizabethæ*, Pilsb. ; DALL, Nautilus, ix, p. 50, and P. U. S. Mus. xviii, p. 3.
Conulinus, n. sect. of *Buliminus*, type *B. ugandæ*, n. sp. ; MARTENS, Nachrbl. Deutsch. malak. Ges. xxvii, p. 180.
Cylindrus, Fitz., PILSBRY (Ann. Nat. Hist. xvi, p. 155) shows to be one of the *Helicidæ*, group *Belogona siphonadenia* [q. v. ante, p. 57], near to *Helicella*.
Distomospira, n. sect. of *Holospira*, type *H. bilamellata*, Dall ; DALL, Nautilus, ix, p. 50, and P. U. S. Mus. xviii, p. 3.
Epiphragmophora arizonensis, Arizona, p. 1, *hachitana*, New Mexico, p. 2, *arnheimi*, California, p. 6 ; DALL, P. U. S. Mus. xviii : n. spp.

- Eudistemma*, n. sect. of *Holospira*, type *H. arizonensis*, Stearns ; DALL, Nautilus, ix, p. 50, and P. U. S. Mus. xviii, p. 3.
- Haplostemma*, n. sect. of *Holospira*, type *H. mearnsii*, Dall ; DALL, *ibid.*
- Holospira*, divided into sections, some new ; DALL, *ibid.*
- H. pasonis*, Texas ; DALL, Nautilus, viii, p. 112 ; *H. (Metastoma) crossei*, New Mexico, *pilsbryi*, Mexico and Arizona, (*Distomospira*) *bilamelata*, (*Haplostemma*) *mearnsii*, New Mexico, (*Bostrichocentrum*) *veracruziana*, Mexico ; DALL, P. U. S. Mus. xviii, p. 4 : n. spp.
- Oligostylus*, n. sect. of *Eucalodium*, type *E. blandianum*, Crosse & Fisch. ; PILSBRY in DALL, Nautilus, ix, p. 51.
- Pupa ronneyensis*, Wstld., in N. Germany ; GOLDFUSS, Nachrbl. Deutsch. malak. Ges. xxvii, p. 100.
- P. gibilfiumensis*, near Palermo ; GREGORIO, Natural. Sicil. xiv, p. 204 ; *P. (Pupisoma) constrictus*, S. Andaman I. ; GODWIN-AUSTEN, P. Zool. Soc. London, 1895, p. 450, figg. : † *P. primavera*, Devonian, St. John, New Brunswick ; MATTHEW, P. R. Soc. Canada, xii, p. 98, fig. : n. spp.
- Pupidae*, synopsis of the subdivisions of *Holospira* and related genera ; DALL, Nautilus, ix, pp. 50 & 51.
- Spartocentrum*, n. subg. of *Celocentrum*, type *C. turris*, Pfr. ; DALL, Nautilus, ix, p. 51, and P. U. S. Mus. xviii, p. 3.

THYROPHORELLIDÆ.

New family proposed for *Thyrophorella thomensis*, Greeff, which has a false-operculum hinged to the shell, and of which a description of the animal and its anatomy is given ; GIRARD, J. Sci. Lisb. iv, pp. 28-32, figg.

STENOGYRIDÆ and ACHATINELLIDÆ.

- Achatina fatalis*, p. 145, *fulminatrix*, p. 146, E. Africa ; MARTENS, SB. Ges. naturf. Berlin, 1895 : *A. ellioti*, E. Central Africa ; SMITH, P. Malac. Soc. London, i, p. 325, fig. : *A. usambarensis*, Usambara ; ROLLE, Nachrbl. Deutsch. malak. Ges. xxvii, pp. 100 & 101 : *A. churchilliana*, Natal ; MELVILL & PONSONBY, Ann. Nat. Hist. xv, p. 164, fig. : n. spp.
- Achatinellide* from the Hawaiian Is., 30 new species ; BALDWIN, P. Ac. Philad. 1895, pp. 214-236, 3 pls. : observations on the dentition ; GWATKIN & SUTER, *t. c.* pp. 237-240.
- Achatinidæ*, monograph completed by KOBELT in MARTINI & CHEMNITZ (272).
- Bulimus [Stenogyra] decollatus*, its instinct of movement ; PÉREZ, Act. Soc. Bordeaux, xlvii, p. 314.
- Caecilianella imovata*, near Palermo ; GREGORIO, Natural. Sicil. xiv, p. 206 : n. sp.
- Glessula runssorina*, E. Africa ; MARTENS, Nachrbl. Deutsch. malak. Ges. xxvii, p. 184 : n. sp.

- Hapalus scalaris*, p. 117, *decurtatus*, p. 118, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii : n. spp.
- Limicolaria ventricosa, saturata*, E. Central Africa; SMITH, P. Malac. Soc. London, i, p. 324, figg. : *L. turriiformis*, p. 181, *mediomaculata*, p. 182, *connectens, acuminata*, p. 183, E. Africa; MARTENS, Nachrbl. Deutsch. malak. Ges. xxvii : n. spp.
- Opeas subcrenulatum*, Philippines; MOELLENDORFF, t. c. p. 118 : n. sp.
- Pseudoglessula conradti*, E. Africa; MARTENS, t. c. p. 184 : n. sp.
- Subulina castanea*, E. Africa; MARTENS, SB. Ges. naturf. Berlin, 1895, p. 129 : *S. (Subulina, n.) silvicola*, p. 184, *S. pinguis, elegans, perstriata*, p. 185, *bicolumellaris, subcrenata*, p. 186, E. Africa; MARTENS, Nachrbl. Deutsch. malak. Ges. xxvii : n. spp.
- Subulona*, n. sect. of *Subulina*, type *S. silvicola*, n. sp.; MARTENS, t. c. p. 184.
- Tornatellina camarinica*, Philippines; MOELLENDORFF, t. c. p. 117 : n. sp.

SUCCINEIDÆ and VAGINULIDÆ.

- Succinea corticalis*, E. Africa; MARTENS, Nachrbl. Deutsch. malak. Ges. xxvii, p. 186 : *S. strubelli, papuana*, British New Guinea; STRUBELL, t. c. p. 152 : n. spp.
- Vaginula schneideri*, E. Sumatra; SIMROTH, SB. Ges. Leipzig, xix, p. 7 : *V. gigantea*, Andaman Is.; GODWIN-AUSTEN, P. Zool. Soc. London, 1895, p. 451 : n. spp.
- Veronicella*, species from Central America, 2 possibly new; COCKERELL, Nautilus, viii, pp. 140-143.

BASOMMATOPHORA.

AURICULIDÆ.

- Auricula*, note on the genitalia; PELSENER, Bull. Soc. malac. Belgique, xxviii, pp. lxii & lxiii.
- A. stazonensis*, near Palermo; GREGORIO, Natural. Sicil. xiv, p. 206 : *A. quadrasi*, Philippines; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii, p. 118 : n. spp.
- Blauneria quadrasi*, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii, p. 76 : n. sp.
- Cylindrotis*, n. g., p. 76, for *C. quadrasi*, p. 77, Philippines; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii.
- Enterodonta*, n. n. for *Laimodonta* preocc.; SYKES, J. Malac. iii (1894), p. 73.
- Plecotrema*, review of the genus with †*P. antiquum*, n. n. for *minuta*, Briart & Cornet, p. 245; SYKES, P. Malac. Soc. London, i, pp. 241-246, figg.

LIMNÆIDÆ and PHYSIDÆ.

- Ameria quadrasi*, p. 119, *hildalgori* [*sic*], p. 120, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii : n. spp.
- Amphipeplea quadrasi*, Philippines; MOELLENDORFF, *l. c.* p. 119 : n. sp.
- Chilina*, anatomy; PLATE, Zool. Jahrb. Anat. ix, pp. 200-202, figg.
- Gundlachia*, notes on; HEDLEY, P. Linn. Soc. N. S. Wales, ix, p. 464 : on the Australasian species, with notes on the American forms; HEDLEY & PILSBRY, Nautilus, ix, pp. 61-68, figg.
- Limnæa*, the black pigment in the tissues is identical with the melanine or colouring matter of Cephalopod ink; ANDRÉ, Rev. Suisse Zool. vi, pp. 429-431 : *L. stagnalis*, note on the period of growth; VARIGNY, Bull. Mus. Paris, i, pp. 131 & 132.
- L. suarezensis*, Diego-Suarez, Madagascar; DAUTZENBERG, J. Conchyl. xlii, p. 100, fig. : n. sp.
- Physa paulinoi*, Portugal [alleged new species]; LOCARD, Echange, xi, p. 109 : n. sp.
- Planorbis*, sinistral character of shell; VANSTONE, P. Malac. Soc. London, i, pp. 254-256, figg. : smaller American species; VANATTA, Nautilus, ix, pp. 52-55.
- P. simpliculus*, *alluaudi*, Diego-Suarez, Madagascar; DAUTZENBERG, J. Conchyl. xlii, p. 101, figg. : *P. (Hippeutis) luzonicus*, Philippines; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii, p. 120 : *P. alabamensis*, Alabama; PILSBRY, Nautilus, viii, p. 114 : *P. callioglyptus*, Freeport, Washington; VANATTA, *op. cit.* ix, p. 54 : n. spp.
- Pyrgophysa bavayi*, Diego-Suarez, Madagascar; DAUTZENBERG, J. Conchyl. xlii, p. 103, fig. : n. sp.

SIPHONARIIDÆ, ACRORIIDÆ, GADINIIDÆ, and AMPHIBOLIDÆ.

Genera of fossil *Thalassophila*; COSSMANN (92).

Amphibola quadrasi, p. 120, *sanchez*, p. 121, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii : n. spp.

Rhytidopilus, n. g., type †*Patella humbertina*, Buv.; COSSMANN (92) p. 143.

Siphonaria is a Pulmonate and not an Opisthobranch; PEISENEER, Mem. Cour. Ac. Belgique (4to) liii, p. 81 : *S. lepida*, mesoderm formation in; FUJITA, Zool. Mag. Tokyo, vii, pp. 89-93, figg.

S. sirius, p. 5, *acmæoides*, p. 6, Japan; PILSBRY (322), figg., cited as new but already described, *v. Zool. Rec.*, 1894, *Moll.*, p. 66.

PULMONATA INCERTA SEDES.

†*Nicolasia*, n. g., type *Bulimus provensali*, Nicol.; OPPENHEIM, Palæontogr. xlii, p. 351, figg.—may belong to *Helicidae* or to *Auriculidæ*.

OPISTHOBRANCHIATA.

- Memoir on the representative forms, with anatomy and phylogeny ;
 PELENEER, Mem. Cour. Ac. Belgique (4to) liii.
 Review of new works on ; SIMROTH (381).

NUDIBRANCHIATA.

- Alderia scaldiana*, Nyst, disappearance from the lower Escaut, Belgium ;
 RAEYMAEKERS, Pr. verb. Soc. malac. Belgique, xxiv, pp. cl-clv.
Ceratosoma, monograph of the genus ; ROCHEBRUNE, Arch. Mus. Paris,
 vii, p. 119, &c., figg.
C. jousseaumi, *rhopalicum*, Red Sea, *livi*, *gibbosum*, Torres Straits,
francesii, Noumea, New Caledonia ; ROCHEBRUNE, Naturaliste, 1894,
 p. 55 [figg. in Arch. Mus. Paris, vii] : n. spp.
Dendronotus arboreseens, structure of the cerata ; CLUBB, P. Liverp. biol.
 Soc. ix, pp. 200-234, 2 pls.
Doris maculata, Plymouth ; GARSTANG, J. Mar. Biol. Ass. iv, p. 167 :
D. umbrella, Gulf of California ; ROCHEBRUNE, Bull. Mus. Paris, i,
 p. 239 : n. spp.
Doto (?) *ocellifera*, Bermudas ; SIMROTH (377) p. 168, figg. : n. sp.
Hedyle, n. g., p. 4, for *H. weberi*, n. sp., p. 5, Indian Ocean, with an
 account of its anatomy ; BERGH, Verh. Ges. Wien, xlv, figg.
Phyllobranchus borqninii, note on the nervous system ; TRINCHESE, Rend.
 Acc. Napoli, ii, p. 37.
Scyllaea pelagica, Linn., rediscovered in Victoria ; HEDLEY, P. Soc.
 Victoria, vii, p. 199.
Tethys, on the status of the name ; PILSBRY, Ann. Nat. Hist. xvi, p. 424.

TECTIBRANCHIATA.

Fossil genera ; COSSMANN (92).

BULLOIDEA.

- Abderospira*, n. sect. of *Bullina*, type †*B. chipolana*, n. sp. ; DALL,
 P. U. S. Nat. Mus. xviii, p. 32.
 †*Acera neocomiensis*, Lower Neocomian, Marolles ; COSSMANN (92) p. 153,
 figg. : n. sp.
Acerida, n. fam. for *Acera*, *Amphisphyra*, and *Cylindrobulla* ; COSSMANN
 (92) p. 102.
Acrocolpus, n. subg. of *Bulla*, type †*B. plicata*, Desh. ; COSSMANN
 (92) p. 92.
Acteon browni, Faroe Channel ; JORDAN, P. Malac. Soc. London, i, p. 267,
 fig. : n. sp.
 †*Acteonella terebellum*, Upper Turonian beds of Gosau ; COSSMANN (92)
 p. 148, figg. : n. sp.

- † *Actæonidæ*, of the Jurassic of France ; COSSMANN (93).
Adelactæon, n. n. for *Myonia*, A. Ad., non Dana ; COSSMANN (92) p. 54.
Aglaja, Renier, has priority over *Doridium*, Meckel. ; PILSBRY in TRYON (448), xvi, p. 44, and therefore also *Aglajidæ* supersedes *Doridiidæ*.
A. nuttalli, Sandwich Is. ; PILSBRY in TRYON (448) xvi, p. 50, fig. : n. sp.
Akeridæ, n. fam., with subfams. *Akerinæ*, *Hamineinæ*, n., *Volvatellinæ*, n. ;
 PILSBRY in TRYON (448) xv, p. 350.
Alys martensi, n. n. for *Bulla succisa*, Ehrenb., of A. Adams ; KOBELT in
 MARTINI & CHEMNITZ (272), *Bullacea*, p. 18, fig.
Bulla, researches into the olfactory organ ; MAZZARELLI (275).
B. roperiana, Balearic Is. ; PILSBRY in TRYON (448) xv, p. 336, fig. :
 † *B. marullensis*, Neocomian beds, Marolles (Aube) ; COSSMANN (92),
 p. 152, figg. : n. spp.
Bullacea, monograph, begun by KOBELT in MARTINI & CHEMNITZ (272).
Bullia nitida, Mekran coast ; SOWERBY, P. Malac. Soc. London, i, p. 278,
 figg. : n. sp.
Clistaxis, n. n. for *Cryptaxis*, Jeff., non Lowe nec Reuss. ; COSSMANN
 (92), p. 90.
Colpodaspis pusilla, notes on specimen from Plymouth ; GARSTANG,
 P. Zool. Soc. London, 1894, pp. 664-669, 1 pl.
 † *Conularia loculata*, Silurian, Gotland ; WIMAN, Bull. Geol. Inst. Upsala, ii,
 p. 113, fig. : n. sp.
Creseis, anatomical description of, as a typical Pteropod ; HORNELL,
 J. Marine Zool. ii, pp. 19-24, 1 pl.
Cylichna, Lovén, is, Pilsbry considers, sufficiently distinct from *Cylichnus*,
 Burm. (Coleopt.), to stand ; TRYON (448).
Cylichnella vasatensis, Lower Loughian beds, Méruinac ; COSSMANN (92),
 p. 152, figg. : n. sp.
Dactylus, the species recorded here last year should have been placed in
 PELECYPODA, *Mytilidæ*.
Haminea virescens, note on ; BRADSHAW, Nautilus, viii, p. 100, fig.
H. cairnsiana, Lifu, Loyalty Is. ; MELVILL & STANDEN, J. Conch. viii,
 p. 89, fig. : *H. binotata*, Loo Choo Is. ; PILSBRY (322), p. 185 : n. spp.
Hamineinæ, n. subfam. of *Akeridæ* ; PILSBRY in TRYON (448) xv, p. 351.
Micromelo, n. g., type *Bulla undata*, Brug. ; PILSBRY in TRYON (448) xv,
 p. 391.
Navanax, n. n. for *Navarchus*, preocc., type *N. inermis*, Cooper ; PILSBRY,
 Nautilus, viii, p. 131.
Navarchus, preocc. ; PILSBRY, Nautilus, viii, p. 131, proposes *Navanax*
 instead.
Newtoniella, n. n. for *Lovenella*, Sars, preocc. ; COSSMANN, Mem. Soc.
 malac. Belgique, xxviii, p. 18.
Ovactæonina, n. sect. of *Actæonina*, type † *A. sparsisulcata*, D'Orb. ; COSS-
 MANN (92) p. 60.
 † *O. urgonensis*, Urganian beds at Oregon ; COSSMANN (92) p. 147, figg. : n. sp.
Paleohydatina, n. sect. of *Hydatina*, type † *Bulla undulata*, Bean ; COSS-
 MANN (92) p. 110.

- Plicobulla*, p. 193, n. subg. of *Bullinella*, for †*B. dumasi*, n. sp., p. 194, Eocene, Loire Inférieure; COSSMANN, Bull. Soc. Ouest France, v, figg.
- Ptychocylindrites*, n. subg. of *Cylindrites*, type †*Bulla condati*, Guir. & Ogér.; COSSMANN (92) p. 72.
- Pugnus*, n. g., for *P. parvus*, n. sp., Sydney Harb.; HEDLEY, Rec. Austral. Mus. ii, p. 106, fig.
- †*Ringicula turonensis*, Turonian beds at Uchaux; COSSMANN (92) p. 150, figg. : n. sp.
- Scaphander alatus*, p. 676, (*Sabatia*) *pustulosa*, p. 677, off Hawaiian Is.; DALL, P. U. S. Mus. xvii, figg. : n. spp.
- Striactæonina*, n. sect. of *Actæonina*, type †*Orthostoma avena*, Terq.; COSSMANN (92) p. 59.
- Sulcoactæon*, n. g., for †*Actæon striatosulcata*, Zitt. & Goub.; COSSMANN (92) p. 108.
- †*S. ovoidens*, Urganian beds, Oregon; COSSMANN (92) p. 154, figg. : n. sp.
- †*Tornatella lapparenti*, Urganian beds at Vassy; COSSMANN (92) p. 147, figg. : n. sp.
- Tornatina singaporensis*, p. 194, *capitata*, p. 195, Singapore; PILSBRY in TRYON (448) xv, fig. : n. spp.
- †*T. (Retusa) berthelini*, Albion beds at Le Gâti (Aube); COSSMANN (92) p. 151, figg. : n. sp.
- †*Trochactæon arnaudi*, Lower Provencian beds, Charente, p. 148, *boutillieri*, Urganian beds, Oregon, p. 149; COSSMANN (92) figg. : n. spp.
- Tubiferida*, n. fam. for †*Ceritella*, Morr. & Lyc. [= *Tubifer*, Piette]; COSSMANN (92) p. 77, who places it between *Actæonida* and *Tornatiniida*.
- Volvatellina*, n. subfam. of *Akerida*; PILSBRY in TRYON (448) xv, p. 350.
- Volvocylindrites*, n. sect. of *Cylindrites*, type †*Volvula marcousana*, Guir. & Ogér.; COSSMANN (92) p. 71.
- Volvula*, A. Ad., is, Pilsbry considers, sufficiently distinct from *Volvulus* of Oken and of Brullé to stand; TRYON (448).

APLYSIOIDEA.

- Aplysia*, on the status of the name, which must yield to *Tethys*; PILSBRY, Ann. Nat. Hist. xvi, p. 424: *Aplysia*, notes on a group of, which seem to form a connecting link between the *Cephalaspidea* and *Anaspidea*; GILCHRIST, *op. cit.* xv, pp. 403-405, 1 pl.
- A. mouholi*, Siam; GILCHRIST, *t. c.* p. 404, figg. : n. sp.
- Aplysiinae*, n. subfam. of *Aplysiidae*; PILSBRY in TRYON (448) xvi, p. 65.
- Dolabella californica*, Stearns, note on the animal; PILSBRY, Nautilus, ix, pp. 73 & 74.
- Tethys* [*i.e.* *Aplysia*] *floridensis*, Florida, p. 82, *panamensis*, Panama, p. 88, PILSBRY in TRYON (448) xvi, figg. : n. spp.

PLEUROBRANCHOIDEA.

- Pleurobranchus digueti*, Gulf of California; ROCHEBRUNE, Bull. Mus. Paris, i, p. 240 : n. sp.
1895. [VOL. XXXII.]

PROSOBRANCHIATA.

Review of new works on ; SIMROTH (380).

PECTINIBRANCHIATA.

NUCLEOBRANCHIATA.

Genera of fossil *Nucleobranchiata* ; COSSMANN (92).

Pterosoma, Lesson, claimed as a Heteropod ; HEDLEY, P. Malac. Soc. London, i, p. 333, figg.

TOXOGLOSSA.

TEREBRIDÆ, CONIDÆ, PLEUROTOMIDÆ, and CANCELLARIIDÆ.

Bela erythraea, Suez ; JOUSSEAUME, Naturaliste, 1895, p. 147 : n. sp.

Borsonia armata, Philippines ; BÆTTGER, Nachrbl. Deutsch. malak. Ges. xxvii, p. 11 : n. sp.

Cancellaria centrota, p. 13, *io*, p. 14, Gulf of Panama ; DALL, P. U. S. Mus. xviii : n. spp.

Cancellariidae, monograph of Tertiary species from Piedmont and Liguria ; SACCO (358) pt. xvi.

Clathurella (*Bellardiella*) *quadrasi*, p. 48, (*Hemilienardia*) *subbilitata*, p. 54, (*Pseudodaphnella*) *clarocincta*, p. 59, Philippines ; BÆTTGER, Nachrbl. Deutsch. malak. Ges. xxvii : *C. ? gainesii*, Japan ; PILSBRY (322) p. 20, fig. : n. spp.

† *Clavatula burdigalensis*, Faluns of Bordelais ; COSSMANN, C.R. Ass. Franc. 1894, ii, p. 449, fig. : n. sp.

Contortia, n. subg. of *Cancellaria*, type *C. contorta*, Beust. ; SACCO (358) pt. xvi, p. 48.

Conus mediterraneus, Brug., description of animal and radula ; VAYSSIÈRE, J. Conchyl. xliii, pp. 12-18, figg.

C. coxianus, Bay of Zeila, *elegans*, Persian Gulf ; SOWERBY, P. Malac. Soc. London, i, p. 215, figg. : *C. waterhouseæ*, Solomon Is. ; BRAZIER, P. Linn. Soc. N. S. Wales, x, p. 471 : n. spp.

Daphnella quadrasi, Philippines ; BÆTTGER, Nachrbl. Deutsch. malak. Ges. xxvii, p. 61 : n. sp.

Defrancia japonica, Japan ; MELVILL, P. Malac. Soc. London, i, p. 227, fig. : n. sp.

Drillia fugata, Ceylon ; SMITH, Ann. Nat. Hist. xvi, p. 4, figg. : *D. quadrasi*, Philippines ; BÆTTGER, Nachrbl. Deutsch. malak. Ges. xxvii, p. 9 : *D. principalis*, p. 17, *D. ? tokyoensis*, p. 18, Japan ; PILSBRY (322), figg. : n. spp.

Eucyclotoma, n. sect. of *Clathurella*, type *C. fusiformis*, Garrett ; BÆTTGER, Nachrbl. Deutsch. malak. Ges. xxvii, p. 55.

Hemilienardia, n. sect. of *Clathurella*, type *Pleurotoma malleti*, Recl. ; BÆTTGER, Nachrbl. Deutsch. malak. Ges. xxvii, p. 52.

† *Homatoma degrangei*, Faluns of Bordelais ; COSSMANN, C.R. Ass. Franc. 1894, ii, p. 450, fig. : n. sp.

- Mangilia townsendi*, Mekran coast; SOWERBY, P. Malac. Soc. London, i, p. 278, figg. : *M. edentula*, p. 12, *quadras*, p. 15, Philippines; BÆTTGER, Nachrbl. Deutsch. malak. Ges. xxvii : *M. (Glyphostoma) aliciae*, *calcicincta*, p. 95, *cremonilla*, *emmae*, p. 96, *theskela*, p. 97, (*Daphnella*) *dulcinea*, p. 98, Lifu, Loyalty Is.; MELVILL & STANDEN, J. Conch. viii, figg. : *M. (Pleurotomella) gypsina*, p. 678, *hawaiiiana*, ? *climacella*, p. 679, (*Spergo*, n. subg.) *glandiniformis*, p. 680, *daphnelloides*, p. 683, off Hawaiian Is.; DALL, P. U. S. Mus. xvii, figg. : n. spp.
- Paraclathurella*, n. sect. of *Clathurella*, type *Pleurotoma gracilentata*, Rve.; BÆTTGER, Nachrbl. Deutsch. malak. Ges. xxvii, p. 56.
- Pleurotoma (Drillia) jousseaumei*, Aden; MELVILL, P. Malac. Soc. London, i, p. 221, fig. : *P. vagata*, p. 3, *præsignis*, p. 4, Ceylon; SMITH, Ann. Nat. Hist. xvi, figg. : *P. ? kamakurana*, Japan; PILSBRY (322), p. 16, figg. : *P. (Drillia) microscelida*, off Hawaiian Is.; DALL, P. U. S. Mus. xvii, p. 677, figg. : *P. (Steiraxis) aulaca*, W. coast Mexico; DALL, *op. cit.* xviii, p. 14 : n. spp.
- Pleurotomella castanea*, E. of Galapagos Is.; DALL, P. U. S. Mus. xviii, p. 15 : n. sp.
- Pleurotomida*, Philippine species; BÆTTGER, Nachrbl. Deutsch. malak. Ges. xxvii, pp. 1-20.
- Pontiothauma*, n. g. for *P. mirabile*, Malabar Coast, *abyssicola*, Bay of Bengal; SMITH, Ann. Nat. Hist. xvi, p. 2, figg.
- Pseudodaphnella*, n. sect. of *Clathurella*, type *C. philippinensis*, Rve.; BÆTTGER, Nachrbl. Deutsch. malak. Ges. xxvii, p. 58.
- Pseudorhaphitoma*, n. sect. of *Clathurella*, type *C. fairbanki*, Nevill; BÆTTGER, Nachrbl. Deutsch. malak. Ges. xxvii, p. 56.
- Terebra neclarea*, Lifu, Loyalty Is.; MELVILL & STANDEN, J. Conch. viii, p. 91, fig. : n. sp.

RHACHIGLOSSA.

OLIVIDÆ, HARPIDÆ, VOLUTIDÆ, and MITRIDÆ.

- Cithara (Cithara) compressicosta*, p. 42, *diconus*, p. 45, Philippines; BÆTTGER, Nachrbl. Deutsch. malak. Ges. xxvii : n. spp.
- Mitra (Pusia) evlynæ*, Mauritius, p. 221, (*Costellaria*) *eudianthe*, hab. ?, (*Pusia*) *shoplandi*, (*Strigatella*) *nebrias*, p. 222, *M. xerampelina*, Aden, (*Turricula*) *superbiens*, W. Australia, p. 223; MELVILL, P. Malac. Soc. London, i, figg. : *M. (Volutomitra) honesta*, p. 101, (*Costellaria* ?) *nitidissima*, p. 102, Lifu, Loyalty Is.; MELVILL & PONSONBY, J. Conch. viii, figg. : n. spp.
- Olivella gracilis*, Gray, n. var.; FORD, Nautilus, viii, p. 104.
- Scaphella benthalis*, Gulf of Panama; DALL, P. U. S. Mus. xviii, p. 13: n. sp.
- Tractolira*, n. g., p. 12, for *T. spartu*, n. sp., p. 13, Gulf of Panama to W. coast Mexico; DALL, P. U. S. Mus. xviii.
- Voluta*, descriptions and phylogeny of Argentine species; LAHILLE, Revist. Mus. La Plata, vi, pp. 293-332, 12 pls.
- V. oviformis*, p. 312, *ambigua*, p. 319, *paradoxa*, p. 321, Argentine Republic; LAHILLE, Revist. Mus. La Plata, vi, figg. : n. spp.

FASCIOLARIIDÆ, TURBINELLIDÆ, and BUCCINIDÆ.

- Ancistrolepis*, n. subg. of *Chrysodomus*, type *C. eucosmius*, Dall ; DALL, P. U. S. Mus. xvii, p. 709, fig.
- Beringius frielei*, *aleuticus*, Behring Sea ; DALL, t. c. p. 711, figg. : n. spp.
- Buccinum aleuticum*, p. 706, *ovulum*, p. 707, Aleutian Is. ; DALL, t. c. figg. : n. spp.
- Chrysodomus insularis*, p. 707, (*Ancistrolepis*) *magnus*, p. 709, Behring Sea ; DALL, t. c. figg. : n. spp.
- Cominella brunneocincta*, Gulf of Panama ; DALL, *op. cit.* xviii, p. 11 : n. sp.
- Engina cumingiana*, St. Thomas, W. Indies, *natalensis*, Natal, p. 226, *layardi*, Ceylon, *sinensis*, China Seas, p. 227 ; MELVILL, P. Malac. Soc. London, i, figg. : *E. mundula*, *spica*, Lifu, Loyalty Is. ; MELVILL & STANDEN, J. Conch. viii, p. 105, figg. : n. spp.
- Fulgur canaliculatum*, remarkable monstrosity ; JOHNSTON & PILSBRY, Nautilus, ix, pp. 25-27, figg.
- † *Fusus serratus*, Lk., the examples referred to this from the Eocene of Belgium are really 2 new species ; VINCENT (471).
- F.* (?) *rufocaulatus*, Gulf of Panama ; DALL, P. U. S. Mus. xviii, p. 12 : † *F. odontotus*, Eocene of Belgium ; VINCENT, Pr. verb. Soc. malac. Belgique, xxiv, p. cv, fig. : n. spp.
- Lutirus walkeri*, W. Australia ; MELVILL, P. Malac. Soc. London, i, p. 223, fig. : *L. aurantiacus*, p. 89, *pulleinei*, p. 90, S. Australia ; VERCO, Tr. R. Soc. S. Austral. xix, figg. : n. spp.
- Phos cocosensis*, Cocos I., Gulf of Panama ; DALL, P. U. S. Mus. xviii, p. 11 : n. sp.
- Pisania bednalli*, W. Australia ; SOWERBY, P. Malac. Soc. London, i, p. 215, fig. : n. sp.
- Pollia dautzenbergi*, Senegal ; BAVAY, Naturaliste, 1895, p. 160, fig. : n. sp.
- Siphonalia stearnsii*, p. 29, *hyperodon*, p. 30, Japan ; PILSBRY (322), figg. : n. spp. [The former already described, v. Zool. Rec., 1894, *Moll.*, p. 70.]
- Sulcosinus*, n. subg. of *Buccinum*, type *B. taphrium*, Dall ; DALL, P. U. S. Mus. xvii, p. 707, fig.
- † *Surculofusus bruxellensis*, Eocene of Belgium ; VINCENT, Pr. verb. Soc. malac. Belgique, xxiv, p. civ, figg. : n. sp.

NASSIDÆ, COLUMBELLIDÆ, MURICIDÆ, and CORALIOPHILIDÆ.

- Clea*, observations on the genus, with *C. banguyensis*, n. sp., p. 253, Banguy I., Borneo ; SMITH, P. Malac. Soc. London, i, pp. 251-253, figg.
- Columbella*, monograph continued by KOBELT in MARTINI & CHEMNITZ (272), *C. (Strombina) perversa*, n. n. for *C. nivea*, Reeve, non Sow. ; KOBELT in MARTINI & CHEMNITZ (272), *Columbella*, p. 189, fig. [Reeve's figure was accidentally reversed : the specimen is dextral].
- C. (Mitrella) pacri*, Coromandel coast ; SMITH, Ann. Nat. Hist. xvi, p. 5, fig. : *C. (Atilia?) pleurotomoides*, Japan ; PILSBRY (322) p. 39, fig. : n. spp.

- Ciralliophila stearnsii*, Japan ; PILSBRY (322) p. 45, fig. : n. sp.
 † *Locotomella*, n. g., for *L. castor* and *pollux*, n. spp., Marmolata Limestone ; BOEHM, Palæontogr. xlii, p. 301, figg. [Author puts this in "*Purpur-idee*," probably nobody else would].
Murex (Haustellum) multiplicatus, West Australia ; SOWERBY, P. Malac. Soc. London, i, p. 216, fig. : *M. tatei*, p. 84, *robustus*, p. 85, South Australia ; VERCO, Tr. R. Soc. S. Austral. xix, figg. : *M. (Ocinebra) benedictus*, Lifu, Loyalty Is. ; MELVILL & STANDEN, J. Conch. viii, p. 108, fig. : n. spp.
Nassa (Demoulia) binominata, n. n. for *Desmoulea japonica*, A. Ad. ; PILSBRY (322) p. 37.
N. turrifera, p. 5, Coromandel coast, *pseudococoninna*, p. 263, Arabian Sea ; SMITH, Ann. Nat. Hist. xvi, figg. : *N. hypolia*, Japan ; PILSBRY (322) p. 37, fig. : n. spp.
Nassodonta insignis, A. Ad., notes on ; SMITH, P. Malac. Soc. London, i, p. 257.
Ocinebra circumcincta, n. var., Los Angeles Co. ; STEARNS, Nautilus, ix, p. 16.
Purpura coronata, Lam., occurrence in West Indies [*i.e.*, British Guiana and Trinidad] ; COOKE, J. Malac. iv, p. 69.

TÆNIOGLOSSA.

TRITONIDÆ, CASIDIDÆ, CYPREIDÆ, and STROMBIDÆ.

- Cassidaria* as a generic name must yield to *Morio* ; SMITH, J. Malac. iv, p. 11.
Cypræa tessellata, note on ; STANDEN, J. Conch. viii, p. 55.
 † *Moerkia*, n. g., type *Angularia prefecta*, Kittl ; BOEHM, Palæontogr. xlii, p. 298, figg.
Oniscia as a generic name must yield to *Lambidium* ; SMITH, J. Malac. iv, p. 13.
Ovula spelta, Z., description of animal and radula ; VAYSSIÈRE, J. Conchyl. xliii, pp. 6-12, figg.
O. laugierii, Suez ; JOUSSEAUME, Naturaliste, 1895, p. 121 : n. sp.
 † *Pereiraia gervaisii*, Véz., notes on ; HOERNES, Ann. Hofmus. Wien, x, pp. 1-16, figg.
Strombidæ, notes on the *Strombidæ*, especially *Terebellum* ; BERGH, Zool. Jahrb. Anat. viii, pp. 342-378, 2 pls.
Terebellum, notes on, including its anatomy ; BERGH, *vide supra*, *Strombidæ*.
Triton confinis, New Guinea ; BRANCSIK, Jahresh. Ver. Trencsin, xvii, p. 211, figg. : n. sp.
- CERITHIIDÆ, TRICHOTROPIDÆ, VERMETIDÆ, and TURRITELLIDÆ.
- Anaplocampus*, n. g., p. 8, for *A. borealis*, n. sp., p. 9, Unimak I., Aleutian Arch. ; DALL, P. U. S. Mus. xviii.
Archimediella, n. subg., type † *Turritella archimedis*, Brong. ; SACCO (358) pt. xix, p. 12.
Aurelianelia, n. g., p. 11, for † *A. mutabilis*, n. sp., p. 12, Eocene, Paris ; COSSMANN, Mem. Soc. malac. Belgique, xxviii, fig.

- Cerithiidae*, monograph of Tertiary species from Piedmont and Liguria ;
SACCO (358) pt. xvii.
- Cerithiopsis*, monograph of Tertiary species from Piedmont and Liguria ;
SACCO (358) pt. xvii.
- Cerithium*, monograph continued by KOBELT in MARTINI & CHEMNITZ
(272): *C. tryoni*, n. n. for *C. caledonicum*, Jouss., of Tryon; KOBELT
in MARTINI & CHEMNITZ (272), *Cerithium*, p. 169, fig.
- C. (Cerithidea) quadrasi*, p. 176, (*Vertagus* ?) *moellendorffi*, p. 182, *C. plani-*
usculum, p. 188, Philippines, *subatratum*, p. 193, West Indies ?;
KOBELT in MARTINI & CHEMNITZ (272) figg. : *C. dichroum*, Lifu,
Loyalty Is.; MELVILL & STANDEN, J. Couch. viii, p. 115, fig. : n. spp.
- Conocerithium*, n. subg., type †*Cerithium tauroconicum*, n. sp. ; SACCO
(358) pt. xvii, p. 22.
- Dallia*, n. g., p. 447, for †*D. brusinai*, n. sp., p. 448, Faluns of Bordelais ;
COSSMANN, C.R. Ass. Franc. 1894, ii, fig.
- Diastomidae*, monograph of Tertiary species from Piedmont and Liguria ;
SACCO (358), pt. xvii.
- Dizoniopsis*, n. subg., type †*Cerithiopsis bilineata*, Hoern. ; SACCO (358),
pt. xvii, p. 67.
- Fimbriatella*, n. subg. of *Mathilda*, type †*Cerithium fimbriatum*, Micht. ;
SACCO (358), pt. xix, p. 36.
- Mathildidae*, monograph of Tertiary species from Piedmont and Liguria ;
SACCO (358), pt. xix.
- Pithocerithium*, n. subg., type †*Cerithium dotiolum*, Br. ; SACCO (358),
pt. xvii, p. 28.
- Ptychocerithium*, n. subg., type †*Cerithium granulinum*, Bon. ; SACCO
(358), pt. xvii, p. 23.
- Tiaracerithium*, n. subg., for †*Cerithium pseudotiarella*, D'Orb. ; SACCO
(358), pt. xvii, p. 35.
- Tiarapirenella*, n. subg., type †*Cerithium bicinctum*, Br. ; SACCO (358),
pt. xvii, p. 60.
- Torculoidella*, n. subg., type †*Turritella varicosa*, Br. ; SACCO (358),
pt. xix, p. 28.
- Triforidae*, monograph of Tertiary species from Piedmont and Liguria ;
SACCO (358), pt. xvii.
- Triforis purpuratus*, Japan ; PILSBRY (322), p. 58 : n. sp.
- Turritellidae*, monograph of Tertiary species from Piedmont and Liguria ;
SACCO (358), pt. xix.
- Vermetus tokyoensis*, Japan ; PILSBRY (322), p. 61, figg. : n. sp.
- Vertagus implicatus*, New Guinea ; BRANCSIK, Jahresh. Ver. Trencsin.
xvii, p. 217, figg. : n. sp.

PSEUDOMELANIIDÆ, MELANIIDÆ, PLEUROCERIDÆ, LITTORINIDÆ,
FOSSARIIDÆ, SOLARIIDÆ, and HOMALOGYRIDÆ.

- Fossariidae*, monograph of Tertiary species from Piedmont and Liguria ;
SACCO (358), pt. xviii.
- Homalogyra*, notes on the organisation of ; VAYSSIÈRE, Ann. Sci. nat.
xix, pp. 363-378, 1 pl.

- †*Juliana*, n. n. for *Pustularia*, Koken, procc. ; FUCINI, Atti Soc. Toscana, xiv, p. 310.
- Lacuna oxytropis, smithii*, p. 63, *stenotomorpha*, p. 64, Japan ; PILSBRY (322), figg. : n. spp.
- Littorinida*, monograph of Tertiary species from Piedmont and Liguria ; SACCO (358), pt. xviii.
- Melania crawfordi*, Transvaal, p. 473, *leefei*, Tonga Is., p. 474 ; BROU, J. Conchyl. xlii, figg. : *M. lauterbachii*, New Guinea ; BRANCSIK, Jahresh. Ver. Trencsin, xvii, p. 218, figg. : n. spp.
- Melaniidae*, monograph of Tertiary species from Piedmont and Liguria ; SACCO (358), pt. xviii.
- Paramelania (Edgaria) flexicostata*, p. 186, *tiarella*, p. 187, E. Africa ; MARTENS, Nachrbl. Deutsch. malak. Ges. xxvii : n. spp.
- Pleurocera subulare* in water-mains ; SIMPSON, Nautilus, ix, p. 37.
- Ptychomelania*, n. subg., type †*Melania buccinella*, Bon. ; SACCO (358), pt. xviii, p. 7.
- †*Solarium planiforme*, Eocene, Alabama ; ALDRICH, Nautilus, ix, p. 2, figg. : n. sp.
- †*Toconema*, n. subg. of *Undularia*, type *U. scalata*, Schl. ; BOEHM, Palæontogr. xlii, p. 269, figg.

LITOPIDÆ, RISSOIDÆ, HYDROBIIDÆ, PALUDINIDÆ, VALVATIDÆ,
and AMPULLARIIDÆ.

- Acmella mellilla*, S. Andaman I. ; GODWIN-AUSTEN, P. Zool. Soc. London, 1895, p. 453, figg. : *A. gradata, pusilla*, Philippines ; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii, p. 148 : n. spp.
- Alvaniella*, n. subg., type †*Alvania scabra*, Phil. ; SACCO (358), pt. xviii, p. 25.
- Ampullaria tenuissima*, Ecuador ; JOUSSEAUME, Naturaliste, 1894, p. 120, figg. : n. sp.
- Amnicola olivacea*, Alabama ; PILSBRY, Nautilus, viii, p. 115 : n. sp.
- Assimineia quadrasi*, Philippines ; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii, p. 77 : n. sp.
- †*Baglivia spinata*, Upper Pontic of Szegzárd ; LÖRENTHEY, Termes. Fuzetek, xviii, pp. 263 & 323, figg. : n. sp.
- Barleeia chasteri*, Lifu, Loyalty Is. ; MELVILL & STANDEN, J. Conch. viii, p. 120, fig. : *B. tincla*, Gulf of Paria ; GUPPY, P. Inst. Trinidad, i, p. 128 : n. spp.
- Bythinella palomasensis*, Mexico ; PILSBRY, Nautilus, ix, p. 68 : n. sp.
- Cleopatra carinulata*, Diego-Suarez, Madagascar ; DAUTZENBERG, J. Conchyl. xlii, p. 103, fig. : n. sp.
- Diala hardyi, ludens*, Loyalty Is. ; MELVILL & STANDEN, J. Conch. viii, p. 118, figg. : n. spp.
- Galeodimopsis*, n. subg. of *Alvania*, type †*Rissoa tiberiana*, Coppi ; SACCO (358), pt. xviii, p. 28.
- Gibborissoia*, n. sect. of *Alaba*, type †*Balimus costellata*, Grat ; COSSMANN in SACCO (358), pt. xviii, p. 34.

- Hydrobiidae*, monograph of Tertiary species from Piedmont and Liguria; SACCO (358), pt. xviii.
- † *Nystia fulonica*, Faluns of Bordelais; COSSMANN, C.R. Ass. Franc. 1894, ii, p. 447, fig. : n. sp.
- Paludestrina*, notes on the genus and the grouping of the S. American forms; JHERING, Nachrbl. Deutsch. malak. Ges. xxvii, pp. 122-128.
- Paludina vivipara*, seminal elements; AUERBACH (14) : on the attractive sphere in fixed cells of the connective tissue; BRUYNE, Bull. Ac. Belgique, xxx, pp. 241-256.
- Paludinidae*, monograph of Tertiary species from Piedmont and Liguria; SACCO (358), pt. xviii.
- Prososthenia quadrasi*, Philippines; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii, p. 138 : n. sp.
- Rissoide*, monograph of Tertiary species from Piedmont and Liguria; SACCO (358), pt. xviii.
- Somatogyrus sargenti*, Alabama; PILSBRY, Nautilus, viii, p. 102 : n. sp.
- Stenothyra quadrasi*, p. 138, *hyalina*, *cyclothyra*, p. 139, *cristata*, *bettgeri*, p. 140, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii : *S. decollata*, Philippines; MOELLENDORFF, t. c. p. 77 : n. spp.
- Tricula quadrasi*, p. 121, *elongata*, p. 137, *hidalgoyi*, p. 138, Philippines; MOELLENDORFF, t. c. : n. spp.
- Valvatidae*, monograph of Tertiary species from Piedmont and Liguria; SACCO (358), pt. xviii.

CYCLOPHORIDÆ, CYCLOSTOMIDÆ, and TRUNCATELLIDÆ.

- Adelomorpha*, note on genus, with list of species; MOELLENDORFF, P. Malac. Soc. London, i, p. 239.
- A. keta*, German New Guinea; MOELLENDORFF, t. c. p. 239, fig. : n. sp.
- Alycaeus quadrasi*, p. 83, *cyphogyrus*, p. 144, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii : *A. (Orthalycaeus) congener*, *sadongensis*, Borneo, SMITH, *fultoni*, Gormanton I., Borneo, MOELLENDORFF in SMITH, P. Zool. Soc. London, 1895, p. 117, figg. : n. spp.
- Ariina calathiscus*, (*Leucarinia*) *contracta*, p. 84, *dichroa*, *chrysacme*, p. 145, *gibbosula*, *cylindrus*, p. 146, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii : n. spp.
- Bellardiella*, remarks on the genus; ANCEY, Naturaliste, 1894, p. 256.
- Cyathopoma natalicum*, Camorta, Nicobars; GODWIN-AUSTEN, P. Zool. Soc. London, 1895, p. 453, figg. : *C. everetti*, Sarawak; SMITH, t. c. p. 115, figg. : *C. (Jerdonia) microconus*, p. 140, *euspirum*, *concavospirum*, p. 141, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii : n. spp.
- Cyclophorus volkensi*, Kilimandjaro, E. Africa; MARTENS, SB. Ges. naturf. Berlin, 1895, p. 121 : *C. kina-baluenensis*, N. Borneo; SMITH, P. Zool. Soc. London, 1895, p. 118, fig. : *C. aëtarum*, *coronensis*, p. 78, *ceratodes*, *pteroicyclus*, p. 142, Philippines; MOELLENDORFF, Nachrbl. Deutsch.

- malak. Ges. xxvii : *C. kubaryi*, German New Guinea; MOELLENDORFF, P. Malac. Soc. London, i, p. 238, fig. : n. spp.
- Cyclostoma alluaudi*, Mt. Ambre, Madagascar; DAUTZENBERG, J. Conchyl. xlii, p. 110, fig. : *C. foveolatum*, S. Africa; MELVILL & PONSONBY, Ann. Nat. Hist. xv, p. 164, figg. : n. spp.
- Cyclotus palawanicus*, Palawan; SMITH, P. Zool. Soc. London, 1895, p. 124, fig. : *C. (Platyrrhaphé) anthopoma*, p. 81, *anocamptus*, p. 82, Philippines; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii : *C. (Pseudocyclophorus) canaliculatus*, German New Guinea; MOELLENDORFF, P. Malac. Soc. London, i, p. 239, fig. : n. spp.
- Diaucta (Paradiancta) philippinica*, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii, p. 88 : n. sp.
- Diplommatina recta*, p. 122, *balabacensis*, p. 123, Balabac; SMITH, P. Zool. Soc. London, 1895, figg. : *D. masbatika*, p. 85, *goniocampta*, *elegantissima*, p. 86, (*Sinica*) *mindanavica*, *diploloma*, *cyrtochilus*, p. 87, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii : *D. (Diploptychia) heliscus*, Philippines; QUADRAS & MOELLENDORFF, t. c. p. 147 : n. spp.
- Diploptychia*, n. sect. of *Diplommatina*, type *D. heliscus*, n. sp.; MOELLENDORFF, t. c. p. 147.
- Ditropis pusilla*, p. 78, *adesmospira*, p. 141, Philippines; QUADRAS & MOELLENDORFF, t. c. : n. spp.
- Hagemulleria*, Bourg., with 2 species, = *Rissoia (Pisina) punctulum*, Philippi; MONTEROSATO, J. Conchyl. xlii, pp. 112-116, figg.
- Helicomorpha globulus*, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii, p. 84 : n. sp.
- Lagochilus banguyensis*, Banguay I., *rabongensis*, p. 120, *kina-baluensis*, *conicus*, Borneo, *balabacensis*, Balabac I., p. 121, *quadricinctus*, Sarawak, p. 122; SMITH, P. Zool. Soc. London, 1895, figg. : *L. tumidulum*, *euryomphalum*, p. 79, *caguyaniticum*, *scalare*, p. 80, *polytropis*, p. 81, *stephanophorum*, p. 143, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii : n. spp.
- Leptopoma geotrochiforme*, *skertchlyi*, Borneo; SMITH, P. Zool. Soc. London, 1895, p. 119, figg. : *L. poecilum*, p. 81, *pileolus*, p. 143, *varians*, p. 144, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii : n. spp.
- † *Mazzinia*, n. g., for *M. livata*, n. sp., Eocene of Venetia; OFFENHEIM, Zeitschr. Deutsch. geol. Ges. xlvii, p. 132, figg.
- Omphalotropis (Realia) brevis*, Camorta, Nicobars; GODWIN-AUSTEN, P. Zool. Soc. London, 1895, p. 455 : *O. (Atropis) crassilabris*, Philippines; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii, p. 147 : n. spp.
- Otopoma bentianum*, Hadramaut; MELVILL, P. Malac. Soc. London, i, p. 224, fig. : n. sp.
- Pulaina catanduunica*, *deformis*, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii, p. 85 : n. spp.
- Pomatias ignotum*, Sicily; GREGORIO, Natural. Sicil. xiv, p. 202 : n. sp.

- Porocallia canalifera*, Philippines; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii, p. 83 : n. sp.
- Pterocyclos latilabrum*, N. Borneo; SMITH, P. Zool. Soc. London, 1895, p. 116, figg. : n. sp.
- †*Pugnellia*, n. g., for *P. streptaxis*, n. sp., Eocene of Venetia; OPPENHEIM, Zeitschr. Deutsch. geol. Ges. xlvii, p. 129, figg.
- Pupina nasuta*, New Guinea; SMITH, Ann. Nat. Hist. xvi, p. 364, fig. : *P. beddomei*, Bismark (or New Britain) Archipelago; ANCEY, P. Linn. Soc. N. S. Wales, x, p. 379, fig. : n. spp.
- Pupinella fultoni*, New Guinea; SMITH, Ann. Nat. Hist. xvi, p. 365, fig. : *P. luteola*, New Guinea; BRANCSIK, Jahresh. Ver. Trencsin, xvii, p. 225, figg. : n. spp.
- †*Rognacia*, n. g., type *Cyclostoma abbreviata*, Math.; OPPENHEIM, Paläontogr. xlii, p. 323, figg.
- †*Styx*, n. g., type *Bithynia* ? *supraelegans*, De Greg.; OPPENHEIM, Zeitschr. Deutsch. geol. Ges. xlvii, p. 130, fig.
- †*Truncatella costata*, Faluns of Bordelais; COSSMANN, C.R. Ass. Franc. 1894, ii, p. 446, fig. : n. sp.

CAPULIDÆ, NARICIDÆ, NATICIDÆ, and OOCORYTHIDÆ.

- Benthodolium pacificum*, Gulf of Panama; DALL, P. U. S. Mus. xviii, p. 11 : n. sp.
- Capulus irregularis*, Arabian Sea; SMITH, Ann. Nat. Hist. xvi, p. 264 : n. sp.
- Crepidula cerithicola*, Gulf of Paria; GUPPY, P. Inst. Trinidad, i, p. 125 : *C. nebulata*, Lower California; MABILLE, Bull. Soc. Philom. vii, p. 57 : n. spp.
- Natica albospira, candidula*, Ceylon; SMITH, Ann. Nat. Hist. xvi, p. 6, figg. : n. spp.
- †*Plesiothyreus benoisti*, Faluns of Bordelais; COSSMANN, C.R. Ass. Franc. 1894, ii, p. 445, fig. : n. sp.
- Polynices (Lunatia) sandwichensis*, off Hawaiian Is.; DALL, P. U. S. Mus. xvii, p. 684, fig. : n. sp.
- Sigaretus parvus*, Coromandel coast; SMITH, Ann. Nat. Hist. xvi, p. 7, fig. : n. sp.
- Vanikoro japonica*, Japan; PILSBRY (322) p. 70, figg. : n. sp.

PTENOGLOSSA.

[None.]

GYMNOGLOSSA.

- Eulima martyn-jordani, frielei*, Faroe Channel; JORDAN, P. Malac. Soc. London, i, p. 266, fig. : n. sp.
- Niso venosa*, Mekran coast; SOWERBY, P. Malac. Soc. London, i, p. 279, fig. : †*N. pyramidata*, p. l, *micans*, p. li, *obesula*, p. lii, Eocene of Belgium; VINCENT, Pr. verb. Soc. malac. Belgique, xxiv, figg. : n. spp.
- Odomonia oblongula*, the Minch; MARSHALL, J. Malac. iv, p. 38, fig. : n. sp.

- † *Rama*, n. g., type *Macrochilina ptychilica*, Kittl ; BOEHM, Palæontogr. xlii, p. 294, figg.
Syrnola mossiana, Lifu, Loyalty Is. ; MELVILL & STANDEN, J. Conch. viii, p. 122, fig. : n. sp.

II. SCUTIBRANCHIATA.

HELICINIDÆ and HYDROCENIDÆ.

- Georissa everetti*, Sarawak, *bangueyensis*, Banguay I., p. 125, *flavescens*, *borneensis*, Borneo, p. 126 ; SMITH, P. Zool. Soc. London, 1895, figg. : *G. coccinea*, p. 88, *regularis*, p. 149, Philippines ; QUADRAS & MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii : n. spp.
Geotrochatella, n. subg. of *Helicina*, for *H. mouhoti* and others [without definition or any statement that it was proposed as new] ; FISCHER, Bull. Soc. Hist. Nat. Autun, iv (1891) p. 197.
G., revision of known species, with *G. insignis*, n. n., p. 23, and *jourdyi*, Tonkin, p. 25, n. sp. ; DAUTZENBERG, J. Conchyl. xliii, pp. 19-26.
Helicina keatei, Pf. (emend.), for *heatei* ; SMITH, P. Malac. Soc. London, i, p. 318, figg.
H. (*Geophorus*) *bothropoma*, Philippines ; MOELLENDORFF, Nachrbl. Deutsch. malak. Ges. xxvii, p. 148: *H. papuana*, New Guinea ; SMITH, Ann. Nat. Hist. xvi, p. 365, fig. : *H.* (*Sulfurina*) *spheroconus*, German New Guinea ; MOELLENDORFF, P. Malac. Soc. London, i, p. 240, fig. : *H. grenadensis*, Grenada ; SMITH, *t. c.* p. 318, figg. : n. spp.
Helicinide, notes on the classification ; GUPPY, P. Inst. Trinidad, i, pp. 72-77.

NERITOPSIDÆ, TURBINIDÆ, TROCHIDÆ, DELPHINULIDÆ, and CYCLOSTREMATIDÆ.

- † *Auseria*, n. subg. of *Trochus*, with 3 new species, Lias, Mt. Pisano ; FUCINI, Atti Soc. Toscana, xiv, p. 269, figg.
Bathybembix wood-masoni, off Maldives ; SMITH, Ann. Nat. Hist. xvi, p. 7, fig. : n. sp.
Calliostoma subleve, off Ceylon ; SMITH, Ann. Nat. Hist. xvi, p. 8, fig. : *C. iridium*, p. 7, West coast of Mexico, *turbinum*, p. 8, Gulf of California ; DALL, P. U. S. Mus. xviii : n. spp.
Gibbula eucosmia, Japan ; PILSBRY (322) p. 96, fig. : *G.* (*Enida*) *townsendi*, Mekran coast ; SOWERBY, P. Malac. Soc. London, i, p. 279, fig. : n. spp.
Hyperacanthus, n. g., type † *Cirrus superbus*, Hoernes ; KOKEN, Verh. geol. Reichsanst. xlv, p. 451.
Lepidotrochus, n. g., for † *L. bitteri*, n. sp., Trias ; KOKEN, *t. c.* p. 451, fig.
Liotia tasmanica, T. Woods, notes on ; HEDLEY, P. Linn. Soc. N. S. Wales, ix, pp. 464 & 465, figg.
Margarita (*Solarrella*) *reticulina*, off Hawaiian Is. ; DALL, P. U. S. Mus. xvii, p. 684, fig. : n. sp.

- Minolia gradata*, Kurachi; SOWERBY, P. Malac. Soc. London, i, p. 279, fig.:
M. glaphyrella, Lifu, Loyalty Is.; MELVILL & STANDEN, J. Conch.
 viii, p. 125, fig.: *M. stearnsii*, Japan; PILSBRY (322) p. 98 : n. spp.
Phasianella megastoma, p. 90, *oligomphala*, p. 91, Japan; PILSBRY (322),
 figg. : n. spp.
- † *Pachyomphalus*, n. g., for *P. concinnus*, n. sp., Marmolata Limestone;
 BOEHM, Palæontogr. xlii, p. 252, figg.
- Rossiteria*, n. n. for *Solanderia*, Fischer, preoce.; BRAZIER, P. Linn. Soc.
 N. S. Wales, ix, p. 728.
- † *Rothpletzella*, n. g., for *R. richthofeni*, n. sp., Marmolata Limestone;
 BOEHM, Palæontogr. xlii, p. 229, figg.
- Solariella nuda*, off Lower California, *ceratophora*, Gulf of California;
 DALL, P. U. S. Mus. xviii, p. 9 : n. spp.
- Trochus adamsi*, n. n. for *Ziziphinus comptus*, A. Ad.; BRAZIER, P. Linn.
 Soc. N. S. Wales, ix, p. 568.
- T. (Margarita) tetragonostoma*, p. 265, *coulsoni*, p. 266, Faroe Channel;
 JORDAN, P. Malac. Soc. London, i, figg. : n. spp.
- Teinostoma hidalgoana*, Singapore; PILSBRY, Nautilus, ix, p. 52 : n. sp.
- Vernelia*, n. subg. of *Hologyra*, type *Natica fastigata*, Stopp.; BOEHM,
 Palæontogr. xlii, p. 250, figg.

PLEUROTOMARIIDÆ and FISSURELLIDÆ.

- Emarginula hawaiiensis*, off Hawaiian Is.; DALL, P. U. S. Mus. xvii,
 p. 685, fig.: *E. carpenteri*, Gulf of Panama; DALL, *op. cit.* xviii,
 p. 10 : *E. tensa*, Gulf of Paria; GUPPY, P. Inst. Trinidad, i, p. 138 :
 n. spp.
- Fissurella (Cremides) pluridentata, digueti*, Lower California; MABILLE,
 Bull. Soc. Philom. vii, p. 55 : n. spp.
- Lucapinella pritchardi*, Victoria and S. Australia; HEDLEY, P. Soc.
 Victoria, vii, p. 198, figg. : n. sp.
- Macroschisma lischkei*, Japan; PILSBRY (322), p. 108, figg., cited as new
 but already described, *v. Zool. Rec.*, 1894, *Moll.*, p. 80.
- Megatebennus bimaculatus*, note on; BRADSHAW, Nautilus, viii, p. 112.
- † *Murchisonia*, notes on the genus with revision of British Carboniferous
 species and descriptions of new forms; DONALD, Quart. J. Geol.
 Soc. li, pp. 210-234, 3 pls.
- Pleurotomaria*, British Jurassic species; HUDLESTON (204).
- Puncturella chasteri*, Faroe Channel; JORDAN, P. Malac. Soc. London, i,
 p. 265, fig. : n. sp.
- Rimula (?) expansa*, Gulf of Panama; DALL, P. U. S. Mus. xviii, p. 10 :
 n. sp.
- † *Trachybembix*, n. g., type *Pleurotomaria junonis*, Kittl; BOEHM,
 Palæontogr. xlii, p. 220, figg.
- † *Wortheniopsis*, n. g., type *Pleurotomaria margarethe*, Kittl; BOEHM,
 Palæontogr. xlii, p. 219, figg.

DOCOGLOSSA.

ACMÆIDÆ and PATELLIDÆ.

- Acmaea*, note on Tasmanian species; PILSBRY, *Nautilus*, viii, p. 127.
Patella, irregular growth of shell in a Limpet; ROBSON, *J. Mar. Zool.* ii, pp. 7 & 8: notes on the habits of Limpets; DAVIS, *Nature*, li, p. 511: *P. kermadecensis*, notes on the correct locality of; HEDLEY, *P. Linn. Soc. N. S. Wales*, ix, p. 465: CHEESEMAN, *op. cit.* x, pp. 221-223.
P. enigmatica, Lower California; MABILLE, *Bull. Soc. Philom.* vii, p. 56: n. sp.

III. SCAPHOPODA.

- See SIMROTH in BRONN (56).
 Note on the coloration; SIMROTH, *Ber. Ges. Leipzig*, 1893-94, pp. 122-124.
Scaphopoda from the Pliocene of Bologna, with 1 new species; FORESTI, *Bull. Soc. malac. Ital.* xix, pp. 240-262.
Dentalium, histology of the mantle; LÉON, *Jena Zeitschr.* xxix, pp. 411-416, figg.
D. enigmaticum, Faroe Channel; JORDAN, *P. Malac. Soc. London*, i, p. 264, fig.: *D. mirificum*, off Ceylon; SMITH, *Ann. Nat. Hist.* xvi, p. 9, fig.: *D. phaneum, complexum*, off Hawaiian Is.; DALL, *P. U. S. Mus.* xvii, p. 686, figg.: n. spp.

IV. PELECYPODA.

- Development and morphology of the shell, more particularly of the hinge; BERNARD, *Bull. Soc. geol. France*, xxiii, pp. 104-154, figg.
 Physiological experiments on *Pelecypoda*; PIÉRI, *C.R. Ac. Sci.* cxx, pp. 52-54.
 Phagocytosis in *Pelecypoda*; BRUYNE (59 & 60), CARAZZI (65 & 66).
 Mode of fixation by the byssus; BOUTAN, *C.R. Ac. Sci.* cxx, pp. 208-210.
 Observations on the byssus of *Pelecypoda*; BOUTAN, *Arch. Zool. exp.* iii, pp. 297-338, 2 pls.
 New classification; DALL, *Tr. Wagner Inst.* iii, pp. 485-570 (see *ante* p. 34).
 Note on the hinge teeth and mode of their notation; MUNIER-CHALMAS, *C.R. Soc. geol. France*, 1895, pp. liii-lvi.
 Pliocene *Pelecypoda* of Bologna, with a few new species; FORESTI, *Bull. Soc. malac. Ital.* xviii, pp. 185-413.

SEPTIBRANCHIATA.

- Cuspidaria macrorhynchus*, off W. coast India; SMITH, *Ann. Nat. Hist.* xvi, p. 12, figg.: n. sp.
 †*Poromya argyrea*, p. lxxxvii, *corbuloides, antiqua, argentea*, p. lxxxix, Eocene of Belgium; VINCENT, *Pr. verb. Soc. malac. Belgique*, xxiv, figg.: n. spp.

EULAMELLIBRANCHIATA.

ANATINACEA.

- Anatina kamakurana*, Japan ; PILSBRY (322), p. 138, figg. : n. sp.
Callocardia stearnsii, off coast of Washington Terr., *lepta*, p. 17, *gigas*,
 Gulf of California, *ovalis*, Gulf of Panama, p. 8 ; DALL, P. U. S.
 Mus. xviii : n. spp.
Callogonia angulata, Gulf of Panama ; DALL, t. c. p. 19 : n. sp.
Entoderma truncatissima, Japan ; PILSBRY (322), p. 137, figg. : n. sp.
Euairoa pacifica, off Hawaiian Is., and its anatomy ; DALL, P. U. S. Mus.
 xvii, p. 688, figg. : n. sp.
Halocardia, n. g., type *Mytilimeria flexuosa*, Verr. & Smith, with descrip-
 tion of its anatomy ; DALL, t. c. p. 697, figg.
Lyonsiella alaskana, Gulf of Alaska, and its anatomy ; DALL, t. c. p. 703,
 fig. : n. sp.
Periploma stearnsii, Gulf of California, p. 19, *carpenteri*, Gulf of
 Panama, p. 20 ; DALL, *op. cit.* xviii : n. spp.

PHOLADACEA.

- Gastrochanidae*, monograph completed by CLESSIN in MARTINI &
 CHEMNITZ (272).
Kuphus arenarius, Linn., notes on ; HEDLEY, P. Linn. Soc. N. S. Wales,
 ix, pp. 465 & 466.
Pholadidae, early stages of development ; SIGERFOOS, Johns Hopkins
 Univ. Circ. xiv, pp. 78 & 79, figg., and Ann. Nat. Hist. xvi,
 pp. 233-238, figg.
Teredo, a popular paper on the Shipworm ; COATS (80).
T. edax, South Australia ; HEDLEY, P. Linn. Soc. N. S. Wales, ix, p. 501,
 figg. : n. sp.

MYACEA.

- Azara*, D'Orb., is a synonym of *Matonia* ; LARRAÑAGA, An. Mus.
 Montevideo, i, p. 5.
Glycimeris, notes on Eocene species ; VINCENT (465).
Matonia has priority of *Azara*, D'Orb. ; LARRAÑAGA, An. Mus. Monte-
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Chama digueti, parasitica, p. 243, Gulf of California ; ROCHEBRUNE,
 Bull. Mus. Paris, i, p. 243 : n. spp.
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 Abh. Preuss. geol. Landesanst. xvii, p. 378, figg.

- † *Hippurites*, distribution, with new species ; DOUVILLÉ, Mem. Soc. geol. France, Pal. v.
Prosochasma, n. g., p. 369, type † *P. abditum*, n. sp., p. 371, Devonian, Germany ; BEUSHAUSEN, Abh. Preuss. geol. Landesanst. xvii, figg.

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- Claudiconcha madreporica*, Aden ; JOUSSEAUME, Naturaliste, 1895, p. 187 : n. sp.
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- Abra convexior*, off Ceylon ; SMITH, Ann. Nat. Hist. xvi, p. 10, figg. : n. sp.
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Rangia stands in lieu of *Gnathodon* ; GILL, Nautilus, viii, p. 102.
Tellina parvula, off Coromandel coast ; SMITH, Ann. Nat. Hist. xvi, p. 10, fig. : n. sp.

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- A. simulans*, Italy ; DROUET, J. Conchyl. xliii, p. 37 : *A. cilicica*, Asia Minor ; KOBELT in ROSSMAESSLER (356), p. 24, fig. : alleged n. spp.
- † *Anthracomya*, monograph on British species ; HIND (196).
- Batissa discors*, New Guinea ; BRANCSIK, Jahresh. Ver. Trencsin. xvii, p. 227, figg. : n. sp.
- † *Carbonicola*, monograph on British species ; HIND (196).
- Carydium*, n. g., p. 154, for † *C. gregarium*, n. sp., p. 156, Devonian, Germany ; BEUSHAUSEN, Abh. Preuss. geol. Landesanst. xvii, figg.
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- † *Crassatella*, species from the Eocene of Belgium, with *C. cossmanni*, p. clxvi, *erratica*, p. clxvii, n. spp. ; VINCENT, Pr. verb. Soc. malac. Belgique, xxiv, pp. clx–clxx, figg.
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- Crassatellopsis*, n. g., p. 146, for † *C. hauchecornei*, n. sp., p. 147, Devonian, Germany ; BEUSHAUSEN, Abh. Preuss. geol. Landesanst. xvii, figg.
- Cryptodon investigatoris*, p. 13, *acuticarinatus*, p. 14, off Ceylon ; SMITH, Ann. Nat. Hist. xvi, figg. : n. spp.
- † *Cyrena* (*Miodon*) *arata*, E. Forbes, note on ; SANDBERGER, N. Jahrb. Min. 1895, i, p. 215.
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- Joannisiella*, DALL, Nautilus, ix, p. 78.
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- Trigonastarte*, n. sect. of *Opis*, type †*Astarte trigonalis*, Sby.; BIGOT, Bull. Soc. Normandie, viii, p. 89.
- Unio oregonensis*, Lea, is an old, solid, inflated female of *U. rowelli*; SIMPSON, Nautilus, viii, p. 116: *U. ochraceus* and *cariosus*, distinction between; SIMPSON, t. c. pp. 121–123, figg.
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- Opisthocoeilus*, n. g., type † *O. concentricus*, n. sp., Devonian, Germany; BEUSHAUSEN, Abh. Preuss. geol. Landesanst. xvii, p. 338, figg.
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Tuncrediopsis, n. subg. of *Ctenodonta*, type †*C. subcontracta*, n. sp., Devonian, Germany ; BEUSHAUSEN, t. c. p. 94, figg.

INCERTA SEDES.

†*Bodmania*, n. g., for *B. insuctum*, n. sp., Hudson River Group, New York ; MILLER & FABER, J. Cincinnati Soc. xvii, 1894, p. 23, figg. Founded on a mere cast without characters.

V. AMPHINEURA.

APLACOPHORA.

[None.]

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Ischnochiton (Haploplax) nuyi, Tasmania ; PILSBRY, Nautilus, viii, p. 128.

VIII. BRACHIOPODA.

BY

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

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INTRODUCTION.

THE most important contribution to the literature of this subject during the year has been the completion and publication of HALL & CLARKE'S "Introduction to the Study of the Genera of Palæozoic Brachiopoda, Part II" (14). A few copies of portions, as already noted, were issued in 1893 and 1894, but were not on sale. The work concludes with a summary, "The Evolution of the Genera of Palæozoic Brachiopoda," and a table of classification. This last differs in several important respects from that proposed by SCHUCHERT in 1893. The same authors have also completed their "Introduction to the Study of the Brachiopoda" (12 & 13), in both the 4to and the 8vo form.

MISS CRANE (6) has given an admirable and most readable summary of the present state of knowledge concerning the evolution of the group, accompanied by a valuable and copious bibliography.

Attention may also be called to the monograph by WINCHELL & SCHUCHERT (27) on Lower Silurian forms from Minnesota.

No work of importance has appeared on recent species.

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2. BITTNER, A. Ueber die Gattung *Rhynchonellina*, Gemm. Verh. geol. Reichsanst. xlv, pp. 547-572, 2 pls.*
3. —. Brachiopoden aus der Trias von Lagonegro in Unteritalien. *T. c.* pp. 583-588, figg.
4. BUCKMAN, S. S. Notes on certain [Jurassic] *Brachiopoda*. Quart. J. Geol. Soc. li, pp. 445-461, 1 pl.
5. CLARK, W. B. Two new Brachiopods from the Cretaceous of New Jersey. Johns Hopkins Univ. Circ. xv, p. 3, figg. .
CLARKE, J. M. [See HALL & CLARKE (12-14).]
6. CRANE, [MISS] A. The evolution of the *Brachiopoda*. Geol. Mag. 1895, pp. 65-75, & 103-116, 2 pls.
Good bibliography.
7. DALL, W. H. Report on *Mollusca* and *Brachiopoda* dredged . . . chiefly near the Hawaiian Is., &c. P. U. S. Mus. xvii [*Brach.*], pp. 713-729, figg.
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9. GOSSELET, J. Étude sur les variations du *Spirifer verneuili* et sur quelques espèces voisines. Ann. Soc. geol. Nord, xxii, pp. 119-122.
10. —. Note additionnelle à propos du *Spirifer orbelianus*. *T. c.* pp. 123-127.
11. HALL, J. The evolution of the genera of the Palæozoic *Brachiopoda*. (Table of classification—description of new species.) Rep. N. York Mus. xlvii, pp. 803-851, figg.
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13. — & —. An introduction to the study of the *Brachiopoda* . . . Pt. II. 13th Ann. Rept. State Geologist [of New York] for . . . 1893. Albany : 1894 [*i.e.* 1895], 4to, pp. 751-943, pls. xxiii-liv.
14. — & —. An introduction to the study of the genera of Palæozoic *Brachiopoda*. Pt. II. Nat. Hist. New York, Palæont. viii, pt. 2, pp. xvi & 394, 84 pls., 1894 [*i.e.* 1895].

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

15. NOBRE, A. Molluscos e Brachiopodes de Portugal. Ann. Sci. nat. Porto, ii, pp. 25-30.
Introductory remarks only.
16. PARONA, C. F. Nuove osservazioni sopra la Fauna e l'età degli strati con *Posidonomya alpina* nei sette comuni. Palæontogr. Ital. i, pp. [Brach.] 30-42, figg.
17. PERON, A. Les Brachiopodes du terrain crétacé supérieur de Ciplu (Belgique). C.R. Ass. Franc. 1894, ii, pp. 453-468, 2 pls.
18. POSSELT, H. J. Brachiopoderne i den Danske Kridtformation. Avec résumé Française. Pp. 60, 3 pls. (Danm. geol. Undersøg.) Copenhagen : 1895, 8vo.
19. REED, F. R. C. Brachiopods (Fossil). Cambridge Nat. Hist. iii, pp. 491-512.
20. SALOMON, W. Geologische und palæontologische studien über die Marmolata. Palæontogr. xlii, pp. 1-210, 8 pls.
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— [See also WINCHELL & SCHUCHERT (27).]
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23. TIESSEN, E. Die subhercyne Tourtia und ihre Brachiopoden- . . . Fauna. Zeitschr. Deutsch. geol. Ges. xlvii, pp. 423 [Brach. 462] -533, 2 pls.
24. TOMMASI, A. La Fauna del Calcarea conchigliare (Muschelkalk) di Lombardia. Pp. viii & 168, 2 pls. [Brach. pp. 64-81]. Pavia : 1894, 8vo.
25. TORNQUIST, A. Das fossilführenden Untercarbon am östlichen Rossbergmassiv in den Südvogesen. I. . . . Beschreibung der Brachiopoden-Fauna. Abh. geol. Karte Elsass, v, pp. 379-528, 3 pls.
26. VINCENT, É. Contribution à la paléontologie des terrains Tertiaires de la Belgique.—Brachiopodes. Mem. Soc. malac. Belgique, xxviii, pp. 38-64, figg.
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II. BIOLOGY.

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Classification; HALL & CLARKE (12 & 13).
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Norway :—Fauna of Herløfjord ; APPELLÖF, Bergens Mus. Aarbog, 1894-95, No. 11, p. 9.

France :—Distribution of Invertebrata near Banyuls ; PRUVOT, Arch. Zool. exp. iii, p. 629-658.

West Coast U.S. :—*Frieleia halli*, n. g. & sp. ; DALL (7).

Panama, Gulf of :—New species of *Hemithyris*, *Terebratulata*, and *Eudesia* ; DALL (7).

West Coast S. America :—*Eudesia (Macandrevia) americana*, n. sp. ; DALL (7).

Sandwich Is. (deep water) :—*Hemithyris beecheri*, n. sp. ; DALL (7).

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Tertiary :—Belgium : Supplement to the fauna, with a few new species ; VINCENT (26).—Italy : Pliocene species of the basin of Albenga ; ARDUINI, Atti Soc. Ligustica, vi, p. 209.—Australia : Tertiary species of Victoria ; TATE, Tr. R. Soc. S. Austral. xix, p. 115 : list of older Tertiary species in Victoria ; HALL & PRITCHARD, P. Soc. Victoria, vii, p. 184.

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Liassic :—Italy : Fauna of Mt. Pisano, with many new species ; FUCINI (8).

Trias:—Tirol: Fauna of the Marmolata, with new species, and *Didymospira*, n. subg.; SALOMON (20).—Italy: species from Lagonegro; BITTNER (3): Fauna of the Muschelkalk of Lombardy, with new species; TOMMASI (24).

Palæozoic:—Central Asia, with new species; SUSS, Denk. Ak. Wien, lxi, pp. 431–466, 1 pl.—Palæozoic *Brachiopoda* of the State of New York, many new genera and species; HALL & CLARKE (14).

Permo-Carboniferous:—Queensland: Fauna with *Athyris roysii*, n. sp.; ETHERIDGE, P. Linn. Soc. N. S. Wales, ix, p. 529, figg.

Carboniferous:—British: Fossils around Liverpool; MORTON, P. Liverp. Club, 1894 (1895), pp. 26 & 27.—Alsace-Lorraine: Lower Carboniferous fauna, with new species; TORNQUIST (25).

Devonian:—Belgium: Fauna of the Upper Rhenan; KAYSER, Ann. Soc. geol. Belgique, xxii, pp. 204–215, figg.: species of *Spirifer* from the Coblenzian; BÉCLARD (1).—Tripoli: new species; FRECH, N. Jahrb. Min. 1895, ii, pp. 62–67, figg.

Silurian:—Siberia: Upper Silurian of Timan with figures and new species of *Pentamerus*; LEBEDEF, Trudui geol. Kom. xii, No. 2.—Nova Scotia: Fauna with new species of *Discina*; AMI, P. Nova Scotian Inst. i, pp. 412 & 413.—Minnesota: Lower Silurian Fauna with new species; WINCHELL & SCHUCHERT (27).

Ordovician:—Canada: Fossils of the Trenton Limestones of Lake Winnipeg, with *Rafinesquina lata*, n. sp.; WHITEAVES, Canad. Rec. vi, p. 392.

III. SYSTEMATIC.

An introduction to the study of the Brachiopoda; HALL & CLARKE (12 & 13).

[Manual of Recent forms]; SHIPLEY (22).

[Manual of Fossil forms]; REED (19).

†*Anabaia*, n. g., for *A. paraia*, Clarke; HALL & CLARKE, Nat. Hist. New York, Palæont. viii, pt. 2, p. 141, figg.

†*Atryppina*, n. g., type *Leptocælia imbricata*, Hall; HALL & CLARKE, t. c. p. 161, figg.

Bittnerula, n. g., type †*B. zitteli*, Bittner; HALL & CLARKE (13) p. 764, figg.

†*Camarospira*, n. g., for *Camarophoria eucharis*, Hall; HALL & CLARKE, t. c. p. 82, fig.

†*Camarotæchia*, n. g., type *Rhynchonella congregata*, Conrad; HALL & CLARKE, t. c. p. 189, fig.

†*Capellinia*, n. g., for *C. mira*, n. sp., Niagara beds of Wisconsin; HALL & CLARKE, t. c. p. 248, fig.

†*Calazyga*, n. subg. of *Zygospira*, type *Athyris healdi*, Billings; HALL & CLARKE, t. c. p. 157, figg.

†*Cistella beecheri*, *plicatilis*, Cretaceous of New Jersey; CLARK, Johns Hopkins Univ. Circ. xv, p. 2, figg.: n. spp.

†*Clintonella*, n. g., for *C. vagabunda*, n. sp., Clinton Group, State of New York; HALL & CLARKE, Nat. Hist. New York, Palæont. viii, pt. 2, p. 160, figg.

- † *Cyclospira*, n. g., type *Orthis bisulcata*, Emmons ; HALL & CLARKE, *t. c.* p. 146, fig.
- † *Cyclorhina*, n. g., type *Rhynchospira nobilis*, Hall ; HALL & CLARKE, *t. c.* p. 206, fig.
- † *Dilymospira*, n. subg. of *Spirigera*, type *S. quadriplecta* (Münst.) var. *confluens*, Bittner ; SALOMON, Palæontogr. xlii, p. 81.
- Eudesia* (*Macandrevia*) *americana*, W. coast S. America, p. 721, *craniella*, p. 722, *diamantina*, p. 723, Gulf of Panama ; DALL, P. U. S. Mus. xvii, figg. : n. spp.
- Frieleia*, n. g., for *F. halli*, n. sp., off W. coast U. S., with notes on its anatomy ; DALL, *t. c.* p. 713.
- Hemithyris beecheri*, off Hawaiian Is., *craneana*, Gulf of Panama ; DALL, *t. c.* p. 717, figg. : n. spp.
- † *Hustedia*, n. g., type *Terebratula mormoni*, Marcou ; HALL & CLARKE, Nat. Hist. New York, Palæont. viii, pt. 2, p. 120, fig.
- † *Hyattella*, n. g., type *Atrypa congesta*, Conrad ; HALL & CLARKE, *t. c.* p. 61, figg.
- † *Metaplasia*, n. g., type *Spirifer pyxidatus*, Hall ; HALL & CLARKE, *t. c.* p. 56, fig.
- † *Orthorhynchula*, n. g., type *Orthis linneyi*, Nettelroth ; HALL & CLARKE, *t. c.* p. 181, fig.
- † *Parastrophia*, n. g., type *Atrypa hemiplicata*, Hall ; HALL & CLARKE, *t. c.* p. 221, fig.
- † *Parazyga*, n. g., type *Trematospira hirsuta*, Hall ; HALL & CLARKE, *t. c.* p. 127, fig.
- † *Protorhyncha*, n. g., type *Atrypa dubia*, Hall ; HALL & CLARKE, *t. c.* p. 180, fig.
- † *Ptychospira*, n. g., type *Terebratula ferita*, Von Buch ; HALL & CLARKE, *t. c.* p. 112, fig.
- † *Pugnax*, n. subg. of *Hypothyris*, King ; HALL & CLARKE, *t. c.* p. 202, fig.
- † *Rafinesquina lata*, Trenton Limestone, Lake Winnipeg ; WHITEAVES, Canad. Rec. vi, p. 392 : n. sp.
- † *Rhynchonellina*, Gemm., notes on the genus with new species ; BITTNER, Verh. geol. Reichsanst. xlv, pp. 547-572, figg.
- † *Spirifer*, synonymy of species in the Belgian Coblentzian ; BÉCLARD, Bull. Soc. Belge Geol. ix, pp. 129-240, 5 pls.
- † *S. verneuili*, note on variations ; GOSSELET, Ann. Soc. geol. Nord, xxii, p. 119 : † *S. orbelianus*, note on ; GOSSELET, *t. c.* p. 123.
- † *Syntrophia*, n. g., type *Triplesia lateralis*, Whitfield ; HALL & CLARKE, Nat. Hist. New York, Palæont. viii, pt. 1 (1891), p. 270, pt. 2 (1894 [*i. e.* 1895]), p. 216, fig.
- † *Terebratula*, forms from the Upper Cretaceous of Copley, Belgium, with some new species ; PERON, C.R. Ass. Franc. 1894, ii, pp. 453-468, figg.
- T. (Liothyrima) clarkeana*, Gulf of Panama ; DALL, P. U. S. Mus. xvii, p. 718, fig. : n. sp.
- † *Whitfieldella*, n. g., type *Atrypa nitida*, Hall ; HALL & CLARKE, Nat. Hist. New York, Palæont. viii, pt. 2, p. 58, fig.

IX. BRYOZOA.

BY

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

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INTRODUCTION.

VERY little, unfortunately, has been done during the past year in this branch of Zoology. The following papers are perhaps the most noteworthy:—

HARMER (6) has proved the occurrence of embryonic fission in a second genus (*Lichenopora*) of Cyclostomata, in which, however, the details differ from those in *Crisia*.

OKA (17) concludes that the Ectoproctous Bryozoa have no nephridia, that which has been mistaken for them being only a mesodermal thickening of the body-cavity, and wanting in the Gymnolæmata. The excretory function is carried on by free mesodermal cells. Entoproctous Bryozoa have what he terms pronephridia, and should be separated from Bryozoa proper, and placed near to the mesenchymatous worms. *Phoronis* approaches the Siphunculids more than it does the Ectoproctous Bryozoa.

All students of the group will lament the sad loss of DR. MACGILLIVRAY, whose posthumous work (8) on the Tertiary Bryozoa of Victoria has been completed by T. S. HALL. In it several new genera and families are established.

Attention may be called to the important palæontological work by ULRICH (23), with its "Systematic Classification of Palæozoic Bryozoa." This scheme, however, appears to have been printed off before the remaining text, and some of the new genera described in the later pages have been consequently omitted, whilst the order given has not been adhered to.

I. TITLES.*

1. AMI, H. M. Notes on Canadian Fossil [*i.e.* Lower Silurian] *Bryozoa*. *Canad. Rec.* vi, pp. 222-229.
An abstract from ULRICH (23).
2. COLE, G. A. J. On the *Fenestellidae*, with reference to Irish Carboniferous strata. *Irish Natural.* iv, pp. 100-104.
3. DUERDIN, J. E. Survey of fishing grounds, West coast of Ireland, 1890-91. Notes on the . . . *Polyzoa*. *P. Dublin Soc.* viii, pp. 333-335.
4. GREGORY, J. W. A revision of the Jurassic *Bryozoa*. Pt. I: The genus *Stomatopora*. *Ann. Nat. Hist.* xv, pp. 223-228. Abstr. in *J. R. Micr. Soc.* 1895, p. 303.
5. —. Pt. II: The genus *Proboscina*. *Op. cit.* xvi, pp. 447-451.
HALL, T. S. [See MACGILLIVRAY (8).]
6. HARMER, S. F. Preliminary note on Embryonic fission in *Lichenopora*. *P. R. Soc. London*, lvii, pp. 188-192. Abstr. in *J. R. Micr. Soc.* 1895, pp. 302 & 303.
7. HENNIG, A. Om Åhussanstenen. *Geol. Foren. Stockholm Forh.* xvi (1894), pp. 492-530, 1 pl. [*Bryozoa*, pp. 505-511]; also issued in *Sveriges. geol. Unders. Afl.* c 143.
KIRKPATRICK, R. [See THURSTON (22).]
8. MACGILLIVRAY, P. H. A monograph of the Tertiary *Polyzoa* of Victoria. *Tr. R. Soc. Victoria*, iv, 166 pp., 22 pls., 1895 [Reached *Nat. Hist. Mus.*, July 4, 1896].
The Appendix (pp. 136 to end) is by T. S. HALL.
9. —. On the Australian species of *Amathia*. *P. Soc. Victoria*, vii, pp. 131-140, 4 pls.
10. NEVIANI, A. Briozoi fossili illustrati da Soldani Ambrogio nel 1780. *Boll. Soc. Rom. Zool.* iv, pp. 57-64.
11. —. Nota preliminare sui Briozoi fossili del postpliocene antico della Farnesina e Monte Mario. *T. c.* pp. 65-74.
12. —. Briozoi Neozoici di alcune località d'Italia. *T. c.* pp. 109-123 & 227-247, figg.
13. —. Briozoi fossili della Farnesina e Monte Mario presso Roma. *Palæontogr. Ital.* i, pp. 77-140, 2 pls.
14. NORDGAARD, O. Systematisk fortegnelse over de i Norge hidtil observerede arter af marine *Polyzoa* . . . I. *Cheilostomata*. *Bergens Mus. Aarbog.* 1894-95, No. 2.
15. *OKA, A. Note on the Nephridium of *Polyzoa*. *Zool. Mag. Tokyo*, vii, pp. 27-31, 1 pl. Abstr. in *J. R. Micr. Soc.* 1895, p. 303.

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

16. [OKA, A.] Note on the Nephridium of Endoproctous *Polyzoa*. Zool. Mag. Tokyo, vii, pp. 65 & 66. Abstr. in J. R. Micr. Soc. 1895, p. 419.
17. —. On the so-called excretory organ of freshwater *Polyzoa*. J. Coll. Japan, viii, pp. 339-366, 2 pls. Abstr. in J. R. Micr. Soc. 1896, pp. 304 & 305.
18. PERGENS, —. Les Bryozoaires du Sénonien de la carrière de l'Arche de Lèves près Chartres. Bull. Soc. Belge Geol. viii, pp. 131-140.
19. —. Bryozoaires du Sénonien de la carrière de Cachemback près Chartres. T. c. pp. 181-184.
20. SIMPSON, G. B. A discussion of the different genera of *Fenestellidae*. Rep. N. York Mus. xlvii, pp. 881-921, figg., and [in 4to] 13th Ann. Rept. State Geologist for 1893, ii, Palæont., Albany, 1894 [*i.e.*, 1895], pp. 687-727, figg.
21. —. Glossary and explanations of specific names of *Bryozoa* . . . described in Vol. VI Palæontology of New York, &c. T. c. pp. 925-941.
22. THURSTON, E. Rámésvaram Island and fauna of the Gulf of Manaar. Second edition. Bull. Madras Govt. Mus. No. 3 [*Bryozoa*, pp. 131 & 132].
The species identified by R. KIRKPATRICK.
23. ULRICH, E. O. On Lower Silurian *Bryozoa* of Minnesota. Geol. & Nat. Hist. Surv. Minnesota. Geol. of M. iii, pt. 1, pp. 98-332, 28 pls., figg.
With a "Systematic Classification of Palæozoic *Bryozoa*."
24. WATERS, A. W. On Mediterranean and New Zealand *Retepora*, and a Fenestrate *Bryozoa*. J. Linn. Soc. xxv, pp. 255-271, 2 pls. Abstr. in J. R. Micr. Soc. 1895, p. 621.
25. WHIDBORNE, G. F. A monograph of the Devonian Fauna of the South of England. ii, pt. 4 [Pal. Soc. Monog.] pp. 161-188, pls. xviii-xx.

II. BIOLOGY.

ANATOMY, ETC.

- Notes on the nephridia ; OKA (15-17).
Embryonic fission in *Lichenopora* ; HARMER (6).
Classification of Palæozoic *Bryozoa* ; ULRICH (23).

DISTRIBUTION.

GEOGRAPHICAL.

- Irish Sea :—List ; HERDMAN, Rep. Brit. Ass. 1895, p. 461.
Ireland, West coast ; DUERDIN (3).
France :—Distribution of Invertebrata near Banyuls ; PRUVOT, Arch. Zool. exp. iii, pp. 629-658.

Mediterranean :—*Bryozoa* from, with *Retepora complanata* and *Palmicellaria parallelata*, n. spp. ; WATERS (24).

Norway :—*Cheilostomata*, with *Smittia lineata*, n. sp. ; NORDGAARD (14).

Ceylon :—Gulf of Manaar ; THURSTON (22).

Australia :—Victorian species of *Amathia*, with *A. obliqua*, n. sp. ; MACGILLIVRAY (9).

New Zealand :—*Bryozoa* from, with *Retepora novæ-zelandiæ*, n. sp. ; WATERS (24).

GEOLOGICAL.

Fauna of Missouri ; Missouri Geol. Surv. v, Palæont. ii, pp. 13–37, figg.

Postpliocene :—Italy : Fauna of Farnesina and Monte Mario, with many new species, and some new genera and subgenera ; NEVIANI (11, 13).

Tertiary :—Italy : with some new species and *Hippoporina*, *Cyclopor-ella*, and *Costazia*, n. g. ; NEVIANI (12).—Victoria, Australia : monograph with many new species and with some new families and genera of *Cheilo-stomata* ; MACGILLIVRAY (8) : species from Victoria, Australia ; TATE, Tr. R. Soc. S. Austral. xix, p. 115.

Cretaceous :—Belgium : Fauna of the Senonian ; PERGENS (18, 19).—Sweden : fossils from the Åhus Sandstone ; HENNIG (7).

Jurassic :—Revision of the genera *Stomatopora* and *Proboscina*, with *P. cunningtoni*, n. sp. ; GREGORY (4, 5).

Carboniferous :—*Fenestellidæ* ; COLE (2).—Russia : new species from the Ural and Timan ; STUCKENBERG, Trudui geol. Kom. x, No. 3, pp. 233–244, figg.

Devonian :—British, with new species ; WHIDBORNE (25).

Lower Silurian :—Minnesota : Fauna, many new species, some new genera, and a new family ; ULRICH (23).—Canada : AMI (1).

III. SYSTEMATIC.†

ENTOPROCTA.

[None.]

ECTOPROCTA.

GYMNOLÆMATA.

CYCLOSTOMATA.

Lichenopora, embryonic fission ; HARMER, P. R. Soc. London, vii, pp. 188–192.

†*Proboscina*, revision of the Jurassic species ; GREGORY, Ann. Nat. Hist. xvi, pp. 447–451.

†*P. cunningtoni*, Jurassic, British ; GREGORY, t. c. p. 449 : n. sp.

†*Stomatopora*, revision of the Jurassic species ; GREGORY, op. cit. xv, pp. 223–228.

† is prefixed to fossil forms.

TREPOSTOMATA.

- Bythotrypa*, n. g., type †*Fistulipora laxata*, Ulrich ; ULRICH (23), p. 324.
Ceramophylla, n. g., type †*C. frondosa*, n. sp., Lower Silurian, Minnesota ;
 ULRICH (23), p. 331.
Eridotrypa, n. g., p. 264, type †*E. mutabilis*, n. sp., p. 265, Lower
 Silurian, Minnesota ; ULRICH (23).
Hemiphragma, n. g., type †*Batostoma irrasum*, Ulrich ; ULRICH (23),
 p. 299.
Mesotrypa, n. g., type †*Diplotrypa infida*, Ulrich ; ULRICH (23), p. 257.
Stromatotrypa, n. g., p. 301, type †*S. ovata*, n. sp., p. 302, Lower Silurian,
 Minnesota ; ULRICH (23).

CRYPTOSTOMATA.

- †*Cycloporina*, n. g. of *Fenestellidæ*, type *Fenestella hemicycla* ; SIMPSON,
 Rep. N. York Mus. xlvii, p. 905, figg., and 13th Ann. Rept. State
 Geologist for 1893, ii, p. 711, figg.
Fenestellidæ, on Carboniferous, especially Irish ; COLE (2).
 †*Lycoporella*, n. g. of *Fenestellidæ* ; SIMPSON, Rep. N. York Mus. xlvii,
 p. 918, and 13th Ann. Rept. State Geologist for 1893, ii, p. 724.
 †*Lycoporina*, n. g. of *Fenestellidæ* ; SIMPSON, t. c. p. 917, and t. c. p. 723.
 †*Retoporella*, n. g. of *Fenestellidæ* ; SIMPSON, t. c. p. 896, and t. c. p. 702.
Rhinidictyonidæ, n. n. for *Stictoporidæ* ; ULRICH (23), p. 124.
 †*Tectuliporella*, n. g. of *Fenestellidæ*, type *Unitrypa consimilis* ; SIMPSON,
 Rep. N. York Mus. xlvii, p. 909, and 13th Ann. Rept. State Geologist
 for 1893, ii, p. 715.
Trigonodictya, n. g., type †*Pachydictya conciliatrix*, Ulrich ; ULRICH (23),
 p. 160.

CHILOSTOMATA.

- Bigemellaria*, n. g., for †*B. pedunculata*, n. sp., Tertiary, Victoria ; MAC-
 GILLIVRAY, Tr. R. Soc. Victoria, iv, p. 7, figg.
Bitectipora, n. g., p. 106, undefined by MacGillivray, for †*B. lineata*,
 (McG. MS.) n. sp., p. 136, Tertiary, Victoria ; described by HALL in
 MACGILLIVRAY, t. c. figg.
Bulbipora, n. g., for †*B. areolata*, n. sp., Tertiary, Victoria ; MACGILLI-
 VRAY, t. c. p. 79, figg.
Calloporina, n. subg. of *Microporella*, type *Cellepora decorata*, Reuss ;
 NEVIANI, Palæontogr. Ital. i, p. 107.
Caloporella, n. g., for Busk's *Catenicellæ vittatæ* and new species ; MAC-
 GILLIVRAY, Tr. R. Soc. Victoria, iv, p. 18, figg.
Corbulipora, n. g., for †*C. ornata*, n. sp., Tertiary, Victoria ; MACGILLI-
 VRAY, t. c. p. 60, figg.
Costazia, n. g., for †*Cellepora costazii*, Sav. ; NEVIANI, Boll. Soc. Rom.
 Zool. iv, p. 239.
Cucullipora, n. g., for †*C. tetrasticha*, n. sp., Tertiary, Victoria ; MAC-
 GILLIVRAY, Tr. R. Soc. Victoria, iv, p. 96, figg.

- Cycloporella*, n. g., for †*Cellepora globularis*, Bron.; NEVIANI, Boll. Soc. Rom. Zool. iv, p. 111.
- Ditaxipora*, n. g., for †*Catenicella internodia*, Waters; MACGILLIVRAY, Tr. R. Soc. Victoria, iv, p. 22, figg.
- Heckelia*, n. subg. of *Microporella*, type *Lepralia violacea*, Johnston; NEVIANI, Palæontogr. Ital. i, p. 106, figg.
- Hippoporina*, n. g., for †*Cellepora pertusa*, Esper.; NEVIANI, Boll. Soc. Rom. Zool. iv, p. 109.
- Macropora*, n. g., p. 54, type †*M. centralis*, n. sp., p. 55, Tertiary, Victoria; MACGILLIVRAY, Tr. R. Soc. Victoria, iv, figg.
- Marsillea*, n. subg. of *Smittia*, type *Millepora cervicornis*, Pallas; NEVIANI, Palæontogr. Ital. i, p. 119.
- Microstomaria*, n. g., for †*M. tubulifera*, n. sp., Tertiary, Victoria; MACGILLIVRAY, Tr. R. Soc. Victoria, iv, p. 18, figg.
- Pachystomaria*, n. g., for †*P. parvipuncta*, n. sp., Tertiary, Victoria; MACGILLIVRAY, Tr. R. Soc. Victoria, iv, p. 97, figg.
- Palmicellaria parallelata*, Naples; WATERS, J. Linn. Soc. xv, p. 266, figg.: n. sp.
- Plagiopora*, n. g., for †*P. disticha*, n. sp., Tertiary, Victoria; MACGILLIVRAY, Tr. R. Soc. Victoria, iv, p. 79, figg.
- Plicopora*, n. g., for †*P. dedala*, n. sp., Tertiary, Victoria; MACGILLIVRAY, t. c. p. 26, figg.
- Prostomaria*, n. g., for †*P. gibbericollis*, n. sp., Tertiary, Victoria; MACGILLIVRAY, t. c. p. 105, figg.
- Retepora complanata*, Naples, p. 263, *novæ-zelandiæ*, p. 270, New Zealand; WATERS, J. Linn. Soc. xxv, figg.: n. spp.
- Reussia*, n. subg. of *Smittia*, type *Eschara regularis*, Reuss.; NEVIANI, Palæontogr. Ital. i, p. 122.
- Reussina*, n. subg. of *Microporella*, type *Eschara polystomella*, Reuss.; NEVIANI, t. c. p. 106.
- Smittia lineata*, Nordkyn, Norway; NORDGAARD, Bergens Mus. Aarbog, 1894-95, No. 2, p. 27, fig.: n. sp.
- Stenostomaria*, n. g., for †*Catenicella solida*, Waters; MACGILLIVRAY, Tr. R. Soc. Victoria, iv, p. 16, figg.
- Strophipora*, n. g., for *Catenicella harveyi*, Wyv.-Thoms.; MACGILLIVRAY, t. c. p. 17, figg.
- Teuchopora*, n. g., for †*Alecto castrocarenensis*, Manz.; NEVIANI, Boll. Soc. Rom. Zool. iv, p. 66.
- Vibraculina*, n. g., for †*V. conti*, n. sp., Postpliocene, near Rome; NEVIANI, Boll. Soc. Rom. Zool. iv, p. 66.
- Watersipora*, n. subg. of *Smittia*, type *Lepralia cucullata*, Busk; NEVIANI, Palæontogr. Ital. i, p. 120.

CTENOSTOMATA.

- Amathia*, Victorian species, with *A. obliqua*, p. 135, n. sp.; MACGILLIVRAY, P. Soc. Victoria, vii, pp. 131-140, figg.

PHYLAETOLÆMATA.

[None.]

X. CRUSTACEA.

(Including PANTOPODA AND GIGANTOSTRACA.)

By R. I. Pocock.

N.B.—This Record includes the literature of two years, 1894 and 1895.

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I. TITLES.*

ALCOCK, A. (1) Illustration of the Zoology of the "Investigator,"
&c. *Crustacea*, pt. II, pls. vi-viii: Calcutta: 1894.

Contains figures of *Macrura* described in *Ann. Nat. Hist.* 1891-94.

— (2) Natural history notes from H.M. Indian Marine Survey
steamer "Investigator," commander R. F. Hoskyn, R.N., command-
ing. Ser. II, No. 1: On the result of deep-sea dredging during the
season of 1890-91 (continued). *Ann. Nat. Hist.* (6) xiii, pp. 225-
245, 321-331, & 400-411.

* An asterisk prefixed to a quotation indicates that the Recorder has not seen the
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II. BIOLOGY.

1. CLASSIFICATION, GENERAL MORPHOLOGY, AND PHYSIOLOGY.

Classification of *Arthropoda* (Crustaceans); KINGSLEY, BANKS, DANA.

On the relationship between the *Brachyura* and the *Macrura*; BOUVIER (11), and between the *Lithodidae* and *Paguridae*; BOUVIER (3, 4, 5, 9, 10).—Classification of *Ascomyzontidae*; GIESBRECHT (3): of *Bopyridae*; GIARD & BONNIER, HANSEN.

Life-history of *Crustacea* in Palæozoic times; WOODWARD (1, 2).

Physiology of Decapods; CUÉNOT (1, 2).

Morphology of *Dorippe*; CANO.

Studies on Isopod morphology; NÉMEC.

Anatomy of *Lernaeidae*; MRÁZEK (7).

For general morphology of *Ostracoda*, see papers by CLAUS, MÜLLER: of *Copepoda*; DAHL (5), GIESBRECHT (4, 5, 6): of *Cirripedia*; GRUVEL (2), AURIVILLIUS (2).

Anatomy of *Cyprois*; DADAY DE DEES (2).

2. CIRCULATORY ORGANS.

Structure of heart of *Cambarus*; MILLER.—Comparative morphology of the blood system of Decapods; GERSTAECKER.—Circulatory organs of *Lygia*; FREIBERG.—Blood-corpuseles and lymph of *Astacus*; OWSJANNIKOW.—Lymphatic glands of Crustaceans; KOWALEWSKY.

3. ALIMENTARY CANAL.

On the digestion and assimilation of Decapods; BJELOUSSOW.—Conjugation of epithelial nuclei in the intestine of terrestrial *Isopoda*; SCHIMKEWITSCH.—Structure and function of alimentary canal of *Daphnia*; HARDY & MCDUGALL.—Phagocytic function of the hepatic cells in *Astacus*; SAINT-HILAIRE (1).—Morphology of the intestine in Crabs; VAULLEGEARD.—Comparative morphology of alimentary canal in Decapods; GERSTAECKER.—Function of the hepatic vessels in the Crayfish; SAINT-HILAIRE.—Formation and histology of the intestinal epithelium of *Decapoda*; ROUVILLE (1, 2).

4. NERVOUS SYSTEM AND SENSE ORGANS.

On the nerve-endings of the sensory organs in *Crustacea*; CLAUS (2).—Microscopical preparation of nerve-endings in *Crustacea*; RATH (1).—Nervous system of *Crustacea*; MORGAN.—Sensory nervous system of *Crustacea*; RETZIUS.—Structure of the nervous cells of Decapods; BINET.—On the nerve-elements of the embryonic Lobster; ALLEN (3, 4, 6).—On the nervous system of *Crustacea*; ALLEN (7).—Microscopical preparation of the nervous system of *Carcinus*; BETHE (2).—Physiology and histology of the post-œsophageal nerve-cord in *Branchipus* and *Astacus*; HARDY.—Innervation, development, &c., of the otocyst of *Mysis*; BETHE (1).—On the retina and optic ganglia of Decapods; PARKER.—Physio-

logy of compound eyes; KIESEL.—Studies on compound eyes; BREDEL.—Median eye of *Crustacea*; BUMPUS.—Microscopic structure of the eyes of *Squilla*; CIACCIO (1, 2).

5. BRANCHIAL AND MUSCULAR SYSTEM, AND MISCELLANEOUS ORGANS.

On the branchial apparatus of *Dynomene*; BOUVIER (1).—Comparative morphology of the branchial apparatus of Decapods; GERSTAECKER.—Structure of muscles in *Ostracoda*; DADAY DE DEES (3).—Muscular contraction in *Astacus*; PEREZ ZUNIGA.—Morphology of the locomotor apparatus of *Decapoda*; LIST.—Frontal organs of *Cladocera*; HÉROUARD.—Microscopical structure of the gland-cells of the head of *Anilocra*; RATH (2).—On the so-called calceoli of *Gammaridae*; BONSDORFF.—The dorsal organs of Crustaceans; JAWOROWSKI (2).—The segmentation of the antennæ of the Lobster; MORGAN.

6. REPRODUCTIVE ORGANS, EMBRYOLOGY, LARVAL FORMS, &C.

Fertilisation of the eggs of *Cyclops*; RUCKERT (2).—Comparative morphology of the generative organs of Decapods; GERSTAECKER.—Spermatogenesis and germinal cells in Decapods; MARI (1-4).—Spermatogenesis of Decapods; SABATIER.—Reproduction of *Cancer pagurus*; WILSON.—On the reproductive elements of *Astacus*; AUERBACH.—Oviposition of the Lobster; GARMAN.—Reproduction of the Lobster; ALLEN (5), GARMAN (1, 2), F. H. HERRICK (1, 2).—Breeding habits of American Crayfish; ANDREWS (1-3).—Habits and development of the Lobster; F. H. HERRICK (1-4); MATHIER.—Segmentation of the egg of *Virbius*; GORHAM.—Formation of embryonic layers; WAGNER (3).—Development of *Dromia*; CANO (1), CAUSTIER.—Development of *Malacostraca*, *Gebia*, and *Cumacea*; BUTSCHINSKY (1-3).—Embryology of Schizopods; WAGNER (1, 2).—Development of *Crustacea* (*Palaemon* and *Astacus*); ROULE (1, 2).—Embryology and larval forms of *Dromia*; CANO (1): of *Dorippe*; CANO (2).—Morphology of the *Phyllosoma*-larva of *Scyllarus*; HORNELL (3).—On the larval stages of Decapods; ALLEN (1, 2).—On the organisation and postembryonic development of *Lucifer reynaudii*; ROSENSTEDT.—Embryology of *Isopoda*; McMURRICH (1, 2).—On the extremities of Isopod embryos; JAWOROWSKI (1).—Rudimentary appendages in *Isopoda*; NUSBAUM.—Embryonic organs of *Spheroma*; ROSSYSKAJA-KOJEVNIKOWA.—Development of *Gammarus*; KOSCHEWNIKOW.—Modifications of the integument of *Leptodora* during development; SAMTER.—Maturation of eggs in *Copepoda*; RUCKERT (1).—Life-history of Barnacle; GROOM (1).—The parthenogenesis of *Artemia*; BRAUER.—Post-embryonic development of *Daphnia*; LUNDBERG.—Early development of *Cirripedia*; GROOM (3).—Development of the renal organs and of the body cavity in *Cirripedia*; GRUVEL (1).—Mouth-parts of young *Cirripedia*; GROOM (2).—Postembryonic development of *Lepadidae*; AURIVILLIUS (1).—Metamorphosis of freshwater *Ostracoda*; CLAUS (1).—Anatomy and development of *Sarcotaces arcticus*; HJØRST.

7. BIONOMICS AND MISCELLANEOUS SUBJECTS.

Bionomics of various species of Decapods; ORTMANN (1).—Abnormality in *Cancer*; TOSH.—Abnormality in *Astacus fluviatilis*; HOFER.—Abnormal claw of *Portunus*; GOLTZ DE CARVALHO.—Supernumerary digits in *Carcinus*; NAVARRO-NEWMAN.—Habits of *Pilumnus*; RACOVITZA.—Stridulation of *Ocyppoda*; ANDERSON.—Habits of *Pinnotheres*; COUPIN.—Correlation of external parts in *Palæmon*; H. THOMPSON: in *Carcinus mænas*; WELDON (1).—Death-rate of *Carcinus mænas*; WELDON (2).—Crayfish in an aquarium; BUCK.—Sickness of *Palinurus*; BOUVIER & ROCHÉ.—Crustaceans from ants'-nests; MONIEZ, WASMANN (1, 2).—Adaptive modifications of the eyes and antennules of deep-sea *Galatheidæ*; MILNE-EDWARDS & BOUVIER (5).—The moulting of *Lithodes*; BOUVIER (12).—Habits of *Squillidæ*; HORNELL (2).—Nest of *Amphithæ littorina*; SCHERREN.—Parasitic Crustaceans; OSORIO (1).—Cirripedes parasitic on *Palinuridæ*; STEBBING (2).—Gall-producing Copepod; BRADY (2).—Flying *Copepoda*; MRÁZEK (1), OSTROUMOFF (1-3).—*Entomostraca* eaten by *Utricularia*; T. SCOTT (2).—Luminosity of *Copepoda*; GIESBRECHT (4), DAHL (2).—Luminosity of *Metridia*; VANHÖFFEN.—Ethology of *Thaumaleus (Monstrillidæ)*; GIARD.—Life-history of *Monstrilla*; HORNELL (1).

Origin and characters of subterranean Crustacean fauna; CHILTON.—*Entomostraca* and the surface film of water; SCOURFIELD.—Vertical distribution of Pelagic *Crustacea* in Lake Mendota; BIRGE, OLSON, & HARDER.—Vertical distribution of *Cyclops*; ZACHARIAS (1, 2).—Vertical distribution of freshwater *Crustacea*; ZSCHOKKE.—Horizontal and vertical distribution of *Copepoda* in the ocean; DAHL (7).—Distribution of Pelagic *Copepoda* in the sea and in brackish water; DAHL (4); of freshwater animals in the sea; DAHL (6).

Occurrence of the males of *Daphnia psittacina*; KERHERVÉ.—Occurrence of the male of *Apus*; BENHAM.—Numerical proportion of males to females in *Astacus*; FRENZEL.—Secondary sexual characters of *Phronima*; CHUN.—Desiccation of *Copepoda* and their eggs; CLAUS (4).

8. DISTRIBUTION.

Palæarctic Region
(and adjacent Seas).

Geographical distribution of *Lithodes*; BOUVIER (7).

British *Copepoda*; BRADY (1): *Cladocera*; HODGSON (1).—English Isopods, terrestrial and marine, pp. 22-24; STEBBING (2).—Liverpool Bay: *Copepoda*; THOMPSON, J. C.: *Amphipoda*; WALKER (2): Higher *Crustacea*; WALKER (1).—North Wales: *Entomostraca*; SCOURFIELD (2).—Dogger Bank: *Entomostraca*; T. SCOTT (1).—Scotland: *Entomostraca*; T. & A. SCOTT (1-6).—Loch Leven: Aquatic *Entomostraca*; T. SCOTT (7).—Edinburgh: Carphin (record of *Argulus*).—*Ostracoda*, *Cladocera*, and *Copepoda*; T. SCOTT (8, 9).—Firth of Forth: T. SCOTT (3).—North

Uist and Hebrides : *Cladocera* and *Schizopoda* ; T. SCOTT (4, 5, 6).—I. of Mull : Freshwater *Entomostraca* ; T. SCOTT (10).—Ireland : Terrestrial Isopods ; SCHARFF (1, 2).—Loch Erne and Loch Corrib : CREIGHTON.—West of Ireland : *Cladocera* ; HODGSON (2).—Dublin : *Astacus* ; SCHARFF (3).—Co. Carlow : Isopods ; SCHARFF (4).—Irish Sea : *Amphipoda* ; WALKER (4).

North Sea and Heligoland : *Entomostraca* ; TIMM (1, 2).

Norway : *Amphipoda* ; SARS (5).—Trondhjem Fiord : NORMAN.—Helsingfors : *Cladocera* ; STENROOS.

France : *Idoteida* ; DOLLFUS (5) : *Galatheida* ; MILNE-EDWARDS & BOUVIER (2) : *Entomostraca* ; RICHARD (4).—Coast of Normandy : *Entomostraca* ; CANU : *Crustacea* ; GADEAU DE KERVILLE.—Thury : *Entomostraca* ; GUERNE.—Switzerland : *Cladocera* ; STINGELIN (1-3), ZSCHOKKE (1, 2).—Italy, Verona : GARBINI (1).—Portugal : OSORIO (2).—Sicily : RIGGIO.—Is. of Anno Bom and Dahomey : Crustaceans ; OSORIO (3, 4).—Algeria : CHEVREUX (2), GUERNE & RICHARD.—Azores and Western Seas of Europe : *Brachyura* and *Anomura* ; MILNE-EDWARDS & BOUVIER (3).—Mediterranean : *Halocypride* ; CLAUS (6).—Rome : ALESSANDRI (record of *Calappa*).—Gulf of Naples : *Ostracoda* ; MÜLLER.—Adriatic and Mediterranean : *Sapphirinide* ; STEUER (1, 2).—Corsica : Terrestrial Isopods ; DOLLFUS (7).—Saxony : *Entomostraca* ; SCHMEIL (1, 2).—Galicia : *Crustacea* ; WIERZEJSKI.—Hungary : *Entomostraca* ; DADAY DE DEES (1).—Brandenburg : HARTWIG.—Bohemia : *Entomostraca* ; FRIĆ & VÁVRA, MRÁZEK (4).—Westphalia : *Cladocera* ; KLOCKE.—Moscow : *Ostracoda* ; CRONBERG.—Black Sea : Pelagic Crustaceans and *Copepoda* ; KARAWAEW : *Malacostraca* ; SOVINSKIJ (1).—Sea of Azov : *Crustacea* ; SOVINSKIJ (2).—Tiflis and Lake Goktscha : *Cladocera* and *Copepoda* ; RICHARD (7).—Caspian Sea : *Mysidæ*, *Cumacea*, *Amphipoda* ; SARS (1-4).—Palestine : *Crustacea* ; MATZDORFF : Terrestrial and freshwater Isopods ; DOLLFUS (3) : *Amphipoda* ; CHEVREUX (1).—Palestine, Syria, and Egypt : *Cladocera* ; RICHARD (10).

Japan : *Phyllopora* ; ISHIKAWA : *Cumacea* ; MARCUSEN : *Leptostraca* ; NAKAGAWA : *Decapoda* ; ORTMANN (3).

China (Tonkin) : *Entomostraca* ; RICHARD.

Ethiopian Region.

Gulf of Guinea : *Entomostraca* : T. SCOTT (11).—Congo : *Brachyura* ; RATHBUN (2).—S. Africa : Principally *Decapoda* ; ORTMANN (1).—Cape of Good Hope : *Amphipoda* ; STEBBING (4).—Zanzibar : *Ostracoda* ; VÁVRA : *Copepoda* ; POPPE & MRÁZEK.—German East Africa : *Copepoda* ; MRÁZEK (5).—Somaliland : *Crustacea* ; WEDENISSOW.—East Africa : *Thelphusidæ* ; BELL.—Madagascar : Terrestrial *Isopoda* ; DOLLFUS (1) : *Palæman* ; HILGENDORF.—Reunion : *Isopoda* ; DOLLFUS (1).

Oriental and Australian Regions
(and adjacent Seas).

Ceylon : *Entomostraca* ; POPPE & MRÁZEK.—India : Species of *Parthenope* ; ALCOCK (4).—Burma : Terrestrial Isopods ; BUDDE-LUND.

Indian Ocean : *Cirripedes* ; WELTNER.—Bay of Bengal, Andaman and Laccadive Seas : *Brachyura* ; ALCOCK & ANDERSON (1, 2).—Java Sea : *Cirripedes* ; AURIVILLIUS (2).—Sumatra (Lake Toba) : *Entomostraca* ; RICHARD (1).—Malaysian Archipelago : *Decapoda* ; ORTMANN (1).—Malacca, Java, Borneo, Celebes : *Decapoda* ; DE MAN (1, 2).—Amboina, &c. : *Crustacea* ; ZEINTEK.

Australia : *Phyllopora* ; SARS (6), SPENCER.—Australia : Principally Decapods ; ORTMANN (1).—Tasmania (record of *Phreatoicus* and *Anaspides*) ; THOMSON (1-3).—New Zealand : Cave fauna ; CHILTON.—Macquarie Islands : *Copepoda* ; THOMSON (2).

Hauraki Gulf (New Zealand) : *Entomostraca* ; KRÄMER.

Nearctic and Neotropical Regions.

Greenland : *Entomostraca* ; WESENBERG-LUND.—Baffin's Bay : *Malacostraca* ; OHLIN (1, 2).—Lakes Michigan, St. Clair, &c. : *Copepoda* ; MARSH (1).—Green Lake (Wisconsin) ; MARSH (3).—New Jersey ; MOORE.—Lake Mendota : *Entomostraca* ; BIRGE, OLSON, & HARDER.—Buffalo, N. York (record of *Ceratiocaris*) ; STOSE.—Georgia and Delaware : *Ostracoda* ; TURNER.—New Mexico : *Entomostraca* ; C. L. HERRICK.—Florida : Crayfish ; LÖNNBERG.—California : chiefly *Malacostraca* ; HOLMES.—Lower California : *Decapoda* ; BOUVIER (6), *Phyllopora* ; BOUVIER (8, 9).—W. coast of N. America : *Lithodidæ* ; BENEDICT.—West coast of Central America : *Schizopoda* ; ORTMANN (2).

West Indian and Caribbean Seas : *Paguridæ* ; MILNE-EDWARDS & BOUVIER (1).—Antigua : *Amphipoda* ; STEBBING (3).—Haiti : *Entomostraca* (freshwater) ; RICHARD (3).—Gulf of Paria : *Crustacea* ; GUPPY.—Venezuela : Terrestrial Isopods ; DOLLFUS (6).

Brazil : *Phyllopods* ; JHERING.—Argentine Republic : Terrestrial Isopods ; DOLLFUS (4).—Patagonia, Chili, Juan Fernandez : *Cirripedia* ; WELTNER (1).—Strait of Magellan (1 *Hyastenus*) ; MILNE-EDWARDS.

South Georgia : *Entomostraca* ; POPPE & MRÁZEK.

PALÆONTOLOGY.

The following new forms recorded :—

CREMA describes the following from the Tertiaries of Piedmont :—*Callianassa pedemontana*, p. 665, *rovasendæ*, p. 666. *Lyreidus paronæ*, p. 671. *Gonoplax sacii*, p. 674, *croverii*, p. 675.

LOVISATO from the mid-Miocene of Sardinia :—*Squilla miocenica*, n. sp.

LEIENCLAUS from the Middle Oligocene of Jena :—*Cytheropteron ovulum*, p. 151, pl. iii, fig. 4, *parisiense*, p. 152, fig. 5. *Cytherura gracilis*, p. 149, fig. 3. *Loxoconcha bosqueti*, p. 146, fig. 2.

GRZYBOWSKI describes the following new species of Ostracod:—*Cythere striato-reticulata*, p. 207, pl. v, fig. 1, *areata*, p. 208, pl. v, fig. 2. *Bayrdia retracta*, p. 207, pl. v, fig. 4.

JONES & KIRBY describe the following new forms from the Carboniferous of Yorkshire:—*Bythocypris cornigera*, J. & K., *robusta*, n. var., pp. 453 & 454, fig. 2. *Cytherella intercalaris*, p. 455, fig. 4. *Bairdia plebeia*, n. var. *alta*, p. 457, fig. 6; *hisingeri*, n. var. *contracta*, p. 457, fig. 7. *Argillecia aequalis*, n. var. *acuta*, p. 457, fig. 8. *Bythocypris breviata*, n. sp., p. 457, fig. 9.

JONES (4):—*Aparchites reticulatus*, p. 60, pl. vii, fig. 4, n. sp. *Prinitia mundula*, Jones, n. var. *sacculus*, p. 61, pl. vii, fig. 7. *P. laevigata*, p. 63, pl. vii, fig. 3. *Barychilina semen*, p. 63, pl. vii, fig. 5. *Beyrichia stricti-sulcata*, p. 65, pl. vii, fig. 11. *Bollia varians*, p. 65, pl. vii, figg. 8-10. *Drepanella serotina*, p. 66, pl. vii, fig. 12. *Strepula annulata*, p. 66, fig. 13.

JONES, T. RUPERT, & WOODWARD, HENRY (1): *Estheria draperi*, pl. ix, fig. 1; *stowiana*, fig. 2, p. 290. *Elymnocaris*, n. gen., *hindei*, p. 293, fig. 7.

JONES, T. RUPERT (1), from the Rhætic:—*Darwinula liassica*, n. var. *major*, p. 163, pl. ix, fig. 2; *D. globosa*, n. var. *stricta*, p. 164, fig. 5. *Cytheridea moorei*, p. 165, pl. ix, fig. 7. *Cythere reticostata*, p. 166, fig. 10; *wilsoni*, p. 167, fig. 11.

JONES, T. RUPERT (2), from the Palæozoic:—*Estheria striata*, n. var. *muensteriana*, p. 465, pl. i, figg. 1 & 2. *E. reinachii*, p. 467, pl. i, fig. 3; *geinitzii*, p. 467, pl. i, fig. 4, n. var. *grebeana*, p. 467.

JONES, T. RUPERT, & WOODWARD, HENRY (2), from the Palæozoic:—*Ceratiocaris reticosa*, p. 539, pl. xv, fig. 1. *Emnelezoë lindstromii*, p. 539.

III. SYSTEMATIC.

MALACOSTRACA.

PODOPHTHALMA.

DECAPODA.

(1) *Oxyrrhyncha* (*Maiioidea*).

MAIIDÆ and INACHIDÆ.

- Acheus trituberculatus*, Japan, p. 47, RATHBUN, P. U. S. Mus. xvii;
A. hyalinus, Trincomalee, p. 205, ALCOCK & ANDERSON, J. Asiat. Soc.
 Bengal, lxiii; *A. cadelli*, Andamans, p. 171, ALCOCK, J. Asiat. Soc.
 lxiv: n. spp.
Anumathia crassa, *hystrix*, and *umbonata*, discussed, pp. 60 & 61, figured
 pl. i; RATHBUN, P. U. S. Mus. xvii.
A. beauchampii, Bay of Bengal, p. 185, ALCOCK & ANDERSON, J. Asiat.
 Soc. Bengal, lxiii, n. sp.
Anasimus latus, Gulf of Mexico, p. 58, RATHBUN, P. U. S. Mus. xvii, n. sp.

- Apocremnus indicus*, Andamans, p. 188, pl. iv, fig. 2, ALCOCK, J. Asiat. Soc. Bengal, lxiv, n. sp.
- Batrachomotus brasiliensis*, Rio Janeiro, p. 54, *nicholsi*, Gulf of California, p. 55, RATHBUN, P. U. S. Mus. xvii, n. spp.
- Ceratocarcinus intermedius*, Amboina, p. 141, pl. vii, fig. 1, ZEHNTER, Rev. Suisse Zool. ii, n. var.
- Chorilibinia andamanica*, Andamans, p. 222, ALCOCK, J. Asiat. Soc. Bengal, lxiv, n. sp.
- Collodes malabaricus*, Malabar coast, p. 189, ALCOCK, *t. c.* n. sp.
- Echinæcus*, n. g., *pentagonus*, Bonin Is., p. 66, RATHBUN, P. U. S. Mus. xvii, n. sp.
- Echinoplax rubida*, Andaman Sea, p. 179, ALCOCK, J. Asiat. Soc. Bengal, lxiv, n. sp.
- Egeria investigatoris*, Ceylon, p. 225, ALCOCK, *t. c.* n. sp.
- Euprognatha rastellifera*, Smith, *spinosa*, Havana, &c., p. 55, RATHBUN, P. U. S. Mus. xvii, n. sp.
- Gryphæchæus*, n. g. for *Achæus hyalinus*, Alc. & And., p. 177; ALCOCK, J. Asiat. Soc. Bengal, lxiv.
- Holoplites*, n. g. for *Nibilia armata*, M.-Edw., p. 64; RATHBUN, P. U. S. Mus. xvii.
- Hyastenus subinermis*, Amboina, p. 136, pl. vii, fig. 2, ZEHNTER, Rev. Suisse Zool. ii; *H. brevicornis*, Kilwa, p. 42, pl. iii, fig. 3, ORTMANN, Denk. Ges. Jena, viii; *H. consobrinus*, Strait of Magellan, p. 239, MILNE-EDWARDS, P. Zool. Soc. London, 1895; *H. calvarius*, Andamans, p. 213, ALCOCK, J. Asiat. Soc. Bengal, lxiv : n. spp.
- Inachoides intermedius*, Rio Janeiro, p. 57, RATHBUN, P. U. S. Mus. xvii, n. sp.
- Micippa cristata*, *lavimana*, fig. 3, *granulipes*, figg. 3a & 3b, p. 139, Amboina, ZEHNTER, Rev. Suisse Zool. ii, n. varr.
- Podochele spinifrons*, West Indies, p. 51, RATHBUN, P. U. S. Mus. xvii, n. sp.
- Lambrachæus*, n. g., *ramifer*, Andaman Is., p. 168, pl. iii, fig. 1, ALCOCK, J. Asiat. Soc. Bengal, lxiv, n. sp.
- Macrocoeloma nummifer*, Andaman Sea, p. 255, pl. iv, fig. 4, ALCOCK, *t. c.* n. sp.
- Maia squinado* (Rond.), *capensis*, Pt. Elizabeth, p. 40, ORTMANN, Denk. Ges. Jena, viii, n. var.
- M. gibba*, Andaman Is., p. 239, pl. iv, fig. 5, ALCOCK, J. Asiat. Soc. Bengal, lxiv, n. sp.
- Menæthiops*, n. g., *bicornis*, Káráchi, p. 289, ALCOCK, *t. c.* n. sp.
- Navia cerastes*, Thursday I., p. 43, pl. iii, fig. 4, ORTMANN, Denk. Ges. Jena, viii; *M. investigatoris*, Andamans, Ceylon, p. 218, ALCOCK, J. Asiat. Soc. Bengal, lxiv : n. spp.
- Paratymolus hastatus*, Andamans, p. 174, ALCOCK, *t. c.* n. sp.
- Physachæus*, n. g., p. 174, *stenurus*, p. 175, pl. iii, fig. 2, *tonsor*, p. 176, pl. iii, fig. 3, ALCOCK, *t. c.* n. spp.
- Scyramathia rivers-andersoni*, Malabar, p. 203, ALCOCK, *t. c.* n. sp.
- Stenorhynchus brevis*, Kilwa, p. 37, pl. 1, fig. 5, ORTMANN, Denk. Ges. Jena, viii, n. sp.

PARTHENOPIDÆ.

- Cryptopodia angulata*, Edw. & Luc., *cippifer*, Káráchi, p. 283, ALCOCK, J. Asiat. Soc. Bengal, lxiv, n. subsp.
Eumedonus zebra, Ceylon, p. 288, ALCOCK, *t. c. n. sp.*
Heterocrypta investigatoris, India, p. 284, ALCOCK, *t. c. n. sp.*
Lambrus (Aulacolambrus) lecanova, Thursday I., p. 47, pl. iii, fig. 8, ORTMANN, Denk. Ges. Jena, viii, n. sp.
L. (Rhinolambrus) cybelis, p. 270, *petalophorus*, p. 271, Ceylon, ALCOCK, J. Asiat. Soc. Bengal, lxiv, n. spp. .
L. (Parthenolambrus) beaumontii, Ceylon, p. 276, ALCOCK, *t. c.*
Parthenomerus, n. subg. of *Parthenope*, p. 280, *efflorescens*, Andamans, p. 281, ALCOCK, *t. c. n. sp.*
Parthenope investigatoris, Laccadives, p. 297, ALCOCK, *t. c. n. sp.*
Solenolambrus decemspinus, Gulf of Mexico, p. 84, RATHBUN, P. U. S. Mus. 1894, n. sp.
Thyrolambrus, n. g., *astroides*, Cuba, p. 83, RATHBUN, *t. c. n. sp.*

(2) *Cyclometopa (Cancroidea)*.

- Actæa picta*, Amboina, p. 144, pl. vii, fig. 6, ZEHNTER, Rev. Suisse Zool. ii; *A. palmeri*, Florida, p. 85, RATHBUN, P. U. S. Mus. 1894: n. spp.
Caphyra natatrix, Amboina, p. 162, pl. vii, fig. 10, ZEHNTER, Rev. Suisse Zool. ii, n. sp.
Cryptophrys pubescens, Gulf of California, p. 564, HOLMES, P. Calif. Ac. iv, pt. 2, n. sp.
Corystes sicarius, Poppig, = *Corystoides armatus*; PHILIPPI, Zool. Anz. xvii, p. 264.
Deckenia cristata, Seychelles, p. 23, RATHBUN, P. U. S. Mus. xvii, n. sp.
Erimetopus, n. g. of *Telphusida*, *spinus*, Stanley Pool (Congo), p. 26, RATHBUN, *t. c.*, n. sp.
Goniosoma hoplites, Madras coast, p. 114, ALCOCK & ANDERSON, J. Asiat. Soc. Bengal, lxiii, n. sp.
Geryon affinis, Azores, p. 41, pl. i, fig. 1, MILNE-EDWARDS & BOUVIER, Campagnes du yacht l'Hirondelle, vii, n. sp.
Hypocelus abbotii, Aldabra I., p. 21, RATHBUN, P. U. S. Mus. xvii, n. sp.
Heteropilumnus, n. g., p. 527, Stormi, West Celebes, p. 529, fig. 5, DE MAN, Zool. Jahrb. Syst. viii, n. sp.
Lophactæa multieristata, Amboina, p. 144, pl. vii, fig. 7, ZEHNTER, Rev. Suisse Zool. ii, n. sp.
Parapanope, n. g., p. 513, *euagora*, Java Sea, p. 514, fig. 4, DE MAN, Zool. Jahrb. Syst. viii, n. sp.
Paratelphusa campi, Stanley Pool (Congo), p. 25, RATHBUN, P. U. S. Mus. xvii, n. sp.

- Pilumnus infraciliaris*, Port Elizabeth, p. 49, pl. iii, fig. 7, ORTMANN, Denk. Ges. Jena, viii ; *P. diomedea*, Cuba, p. 85, RATHBUN, P. U. S. Mus. 1894 ; *P. (Parapilumnus) quadridentatus*, W. coast of Borneo, p. 537, fig. 6, *P. (ss.) trichophorus*, Malakka, p. 544, fig. 7, *trichophoroides*, West Celebes, p. 549, fig. 8, DE MAN, Zool. Jahrb. Syst. viii : n. spp.
- Platypilumnus*, n. g., *gracilipes*, Bay of Bengal, p. 401, ALCOCK, Ann. Nat. Hist. (6) xiii, n. sp.
- Sphærocarcinus*, n. g. (near *Lissocarcinus*), p. 163, *bedoti*, Amboina, p. 164, pl. viii, fig. 16, ZEHNTER, Rev. Suisse Zool. ii, n. sp.
- Spherozius cochlearis*, Amboina, p. 151, pl. vii, fig. 5, ZEHNTER, t. c. n. sp.
- Telphusa altifrons*, Philippine Is., p. 3, pl. i, fig. 2, *montana*, Luzon, p. 5, fig. 5, *planifrons*, Cape York, p. 6, fig. 6, BÜRGUR, Zool. Jahrb. Syst. viii ; *T. soror*, Ceylon, p. 167, ZEHNTER, Rev. Suisse Zool. ii : n. spp.
- Xanthodes microps*, Bay of Bengal, p. 183, ALCOCK & ANDERSON, J. Asiat. Soc. Bengal, lxiii, n. sp.

Catometopa (Grapsoida).

According to ORTMANN, Zool. Jahrb. Syst. vii, p. 700, the *Catometopa* contain the following families: *Menippida*, *Xanthida*, *Oziida*, *Carcinoplacida*, new, *Gonaplacida*, new, *Pinnotherida*, *Ocypodida*, new, *Grapsida*, and *Gecarcinida*.

GRAPSIDÆ, OCYPODIDÆ, &C.

- Archæoplax*, n. g., p. 180, *notopus*, Bay of Bengal, p. 181, ALCOCK & ANDERSON, J. Asiat. Soc. Bengal, lxiii, n. sp.
- Ceratoplax villosa*, p. 173, pl. vii, fig. 8, *leptochelis*, p. 174, pl. vii, fig. 9, Amboina, ZEHNTER, Rev. Suisse Zool. ii, n. spp.
- Cycloblepas*, n. g. of *Oziida*, *semonii*, Amboina, p. 53, pl. iii, fig. 8, ORTMANN, Denk. Ges. Jena, viii, n. sp.
- Cyclograpsus intermedius*, Indian Ocean, p. 728, ORTMANN, Zool. Jahrb. Syst. vii, n. sp.
- Epesarma*, n. subg. of *Sesarma*, p. 165, *namophyes*, Atjeh, p. 174, fig. 32, *pontianacensis*, Pontianak, p. 178, fig. 33, DE MAN, Zool. Jahrb. Syst. ix, n. sp.
- Gecarcinus regius*, Poppig, = *Xantho plana*, *G. barbiger*, Poppig, = *Paraxanthus hirtipes* ; PHILIPPI, Zool. Anz. xvii, p. 265.
- Geograpsus lividus*, M.-E., *stormi*, Atjeh, p. 88, fig. 18 ; DE MAN, Zool. Jahrb. Syst. ix, n. var.
- Litocheira quadrispinosa*, Amboina, p. 171, pl. viii, fig. 11, ZEHNTER, Rev. Suisse Zool. ii, n. sp.
- Macrophthalmus laniger*, Japan, p. 746, pl. 23, fig. 15, ORTMANN, Zool. Jahrb. Syst. vii, n. sp.
- Ocypode neglecta*, Mauritius, p. 766, pl. xxiii, fig. 18, *pygoides*, W. Australia, p. 766, fig. 19, ORTMANN, Zool. Jahrb. Syst. vii, n. spp.
- Paracleistostoma*, n. g. of *Ocypodida*, p. 580, *depressum*, Penang, p. 581, fig. 13, *cristatum*, Japan, p. 590, DE MAN, *op. cit.* viii, n. spp.

- Psopheticus*, n. g. of *Ocypodidae*, *stridulans*, Bay of Bengal, p. 402, ALCOCK, Ann. Nat. Hist. (6) xiii, n. sp.
- Parasesarma*, n. subg. of *Sesarma*, p. 181, *calypso*, Atjeh, p. 185, fig. 34, *lenzii*, Atjeh, p. 193, fig. 35, *moluccensis*, Moluccas, p. 202, fig. 36, DE MAN, Zool. Jahrb. Syst. ix, n. spp.
- Perisesarma*, n. subg. of *Sesarma*, *eumolpe*, Penang, p. 208, fig. 38, *onychophora*, Penang, p. 214, fig. 39, DE MAN, t. c. n. spp.
- Pilumnoplax glaberrima*, Japan, p. 637, pl. xxiii, fig. 2, ORTMANN, op. cit. vii, n. sp.
- Ptychognathus spinicarpus*, South Sea, p. 711, pl. xxxiii, fig. 13, ORTMANN, t. c. ; *P. polleni*, Madagascar, p. 94, fig. 20, *affinis*, Atjeh, p. 97, fig. 21, DE MAN, op. cit. ix : n. spp.
- Retropluma*, n. n. for *Archaeoplax*, Alcock & Anderson, forming type of family *Reptroplumidae* ; GILL, Amer. Natural. xxviii, p. 1043.
- Sesarma edwardsii*, *laevimana*, Sarawak, p. 181 ; ZEHNTER, Rev. Suisse Zool. ii, n. var.
- S. erythroductyla*, Hess, *africana*, Dar-es-Salaam, p. 56 ; ORTMANN, Denk. Ges. Jena, viii ; *S. jacquinoti*, Tahiti, p. 718, *aequatorialis*, Ecuador, p. 722, pl. xxiii, fig. 14 ; ORTMANN, Zool. Jahrb. Syst. vii ; *S. stormi*, Atjeh, p. 148, fig. 29 ; DE MAN, op. cit. ix : n. spp.
- Tyloidiplax*, n. g. of *Ocypodidae*, p. 598, *tetratylophorus*, Penang, p. 599, fig. 15, DE MAN, op. cit. viii, n. sp.
- Utica nausithoë*, Atjeh, p. 113, fig. 24, *borneensis*, Pontianak, p. 118, fig. 25, DE MAN, op. cit. ix, n. spp.

PINNOTHERIDÆ.

- Durckheimia cæca*, Palao I., p. 385, fig. 33, BÜRGUR, Zool. Jahrb. Syst. viii, n. sp.
- Parapinnixa*, n. n. for *Pseudopinnixa*, Holmes, nec Ortmann, p. 587 ; HOLMES, P. Calif. Ac. iv, pt. 2.
- Pinnaxodes tomentosus*, Brazil, p. 697, pl. xxiii, fig. 9, *major*, Japan, p. 697, fig. 10, ORTMANN, Zool. Jahrb. Syst. vii, n. spp.
- Pinnotheres nudus*, California, p. 563, HOLMES, P. Calif. Ac. iv, pt. 2 ; *P. pisoides*, Japan, p. 698, pl. xxiii, fig. 11, ORTMANN, Zool. Jahrb. Syst. vii ; *P. pectinicola*, Ubay, p. 365, pl. ix, fig. 1, *affinis*, Ubay, p. 365, fig. 2, *glaberrimus*, Zamboangan, p. 366, fig. 3, *cardii*, Philippines, p. 367, fig. 4, *gracilis*, Ubay, p. 368, fig. 6, *coarctatus*, Zamboangan, p. 369, *barbatus*, Aibukit, p. 369, fig. 8, *modiolicola*, Philippines, p. 370, fig. 9, *areophilus*, Ubay, p. 371, fig. 10, *temuipes*, Ubay, p. 371, fig. 11, *palaensis*, Palao I., p. 372, fig. 12, *latissimus*, Manilla, p. 373, fig. 13, *similis*, Ubay, p. 373, fig. 14, *rhombifer*, Ubay, p. 374, fig. 15, *latus*, Philippines, p. 374, fig. 16, *pernicola*, Ubay, p. 375, fig. 17, *exiguus*, Samar, p. 377, fig. 19, *consors*, Palao I., p. 377, fig. 20, *rotundatus*, Philippines, p. 378, fig. 21, *nudifrons*, Lapinig, p. 378, fig. 22, *glaber*, Palao I., p. 379, fig. 22, *longipes*, Aibukit, p. 379, fig. 31, *impressus*, Aibukit, p. 380, fig. 24, *levis*, Palao I., p. 380, fig. 25, *semperi*, Java, p. 382, fig. 28, *ortmanni*, Aibukit, p. 384, fig. 30 ; BÜRGUR, Zool. Jahrb. Syst. viii, n. spp.

- Pseudopinnixa*, n. g., p. 694, *carinata*, Japan, p. 694, pl. xxiii, fig. 6, ORTMANN, *op. cit.* vii, n. sp.
Pseudopinnixa, n. g., p. 565, for *Pinnixa nitida*, Lock., p. 566; HOLMES, P. Calif. Ac. iv, pt. 2.
P. tubicola, p. 569, *littoralis*, p. 571, California, HOLMES, *t. c.* n. spp.
Tritodynamia, n. g., p. 692, *japonica*, Japan, p. 693, pl. xxiii, fig. 5, ORTMANN, Zool. Jahrb. Syst. vii, n. sp.
Xenophthalmus latifrons, Bohol, p. 387, pl. ix, fig. 32, BÜRGUR, *t. c.* n. sp.

(4) *Oxystomata*.

- Arcania quinquespinoza*, Madras, p. 206, ALCOCK & ANDERSON, J. Asiat. Soc. Bengal, lxiii, n. sp.
Calappa exanthematosa, Bay of Bengal, p. 177; ALCOCK & ANDERSON, *t. c.* n. sp.
Cynomomops, n. g., *glaucomma*, Bay of Bengal, p. 406, ALCOCK, Ann. Nat. Hist. (6) xiii, n. sp.
Cymopolia serripes, Madras, p. 208, ALCOCK & ANDERSON, J. Asiat. Soc. Bengal, lxiii, n. sp.
Dorippe polita, Madras, p. 208, ALCOCK & ANDERSON, *t. c.*
Ethusa andamanica, *indica*, p. 405, *pygmaea*, p. 406, Bay of Bengal, ALCOCK, Ann. Nat. Hist. (6) xiii, n. spp.
Leucosilia granulosa, North Maldive, p. 207, ALCOCK & ANDERSON, J. Asiat. Soc. Bengal, lxiii, n. sp.
Merocryptus boletifer, Azores, p. 86, pl. iv, figg. 1-9, MILNE-EDWARDS & BOUVIER, Campagnes du yacht PHirondelle, vii, n. sp.
Mursia bicristimana, Gulf of Manaar, p. 179, ALCOCK & ANDERSON, J. Asiat. Soc. Bengal, lxiii, n. sp.
Nursia ypsilon, Thursday I., p. 36, pl. ii, fig. 7, ORTMANN, Denk. Ges. Jena, viii, n. sp.
Randallia coronata, Bay of Bengal, p. 177, ALCOCK & ANDERSON, J. Asiat. Soc. Bengal, lxiii, n. sp.

(5) *Raninoidea*.

- Cryptodromia lamellata*, Thursday I., p. 34, pl. ii, fig. 8, ORTMANN, Denk. Ges. Jena, viii, n. sp.
Dromidia kendalli, Bay of Bengal, p. 175, ALCOCK & ANDERSON, J. Asiat. Soc. Bengal, lxiii, n. sp.
Homola megalops, Bay of Bengal, p. 408, ALCOCK, Ann. Nat. Hist. (6) xiii, n. sp.

(6) *Anomala*.

LITHODIDÆ.

- Acantholithodes*, n. g., p. 578, for *Dermaturus hispidus*, p. 575, California; HOLMES, P. Calif. Ac. iv, pt. 2.
Lepeopus, n. g., p. 487, *forcipatus*, British Columbia, p. 488, BENEDICT, P. U. S. Mus. xvii, n. sp.

- Leptolithodes*, n. g., *multispinus*, Queen Charlotte I., p. 484, *papillatus*, Lower California, p. 485, BENEDICT, *t. c. n. spp.*
- Lithodes* *goodei*, Nantucket, p. 479, *diomedææ*, Chili, p. 480, *æquispinus*, Behring Sea, p. 481, *couesi*, Unalaska, p. 481, *rathbuni*, p. 482, *californiensis*, p. 483, California, BENEDICT, *t. c.*; *L. grimaldii*, p. 62, pl. iii, figg. 1-6, MILNE-EDWARDS & BOUVIER, Campagnes du yacht l'Hirondelle, vii : n. spp.
- Neolithodes*, n. g., *grimaldii*, Terre-Neuve, p. 122; MILNE-EDWARDS & BOUVIER, Bull. Soc. zool. France, xix.
- Ædignathus*, n. g., *gilli*, Alaska, p. 487, BENEDICT, P. U. S. Mus. xvii, n. sp.
- Pristopus*, n. g., *verrilli*, Behring Sea, p. 486, BENEDICT, *t. c. n. sp.*

PORCELLANIDÆ.

- Petrolisthes trivirgatus*, Dar-es-Salaam, p. 28, pl. ii, fig. 5, ORTMANN, Denk. Ges. Jena, viii, n. sp.
- Pisisma granulatum*, Dar-es-Salaam, p. 28, pl. ii, fig. 6, ORTMANN, *t. c. n. sp.*
- Polyonyx trianguiculatus*, p. 185, *hexagonulis*, p. 187, pl. viii, fig. 18, Amboina, ZEINER, Rev. Suisse Zool. ii, n. sp.
- Porcellana macrochela*, Poppig, = *Porcellana violacea*; PHILIPPI, Zool. Anz. xvii, p. 264.

GALATHEIDÆ.

- Bathyan kyristes*, n. g., p. 173, *spinus*, Andaman Sea, p. 174, pl. ix, fig. 2, *levis*, Laccadive Sea, p. 175, ALCOCK & ANDERSON, J. Asiat. Soc. Bengal, lxiii, n. spp.
- Elasmonotus cylindrophthalmus*, Bay of Bengal, p. 333, ALCOCK, Ann. Nat. Hist. (6) xiii, n. sp.
- Galacantha investigatoris*, Laccadive Sea, p. 173, ALCOCK & ANDERSON, J. Asiat. Soc. Bengal, lxiii, n. sp.
- Munida semoni*, Amboina, p. 24, pl. i, fig. 4, ORTMANN, Denk. Ges. Jena, viii; *M. tricarinata*, Andaman Sea, p. 324, *microps*, Colombo, p. 326, ALCOCK, Ann. Nat. Hist. (6) xiii : n. spp.
- M. militaris*, Hend., *andamanica*, Andaman Sea, p. 321; ALCOCK, *t. c. n. var.* *M. squamosa*, Hend., *prolixa*, Bay of Bengal, p. 322; ALCOCK, *t. c. n. var.* *M. microps*, Alcock, *lasiocheles*, Andaman Sea; ALCOCK, *t. c. n. var.*
- Munidopsis dasypus*, p. 329, *scobina*, p. 330, Bay of Bengal, ALCOCK, *t. c.*; *M. poseidonia*, Bay of Bengal, p. 167, *triæna*, Andaman Sea, *regia*, Gulf of Manaar, p. 168, *trachypus*, Laccadive Sea, p. 169, *centrina*, p. 170, *arietina*, p. 171, *unguifera*, p. 172, Bay of Bengal, ALCOCK & ANDERSON, J. Asiat. Soc. Bengal, lxiii : n. spp.
- M. subsquamosa*, Hend., *pallida*, Bay of Bengal, p. 331; ALCOCK, Ann. Nat. Hist. (6) xiii, n. var.

PAGURIDÆ, PARAPAGURIDÆ, &C.

- Anapagurus acutus*, St., No. 5, p. 120, pl. ix, figg. 7-13, *marginatus*, Barbadoes, p. 123, pl. ix, figg. 14-18, MILNE-EDWARDS & BOUVIER, Mem. Mus. Harvard, xiv, No. 3, n. spp.
- Catapagurus gracilis*, Smith, *intermedius*, Dominica, p. 137, pl. ix, figg. 31-34; MILNE-EDWARDS & BOUVIER, *t. c. n. var.*
- Clibanarius anomalus*, Barbadoes, p. 157, pl. xi, figg. 13-23, MILNE-EDWARDS & BOUVIER, *t. c. n. sp.*
- Eupagurus smithi*, Sand Key, p. 140, pl. x, figg. 1-12, *stimpsoni*, Florida, p. 144, pl. x, figg. 13-18, *dissimilis*, Yucatan, p. 146, pl. x, figg. 19-25, *problematicus*, Barbadoes, p. 151, pl. xi, figg. 1-10, MILNE-EDWARDS & BOUVIER, *t. c. n. spp.*
- Munidopagurus*, n. g., p. 102, for *Eupagurus macrocheles*, M.-Edwards; MILNE-EDWARDS & BOUVIER, *t. c.*
- Paguristes triangulatus*, Barbadoes, p. 40, pl. iv, figg. 6-12, *planatus*, Barbadoes, p. 43, pl. iv, figg. 1-5, *lymarni*, West Indies, p. 49, pl. iv, figg. 13-22, *sayi*, Barbadoes, p. 55, MILNE-EDWARDS & BOUVIER, *t. c. n. spp.*
- Pagurus sigmoidalis*, Amboina, p. 192, pl. viii, fig. 19, ZEHNTER, Rev. Suisse Zool. ii, n. sp.
- Parapagurus monstrosus*, Bay of Bengal, p. 243, ALCOCK, Ann. Nat. Hist. (6) xiii, n. sp.
- Pylocheles scorpio*, Bay of Bengal, p. 244, ALCOCK, *t. c. n. sp.*
- Pylopagurus*, n. g., for *Eupagurus discoidalis*, &c., p. 74; MILNE-EDWARDS & BOUVIER, Mem. Mus. Harvard, xiv, No. 3.
- P. boletifer*, St. Vincent, p. 84, pl. vi, figg. 19-22, *alexandri*, Santa Cruz, p. 87, pl. vi, figg. 23-26, *rosaceus*, Grenada, p. 97, pl. vii, figg. 10-17, MILNE-EDWARDS & BOUVIER, *t. c. n. spp.*
- Spiropagurus caribbensis*, Flannegan Passage, p. 116, pl. viii, figg. 26-30, MILNE-EDWARDS & BOUVIER, *t. c. n. sp.*
- Sympagurus arcuatus*, Dominica, p. 67, pl. v, figg. 21-28, MILNE-EDWARDS & BOUVIER, *t. c.*; *S. ruticheles*, Azores, p. 70, pl. x, figg. 1-14, MILNE-EDWARDS & BOUVIER, Campagnes du yacht l'Hirondelle, vii: n. spp.
- Tomopagurus*, n. g., p. 70, *rubropunctatus*, Barbadoes, p. 71, pl. vi, figg. 1-6, MILNE-EDWARDS & BOUVIER, Mem. Mus. Harvard, xiv, No. 3, n. sp.

(7) *Thalassinidea*, *Astacidea*, and *Scyllaridea*.

- Arctus rubens*, Gulf of Manaar, p. 165, ALCOCK & ANDERSON, J. Asiat. Soc. Bengal, lxiii, n. sp.
- Callianassa cæcigena*, Bay of Bengal, p. 163, ALCOCK & ANDERSON, *t. c. n. sp.*
- Cambarus acherontis*, Florida, pp. 125-127; LÖNNBERG, Zool. Anz. xvii; *C. faxonii*, Arkansas, p. 1042, MEEK, Amer. Natural. xxviii: n. spp.

Gebia africana, Pt. Elizabeth, pl. ii, fig. 4, ORTMANN, Denk. Ges. Jena, viii, n. sp.

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Scyllarus elizabethæ, Port Elizabeth, p. 20, pl. ii, fig. 3, ORTMANN, t. c. n. sp.

(8) *Stenopidea* and *Penæidea*.

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(9) *Caridea*.

For revision of the species and genera of *Atyidae*, see ORTMANN, P. Ac. Philad. 1894, pp. 387-416 : of *Crangonidae*; ORTMANN, *op. cit.* 1895, pp. 173-197.

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- Palæmonella amboinensis*, p. 206, pl. ix, fig. 27, *affinis*, p. 208, Amboina, ZEHNTER, Rev. Suisse Zool. ii; *P. laccadivensis*, Laccadive Sea, p. 157, ALCOCK & ANDERSON, J. Asiat. Soc. Bengal, lxiii : n. spp.
- Philonicus cervicalis*, Amboina, p. 210, pl. ix, fig. 26, ZEHNTER, Rev. Suisse Zool. ii, n. sp.
- Plesionika bifurca*, Laccadive Sea, p. 155, ALCOCK & ANDERSON, J. Asiat. Soc. Bengal, lxiii, n. sp.
- Pontonia pinnae*, Dar-es-Salaam, p. 16, pl. i, fig. 5, ORTMANN, Denk. Ges. Jena, viii, n. sp.
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- Anaspides*, n. n. for *Anaspis*, Thoms., preocc., p. 286; THOMSON, Tr. Linn. Soc. London, vi, pt. 3, p. 286. *A. tasmanica*, fully figured and described, its affinities and significance discussed; THOMSON, *t. c.* pp. 285-301, pls. xxiv-xxvi.
- Boreomysis californica*, Gulf of California, p. 106, ORTMANN, Bull. Harvard Coll. xxv, n. sp.
- Synopsis of known species of *Boreomysis*; ORTMANN, *t. c.* pp. 105 & 106.
- Callomysis*, n. g. *maculata*, California, p. 582, HOLMES, P. Calif. Ac. iv, pt. 2, n. sp.
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- Katamysis*, n. g., p. 64, *warpachowskyi*, Caspian Sea, p. 65, pl. vii, SARRS, Bull. Ac. St. Petersb. (4) xxvi, n. sp.
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- Pseudericthus communis*, Sargasso Sea, p. 86, pl. viii, fig. 5, *distinguendus*, S. Equatorial current, p. 86, HANSEN, *t. c.* n. sp.
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- Lysiosquilla multifasciata*, Bombay, p. 1, pl. i, figg. 4-7, WOOD-MASON, New Squillidæ in the Indian Museum, n. sp.
- Squilla foveolata*, Hong-kong, p. 2, pl. ii, fig. 1, WOOD-MASON, *t. c.* ; *S. stridulans*, Bay of Bengal, p. 409, ALCOCK, Ann. Nat. Hist. (6) xiii : n. spp.

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- Mesarmadillo heterodoxus*, Diego Suarez, p. 182, DOLLFUS, Mem. Soc. zool. France, 1895, n. sp.
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- Munnoniscus*, n. g. of *Cabiropsidae*, for *Cryptothiria marsupialis*, Sars (in part), p. 444, GIARD & BONNIER, Bull. Sci. France Belgique, xxv, n. sp.
- M. sarsi* = *marsupialis*, Sars (in part), GIARD & BONNIER, t. c. p. 445, n. sp.
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- Phreatoicus tasmaniae*, Tasmania, in wells, pp. 349-351, pl. xi, THOMSON, Ann. Nat. Hist. (6) xiii; *P. assimilis*, Winchester (N.Z.), in wells, p. 186, pls. xvi & xvii; CHILTON, Tr. Linn. Soc. London, vi, n. spp.
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- Porcellio pubescens*, Venezuela, p. 341, DOLLFUS, Ann. Soc. ent. France, 1893; *P. maculipennis*, Palon (Burma), p. 608, BUDDE LUND, Ann. Mus. Genova, xxxiv : n. spp.
- Seroloniscus*, n. g. of *Cabiropsidae*, *incertus*, p. 445, GIARD & BONNIER, Bull. Sci. France Belgique, xxv, n. sp.
- Sphaeronella diadema*, *microcephala*, pp. 464-478, GIARD & BONNIER, t. c. n. sp.
- Synarmadillo madagascariensis*, Diego Suarez, p. 182, DOLLFUS, Mem. Soc. zool. France, 1895, n. sp.
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- Tanais robustus*, New Jersey, p. 90, pl. v, MOORE, P. Ac. Philad. 1894, n. sp.

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- Amathilla angulosa* (Rathke), doubtfully distinct from *A. homari* (Fabr.);
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- Amathillina affinis*, Caspian Sea, p. 207, pl. vi, figg. 9-19, SARS, Bull. Ac. St. Petersb. (5) i, n. sp.
- Ampelisca gaimardii*, Kröyer, is not that species, nor *A. typica*, Bate, as suggested by Sars, but *A. spinipes*, Boeck.; A. O. WALKER, Ann. Nat. Hist. (6) xv, p. 466.
- Amphilochus melanops*, Menai Straits, p. 298, WALKER, P. Liverp. biol. Soc. ix, n. sp.
- Amphithæ megaloprotopus*, Antigua, p. 397, pls. xiv & xv B, STEBBING, Ann. Nat. Hist. (6) xv, n. sp.
- Andania spinescens*, Bay of Bengal, p. 411, ALCOCK, *op. cit.* xiii, n. sp.
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- Calliope grandoculis*, Bate, probably young of *C. leviuscula* (Kröyer);
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- Calliopius subterraneus*, New Zealand, in wells, redescribed, p. 234, figured, pl. xxii, figg. 1-15, & pl. xxiii, figg. 1-18; CHILTON, Tr. Linn. Soc. London, vi.
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- Corophium bonellii*, Milne-Edwards, is *C. crassicorne*, Bruzelius, ♀;
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- Crangonyx compactus*, Ch., New Zealand, in wells, redescribed, p. 220, figured, pl. xx, figg. 1-30, CHILTON, Tr. Linn. Soc. London, vi.
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- G. fragilis*, Ch., New Zealand, in wells, redescribed, p. 227, figured, pl. xxi, figg. 1-25; CHILTON, Tr. Linn. Soc. London, vi.

- G. tenuimanus*, Bate, is *Mera batei*, Norman, ♀ ; A. O. WALKER, Ann. Nat. Hist. (6) xv, p. 471.
- Gmelina*, n. g., p. 191, *costata*, Caspian Sea, p. 192, pl. iii, SARS, Bull. Ac. St. Petersb. (5) i, n. sp.
- Gossea microdeutopa*, Bate, apparently *Apherusa jurinii* (M.-Edw.) ; A. O. WALKER, Ann. Nat. Hist. (6) xv, p. 469.
- Hippomedon robustus*, Norway, p. 679, Suppl., pl. iii, fig. 1, SARS, Crustacea of Norway, i (Appendix), n. sp.
- Hyperia tauriformis*, Bate, = *Hyperoche lütkeni*, Bovallius, 1887, which becomes *Hyperoche tauriformis* ; A. O. WALKER, Ann. Nat. Hist. (6) xv, p. 476.
- Idwella*, n. g., p. 536, for *Lilljeborgia aquicornis*, Sars, figured, p. 537, figured, p. 190 ; SARS, Crustacea of Norway, i.
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- Lysianassa audouiniana*, Bate, = *Perrierella crassipes*, Chevreux & Bouvier, and becomes *Perrierella audouiniana* (Bate) ; A. O. WALKER, Ann. Mag. Nat. Hist. (6) xv.
- Megamera brevicaudata*, Bate, is *Elasmopus rapax* (Costa) ; A. O. WALKER, t. c. p. 471.
- Melphidippa macrura*, Norway, p. 484, pl. clxx, fig. 1, SARS, Crustacea of Norway, n. sp.
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- M. stimpsoni*, Bate, is *Synchelidium brevicarpum* (Bate) ; A. O. WALKER, Ann. Nat. Hist. (6) xv, p. 466.
- Nannonyx spinimanus*, Liverpool Bay, pp. 49, 292, & 293, pl. xviii, figg. 1-11, WALKER, P. Liverpool biol. Soc. ix, n. sp.
- Normanion amblyops*, Norway, p. 674, SARS, Crustacea of Norway, i, n. sp.
- Oediceros parvimanus*, Bate, = *Halimedes mülleri*, Boeck., which becomes *H. parvimanus* (Bate) ; A. O. WALKER, Ann. Nat. Hist. (6) xv, p. 466.
- Orchestia incisimana*, Chev., = *O. crassicornis*, Costa ; CHEVREUX, Bull. Soc. ent. France, lxii, p. cxcii.
- Paracyamus*, n. g., for *Cyamus boopsis*, Lütck., p. 669, pl. ccxl ; SARS, Crustacea of Norway, i.
- Pherusa bicuspis* (Krøyer) is not *Anphithoë bicuspis*, Kr. ; A. O. WALKER, Ann. Nat. Hist. (6) xv, p. 468.
- Photis pollex*, Menai Strait, p. 312, pl. xix, fig. 16, WALKER, P. Liverp. biol. Soc. ix, n. sp.

- Phoxus simplex*, Bate, is *Phoxocephalus hollbölli* (Kröyer), young; A. O. WALKER, Ann. Nat. Hist. (6) xv, p. 466.
- Podocerus odontonyx*, Norway, p. 597, pl. ccciii, fig. 2, G. O. SARS, Crustacea of Norway, i, n. sp.
- P. herdmani*, Walker (= *P. odontonyx*, Sars), Liverpool Bay, p. 314, A. O. WALKER, Tr. Liverp. biol. Soc. ix. *P. variegatus*, Leach, is distinct both from *P. falcatus* (Montagu), and *Ianassa capillata* (Rathke); A. O. WALKER, Ann. Nat. Hist. (6) xv, p. 472. *P. falcatus* (Mont.), young, probably identical with *P. herdmani*, Walker (= *P. odontonyx*, Sars); A. O. WALKER, t. c. p. 472.
- Podoprionella*, n. g., p. 687, *norvegica*, p. 688, Suppl., pl. iv, SARS, Crustacea of Norway, i (Appendix), n. sp.
- Proto goodsirii*, Bate, is *Phtisica marina*, Slabber, ♂; A. O. WALKER, Ann. Nat. Hist. (5) xv, p. 474.
- Protomedeia hirsutimana*, Bate, is not identical with *L. pilosus*, Zaddach, as stated by Sars; A. O. WALKER, t. c. p. 469.
- Pseudotrilon*, n. g. of *Syrrhoide*, *bouvieri*, p. 166, Gabès, CHEVREUX, Bull. Soc. zool. France, xx, n. sp.
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- Scina acanthodes*, p. 352, pl. li, *stenopus*, p. 354, pl. liia, *cedicarpus*, p. 356, pl. liib, *rattrayi*, p. 358, pl. liiia, *concors*, p. 360, pl. liiib, *similis*, p. 362, pl. liva, *uncipes*, p. 363, pl. livb, Tropical Atlantic Ocean, STEBBING, t. c. n. spp.
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- Estheria digueti*, Lower California, p. 107, RICHARD, Bull. Mus. Paris, 1895; also Bull. Soc. zool. France, xx, p. 102; *E. gifuensis*, Japan, pp. 8-12, ISHIKAWA, Zool. Mag. Tokyo, vii, No. 3 : n. spp.
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For synopsis of suborders, families, subfamilies, and genera of Marine *Ostracoda*, see MÜLLER, Die Ostracoden des Golfes von Neapel, pp. 390-394.

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- Eucytherura*, n. g., p. 305, *angulata*, *alata*, *gibbera*, p. 307, Bay of Naples, MÜLLER, *t. c. n. spp.*
- Krithe similis*, Bay of Naples, p. 359, MÜLLER, Ostracoden des Golfes von Neapel, n. sp.
- Limnocythere neocomensis*, p. 369, Switzerland, ZSCHOKKE, Rev. Suisse Zool. (2) ii, n. sp.
- Loxoconcha stellifera*, p. 343, *minima*, *levis*, p. 344, *pellucida*, *parallela*, p. 345, *versicolor*, *littoralis*, p. 346, *mediterranea*, *decipiens*, p. 347, Bay of Naples, MÜLLER, Ostracoden des Golfes von Neapel, n. spp.
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- Microcytherura*, n. g., *nigrescens*, Bay of Naples, p. 383, MÜLLER, *t. c. n. sp.*
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- Sclerochilus levis*, p. 283, *æquus*, p. 284, Bay of Naples, MÜLLER, *t. c. n. spp.*
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- Argillæcia acuminata*, p. 261, *bulbifera*, p. 262, *minor*, *levis*, p. 263, *caudata*, p. 264, Bay of Naples, MÜLLER, *t. c. n. spp.*
- Candona croghaniana*, Atlanta, p. 20, pl. viii, figg. 24-33, *delawarensis*, Delaware, p. 21, pl. viii, figg. 35-40, TURNER, Bull. Denison Univ. viii, n. spp.
- Cylindroleberis lobianci*, Bay of Naples, p. 220, pl. iv, fig. 40, MÜLLER, Ostracoden des Golfes von Neapel, n. sp.
- Cyclocypris pygmæa*, Moscow, p. 294, fig. 9, CRONEBERG, Bull. Soc. Moscou, 1894, No. 3, n. sp.
- Cypria atlantica*, Gulf of Guinea, p. 134, pl. xiv, figg. 31-33, T. SCOTT, Tr. Linn. Soc. London, vi, p. 1, n. sp.

- Cypris burlingtonensis*, Delaware, p. 17, pl. vii, figg. 14-23, TURNER, Bull. Denison Univ. viii, n. sp.
- Erpetocypris peregrina*, Moscow, p. 299, fig. 15, CRONEBERG, Bull. Soc. Moscou, 1894, No. 3, n. sp.
- Erythrocypris*, n. g., p. 256, *frequens*, *obtusa*, p. 257, *rara*, *serrata*, p. 258, *pallida*, *acuminata*, p. 259, *discrepans*, p. 260, Bay of Naples, MÜLLER, Ostracoden des Golfes von Neapel, n. spp.
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- Phlyctenophora africana*, Gulf of Guinea, p. 135, pl. xiv, figg. 3-35, T. SCOTT, Tr. Linn. Soc. London, vi, n. sp.
- Pontocypris*, n. g., *spinosa*, Bay of Naples, p. 255, pl. x, figg. 7 & 8, MÜLLER, Ostracoden des Golfes von Neapel, n. sp.
- Pontocypris pirifera*, p. 247, *subfusca*, p. 248, *succinea*, *setosa*, p. 249, *declivis*, p. 250, *levis*, *pellucida*, p. 251, *mediterranea*, *monstrosa*, p. 252, *dispar*, p. 253, *maculosa*, p. 254, Bay of Naples, MÜLLER, *t. c.*; *P. subreniformis*, Gulf of Guinea, p. 136, pl. xiv, figg. 38 & 39, T. SCOTT, Tr. Linn. Soc. London, vi, pt. 1, n. spp.

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- Asterope squamiger*, Gulf of Guinea, p. 140, pl. xiv, figg. 56 & 57, T. SCOTT, Tr. Linn. Soc. London, vi, n. sp.
- Cypridina squamosa*, Gulf of Naples, p. 207, pl. ii, fig. 3, MÜLLER, Ostracoden des Golfes von Neapel, n. sp.
- Gigantocypris*, n. g., *pellucida*, W. coast of Central America, p. 164, MÜLLER, Bull. Mus. Harvard, xxvii, No. 5, n. sp.
- Philomedes aspera*, p. 210, pl. iii, fig. 3, *levis*, p. 211, pl. iii, fig. 4, Gulf of Naples, MÜLLER, Ostracoden des Golfes von Neapel, n. spp.
- Pseudophilomedes*, n. g., p. 211, *foveolata*, *angulata*, Bay of Naples, p. 212, MÜLLER, *t. c. n. spp.*
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- Conchœcia procera*, Bay of Naples, p. 228, pl. vi, fig. 47, &c., MÜLLER, *t. c.*;
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- Conchœcissa loricata*, Mediterranean, p. 4, pl. iii, figg. 24-30, CLAUS, Denk. Ak. Wien, lxi, n. sp.
- Halocypris elongata*, p. 141, pl. xv, figg. 1 & 2, *torosa*, pl. xv, figg. 3 & 4, *aculeata*, figg. 5 & 6, p. 142, *punica*, figg. 7 & 8, p. 143, Gulf of Guinea, T. SCOTT, Tr. Linn. Soc. London, vi, pl. 1, n. spp.

- Polycope rostrata, tuberosa*, p. 234, *maculata, reticulata*, p. 235, *frequens, striata*, p. 236, *fragilis, dispar*, p. 237, Bay of Naples, MÜLLER, Ostracoden des Golfes von Neapel, n. spp.
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 Synopsis of genus *Dichelaspis* ; STEBBING, t. c. p. 21.
Gymnolepas, n. g., p. 33, *pellucida*, Atlantic (on *Medusa*), p. 34, pl. ii, fig. 19, AURIVILLIUS, Svenska Ak. Handl. 1894-95, No. 7, n. sp.
Megalasma carino-dentatum, Indian Ocean, p. 84, fig. 6, WELTNER, SB. Ges. naturf. Berlin, 1894, n. sp.
Pœcilasma amygdalum, Java Sea, p. 10, pl. i, figg. 4-6, *lenticula*, Java Sea, p. 12, pl. i, figg. 7 & 8, *tridens*, Philippine Is., p. 14, pl. i, fig. 13, AURIVILLIUS, Svenska Ak. Handl. 1894-95, No. 7, n. spp.
Scalpellum squamuliferum, Indian Ocean, p. 80, figg. 2-5, WELTNER, SB. Ges. naturf. Berlin, 1894, n. sp.
Trichelaspis, n. g., p. 443, *forrestii*, Antigua, p. 445, figg. A & B, STEBBING, Ann. Nat. Hist. (6) xiii, n. sp.

GIGANTOSTRACA, i. c.,

TRILOBITA, XIPHOSURA AND EURYPTERIDA.

- BEECHER, C. E. (1) Appendages of the pygidium of *Triarthrus*. Amer. J. Sci. xlvii, pp. 298-300, pl. vii.
 —. (2) Structure and appendages of *Trinucleus*. T. c. 1895, pp. 307-311, 1 pl.
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The following new forms described:—

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The following new forms described:—

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O. reticulatus, p. 668, pl. xxx, figg. 1-6 & 8-14, *gigas*,

O. intermedius, p. 666, pl. xxxii, fig. 7.

Olenelloides, n. g., p. 668, *armatus*, p. 669, pl. xxii, figg. 1-6.

SCHMIDT, F. Revision der ostbaltischen silurischen Trilobiten. Abth. iv. Calymeniden, Proetiden, Bronteiden, Harpediden, Trinucleiden, Remopleuriden, und Agnostiden. Mem. Ac. St. Petersb. (7) xlii, No. 5.

Calymene conspicua, p. 20, pl. i, figg. 8-12, *ohhesaarensis*, p. 22, fig. 13, *nieszkowskii*, p. 29, pl. ii, figg. 17 & 18.

Ptychmetopus, n. subg. of *Calymene*, for *volborthi*, p. 32, pl. ii, fig. 21.

Bronteus estonicus, p. 36, pl. iii, figg. 1-7

- Proetus concinnus*, Dalm., n. var. *ossiliensis*, p. 48, pl. iv, fig. 19,
planedorsatus, p. 49, pl. iv, figg. 21 & 22, *kertelensis*, p. 56,
 pl. iv, fig. 37, *wesenbergensis*, p. 57, pl. iv, fig. 38.
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Ampyx volborthi, p. 80, pl. vi, figg. 11-20, *linarssoni*, p. 83, pl. vi,
 fig. 21.
Remopleurides nanus, var. *elongata*, p. 89, pl. vi, fig. 36.
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 p. 487, pl. xiv, figg. 7-12.
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 The following species figured and described :—
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 fig. 2, *scotti*, p. 536, pl. xv, fig. 3, and *C. johnsoni*, n. sp.,
 p. 537, pl. xv, figg. 4-7.

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— (3) *Pycnogonida* from Killala Bay. *T. c.* No. 8, p. 168.

— (4) (On Irish Pycnogonids.) *Op. cit.* iii, pp. 66 & 67.

NORMAN, A. M. A month on the Trondhjem Fiord. *Ann. Nat. Hist.* (6) xiii, pp. 151-154.

Chatonymphon spinosissimum, n. n. for *C. spinosum*, Sars, p. 154.

XI. ARACHNIDA.

BY

R. I. POCCOCK.

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INTRODUCTION.

OWING to the omission of the literature of *Arachnida* from the Zool. Rec. of 1894, an analysis of the papers for that year, as well as for 1895, is contained in the following pages. The arrangement followed is substantially the same as that adopted for 1893, with the exception that for the sake of economising space, by fusing together two or more families, the alphabetical arrangement of the groups of this rank has not been strictly adhered to.

I. TITLES.*

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- . (13) Some Acarians from Sphagnum Swamp. *T. c.* pp. 128–130.
- . (14) The *Nemastomatidæ* and *Trogulidæ* of the United States. *Psyche*, vii, pp. 11 & 12.
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II. BIOLOGY.

A. PAPERS DEALING WITH ANATOMY, EMBRYOLOGY, TAXONOMY, BIONOMICS, &c., &c.

1. *General, Scorpiones, Pedipalpi, Solifugæ, Pseudoscorpiones, and Opiliones.*

- Classification of *Arachnida* and their relationship with other Arthropoda; KINGSLEY, BANKS (19).—Phylogeny of *Arachnida*; J. WAGNER (1).
- On the external organs of *Arachnida*; HANSEN, CARPENTER (2).
- Endosternite of *Scorpio* and other *Arachnida*; BERNARD (1), SCHIMKÉWITSCH (1, 2).
- Geographical distribution of Scorpions; POCOCK (13).
- Classification of Scorpions; KRAEPELIN (1, 2): of *Tarantulidæ*; KRAEPELIN (4), POCOCK (3): *Thelyphonidæ*; POCOCK (2).
- Development of Scorpions; BRAUER (1, 2).
- Morphology and embryology of *Pedipalpi*; LAURIE.
- Coxal gland of *Thelyphonus*; ADENSAMER.
- Presence of silk glands in *Phrynus*; POCOCK (16), BERNARD (4).—Structure and homology of the penis in *Phrynus*; POCOCK (3), BERNARD (4).
- Lymphatic glands in Scorpions; KOWALEWSKY.
- Vestigial stigmata in *Thelyphonus* and *Scorpio*; BERNARD (3).
- On the generative organs of *Galeodes*; BIRULA (3).
- Presence of lateral eyes in *Galeodes*; BERNARD (2).
- Eyes of *Opiliones*; PURCELL (1, 2).
- Vitality of Scorpions; DISSARD & NOÉ.—Prolonged youth of Scorpions; JAQUET: young of the Scorpion; NOÉ.
- Effects of the poison of Scorpions; *Insect Life*, vii, p. 260.
- Habits of *Thelyphonus*; POCOCK (17).
- On the young of *Thelyphonidæ*; HAASE.
- Mode of life of Chelifers; RECKER.—Chelifers and Flies; BANKS (3), HESS.

2. *Araneæ*.

Classification of *Mygalomorphæ*; POCOCK (4, 10): of *Araneæ veræ*; SIMON (9-11): the systematic position of *Desis*; POCOCK (8).

Development of lungs; SIMMONS, JAWOROWSKI (1), CARPENTER (3): the lungs, entapophyses, and genital ducts; PURCELL (3): of the generative organs; JAWOROWSKI (2): of the spinning apparatus and abdominal limbs of *Trochosa*; JAWOROWSKI (3): of the vitelline nucleus in *Salticus*; BISOGNI.

Fate of the coelom; KISHINOYŪ.

Stridulatory organs and stridulation of *Thomisoides (Sicarius)*; POCOCK (14), SIMON (2): of *Cambridgea*; POCOCK (15): of *Scytodes*; F. CAMBRIDGE (7): of *Selenocosmiidæ*; POCOCK (4, 15), PEAL, SPENCER: of *Ornithoctonidæ*; POCOCK (4, 15).

Copulation of *Nephila*; BERTKAU.

General observations on bionomics of Spiders; MCCOOK, MULLER (2), SCHAW.

Sagacity of Spiders; MOSLEY.

Habits of *Nephila*; RAINBOW (3), COCKERELL (3): of the Hunting Spider of the vine; COCKERELL (1).

Mode of life of *Atypus*; ENOCK: of *Argyroneta*; JAMESON, JOHNSON.

Instincts of Spiders; CAMBOUÉ, PHILIPP.

Effects of the poison of *Mygale*; MEADEN, see also Insect Life, vii, p. 260: of *Lathrodectus*; PHILIPPI, PUGA-BORRE.

On habits and distribution of Spiders; KOCH (1, 2).

Protective resemblance in *Thomisus*; LEMBERT: of Spiders; WEBSTER.

Mimicry of *Salticus formicarius*; ADLERZ.

Spiders and wasps; PECKHAM (5).

Snare of the Cactus-Spider of the Canary Is.; REBEUR-PASCHWITZ.

—Snare of *Lathrodectus*; DUGÉS (1).—Webs of Gossamer Spiders; HOWARD.

Origin and evolution of web-spinning in Spiders; POCOCK (16).

Industries of Spiders and their value in Taxonomy; W WAGNER.

Parasites of Spiders; ASHMEAD, BIGNELL: of Spider's eggs; DAVIDSON.

Use of silk in *Nephila madagascarienses*; Ent. News Philad. v, p. 79.

Use of *Lathrodectus* in medicine; HERRERA.

3. *Acari*.

Classification of *Acari*; BANKS (17), CANESTRINI (2), MICHAEL (2, 3).

Embryology of *Acari*; SUPINO (2): of *Ixodes calcaratus*; J. WAGNER (2).

Anatomy of *Ixodes*; BRANDES.

Anatomy of *Hydrachnidæ*; MICHAEL (5).

Structure of brain of *Acari*; MICHAEL (4).

Observations on the *crista* of the *Trombidiidae*; TROUSSERT (2).

Parthenogenesis of *Sarcoptidae*; TROUSSERT (4, 16).

Progenesis of *Sarcoptidae*; TROUSSERT (17).

Oviposition of *Ixodes*; SCHLECHTENDAL.

Respiration of parasitic *Hydrachnidae*; GIROD.

Vitality of *Argas reflexus*; PLANCHON.

Carnivorous habits of *Trombidiidae*; TROUSSERT (3).

Acari parasitic on Mussels; LAMPERT: on *Tettix*; HANCOCK (1, 2, 3), TROUSSERT (21): on *Lampyrus*; GRUVEL, TROUSSERT (20), MEGNIN: on the Beaver; FRIEDRICH: on *Mammalia*; MATZDORFF, PARONA: in the urogenital-apparatus of man; MIYAKE & SCRIBA.

On different *Acari* found on mankind; MONIEZ (3).—*Acari* in the nostril of Seals; NEHRING (1).

Effects upon cattle of the parasitism of *Ixodidae* and treatment of the malady; BARBER (1, 2, 3).

Acari infesting the nasal cavities of birds; TROUSSERT (6, 8, 14).

Notes on the pigeon-Mite; WARD.

Life-history of *Dermanyssus gallinae*; Insect Life, vi, p. 342.

Notes on the chicken Tick (*Argas americanus*); Insect Life, vii, pp. 417 & 418.

Acari from ants' nests; MONIEZ (1), WASMANN.

Acari parasitic on plants; MCCUE, NALEPA (1-10), NEWSTEAD, SLINGERLAND (1, 2), MANGIN.

Bionomics of *Tydeus*; MONIEZ (2).

Food of *Tyroglyphidae*; MONIEZ (4).

Mimicry and protective instincts in *Syringobia*; TROUSSERT (5).

Abundance of *Tetranychus*; MUNDL.

4. *Tardigrada*.

Morphology and embryology of *Tardigrada (Macrobiotus)*; ERLANGER (1-4).

Vitality of *Tardigrades*; LANCE.

On the alimentary canal of *Pentastoma*; KULAGIN.

B. DISTRIBUTION.

Palæarctic and Ethiopian Regions.

Arctic Regions: *Acari*; TROUSSERT (13, 18).

Helsingfors: *Hydrachnidae*; NORDENSKIÖLD.

British Is.: Spiders; O. P. CAMBRIDGE (3, 4), F. O. P. CAMBRIDGE (3, 5, 6): *Hydrachnidae*; SOAR.—Cumberland and Lake District; Spiders; F. O. P. CAMBRIDGE (1).

Scotland: Spiders; GRANT, O. P. CAMBRIDGE (1, 2), CARPENTER (7).—Pembrokeshire; YOUNG.—Inverness-shire: Spiders; CARPENTER & EVANS (1).—Argyllshire: Spiders; CARPENTER & EVANS (2).—Edinburgh:

Spiders; CARPENTER & EVANS (3).—*Opiliones* and *Pseudoscorpiones*; CARPENTER & EVANS (4).

Ireland: Spiders; CARPENTER (4, 5, 6).

Channel Is.: Spiders; F. O. P. CAMBRIDGE (2).

Normandy: *Halacari*; GADEAU DE KERVILLE (1), TROUESSART (15); Spiders; GADEAU DE KERVILLE (2).

Calais: *Halacari*; TROUESSART (19).

Corsica: *Arachnida*; CARPENTER (1).

Madeira and Canary Is.: Spiders; BÖSENBERG, SCHMITZ.

Switzerland: Spiders, *Opiliones*, and *Cheliferidae*; MÜLLER & SCHENKEL.

Italy: *Acari*; BERLESE, TERRENZI.

Germany: *Hydrachnida*; KOENIKE (3, 4, 6).

Juist: *Hydrachnida*; KOENIKE (2).

Saxony and Central Europe: Hydrachnids; PIERSIG (1–8).

Hungary: Spiders; CHYZER & KULCSZYNSKI (1, 2): *Theridiidae*; KULCSZYNSKI (3): *Opiliones*; LENDL: *Acari*; SUPINO.

Bohemia: Hydrachnids; FRIČ & VÁVRA: Spiders; NOSEK.

Bessarabia and Transcaucasia: Spiders; KULCSZYNSKI (2).

Russian Empire: *Lycosida*; SCHMIDT: *Ixodida*; BIRULA (2).—Moscow: Spiders; FREIBURG (1, 2): *Pseudoscorpiones*; TICHOMIROVA.

Siberia: *Attida*; KULCSZYNSKI (4).

Mongolia and China: Spiders; SIMON (13).

Palestine and Syria: *Hydrachnida*; KOENIKE (5): *Arachnida*; PAVESI (3).

South Arabia: *Aranea*, *Pedipalpi*, Scorpions; POCOCK (12).

Egypt and Soudan: Scorpions; POCOCK (12).

Somaliland: *Arachnida*; PAVESI (1, 2).

East Africa: Spiders; BÖSENBERG & LENZ: Scorpions and *Pedipalpi*; KRAEPELIN (3): *Gamasida*; KRAMER (2).

St. Thomas (Gulf of Guinea): Spiders; MÖLLER.

S. W. Africa: *Arachnida*; LENZ.

Oriental and Australian Regions.

India: Scorpions; POCOCK (1): *Solifugæ*; POCOCK (6).

Burma: Spiders; THORELL (4).

Java: *Arachnida*; THORELL (1): Spiders; HASSELT: *Opiliones*; LOMAN.

Singapore: Spiders; THORELL (3).

Philippine Is.: Spiders; SIMON (3).

New South Wales: Spiders; RAINBOW (1, 3).

New Zealand: Spiders; URQUIHART.

Nearctic and Neotropical Regions.

United States: Spiders; BANKS (1, 2, 16): *Attidæ*; BANKS (6): *Epeiridæ*; MCCOOK: *Opiliones*; BANKS (9, 14, 15): *Acari*; BANKS (17): *Oribatidæ*; BANKS (18); *Hydrachnidæ*; KOENIKE (1).

Canada: Spiders; EMERTON.

Michigan: Spiders; BAKER.—Missouri: Spiders; BANKS (4).—New York: *Opiliones*; BANKS (7).—Washington: *Opiliones*; BANKS (5).—Colorado: *Lycosidæ*; BANKS (8).—Long I.: Spiders; BANKS (12).—Sphagnum Swamp: *Acari*; BANKS (13).

California: *Opiliones*; BANKS (11).

Lower California: Spiders; SIMON (7, 8).

Central America: Spiders; O. P. CAMBRIDGE (5).

West Indies: *Pedipalpi*; POCOCK (11).—Trinidad: *Attidæ*; PECKHAM (3).—St. Vincent: Spiders; SIMON (1).—Jamaica: Ticks; TOWNSEND.

Demerara: Spiders; POCOCK (8).

Brazil: Spiders; GÖLDI.

Argentine Republic: *Opiliones*; SORENSEN: *Arachnidæ*; THORELL (1).

Tierra del Fuego; Spiders; SIMON (14).

S. Georgia: MICHAEL (1).

III. SYSTEMATIC.

SCORPIONES.

For a revision of the subfamilies, genera, and species of *Scorpionidæ* and

Bothriuridæ, see KRAEPELIN, Jahresber. Hamburg. Anst. xi.

Bothriurus burmeisteri, Argentine, p. 227, KRAEPELIN, *t. c. n. sp.*

Broteas panamensis, Panama, p. 382, THORELL, Bull. Soc. ent. Ital. xxv, n. sp.

Bulhus acute-carinatus, Sim., *dimidiatus*, Sim., discussed; POCOCK, J. Linn. Soc. xxv, pp. 292 & 293: for the former, see also THORELL, Bull. Soc. ent. Ital. 1894, p. 364.

B. anthracinus, Hadramaut, p. 294, pl. ix, fig. 1, *jayakari*, Muscat, p. 300, pl. ix, fig. 2, *alticola*, Chitral, p. 302, pl. ix, fig. 2, POCOCK, J. Linn. Soc. xxv, n. spp.

Centromachus, n. g. of *Bothriurida*, *pocockii*, Valparaiso, p. 238; KRAEPELIN, Jahresber. Hamburg. Anst. xi, n. sp.

Cherilus margaritatus, India, p. 79, *gemmifer*, Silhet, p. 81, *insignis*, Ladak, p. 82, *ceylonensis*, Trincomalee, p. 83, POCOCK, Ann. Nat. Hist. (6) xiii, n. spp.

Hadogenes, n. g. for *Scorpio trichiurus*, Gerv., p. 113; KRAEPELIN, Jahresber. Hamburg. Anst. xi.

Nanobuthus, n. g. of *Buthidæ*, *andersoni*, Duroor, p. 314, POCOCK, J. Linn. Soc. xxv, n. sp.

Oncocentrus, n. g. for *Centrurus phæodactylus*, Wood; THORELL, Bull. Soc. ent. Ital. xxv, p. 374.

- Opisthacanthus madagascariensis*, Majumba, p. 125; KRAEPELIN, Jahresber. Hamburg. Anst. xi, n. sp.
- Opisthophthalmus intermedius*, Cape Colony, p. 89, *pictus*, Orange Free State, p. 102; KRAEPELIN, *t. c.*
- Parabuthus hunteri*, Duroor, p. 309, *granimanus*, Zeyla, p. 311, pl. ix, fig. 4, *pallidus*, Mombasa, POCOCK, J. Linn. Soc. xxv, n. spp.
- Prionurus australis*, Linn., *priamus*, Koch, *libycus*, *citrinus*, *funestus*, *bicolor*, Hemp. & Ehrb., and *crassicauda*, Oliv., discussed; POCOCK, *t. c.* pp. 303-309.
- Tityus paraguayensis*, Paraguay, p. 19, *bolivianus*, Bolivia, p. 21, KRAEPELIN, Jahresber. Hamburg. Anst. xii, n. sp.
- Scorpio latimanus*, N. India, p. 74, *gravimanus*, Ceylon, p. 75, POCOCK, Ann. Nat. Hist. (6) xiii; *S. arabicus*, Homran, p. 58, *pallidus*, Baravez, Sumatra, p. 60, KRAEPELIN, Jahresber. Hamburg. Anst. xii: n. spp.
- S. africanus* (Linn.), *subtypicus*, p. 69; KRAEPELIN, *t. c.*, n. subsp.
- S. bengalensis* (Koch), *cæsar*, Koch, *phipsoni*, Poc., discussed; POCOCK, Ann. Nat. Hist. (6) xiii, pp. 72 & 73.
- Scorpiops tenuicauda*, Deccan, p. 77, POCOCK, *t. c.*, n. sp.

PEDIPALPI.

THELYPHONIDÆ.

- Synopsis of the genera; POCOCK, Ann. Nat. Hist. (6) xiv, pp. 120 & 121.
- Labochirus*, n. g. for *Thelyphonus proboscideus*, Butl., pp. 132 & 133; POCOCK, *t. c.*
- Mastigoproctus*, n. g., containing *Thelyphonus giganteus*, Luc., *maximus*, Tarn., and *proscorpio*, Latr., pp. 129 & 130; POCOCK, *t. c.*
- M. butleri*, Brazil, p. 130, pl. ii, fig. 5, p. 130, POCOCK, *t. c.*, n. sp.
- Mimoscorpium*, n. g. for *Thelyphonus puginator*, Butl., p. 132, pl. ii, fig. 6; POCOCK, *t. c.*
- Thelyphonellus*, n. g. for *Thelyphonus amazonicus*, Butl., p. 133; POCOCK, *t. c.*
- Thelyphonus rufus*, Butl., = *Mastigoproctus giganteus*, Luc., p. 133, *T. philippensis*, Butl., = *T. manillanus*, Koch, p. 134; POCOCK, *t. c.* *T. sepiaris*, Butl., syn. *nigrescens*, Butl., *indicus*, Stol., *beddomei*, Stol., *lucanoides* compared with *caudatus*, p. 122; POCOCK, *t. c.*
- T. hosei*, Mt. Dulit, pp. 123 & 124, pl. ii, fig. 1, *anthracinus*, Batu Song, p. 125, *tarnanii*, Billiton I., p. 125, pl. ii, fig. 2, POCOCK, *t. c.*; *T. niger*, China, p. 30, *schimkewitschii*, Bangkok, p. 31, TARNANI, Zool. Anz. xvii: n. spp.
- Typopeltis*, n. g., p. 126, for *crucifer*, loc. ?, p. 128, pl. ii, fig. 4, POCOCK, Ann. Nat. Hist. (6) xiv, n. sp.
- T. stimpsoni* (Wood), described, p. 126, and figured pl. ii, fig. 3; POCOCK, *t. c.*
- Uroproctus*, n. g. for *Thelyphonus assamensis*, Stol., p. 129, pl. ii, fig. 7; POCOCK, *t. c.*

TARANTULIDÆ.

- For revision of the genera and species of this family see KRAEPELIN, *Abh. Hamburg. Anst.* xiii, No. 3, and POCOCK, *Ann. Nat. Hist.* (6) xiv.
- Damon variegatus*, Perty, = *annulatifpes*, *diadema*, *australis*, *cinctipes*, p. 18; KRAEPELIN, *Abh. Hamburg. Ges.* xiii, No. 3.
- Heterophrynus*, n. g. for *Phrynus chiracanthus*, Gerv.; POCOCK, *J. Linn. Soc.* xxiv, p. 527, and *Ann. Nat. Hist.* (6) xiv, pp. 275 & 286.
- H. chiracanthus*, Gerv., *batesii*, Butl., and *longicornis*, Butl., diagnosed; POCOCK, *t. c.* p. 287.
- H. cervinus*, New Granada, p. 288, pl. viii, fig. 1; POCOCK, *t. c.* n. sp.
- Nanodamon*, n. g., p. 289, *diadema*, Sim., *annulatifpes*, Wood, p. 293; POCOCK, *Ann. Nat. Hist.* (6) xiv.
- N. cinctipes*, S. Africa, p. 293, POCOCK, *t. c.* n. sp.
- Neophrynus*, n. n. (= *Tarantula*, auct.), 4 species admitted, p. 23; KRAEPELIN, *Abh. Hamburg. Anst.* xiii, No. 3.
- Phrynichus*, Karsch, characterised, p. 289, *jayakari*, Muscat, p. 291, pl. viii, fig. 3, *phipsoni*, Bombay, p. 285, pl. viii, fig. 4, *pusillus*, Ceylon, p. 296, POCOCK, *Ann. Nat. Hist.* (6) xiv, n. spp.
- Phrynoposis*, n. g., p. 275, *spinifrons*, Ciudad, p. 286, POCOCK, *t. c.* n. sp.
- P. coronatus*, Butl., recharacterised, p. 286; POCOCK, *t. c.*
- Tarantula*, Fabr., *Phrynus*, Lam., and *Admetus*, Koch, characterised and discussed; POCOCK, *J. Linn. Soc.* xxiv, pp. 527 & 529, and *Ann. Nat. Hist.* (6) xiv, pp. 273-275. *T. pallasii*, Blanch., Montserrat and Martinique, described, p. 533, pl. xl, fig. 3; POCOCK, *J. Linn. Soc.* xxiv: identified with *reniformis*, Linn.; POCOCK, *Ann. Nat. Hist.* (6) xiv, p. 297. *T.*, Fabr., = *Phrynichus*, Karsch, *reniformis*, Linn. = *lunatus*, *ceylonicus*, *scaber*, *nigrimanus*, *deflersi*, *jayakari*, *phipsoni*, *pusillus*, p. 10; KRAEPELIN, *Abh. Hamburg. Anst.* xiii, No. 3.
- T. barbadosis*, Barbadoes, p. 529, pl. xl, fig. 1, *tessellata*, St. Vincent, Grenada, p. 531, *spinimana*, Haiti, p. 534, pl. xl, fig. 4, *longipes*, Haiti, p. 536, pl. xl, fig. 5, *latifrons*, Haiti, p. 537, pl. xl, fig. 6, *keyserlingii*, Cuba, p. 539, pl. xl, fig. 7, *viridiceps*, Bahamas, p. 540, pl. xl, fig. 7, POCOCK, *J. Linn. Soc.* xxiv; *T. levifrons*, ? Ecuador, p. 279, pl. vii, fig. 1, *azteca*, Mexico, p. 280, pl. vii, fig. 2, *macrops*, S. America, p. 281, pl. vii, fig. 3, *thorellii*, loc. ?, p. 282, pl. vii, fig. 7, *pulchripes*, Colombia, p. 283, pl. vii, fig. 6, *santarensis*, Santarem, p. 284, *gervaisii*, Colombia, p. 285, pl. vii, fig. 5, POCOCK, *Ann. Nat. Hist.* (6) xiv: n. spp.
- Titanodamon*, n. g., p. 289, *johustonii*, Cameroons, p. 291, pl. viii, fig. 2, POCOCK, *t. c.* n. sp.
- T. bassamensis*, Luc., = *granulosus*, Butl., and *savatiери*, Rochebrune, p. 290, *tibialis*, Sim., pp. 290 & 291; POCOCK, *t. c.*
- Stygophrynus*, n. g. for *Charon cavernicola*, Thor., p. 44; KRAEPELIN, *Abh. Hamburg. Anst.* xiii, No. 3.

ARANEÆ.

MYGALOMORPHÆ.

CTENIZIDÆ and DIPLURIDÆ.

- Actinopus hartii*, Trinidad, p. 195; POCOCK, Ann. Nat. Hist. (6) xvi, n. sp.
Aganippe subtristis, Cambr., falls into Simon's group *Cyrtarchenee*;
 POCOCK, t. c. p. 223.
Anemesia, n. g. for *Nemesia tubifer*, Poc., p. 194, pl. v, fig. 4; POCOCK,
 t. c.
Cteniza antipodum and *hexops* are synonymous and belong to the genus
Macrothele, Auss.; POCOCK, t. c. p. 224.
Damarchus oatesii, Moulmein, &c., p. 2, THORELL, Spiders of Burma,
 n. sp.
Enrico, n. g., *mexicanus*, Atoyac, p. 157, CAMBRIDGE, *Araneidea* in Biol.
 Centr.-Amer. n. sp.
Eucteniza mexicana, Auss., discussed; POCOCK, Ann. Nat. Hist. (6) xvi,
 p. 223.
Favila, n. g., *relatus*, Amula, p. 156, CAMBRIDGE, *Araneidea* in Biol.
 Centr.-Amer. n. sp.
Hexops, Auss., = *Macrothele*, Auss.; POCOCK, Ann. Nat. Hist. (6) xvi,
 p. 224.
Idiops cambridgei, Auss., belongs to the genus *Pseudidiops*; POCOCK,
 t. c. p. 223.
Ischnothele, Auss., = *Thelechoris*, Sim.; POCOCK, t. c. p. 224.
Moggridgea abrahami, Camb., = *tidmarshi*, Lenz, does not belong to
Migas, L. Koch; POCOCK, t. c. pp. 187 & 188.
Micromesomma, n. g., p. 190, *cowani*, Central Madagascar, p. 191, POCOCK,
 t. c. n. sp.
Nemesia kirkii, Wellington, p. 204, URQUIHART, Tr. N. Zealand Inst. xxvi,
 n. sp.
Neocteniza, n. g., p. 193, *sclateri*, Demerara, p. 194, pl. v, fig. 3, POCOCK,
 Ann. Nat. Hist. (6) xvi, n. sp.
Paramigas, n. g., p. 188, *subrufus*, Senbendrana, p. 189, pl. v, figg. 1-16,
 POCOCK, t. c. p. 189, n. sp.
Thalerommata gracile, Auss., discussed; POCOCK, t. c. p. 224.
Thelechoris karschii, Kihengo, p. 27, pl. ii, fig. 31; BÜSEBERG & LENZ,
 Jahresber. Hamburg. Anst. xii, n. sp.
Thyropæus, n. g., p. 191, *mirandus*, South Central Madagascar, p. 192,
 pl. v, fig. 2, POCOCK, Ann. Nat. Hist. (6) xvi, n. sp.
Trechona zeburata, Walck., not synonymous with *Trechona venosa*, Auss.;
 POCOCK, t. c. p. 224.

THERAPHOSIDÆ.

- Acanthoscurria cordubensis*, Argentine, p. 28, THORELL, Bih. Svenska Ak.
 xx, pl. iv, No. 4, n. sp.
Bolostromus, Auss., = *Phænothele*, Simon; POCOCK, Ann. Nat. Hist. (6)
 xvi, p. 223.

- Callyntropus*, Auss., based upon young specimens of *Lasiodora*; POCOCK, *t. c.* p. 226.
- Crypsidromus macropus* and *pernix*, Auss., are not congeneric; POCOCK, *t. c.* p. 226.
- Cyrtogramomma*, n. g. (of *Barychelinae*), *monticola*, Mount Roraima, p. 139, POCOCK, *t. c.* n. sp.
- Cyrtopholis antillana*, St. Bartholomew, p. 25, THORELL, Bih. Svenska Ak. xx, No. iv, pt. 4, n. sp.
- Cyrtosternum*, Auss., not synonymous with *Cyrtosternum*, Sim.; POCOCK, Ann. Nat. Hist. (6) xvi, p. 226.
- Eurypelma jheringii* apparently belongs to *Agathostola*, Sim.; POCOCK, *t. c.* p. 227.
- E. minax*, Cordova (Argentine), p. 33, THORELL, Bih. Svenska Ak. xx, pt. iv, No. 4, n. sp.
- Idiommata blackwallii*, Cambr., discussed; POCOCK, Ann. Nat. Hist. (6) xvi, p. 225.
- Ischnocolus obscurus*, Auss., is congeneric with *Hapalopus formosus*, Auss.; *sericeus* based upon a young specimen of an undetermined genus, *hirsutus* based on young *Lasiodora*, *parvus* on young *Eurypelma*, *gracilis* and *rubropilosus* also on young specimens; *janeirus* belongs to the genus *Magulla*; POCOCK, Ann. Nat. Hist. (6) xvi, pp. 225 & 226.
- Hapalopus villosus*, *Ischnocolus pilosus*, *nigrescens*, *Crypsidromus perfidus*, *funestus* are based upon specimens of different sexes and ages of species allied to *Mygale fusca*, Perty; POCOCK, *t. c.* p. 226.
- Lasiodora inmanis*, Auss., belongs to the genus *Xenesthis*, Sim.; POCOCK, *t. c.* p. 227.
- L. weijenberghii*, Cordova (Argentine), p. 31; THORELL, Bih. Svenska Ak. xx, No. 4, pl. 4, n. sp.
- Lycinus*, n. g., p. 36, *longipes*, Cordoba (Argentine), p. 37, THORELL, *t. c.* n. sp.

SELENOCOSMIIDÆ, n. fam.

POCOCK, Ann. Nat. Hist. (6) xv, pp. 168 & 169.

- Coremiocnemis*, Sim., characterised, p. 172, *validus*, East Indies, p. 175, pl. x, fig. 5, POCOCK, Ann. Nat. Hist. (6) xv, n. sp.
- Haploclastus*, *Selenocosmia*, and *Phlogius*, recharacterised; POCOCK, *t. c.* pp. 169 & 170.
- Lyrognathus*, n. g., p. 170, *crotalus*, Assam, p. 175, POCOCK, *t. c.* n. sp.
- Musagetes*, n. g., p. 171, *andersonii*, Mergui, p. 172, *masoni*, Silhet, pp. 172 & 174, pl. x, fig. 6, *hardwickii*, Burdwan, pp. 172 & 174, *bicolor*, Kijouske (Burma), pp. 172 & 174, *fumosus*, N. India, pp. 172 & 174, pl. x, fig. 7, POCOCK, *t. c.* n. spp.
- Phlogius cervinus*, Thayetmyo, p. 5, *fuliginous*, Tharrawaddy, p. 8, *sericeus*, Rangoon, p. 10, *oculatus*, Akyab, p. 13, THORELL, Spiders of Burma, n. spp.

- P. cervinus*, Thor., belongs to the genus *Musagetes*, Poc., *sericeus* and *oculatus*, Thor., to the genus *Chilobrachys*; POCOCK, Ann Nat. Hist. (6) xvi, p. 228.
- Pæcilotheria*, Sim., characterised, p. 170, *subfusca*, Ceylon, p. 171, *striata*, Penang, p. 171, *vittata*, S. India, p. 172; POCOCK, *op. cit.* xv, n. spp.
- Psalmopæus*, n. g., p. 172, *cambridgii*, E. Indies, p. 178, pl. x, fig. 3, POCOCK, *t. c.* n. sp.
- Selenotypus*, n. g., p. 172, *plumipes*, Townsville (Queensland), p. 176, POCOCK, *t. c.* n. sp.

ORNITHOCTONIDÆ, n. fam.

POCOCK, Ann. Nat. Hist. (6) xv, p. 179.

- Citharognathus*, n. g., p. 179, *hosei*, Sarawak, p. 183, POCOCK, Ann. Nat. Hist. (6) xv, n. sp.
- Melopæus*, n. g., p. 179, for *Selenocosmia albostrata*, Sim.; POCOCK, *t. c.*
- Omothymus*, Thor., recharacterised, p. 179; POCOCK, *t. c.*
- Ornithoctonus*, Poc., recharacterised, p. 179; POCOCK, *t. c.*
- Phormingochilus*, n. g., p. 179, *evrettii*, N.-W. Borneo, p. 181, pl. x, fig. 4, *tigrinus*, Kuala Lama, p. 181, POCOCK, *t. c.*, n. spp.

ARACHNOMORPHÆ.

AGALENIDÆ (including ANYPHÆNIDÆ and DESIS).

- Alistra*, n. g., *longicauda*, Lampong (Sumatra), p. 40, THORELL, Bih. Svenska Ak. xx, pt. iv, No. 4, n. sp.
- Anypheana simplex*, Amula, p. 124, CAMBRIDGE, *Araneidea* in Biol. Centr.-Amer., n. sp.
- Aysa quelchii*, Mount Roraima, p. 140, POCOCK, Ann. Nat. Hist. (6) xvi, n. sp.
- Cedicus pumilus*, Tharrawaddy, p. 52, THORELL, Spiders of Burma, n. sp.
- Chorizomma pallens californicum*, Lower California, p. 136, SIMON, Bull. Soc. zool. France, 1895, n. spp.
- Celotes æmilii*, Madeira, p. 4, fig. 6, BÜSENBERG, Abh. Hamburg. Anst. xiii, No. 4, n. sp.
- Desis*, Walck. = *Dandridgia*, White, and *Robsonia*, Cambr., is the type of a new family *Desidæ*; POCOCK, Ann. Nat. Hist. (6) xvi, p. 143.
- D. marinus*, Hector, = *dysderoides*, White, *robsoni*, Powell, and *marina*, Cambr.; POCOCK, *t. c.*
- Zobia*, n. g., *parvula*, Tharrawaddy, p. 54, THORELL, Spiders of Burma, n. sp.

AMAUROBIIDÆ (= DICTYNIDÆ).

- Amaurobius castaneiceps*, Quingua, p. 69, SIMON, Ann. Soc. ent. France, lxii, n. sp.
- Argenna minima*, p. 159, *lendlii*, p. 160, Hungary, KULCSZYNSKI, *Araneæ Hungariæ*, i, n. spp.

- Dictyna grammica*, Manila, p. 70, SIMON, Ann. Soc. ent. France, lxii ;
D. arenicola, East Iothian, p. 589, pl. xii, fig. 1, P. Phys. Soc. Edinb. xii ; *D. ignobilis*, Goktsha, p. 31, *annulata*, Teleshovo, p. 32, *orientalis*, p. 34, KULCSZYNSKI, Termes. Fuzetek, xviii ; *D. szaboi*, Hungary, p. 156, CHYZER, Araneæ Hungariæ, i ; *D. fuegiana*, Tierra del Fuego, p. 168, SIMON, An. Mus. Buenos Aires, iv : n. spp.
Lathys heterophthalma, Hungary, p. 161, KULCSZYNSKI, Araneæ Hungariæ, i, n. sp.
Phyxelida, n. g., *makapanensis*, Makapa, p. 64 ; SIMON, Ann. Soc. ent. France, lxiii, n. sp.
Titanæca birmanica, Rangoon, p. 62 ; THORELL, Spiders of Burma, n. sp.

ATTIDÆ.

- Ælurillus m-nigrum*, Hungary, p. 31 ; KULCSZYNSKI, Araneæ Hungariæ, i, n. sp.
Ælurops rugatus, Usambara, p. 28, pl. i, fig. 1 ; BÖSENBERG & LENZ, Jahresber. Hamburg. Anst. xii, n. sp.
Anamosa, n. g., p. 164, *callosa*, Himalaya, pl. xv, fig. 6, *inconcinna*, Trinidad, fig. 7, p. 165, PECKHAM, Pap. Soc. Wisconsin, ii ; *A. inconcinna*, Trinidad, p. 216, PECKHAM, Trinidad Field Club, ii : n. spp.
Anoka parallela, Trinidad, p. 215, PECKHAM, Trinidad Field Club, ii ; *A. grenada*, New Grenada, p. 126, pl. xii, fig. 8, *moneagua*, Jamaica, p. 127, fig. 9, *parallela*, Trinidad, p. 129, pl. xiii, fig. 2, PECKHAM, Pap. Soc. Wisconsin, ii : n. spp.
Ascalus, n. g., p. 55, *pygmaeus*, Singapore, p. 56, THORELL, Bih. Svenska Ak. xx, pt. iv, No. 4 ; *A. vestitus*, p. 322, *rhopalotus*, p. 326, Tharrawaddy, THORELL, Spiders of Burma : n. spp.
Asemonæa cingulata, p. 314, *cristata*, p. 316, *picta*, p. 318, Tharrawaddy, THORELL, Spiders of Burma, n. spp.
Ashtabula, n. g., p. 139, *zonura*, New Grenada, p. 140, pl. xiv, fig. 4, PECKHAM, Pap. Soc. Wisconsin, ii, n. sp.
Attus dorsatus, California, *morosus*, Washington, p. 97, BANKS, Canad. Ent. 1895 ; *A. albosignatus*, Bagamoyo, p. 29, pl. i, fig. 2, *hispidus*, Quilimane, p. 29, pl. i, fig. 3, *gracilis*, Zanzibar, p. 30, pl. i, fig. 4, *comptus*, Zanzibar, p. 30, pl. i, fig. 5, BÖSENBERG & LENZ, Jahresber. Hamburg. Anst. xii ; *A. ravus*, Teneriffe, p. 10, fig. 11, BÖSENBERG, Abh. Hamburg. Anst. xiii, No. 4 ; *A. daminii*, p. 21, *hungaricus*, p. 23, Hungary, CHYZER & KULCSZYNSKI, Araneæ Hungariæ, i ; *A. godlenskii*, Darasun, p. 74, fig. 34, *albolineatus*, Kultuk, p. 77, fig. 35, *viduus*, Kultuk, p. 79, figg. 28 & 29, KULCSZYNSKI, Dissert. Acad. Cracov. xxxii ; *A. vilis*, Goktsha, p. 8, KULCSZYNSKI, Termes. Fuzetek, xviii ; *A. concolor*, Missouri, p. 206, BANKS, Ent. News Philad. vi : n. spp.
Balmaceda, n. g., p. 100, *picta*, Guatemala, p. 101, pl. x, fig. 1, *punctata*, Central America, p. 102, pl. viii, fig. 8, PECKHAM, Pap. Soc. Wisconsin, ii, n. spp.

- Bathippus birmanicus*, Rangoon, p. 384, *trinotatus*, Tharrawaddy, p. 386, THORELL, Spiders of Burma, n. spp.
- Beata*, n. g., p. 167, *magna*, New Grenada, p. 168, pl. xv, fig. 9, PECKHAM, Pap. Soc. Wisconsin, ii, n. sp.
- Bianor trepidans*, Tharrawaddy, p. 334, THORELL, Spiders of Burma, n. sp.
- Breda*, n. g., p. 92, for *Marpissa milvina*, Koch, p. 93, pl. viii, fig. 7; PECKHAM, Pap. Soc. Wisconsin, ii.
- Brettus*, n. g., *cingulatus*, Tharrawaddy, p. 355, THORELL, Spiders of Burma, n. sp.
- Ceglusa*, n. g., *polita*, Tharrawaddy, p. 342, THORELL, *t. c.*, n. sp.
- Charippus*, n. g., *errans*, Rangoon, p. 351, THORELL, *t. c.*, n. sp.
- Cocalus lancearius*, Tharrawaddy, p. 357, THORELL, *t. c.*, n. sp.
- Carrhotus tristis*, Tharrawaddy, p. 379, THORELL, *t. c.*, n. sp.
- Coccorchestes scarabeoides*, Panama, p. 121, CAMBRIDGE, *Araneidea* in Biol. Centr.-Amer., n. sp.
- Cytea guentheri*, Tharrawaddy, p. 388, THORELL, Spiders of Burma, n. sp.
- Dendryphantas thorellii*, Kultuk, p. 68, figg. 30-33, KULCSZYNSKI, Dissert. Acad. Cracov. xxxii; *D. bifida*, Washington, p. 96, BANKS, Canad. Ent. 1895; *D. mcebbii*, Teneriffe, p. 10, fig. 12, BÖSENBERG, Abh. Hamburg. Anst. xiii, No. 4 : n. spp.
- Deza*, n. g., p. 97, for *Salpicus sumptuosus*, Perty, p. 98, pl. ix, fig. 3; PECKHAM, Pap. Soc. Wisconsin, ii.
- Epiblemum latidens*, Kultuk, p. 56, figg. 22-24, KULCSZYNSKI, Dissert. Acad. Cracov, xxxii, n. sp.
- Epinga*, n. g., p. 94, *chapoda*, Chapoda, p. 95, pl. ix, fig. 1, *barbarica*, Trinidad, p. 96, fig. 2, PECKHAM, Pap. Soc. Wisconsin, ii; *E. barbarica*, Trinidad, p. 214, PECKHAM, Trinidad Field Club, ii : n. spp.
- Epocilla innotata*, Tharrawaddy, p. 353, THORELL, Spiders of Burma, n. sp.
- Ergane pulchella*, Tharrawaddy, p. 391, THORELL, *t. c.*; *E. albifrons*, Ussur, p. 90, figg. 25-27, KULCSZYNSKI, Dissert. Acad. Cracov. xxxii : n. spp.
- Euophrys valens*, Bagamoyo, p. 31, pl. i, fig. 6, BÖSENBERG & LENZ, Jahresber. Hamburg. Anst. xii; *E. confusa*, p. 40, *thorelli*, p. 45, Hungary, KULCSZYNSKI, Araneæ Hungariæ, i : n. spp.
- Fuentes*, n. g., p. 113, *pertinax*, Belize, p. 113, pl. xi, fig. 4, PECKHAM, Pap. Soc. Wisconsin, ii, n. sp.
- Goleta*, n. g., p. 124, for *Ganesea workmanii*, Peckh.; PECKHAM, *t. c.*
- Harmochirus albi-barbis*, Zanzibar, p. 171, pl. xvi, fig. 3; PECKHAM, *t. c.*, n. sp.
- Habrocestum borealis*, Franconia, p. 101, *clypeatum*, Colorado, p. 102, BANKS, Canad. Ent. 1895, n. spp.
- Hasarius egenus*, Rangoon, p. 393, *plumpalpis*, Tharrawaddy, p. 395, THORELL, Spiders of Burma, n. spp.
- Heliophanus glaucus*, Alexandria, p. 33, pl. i, fig. 9, BÖSENBERG & LENZ, Jahresber. Hamburg. Anst. xii, n. sp.; *H. ussuricus*, Ussur, p. 51, figg. 6-9, *baicalensis*, Kultuk, p. 54, fig. 11, KULCSZYNSKI, Dissert. Acad. Cracov. xxxii; *H. forcipifer*, Armenia, p. 5, *nigriceps*, Erivan, p. 6, KULCSZYNSKI, Termos. Fuzetek, xviii : n. spp.

- Helvetia*, n. g., p. 119, *santarema*, Santarem, p. 119, pl. xii, fig. 2, PECKHAM, Pap. Soc. Wisconsin, ii, n. sp.
- Herilus radiatus*, Java, p. 61, THORELL, Bih. Svenska Ak. xx, pt. iv, No. 4, n. sp.
- Homalattus maccuni*, S. America, p. 160, pl. xv, fig. 1, *rusticus*, Amazons, p. 161, pl. xv, fig. 2, PECKHAM, Pap. Soc. Wisconsin, ii, n. sp.
- Hyllus pudicus*, Tharrawaddy, p. 373, THORELL, Spiders of Burma, n. sp.
- Icius obliquus*, Washington, *monticola*, Colorado, p. 98, *minutus*, Washington, *floridanus*, Florida, p. 99, *similis*, Colorado, *sexmaculatus*, Washington, p. 100, BANKS, Canad. Ent. 1895; *I. wickhamii*, Bahamas, p. 109, pl. x, fig. 8, PECKHAM, Pap. Soc. Wisconsin, ii : n. spp.
- Itata*, n. g., p. 114, *radia*, New Grenada, p. 115, pl. xi, fig. 5, PECKHAM, *t. c.*, n. spp.
- Ligidus*, n. g., *chelifer*, Tharrawaddy, p. 337, THORELL, Spiders of Burma, n. sp.
- Mævia clathrata*, Tharrawaddy, p. 345, THORELL, *t. c.*, n. sp.
- Marpessa stuhlmanni*, Zanzibar, p. 31, pl. i, fig. 7, *robusta*, Usambara, p. 32, pl. i, fig. 8, BÖSENBERG & LENZ, Jahresber. Hamburg. Anst. xii, n. sp.
- Marpusa* recharacterised, p. 86, *magna*, p. 87, pl. viii, fig. 3, *agricola*, p. 89, fig. 4, Santarem, *broadwayi*, Trinidad, p. 89, fig. 5, *mullerii*, Tokio, p. 91, fig. 6, PECKHAM, Pap. Soc. Wisconsin, ii; *M. dybowskii*, Ussur, p. 63, figg. 36, 41, 42, KULCSZYNSKI, Dissert. Acad. Cracov. xxxii; *M. broadwayi*, Trinidad, p. 212, PECKHAM, Trinidad Field Club, ii : n. spp.
- Mendoza*, n. g., p. 105, pl. x, fig. 4, for *Attus memorabilis*, Cambr.; PECKHAM, Pap. Soc. Wisconsin, ii.
- Neon pictus*, Hungary, p. 45, KULCSZYNSKI, Araneæ Hungariæ, i, n. sp.
- Onura*, n. g., p. 102, *cruenta*, Santarem, p. 104, pl. x, fig. 2, *perita*, Pumamarca, p. 104, fig. 3, PECKHAM, Pap. Soc. Wisconsin, ii, n. sp.
- Padilla*, n. g., p. 130, *armata*, Madagascar, p. 130, pl. xiii, fig. 1, PECKHAM, *t. c.*, n. sp.
- Pellenes limbatus*, Kultuk, p. 87, figg. 19-21, KULCSZYNSKI, Dissert. Acad. Cracov. xxxii; *P. kraepelinorum*, Teneriffe, p. 11, fig. 13, BÖSENBERG, Abh. Hamburg. Anst. xiii, No. 4 : n. spp.
- Phidippus borealis*, White Mts., N. H., p. 96, BANKS, Canad. Ent. 1895, n. sp.
- Philotherus*, n. g., *setosus*, Tharrawaddy, p. 382, THORELL, Spiders of Burma, n. sp.
- Phlegra fuscipes*, Hungary, p. 33, KULCSZYNSKI, Araneæ Hungariæ, i, n. sp.
- Piranthus*, n. g., *decorus*, Tharrawaddy, p. 339, THORELL, Spiders of Burma, n. sp.
- Plexippus coccinatus*, Rangoon, p. 360, *albo-punctatus*, p. 362, *perfidus*, p. 366, *pocockii*, p. 368, Tharrawaddy, THORELL, *t. c.*, n. spp.
- Pseudicius orientalis*, Ussur, p. 59, figg. 12-14, KULCSZYNSKI, Dissert. Acad. Cracov. xxxii; *P. oblongus*, Santarem, p. 111, pl. xi, fig. 2, *cognatus*, Japan, p. 112, fig. 3, PECKHAM, Pap. Soc. Wisconsin, ii; *P. epiblemoides*, Hungary, p. 12, CHYZER, Araneæ Hungariæ, i : n. spp.

- Rhene callida*, Calcutta, p. 162, pl. xv, fig. 4, *vaga*, Para, p. 163, fig. 5, PECKHAM, Pap. Soc. Wisconsin, ii, n. spp.
- Rudra polita*, Guatemala, p. 121, pl. xii, fig. 4, *tenera*, Santarem, p. 122, PECKHAM *t. c.*, n. sp.
- Saitis annæ*, Kingston, Jamaica, p. 343, COCKERELL, Canad. Ent. 1894 ; *S. parvulus*, Ithaca, p. 101, BANKS, *op. cit.* 1895 : n. spp.
- Sadala magna*, Brazil, p. 133, pl. xiii, fig. 5, *gemmea*, p. 135, pl. xiv, fig. 1, *horatia*, Santarem, p. 136, pl. xiv, fig. 2, *deserta*, Rio Janeiro, p. 138, fig. 3, PECKHAM, Pap. Soc. Wisconsin, ii, n. spp.
- Salticus macrogathus*, Java, p. 58, THORELL, Bih. Svenska Ak. xx, pt. iv, No. 4 ; *S. lugubris*, Ussur, p. 45, figg. 1-5, KULCSZYNSKI, Dissert. Acad. Cracov. xxxii : n. spp.
- Sassacus*, n. g., p. 176, *papenhoei*, Kansas, p. 177, pl. xvi, fig. 11, PECKHAM, Pap. Soc. Wisconsin, ii, n. sp.
- Sidusa*, n. g., p. 175, *gratiosa*, Amazon, p. 175, pl. xvi, fig. 10, PECKHAM, *t. c.*, n. sp.
- Spudera*, n. g., p. 117, *unica*, Madagascar, p. 118, pl. xi, fig. 1, PECKHAM, *t. c.*, n. sp.
- Thiene corcula*, Bardera, p. 527, PAVESI, Ann. Mus. Genova, xxxv, n. sp.
- Viciria rhinoceros*, Celebes, p. 187, pl. iv, figg. 6 & 7, HASSELT, Tijdschr. Ent. 1894, n. sp.
- Vindima*, n. g., *maculata*, Tharrawaddy, p. 348, THORELL, Spiders of Burma, n. sp.
- Yllenus hamifer*, Altai, p. 342, *flavociliatus*, Zizik-Nor, p. 343, SIMON, Bull. Ac. St. Petersb. (5) ii ; *Y. horvathi*, Hungary, p. 27, CHYZER, Araneæ Hungariæ, i : n. spp.
- Zeuippus atellanus*, p. 331, *pallidus*, p. 333, Tharrawaddy, THORELL, Spiders of Burma, n. spp.
- Zygodallus suavis*, Jamaica, p. 173, pl. xvi, fig. 6, PECKHAM, Pap. Soc. Wisconsin, ii ; *Z. iridescens*, Franconia, p. 102, BANKS, Canad. Ent. 1895 : n. spp.

CLUBIONIDÆ.

- Agraca minuta*, Long I., p. 80, BANKS, J. N. York Ent. Soc. 1895 ; *A. littoralis*, Swanage, p. 26, pl. iii, fig. 15, F. CAMBRIDGE, Ann. Nat. Hist. (6) xv : n. spp.
- Chiracanthium somalinum*, Somaliland, pp. 41-43, PAVESI, Boll. scient. xvii, n. sp.
- Clubiona analis*, Moulmein, p. 41, *melanothele*, Tharrawaddy, p. 42, THORELL, Spiders of Burma ; *C. littoralis*, Long I., p. 79, BANKS, J. N. York Ent. Soc. 1895 : n. spp.
- Celotes nigriceps*, Long I., p. 82, BANKS, *t. c.*, n. sp.
- Eutitha melanostoma*, p. 44, *gracilipes*, p. 47, *trivialis*, p. 49, *murina*, p. 50, Tharrawaddy, THORELL, Spiders of Burma, n. spp.
- Meriola*, n. g., *decepta*, Long I., p. 81, BANKS, J. N. York Ent. Soc. 1895, n. sp.

- Micaria quinquenotata*, Chatu, p. 339, *aciculata*, Taschougty, p. 339, SIMON, Bull. Ac. St. Petersb. (5) ii; *M. agilis*, Missouri, p. 204, BANKS, Ent. News Philad. vi : n. spp.
- Phruvolithus similis*, *formica*, Long I., p. 81, BANKS, J. N. York Ent. Soc. 1895, n. spp.
- Syspira*, n. g., *tigrina*, p. 135, *longipes*, p. 136, Lower California, SIMON, Bull. Soc. zool. France, 1895, n. spp.
- Tomopisthes backhauseni*, Tierra del Fuego, p. 172, SIMON, An. Mus. Buenos Aires, iv, n. sp. (An hujus familiæ ?)

DRASSIDÆ.

- Aphantaulax* (?) *zonata*, Tharrawaddy, p. 32, THORELL, Spiders of Burma, n. sp.
- Brachypheea*, n. g., *simoni*, Zanzibar, p. 35, pl. i, fig. 12, BÜSENBERG & LENZ, Jahresber. Hamburg. Anst. xii, n. sp.
- Callilepis chazaliae*, Cape Blanc, W. Africa, p. cccxxvi, SIMON, Bull. Soc. zool. France, 1895; *C. mæbii*, Teneriffe, p. 5, fig. 8, BÜSENBERG, Abh. Hamburg. Anst. xiii, No. 4 : n. spp.
- Delozeugma depictum*, Teapa, p. 146, CAMBRIDGE, *Araneidea* in Biol. Centr.-Amer., n. sp.
- Drassodes nigrosegmentatus*, Tjan-Schan, p. 332, *sollers*, Chara-Ussu, p. 333, SIMON, Bull. Ac. St. Petersb. (5) ii, n. spp.
- Drassus rangunensis*, Rangoon, p. 32, THORELL, Spiders of Burma; *D. mysticus*, Paisley, p. 104, fig. 1, CAMBRIDGE, P. Dorset Club, xv; *D. perelegans*, Sydney, pl. x, fig. 1, RAINBOW, P. Linn. Soc. N. S. Wales (2) ix : n. spp.
- Echemus canariensis*, Teneriffe, p. 6, fig. 10, BÜSENBERG, Abh. Hamburg. Anst. xiii, No. 4, n. sp.
- Gnaphosa potanini*, p. 333, *mongolica*, p. 334, Chara-Ussu, SIMON, Bull. Ac. St. Petersb. (5) ii; *G. rhenana*, Basel, p. 772, fig. 9, MÜLLER & SCHENKEL, Verh. Ges. Basel, x : n. spp.
- Platyoides bottegi*, Galla Country, p. 17, PAVESI, Ann. Mus. Genova, xxxv, n. sp.
- Pæcilochoa concinna*, Lower California, p. 107, SIMON, Bull. Mus. Paris, 1895, n. sp.
- Prothesima exigua*, Basel, p. 770, MÜLLER & SCHENKEL, Verh. Ges. Basel, x, n. sp.; *P. insularis, nova*, Long I., p. 78, BANKS, J. N. York Ent. Soc. 1894 : n. spp.
- Myrmecotypus*, n. g., p. 123, *fuliginosus*, Teapa, p. 124, CAMBRIDGE, *Araneidea* in Biol. Centr.-Amer., n. sp.
- Thamphilus*, n. g., *gracilis*, Tharrawaddy, p. 36, THORELL, Spiders of Burma, n. sp.
- Tylophora venustula*, Galla Country, p. 511, PAVESI, Ann. Mus. Genova, xxxv, n. sp.
- Tyrrhus*, n. g., *nitidus*, Tharrawaddy, p. 38, THORELL, Spiders of Burma, n. sp.
- Wulfila*, n. g., p. 158, *pallidus*, *proximus*, *diversus*, Teapa, p. 159, CAMBRIDGE, *Araneidea* in Biol. Centr.-Amer., n. spp.

EPEIRIDÆ

(= *Euetrioidæ*, Thor. ; *Argiopidæ*, Sim.).

- SIMON, Hist. Nat. Araignees, i, p. 594, divides this family into the following subfamilies :—*Linyphiinæ*, *Tetragnathinæ*, *Nephilinaæ*, *Argiopinaæ*, *Theridiosomatinaæ*, *Arciinaæ*, *Eurycorminaæ*, *Amazulinaæ*, and *Poltyinaæ*. All the known genera are characterised and their synonymy discussed.
- Abbotia*, n. g., for *Epeira gibberosa*, p. 239; MCCOOK, American Spiders, iii.
- Acacesia*, n. g., for *Epeira foliata*, Hentz. ; SIMON, Hist. Nat. Araignees, i.
- Acusilus*, n. g., p. 784, *coccineus*, Java, *africanus*, Sierra Leone, p. 785, SIMON, Hist. Nat. Araignees, i.
- Agatostichus*, n. g., for *leucacantha*, Sim. ; SIMON, *t. c.*
- Alcimosphenus*, n. g., p. 930, *licinus*, Jamaica, p. 931, SIMON, *t. c.*, n. sp.
- Amamra gibbifera*, Mexico, p. 137, CAMBRIDGE, *Araneidea* in Biol. Centr.-Amer. ; *A. nigro-maculata*, Teapa, p. 155, CAMBRIDGE, *t. c.* : n. spp.
- Anania*, n. g., *bituberculata*, Tharrawaddy, p. 148, THORELL, Spiders of Burma, n. sp.
- A. gullana*, Galla Country, p. 500, PAVESI, Ann. Mus. Genova, xxxv, n. sp.
- Anapis*, n. n. for *Amazula*. Keys., preocc., p. 927, *algerica*, Algeria, p. 928, SIMON, Hist. Nat. Araignees, i, n. sp.
- Andasta*, n. g., *semiargentea*, Ceylon, p. 918, SIMON, *t. c.*, n. sp.
- Araneus* (*Epeira*) *mongolicus*, p. 335, *potamini*, p. 336, Saissan, SIMON, Bull. Ac. St. Petersb. (5) ii ; *A. castancoscutatus*, Amazons, p. 806, *candidus*, S. Brazil, p. 809, *mellottei*, Japan, p. 812, *tabula*, Amazons, p. 815, *sandrei*, *nigrofrenatus*, Minas, p. 816, *hampri*, Java, *calciopie*, Kodeikanal, *myrrheus*, S. India, *thevenoti*, Zanzibar, *fluvosellatus*, Amazons, p. 824, SIMON, Hist. Nat. Araignees, i : n. spp.
- Argiope marcii*, Arizona, p. 223, pl. i, fig. 5, MCCOOK, American Spiders, iii, n. sp.
- Argyropeira macrochæra*, Sumatra (n. var. *tenasserimensis*, Tenasserim, p. 152), *leprosa*, Tharrawaddy, p. 153, THORELL, Spiders of Burma ; *A. mesomelas*, Teapa, p. 135, CAMBRIDGE, *Araneidea* in Biol. Centr.-Amer. : n. spp.
- Artonis*, n. n. for *Anania*, Thor., preoccupied ; SIMON, Hist. Nat. Araignees, i, p. 922.
- Atelidea*, n. g., p. 737 ; SIMON, *t. c.*
- A. spinosa*, Ceylon, p. 151, SIMON, Ann. Soc. ent. France, 1895, n. sp.
- Atimiosa*, n. g., p. 742 ; SIMON, Hist. Nat. Araignees, i.
- Azilia hîstrio*, p. 152, *rojasi*, Ecuador, *boudeti*, Rio, *vagepicta*, Georgia, p. 153, SIMON, Ann. Soc. ent. France, 1895, n. spp.
- Carepalxis camelus*, Paraguay, *salobrensis*, Brazil, p. 157, SIMON, Ann. Soc. ent. France, 1895 ; *C. nigriceps*, Teapa, p. 158, CAMBRIDGE, *Araneidea* in Biol. Centr.-Amer. : n. spp.
- Chasmocephalon bimaculatum*, Cape Town, p. 928, SIMON, Hist. Nat. Araignees, i, n. sp.

- Chetacis*, n. g., for *Acrosoma affine*, C. Koch ; SIMON, *t. c.*
Chorizopes mucronatus, Ceylon, p. 922, SIMON, *t. c.*, n. sp.
Chrysometa, n. g., for *Tetragnatha tenuipes*, Keys., p. 736 ; SIMON, *t. c.*
Olytatra perroti, Madagascar, p. 751, SIMON, *t. c.*, n. sp.
Cladomelea, n. g., for *Cyrtarachne longipes*, Cambr., p. 886 ; SIMON, *t. c.*
Celossia, n. g., *aciculata*, Sierra Leone, p. 888, SIMON, *t. c.*, n. sp.
Cerostris simata, Quilimane, p. 46, pl. ii, fig. 27, BÖSENBERG & LENZ,
 Jahresber. Hamburg. Anst. xii, n. sp.
Cyatholipus, n. g., *hirsutissimus*, p. 712, *quadrinaculatus*, p. 713, S. Africa,
dentipes, Jamaica, p. 713, SIMON, Hist. Nat. Araignees, i, n. spp.
Cyclosa thorellii, Florida, p. 228, pl. xix, fig. 11, MCCOOK, American
 Spiders, iii, n. sp.
Cyphalonotus, n. g., for *Poltyx larvatus*, Sim. ; SIMON, Hist. Nat.
 Araignees, i.
Cyrtarachne cono-humeralis, Batavia, p. 185, pl. iv, figg. 1-3, HASSELT,
 Tijdschr. Ent. 1894 ; *C. inæqualis*, Tharrawaddy, p. 201, *cingulata*,
 p. 202, *ignava*, p. 203, Rangoon, *dimidiata*, Tharrawaddy, p. 204,
melanosticta, Rangoon, p. 205, THORELL, Spiders of Burma ; *C.*
caliginosa, Sydney, pl. x, fig. 2, RAINBOW, P. Linn. Soc. N. S. Wales
 (2) ix : n. spp.
Cyrtophora larinioides, W. Africa, p. 155, *sexnotata*, Peru, *sellata*, St.
 Domingo, p. 155, *nympha*, Venezuela, *graminia*, Para, p. 156, SIMON,
 Ann. Soc. ent. France, 1895 ; *C. caudata*, E. Africa, p. 41, pl. ii,
 fig. 22, *interalbicans*, E. Africa, p. 42, pl. ii, fig. 23, BÖSENBERG &
 LENZ, Jahresber. Hamburg. Anst. xii : n. spp.
Deliochus, n. g., for *Meta zelivira*, Keys. ; SIMON, Hist. Nat. Araignees, i.
Dolichognatha diversa, Teapa, p. 147, CAMBRIDGE, *Araneidea* in Biol.
 Centr.-Amer. n. sp.
Dicrostichus, n. g., for *Cyrtarachne furcata*, Cambr., p. 886 ; SIMON, Hist.
 Nat. Araignees, i.
Encyosaccus, n. g., *sexmaculatus*, Amazons, p. 847, SIMON, *t. c.*, n. sp.
Epecthina, n. g., *circinata*, Venezuela, p. 928, SIMON, *t. c.*, n. sp.
Epeira ithaca, New York, p. 152, pl. iv, fig. 3, *tranquilla*, Columbia,
 p. 162, pl. vi, fig. 3, *reptilis*, Crescent City, p. 165, pl. vi, fig. 6,
forata, California, p. 165, pl. vi, fig. 7, *wittfeldæ*, Florida, p. 168,
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 California, p. 179, pl. viii, fig. 10, *mayo*, Wisconsin, p. 179, pl. viii,
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 MCCOOK, American Spiders, iii ; *E. acrobalia*, Tonghoo, p. 173,
perfissa, Tharrawaddy, p. 175, *noegeata*, Tharrawaddy, p. 178, *lizi-*
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gaster, p. 189, *catillata*, p. 191, *turdipes*, p. 193, Tharrawaddy,
 THORELL, Spiders of Burma ; *E. striata*, Quilimane, p. 43, pl. ii,
 figg. 24 & 25, *similis*, Quilimane, p. 44, pl. ii, fig. 26, BÖSENBERG &
 LENZ, Jahresber. Hamburg. Anst. xii ; *E. leui*, p. 287, pl. x, fig. 1,
prouba, p. 289, fig. 2, Bungendore, RAINBOW, P. Linn. Soc. N. S.

- Wales (2) viii ; *E. decorosa*, p. 212, *powelli*, p. 214, *peronginia*, p. 215, New Zealand, URQUHART, Tr. N. Zealand Inst. xxvi ; *E. (Singa) theodori*, Java, p. 46, THORELL, Bih. Svenska Ak. xx, pt. iv, No. 4 : n. spp.
- Eustala*, n. g., for *Epeira anastera*, Walck., p. 795 ; SIMON, Hist. Nat. Araignees, i.
- Gasteracantha pygmaea*, Usaramo, p. 48, pl. ii, fig. 29, *stuhlmanni*, E. Africa, p. 48, pl. ii, fig. 30, BÖSENBERG & LENZ, Jahresber. Hamburg. Anst. xii ; *G. maura*, California, p. 210, pl. xiii, fig. 12, *preciosa*, California, p. 211, pl. xiv, fig. 7, MCCOOK, American Spiders, iii : n. spp.
- Gea africana*, Congo, p. 154, SIMON, Ann. Soc. ent. France, 1895 ; *G. festiva*, Tharrawaddy, p. 166, THORELL, Spiders of Burma : n. spp.
- Glenognatha gaujoni*, Ecuador, p. 151, SIMON, Ann. Soc. ent. France, 1895, n. sp.
- Glyptocranium*, n. g., for *Epeira cornigera*, Hentz, p. 885 ; SIMON, Hist. Nat. Araignees, i.
- Glyptogona durivuscula*, Ceylon, p. 159, *sexlobata*, Peru, p. 160, SIMON, Ann. Soc. ent. France, 1895, n. spp.
- Hentzia*, n. g., for *Epeira basilica*, p. 244 ; MCCOOK, American Spiders, iii.
- Homalopolittys*, n. g., *incanescens*, p. 893, *albidus*, p. 894, Ceylon, SIMON, Hist. Nat. Araignees, i, n. spp.
- Larinia borealis*, Washington, p. 8, BANKS, Ent. News Philad. v, n. sp.
- Lobetina*, n. g., for *opaciceps*, Sim. ; SIMON, Hist. Nat. Araignees, i.
- Mangora semiargentea*, Ceylon, p. 791, SIMON, t. c., n. sp.
- Marzia*, n. g., for *Plectana stellata*, Walck., p. 192 ; MCCOOK, American Spiders, iii.
- M. grisea*, Florida, p. 195, pl. xiii, fig. 10, MCCOOK, t. c., n. sp.
- Mecynometa*, n. g., for *Meta globosa*, Cambr. ; SIMON, Hist. Nat. Araignees, i.
- M. gemmata*, Venezuela, *santilla*, Para, p. 152, SIMON, Ann. Soc. ent. France, 1895, n. spp.
- Melychiopharis*, n. g., *cynips*, Amazons, p. 907, SIMON, Hist. Nat. Araignees, i, n. sp.
- Meta flava*, Teapa, p. 135, CAMBRIDGE, *Araucidea* in Biol. Centr.-Amer., n. sp.
- Micrathena prudens*, Paraguay, p. 860, SIMON, Hist. Nat. Araignees, i, n. sp.
- Milonia tomosceles*, Tharrawaddy, p. 199, THORELL, Spiders of Burma, n. sp.
- Neuroscolus*, n. g., for *Singa lauræ*, Sim. ; SIMON, Hist. Nat. Araignees, i.
- Neplila wistariana*, Texas, p. 252, pl. xxiii, fig. 2, *concolor*, S. California, p. 256, pl. xxiii, fig. 1, MCCOOK, American Spiders, iii ; *N. fletcheri*, New England (N.S.W.), p. 347, pl. xxii, fig. 1, *edwardsii*, Sydney, p. 350, pl. xxii, fig. 2, *ventricosa*, Sydney, p. 351, pl. xxiii, figg. 1 & 2, RAINBOW, P. Linn. Soc. N. S. Wales (2) x : n. spp.
- Notocentria*, n. g., *sexspinosa*, Tharrawaddy, p. 48, THORELL, Bih. Svenska Ak. xx, pt. iv, No. 4, n. sp.

- Pachygnatha longipes*, Madagascar, p. 717, SIMON, Hist. Nat. Araigues, i;
P. vorax, Tharrawaddy, p. 137, THORELL, Spiders of Burma; *P. curtisi*, California, p. 271, pl. xxvi, fig. 5, MCCOOK, American Spiders, iii : n. spp.
- Paramela*, n. g., *jugularis*, Sierra Leone, p. 930, SIMON, Hist. Nat. Araigues, i, n. sp.
- Pasilobus*, n. g., for *Micrathena bufonina*, Sim. ; SIMON, t. c.
- Perilla*, n. g., *teres*, Tharrawaddy, p. 196, THORELL, Spiders of Burma, n. sp.
- Phonognatha*, n. g., for *Epeira graeffii*, Keys., p. 748; SIMON, Hist. Nat. Araigues, i.
- Phricotelus*, n. g., *stelliger*, Ceylon, p. 919, SIMON, t. c., n. sp.
- Physiola*, n. g., p. 875, *nigrans*, Venezuela, p. 876, SIMON, t. c., n. sp.
- Pitharatus*, n. g., for *Epeira junghuhni*, Dol., Java, p. 904; SIMON, t. c.
- Pæcilarcys*, n. g., for *Epeira ditissima*, Sim., p. 913; SIMON, t. c.
- Pæcilopachys*, n. g., for *Cyrtogaster bispinosus*, Keys., p. 880; SIMON, t. c.
- Poltys panuceus*, Tharrawaddy, p. 167, THORELL, Spiders of Burma, n. sp.
- Prasonica*, n. g., *albolimbata*, Madagascar, *seriata*, Sierra Leone, p. 794, SIMON, Hist. Nat. Araigues, i, n. sp.
- Prionolemma*, n. g., p. 725, SIMON; t. c.
- P. atherea*, Venezuela, p. 150, SIMON, Ann. Soc. ent. France, 1895, n. sp.
- Prolochus*, n. g. (referred with doubt to the *Archeidæ*, but according to Simon belonging to the *Argiopidæ*), *longiceps*, Tenasserim, p. 122, THORELL, Spiders of Burma, n. sp.
- Pronous taprobanicus*, Ceylon, *tetralobus*, Madagascar, p. 863, SIMON, Hist. Nat. Araigues, i, n. spp.
- Salassina atomaria*, Rio, p. 781, SIMON, t. c., n. sp.
- Singa mollybryne*, Florida, p. 229, pl. xix, fig. 1, *keysleringii*, St. Louis, p. 230, pl. xix, fig. 2, *listerii*, Georgia, p. 231, pl. xix, fig. 3, MCCOOK, American Spiders, iii; *S. flava*, Mexico, p. 136, CAMBRIDGE, *Araneida* in Biol. Centr.-Amer. : n. spp.
- Singotypa*, n. g., for *Epeira melania*, L. Koch; SIMON, Hist. Nat. Araigues, i.
- Spilasma*, n. g., for *artifex*, Sim., p. 794; SIMON, t. c.
- Tetragnatha (Cyrtognatha) jubensis*, Galla Country, p. 502, PAVESI, Ann. Mus. Genova, xxxv; *T. puella*, Tharrawaddy, p. 143, THORELL, Spiders of Burma; *T. banksi*, Florida, p. 262, pl. xxiv, fig. 6, MCCOOK, American Spiders, iii : n. spp.
- Turckheimia diversa*, Teapa, p. 136, CAMBRIDGE, *Araneulea* in Biol. Centr.-Amer., n. sp.
- Trichocharis*, n. g., *hirsuta*, Madagascar, p. 835, SIMON, Hist. Nat. Araigues, i, n. sp.
- Tylorida*, n. g., for *Meta striata*, Thor., p. 737; SIMON, t. c.
- Ursa*, n. g., *pulchra*, Amazons, *turbinata*, Transvaal, *vittigera*, Ceylon, p. 909, SIMON, t. c., n. sp.
- Vendilgarda theridionina*, Venezuela, p. 919, SIMON, t. c., n. sp.

- Verrucosa unistriata*, Arizona, p. 201, pl. v, fig. 3, McCook, American Spiders, iii, n. sp.
Wagneria, n. g., for *Epeira tauricornis*, Camb., p. 203; McCook, *t. c.*
Witica, n. g., *tahi*, Teapa, p. 160, CAMBRIDGE, *Araneidea* in Biol. Centr.-Amer., n. sp.
Xylethrus, n. g., p. 865; SIMON, Hist. Nat. Araignees, i.
X. trifidus, Paraguay, p. 157, *superbus*, *perlatus*, p. 158, *scrupeus*, p. 159, Brazil, SIMON, Ann. Soc. ent. France, 1895, n. spp.

ERESIDÆ, FILISTATIDÆ, HERSILIIDÆ.

- Eresus granosus*, Pekin, p. 331, SIMON, Bull. Ac. St. Petersb. (5) ii, n. sp.
Filistata zebra, Tharrawaddy, p. 14, THORELL, Spiders of Burma; *F. pulchella*, Antipolo, p. 66, SIMON, Ann. Soc. ent. France, lxii: n. spp.
Hersilia clathrata, S. Tenasserim, p. 56, *pectinata*, Rangoon, p. 58, *peguana*, Pegu, p. 60; THORELL, Spiders of Burma, n. spp.

DYSDERIDÆ, OONOPIDÆ, LEPTONETIDÆ.

- Harpactes caucasicus*, Gelati, p. 35, KULCSZYNSKI, Termes. Fuzetek, xviii, n. sp.
Dysderina bimucronata, Montatvan, *purpurea*, Antipolo; SIMON, Ann. Soc. ent. France, lxii; *D. plena*, Mexico, p. 143, CAMBRIDGE, *Araneidea* in Biol. Centr.-Amer.: n. spp.
Epectris, n. g., *apicalis*, Antipolo, p. 74, SIMON, Ann. Soc. ent. France, xlii, n. sp.
Gemasomorpha nitida, Antipolo, p. 72, SIMON, *t. c.*, n. sp.
Ischnaspis aculeata, Antipolo, p. 75, SIMON, *t. c.*, n. sp.
Leptoneta japonica, Yokohama, p. cexlvii, SIMON, *op. cit.* 1894, n. sp.
Ochyrocera simoni, Teapa, p. 122, CAMBRIDGE, *Araneidea* in Biol. Centr.-Amer.; *O. pacifica*, Washington, p. 299, BANKS, Ent. News Philad. v; *O. picturata*, Kandy, *cruciata*, Ceylon, p. cexlvii, SIMON, Bull. Soc. ent. France, 1894: n. spp.
Opopæa mattica, S. Africa, p. cexlviii, SIMON, Bull. Soc. ent. France, 1894, n. sp.
Orchestina elegans, Antipolo, p. 75, SIMON, Ann. Soc. ent. France, lxii; *O. saltitans*, New York, p. 300, BANKS, Ent. News Philad. v; *O. cineta*, Cape Town, *manicata*, Kandy, *dentifera*, Kandy, p. cexlviii, Bull. Soc. ent. France, 1894: n. spp.
Xestaspis bipeltis, Tharrawaddy, p. 16, THORELL, Spiders of Burma, n. sp.
Xyphinus, n. g., p. 76, *hystrix*, Singapore, p. 76, SIMON, Ann. Soc. ent. France, xlii, n. sp.

HETEROPODIDÆ AND CTENIDÆ.

- Ctenus barbatus*, Kyeikpadem, p. 214, THORELL, Spiders of Burma, n. sp.
Heteropoda lutea, Tharrawaddy, p. 265, THORELL, Spiders of Burma, n. sp.

- Micrommata longipes*, loc ?, p. 34, pl. i, fig. 11, BÖSENBERG & LENZ, Jahresber. Hamburg. Anst. xii, n. sp.
- Pandercetes macilentus*, S. Tenasserim, p. 267, THORELL, Spiders of Burma, n. sp.
- Phoneutria debilis*, Galla Country, p. 523, PAVESI, Ann. Mus. Genova, xxxv ; *P. melanogastra*, loc ?, p. 36, pl. i, fig. 14, BÖSENBERG & LENZ, Jahresber. Hamburg. Anst. xii : n. spp.
- Pothæus armatus*, Lower Burma, p. 275, THORELL, Spiders of Burma, n. sp.
- Sarotes cursor*, Singapore, p. 339, THORELL, Bull. Soc. ent. Ital. xxvi, n. sp.
- Selenops birmanicus*, Tharrawaddy, p. 261, THORELL, Spiders of Burma, n. sp.
- Sparassus potanini*, Tjan Shan, p. 341, SIMON, Bull. Ac. St. Petersb. (5) ii, n. sp.
- Thelecticopis birmanica*, Tenasserim, p. 274, THORELL, Spiders of Burma, n. sp.

LYCOSIDÆ.

- Evippa onager*, Tjan Shan, p. 342, SIMON, Bull. Ac. St. Petersb. (5) ii, n. sp.
- Hippasa holmera*, Tharrawaddy, p. 218, THORELL, Spiders of Burma, n. sp.
- Hygropoda*, n. g. (= *Dendrolycosa*, Thor. non Dol.), *prognatha*, Singapore, THORELL, Bull. Soc. ent. Ital. xxvi, p. 324 ; *H. procera*, Tharrawaddy, p. 222, THORELL, Spiders of Burma : n. spp.
- Lycosa grandis*, p. 49, *coloradensis*, p. 50, *brunneiventris*, p. 50, BANKS, J. N. York Ent. Soc. 1894 ; *L. amazonia*, Rangoon, p. 236, *tenusserimensis*, Tenasserim, p. 239, *ludia*, Tharrawaddy, p. 245, THORELL, Spiders of Burma ; *L. nobilis*, Turgas Geb., p. 455, *albonotata*, Monjero, p. 461, *albovittata*, Angora, p. 464, SCHMIDT, Zool. Jahresber. viii ; *L. entzii*, Hungary, p. 60, CHYZER, Araneæ Hungariæ, i ; *L. missouriensis*, Missouri, BANKS, Ent. News Philad. vi ; *L. spinipalpis*, Dorset, p. 28, pl. iii, figg. 4 & 5, F. CAMBRIDGE, Ann. Nat. Hist. (6) xv : n. spp.
- Pardosa coloradensis*, *dorsalis*, p. 51, *atra*, p. 52, Colorado, BANKS, J. N. York Ent. Soc. 1894 ; *P. purbeckensis*, Purbeck, p. 32, pl. iv, figg. 7-9, n. var. *minor*, p. 33, F. CAMBRIDGE, Ann. Nat. Hist. (6) xv : n. spp.
- Polybea*, n. g., *vulpina*, Rangoon, p. 229, THORELL, Spiders of Burma, n. sp.
- Tarentula ovicula*, p. 230, *stictopyga*, p. 232, *subinermis*, p. 234, Rangoon, THORELL, t. c. ; *T. hirsuta*, Usambaa, p. 38, pl. ii, fig. 16, *pulla*, Usambaa, p. 39, pl. ii, fig. 17, BÖSENBERG & LENZ, Jahresber. Hamburg. Anst. xii ; *T. kulczynskii*, fig. 2, *brunnea*, fig. 3, Teneriffe, *gracilis*, La Palma, fig. 4, p. 8, BÖSENBERG, Abh. Hamburg. Anst. xiii, No. 4 ; *T. tenuopus*, Kvirili (Transcaucasia), p. 16, KULCZYNSKI, Termes. Fuzetek, xviii : n. spp.
- Therimachus*, n. g., *robustus*, Tharrawaddy, p. 224, THORELL, Spiders of Burma, n. sp.

- Trochosa parva*, Colorado, p. 52, BANKS, J. N. York Ent. Soc. 1894; *T. aquila*, Teneriffe, p. 9, fig. 1, BÖSENBERG, Abh. Hamburg. Anst. xiii, No. 4; *T. spissa*, Zanzibar, p. 39, pl. ii, fig. 18, BÖSENBERG & LENZ, Jahresber. Hamburg. Anst. xii : n. spp.
Venonia, n. g., p. 332, *coruscans*, Singapore, p. 333, THORELL, Bull. Soc. ent. Ital. xxvi, n. sp.

OXYOPIDÆ and PODOPTHALMIDÆ.

- Lastrygones*, n. g., p. 216, *albicerus*, New Zealand, p. 217, URQUHART, Tr. N. Zealand Inst. xxvi, n. sp.
Oxyopeidon, n. g., p. 139, *facile*, Guerrero, p. 140, *putum*, Bugaba, p. 140, *subfacile*, Amula, *molestum*, Amula, *flebile*, Panama, p. 141, *lætum*, Acapulco, *difficile*, Amula, p. 142, CAMBRIDGE, *Araneidea* in Biol. Centr.-Amer., n. spp.
Oxyopes aculeatus, Usaramo, p. 37, pl. i, fig. 15, BÖSENBERG & LENZ, Jahresber. Hamburg. Anst. xii; *O. kraepelinorum*, Teneriffe, p. 9, fig. 9, BÖSENBERG, Abh. Hamburg. Anst. xiii, No. 4; *O. lagurus*, p. 248, *quadridentatus*, p. 250, Tharrawaddy, *russulus*, S. Teuasserim, p. 250, THORELL, Spiders of Burma : n. spp.
Tapponia austera, Singapore, p. 336, THORELL, Bull. Soc. ent. Ital. xxvi; *T. severa*, Rangoon, p. 255, *cornuta*, Tonghoo, p. 258, *incompta*, Rangoon, p. 259, THORELL, Spiders of Burma : n. spp.
Tetragonophthalma bilineata, Galla Country, p. 524, PAVESI, Ann. Mus. Genova, xxxv; *T. stuhlmanni*, Zanzibar, p. 37, pl. ii, fig. 19, BÖSENBERG & LENZ, Jahresber. Hamburg. Anst. xii, n. sp.

MYRMECIDÆ, PALPIMANIDÆ, PSECHRIDÆ, SICARIIDÆ,
STENOCHILIDÆ.

- Diguetia*, n. g. of *Sicariidæ*, for *Segestria canities*, McCook, p. 106; SIMON, Bull. Mus. Paris, 1895.
Fecenia cylindrata, Tharrawaddy, p. 64, THORELL, Spiders of Burma, n. sp.
Psechrus singaporensis, Singapore, p. 321, THORELL, Bull. Soc. ent. Ital. xxvi, n. sp.
Metronax (?) *lætus*, Tharrawaddy, p. 18, THORELL, Spiders of Burma, n. sp.
Stenochilus pusillus, Antipolo, p. 76, SIMON, Ann. Soc. ent. France, lxii, n. sp.
Sphecotypus, n. g. (of *Myrmecidæ*), p. 152, *formicarius*, Panama, p. 153, CAMBRIDGE, *Araneidea* in Biol. Centr.-Amer., n. sp.
Steriphopus crassipalpis, Tharrawaddy, p. 20, THORELL, Spiders of Burma, n. sp.
Ervig, n. g. (*Sicariidæ*) *albolineatus*, Guerrero, p. 151, CAMBRIDGE, *Araneidea* in Biol. Centr.-Amer., n. sp.

THERIDIIDÆ.

[Including *Linyphiidæ* and *Mimetidæ*.]

- SIMON, Hist. Nat. Araignees, i, pp. 492-494, divides the *Theridiidæ* (excl. *Linyphiidæ*) into the following groups:—*Asagenæ*, *Hetschkieæ*, *Paculleæ*, *Dipaneæ*, *Phoroncidieæ*, *Argyrodeæ*, *Spinthareæ*, *Synotaxeæ*, *Theridieæ*, *Æteæ*, *Propostineæ*, *Episineæ*, *Euryopeæ*, *Sedasteæ*, *Moneteæ*, *Theonoeæ*, *Histogonieæ*, *Pholcommateæ*, and characterises all the known genera.
- Abacoprocees ascitus*, Hungary, p. 119, KULCSZYNSKI, *Araneæ Hungariæ*, ii, pt. i, n. sp.
- Achea vittata*, Teapa, p. 130, CAMBRIDGE, *Araneidæ* in Biol. Centr.-Amer.; *A. quadripunctata*, Caraça (Brazil), p. 145, SIMON, Ann. Soc. ent. France, 1894 : n. spp.
- Ancocælus*, n. g., p. 581 ; SIMON, Hist. Nat. Araignees, i.
- A. livens*, Tasmania, p. 150, SIMON, Ann. Soc. ent. France, 1894, n. sp.
- Ancylorrhaxis*, n. g., for *Pholcomma hirsutum*, Em., p. 592 ; SIMON, Hist. Nat. Araignees, i.
- Argyrodes callipygus*, p. 119, *apiculatus*, p. 120, Tharrawaddy, THORELL, Spiders of Burma ; *A. argenteola*, Teapa, p. 128, CAMBRIDGE, *Araneidea* in Biol. Centr.-Amer. : n. spp.
- Ariannes gracillimus*, p. 74, *rufopictus*, p. 76, Tharrawaddy, THORELL, Spiders of Burma ; *A. furcata*, Teapa, p. 129, *gracillima*, Panama, p. 129, *approximata*, Panama, p. 130, CAMBRIDGE, *Araneidea* in Biol. Centr.-Amer. : n. spp.
- Asagena meridionalis*, Hungary, p. 39, KULCSZYNSKI, *Araneæ Hungariæ*, ii, pt. i, n. sp.
- Atypena*, n. g. (*Linyphiidæ*), *superciliosa*, Manilla, p. 668, SIMON, Hist. Nat. Araignees, i, n. sp.
- Audifia semigranosa*, Teffe (Amazons), p. 132, SIMON, Ann. Soc. ent. France, 1894, n. sp.
- Bathyphantes setiger*, Penrith, p. 91, pl. i, fig. 6, F. CAMBRIDGE, Ann. Nat. Hist. (6) xiii ; *B. similis*, Hungary, p. 74, KULCSZYNSKI, *Araneæ Hungariæ*, ii, pl. i : n. spp.
- Brachycentrum odontophorum*, Tiflis, p. 28, KULCSZYNSKI, Termes. Fuzetek, xviii, n. sp.
- Brattia*, n. g. (*Linyphiidæ*), p. 673, *spalicaria*, Venezuela, *scutila*, Manilla, *africana*, Gaboon, p. 674, SIMON, Hist. Nat. Araignees, i, n. spp.
- Caledonia*, n. g., p. 20, *evansii*, Pentlands, p. 23, pl. i, fig. 4, O. P. CAMBRIDGE, Ann. Scott. Nat. Hist. 1894, n. sp.
- Centromerus similis*, Hungary, p. 82, KULCSZYNSKI, *Araneæ Hungariæ*, ii, pt. i, n. sp.
- Cepheia*, n. g. for *Theonoe longiseta*, p. 589 ; SIMON, Hist. Nat. Araignees, i.
- Ceratinopsis antarctica*, p. 169, *arconiformis*, p. 170, Tierra del Fuogo, SIMON, An. Mus. Buenos Aires, iv, n. sp.
- Cerocida*, n. g., *strigosa*, Venezuela, p. 508, SIMON, Hist. Nat. Araignees, i, n. sp.

- Chrosiothes*, n. g., *silvaticus*, Venezuela, p. 521, SIMON, Hist. Nat. Araignees, i, n. sp.
- Clitolya*, n. g. (*Linyphiidae*), for *Erigone fastibilis*, p. 673 ; SIMON, Hist. Nat. Araignees, i.
- Coleosoma flavipes*, Teapa, p. 154, CAMBRIDGE, *Araneidea* in Biol. Centr.-Amer., n. sp.
- Coressa*, n. g. (*Linyphiidae*), for *Walckenaera minutissima*, Cambr., p. 647 ; SIMON, Hist. Nat. Araignees, i.
- C. altissima*, Venezuela, p. 648, SIMON, *t. c.*, n. sp.
- Coryphæus*, n. g., *glabriceps*, Carlisle, p. 87, pl. i, fig. 2, F. CAMBRIDGE, Ann. Nat. Hist. (6) xiii, n. sp.
- Coscinida*, n. g., p. 529 ; SIMON, Hist. Nat. Araignees, i.
- C. tibialis*, Biskra, *subtilis*, Venezuela, *novemnotata*, Kandy, p. 137, *gentilis*, Colombo, p. 138, SIMON, Ann. Soc. ent. France, 1894, n. spp.
- Craspedisia*, n. g., p. 580, for *Umfila cornuta*, Keys. ; SIMON, Hist. Nat. Araignees, i.
- Diaplocorus*, n. g., p. 529 ; SIMON, *t. c.*
- D. multipunctatus*, Victoria, p. 137, SIMON, Ann. Soc. ent. France, 1894, n. sp.
- Diplocephalus connectens*, Hungary, p. 103, KULCSZYNSKI, *Araneæ Hungariæ*, ii, pt. i, n. sp.
- Dipena subflavida*, Tharrawaddy, p. 102, *forficata*, Rangoon, p. 104, THORELL, Spiders of Burma ; *D. cyclooides*, Sierra Leone, p. 145, SIMON, Ann. Soc. ent. France, 1894 : n. spp.
- Emenista*, n. g. (*Linyphiidae*), *bisinuosa*, Kodeikanal, p. 700, SIMON, Hist. Nat. Araignees, i, n. sp.
- Enoplognatha ambigua*, Hungary, p. 43, KULCSZYNSKI, *Araneæ Hungariæ*, ii, pt. i ; *E. satlerii*, Madeira, p. 4, fig. 7, BÖSENBERG, Abh. Hamburg. Anst. xiii, No. 4 : n. spp.
- Episinopsis*, n. g., p. 522 ; SIMON, Hist. Nat. Araignees, i.
- E. albostrigatus*, Pebas, *rhomboidalis*, Singapore, p. 136, SIMON, Ann. Soc. ent. France, 1894, n. spp.
- Episinus bilineatus*, Transvaal, p. 520, SIMON, Hist. Nat. Araignees, i ; *E. putus*, Teapa, p. 132, CAMBRIDGE, *Araneidea* in Biol. Centr.-Amer.: n. spp.
- Epirotypus*, n. g., *brevipes*, Guatemala, p. 134, CAMBRIDGE, *t. c.*, n. sp.
- Erigone chiridota*, p. 108, *crucifera*, p. 110, *birmanica*, p. 111, *occipitalis*, p. 114, Tharrawaddy, THORELL, Spiders of Burma ; *E. dentosa*, Guatemala, p. 128, CAMBRIDGE, *Araneidea* in Biol. Centr.-Amer. : n. spp.
- Ero capensis*, Cape Town, p. 945, SIMON, Hist. Nat. Araignees, i, n. sp.
- Euryopsis molopica*, Rangoon, p. 105, *jucunda*, Tonghoo, p. 106, THORELL, Spiders of Burma ; *E. spinigera*, Guatemala, p. 146, CAMBRIDGE, *Araneidea* in Biol. Centr.-Amer. ; *E. orgovensis*, Hungary, p. 20, KULCSZYNSKI, *Araneæ Hungariæ*, ii, pt. i : n. spp.
- Frontina phenicea*, Guatemala, p. 144, CAMBRIDGE, Biol. Centr.-Amer., n. sp.

- Gnophomytis*, n. g., p. 560; SIMON, Hist. Nat. Araignees, i.
G. variolosa, Venezuela, p. 148, SIMON, Ann. Soc. ent. France, 1894, n. sp.
- Gongylidium morum*, Aberlady, p. 21, pl. i, fig. 2, O. P. CAMBRIDGE, Ann. Scott. Nat. Hist. 1894, n. sp.
- Grammonota trivittata, pallipes*, Long I., p. 86, BANKS, J. N. York Ent. Soc. 1895, n. spp.
- Haplins*, n. g. (*Linyphiidae*), p. 700, *subclathrata*, New Zealand, p. 701, SIMON, Hist. Nat. Araignees, i, n. sp.
- Helvitis germaini*, Matto Grosso, p. 132, SIMON, Ann. Soc. ent. France, 1894, n. sp.
- Hillhousia*, n. g. *desolans*, Southwell, p. 89, pl. i, fig. 4, F. CAMBRIDGE, Ann. Nat. Hist. (6) xiii, n. sp.
- H. turbatrix*, Cb., figured, pl. i, fig. 3; F. CAMBRIDGE, t. c.
- Histagonia*, n. g., p. 585, for *H. deserticola*, Sim.; SIMON, Hist. Nat. Araignees, i.
- Hyocrea*, n. g., p. 559; SIMON, t. c.
- H. implexa*, Venezuela, p. 146, SIMON, Ann. Soc. ent. France, 1894, n. sp.
- Hypobares*, n. g., p. 552, SIMON; Hist. Nat. Araignees, i,
- H. unisignatus*, Venezuela, p. 144, SIMON, Ann. Soc. ent. France, 1894, n. sp.
- Hypselistes*, n. g. (*Linyphiidae*), for *Erigone florens*, Cambr., p. 671; SIMON, Hist. Nat. Araignees, i.
- Hystagonia deserticola*, Bechuanaland, p. 148, SIMON, Ann. Soc. ent. France, 1894, n. sp.
- Itys*, n. g., *pergrata*, Guatemala, p. 127, CAMBRIDGE, *Araneida* in Biol. Centr.-Amer., n. sp.
- Janulus taprobanicus*, Kandy, *pictus*, Singapore, p. 134, *malachinus*, Pebas, *nebulosus*, Pernambuco, *salobrensis*, Bahia, p. 135, *germaini*, Paraguay, p. 136, SIMON, Ann. Soc. ent. France, 1894; *J. erythrophthalmus*, St. Vincent, p. 525, SIMON, P. Zool. Soc. London, 1894; *J. bifons*, Rangoon, p. 85, THORELL, Spiders of Burma: n. spp.
- Lasæola croatica*, Croatia, p. 24, CHYZER, *Araneæ Hungariæ*, ii, pt. 1; *L. proxima*, Tonbridge, p. 102, pl. A, fig. 3; O. P. CAMBRIDGE, P. Dorset Club, xvi: n. spp.
- Lasiargus*, n. g., p. 132, for *Micryphantes hirsutus*, Menge; KULCSZYNSKI, *Araneæ Hungariæ*, ii, pt. 1.
- Lathrodectus mactans* and *formidabilis*, discussed; DUGÉS, Act. Soc. Chili, iv, p. xlv. *L. scelio* and *L. katipo* compared; URQUHART, Tr. N. Zealand Inst. xxvi, p. 218.
- Lepthyphantes whympersi*, Ben Nevis, p. 93, pl. i, fig. 1, F. CAMBRIDGE, Ann. Nat. Hist. (6) xiii, n. sp.
- Linyphia mundenia*, New Zealand, p. 207, *decolora*, p. 208, *fucatinia*, p. 209, New Zealand, URQUHART, Tr. N. Zealand Inst. xxvi; *L. tersa*, Ceylon, p. 691, SIMON, Hist. Nat. Araignees, i: n. spp.
- Lygarina*, n. g. (*Linyphiidae*), *nitida*, Brazil, *monticola*, Ceylon, p. 648, SIMON, t. c., n. spp.

- Maso carpathicus*, Carpathia, p. 133, CHYZER, Araneæ Hungariæ, ii, pt. 1, n. sp.
- Mecynargus*, n. g. for *Erigone longa*, Kulcs., p. 121; KULCSZYNSKI, *t. c.*, pt. 1.
- Mecynidius*, n. g., *dentipalpis*, Transvaal, p. 507, SIMON, Hist. Nat. Araignees, i, n. sp.
- Meotipa*, n. g., p. 519; SIMON, *t. c.*
- M. picturata*, Kodeikanal, p. 133, *vesiculosa*, Manilla, p. 134, SIMON, Ann. Soc. ent. France, 1894, n. spp.
- Mesopneustes*, n. g., *nigrovittata*, Teapa, O. P. CAMBRIDGE, *Araneidea* in Biol. Centr.-Amer., n. sp.
- Microneta clypeata*, Penrith, p. 90, pl. i, fig. 5, F. CAMBRIDGE, Ann. Nat. Hist. (6) xiii, n. sp.
- Microdipœna*, n. g., [p. 84, *guttata*, Long I., p. 85, BANKS, J. N. York Ent. Soc. 1895, n. sp.
- Mimetus bigibbosus*, Teapa, p. 133, CAMBRIDGE, *Araneidea* in Biol. Centr.-Amer., n. sp.
- Mysmena*, n. g., p. 588, for *Dipana leucoplagiata*, Sim., SIMON, Hist. Nat. Araignees, i.
- Mysmena conica*, Algeria, *illectrix*, Manilla, *saltuensis*, Ceylon, p. 149, SIMON, Ann. Soc. ent. France, 1894, n. spp.
- Neriene insolens*, Algeria, *coronata*, Venezuela, p. 333, *analis*, Victoria, p. 667, SIMON, Hist. Nat. Araignees, i, n. spp.
- Nesticus biroï*, in cave at Fericse, p. 328, KULCSZYNSKI, Math. naturw. Ber. Ungarn, xii; *N. affinis*, p. 14, *fodinarum*, p. 15, *puteorum*, p. 17, *hungaricus*, p. 17, Hungary, CHYZER & KULCSZYNSKI, Araneæ Hungariæ, ii, pt. 1 : n. spp.
- Notioscopus australis*, Capo Towu, p. 667, SIMON, Hist. Nat. Araignees, i, n. sp.
- Obrima*, n. g. (*Linyphiidæ*), *tennenti*, Kandy, p. 703, SIMON, *t. c.*, n. sp.
- Onesinda*, n. g. for *Walckenaera minutissima*, p. 105, O. P. CAMBRIDGE, P. Dorset Club, xvi.
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- Parabius*, n. g., p. 43, *mandibularis*, Lampong (Sumatra), THORELL, Bih. Svenska Ak. xx, pt. iv, No. 4, n. sp.
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- P. subtilis*, Zanzibar, p. 145, SIMON, Ann. Soc. ent. France, 1894, n. sp.
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- Piesocalus*, n. g. (*Linyphiidae*), p. 667, *javanus*, Java, p. 668, SIMON, Hist. Nat. Araïgnees, i, n. sp.
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- P. meadli*, Hoddesdon, p. 101, pl. ii, fig. 2, *campbellii*, Hoddesdon, p. 105, pl. ii, fig. 5, F. CAMBRIDGE, *t. c.*, n. spp.
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- Virada rugithorax*, *tovarensis*, Venezuela, p. 148, SIMON, *t. c.*, n. spp.
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- SIMON, Hist. Nat. Araignees, i, pp. 953 & 954, divides this family into the following subfamilies: *Aphantochilinae*, *Strophiinae*, *Stiphropodinae*, *Stephanopsinae*, *Misumeninae*, *Philodrominae*.
- Amyciaea hesperia*, Sierra Leone, p. 434, SIMON, Ann. Soc. ent. Belgique, xxxix, n. sp.
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- Epicadus*, n. n. for *Eripus*, Walek., preocc., p. 1052; SIMON, t. c.
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- Firmicus*, n. g. for *Synæma quadrinotatum*, Sim., p. 1036; SIMON, t. c.
- F. multipunctatus*, Aden, *bivittatus*, Algeria, p. 438, SIMON, Ann. Soc. ent. Belgique, xxxix, n. spp.
- Gephyra candida*, Saigon, p. 442, SIMON, t. c., n. sp.
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- Hericeus transvaalicus*, Transvaal, p. 438; SIMON, t. c., n. sp.
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- Monases pustulosus*, Galla Country, p. 513, PAVESI, Ann. Mus. Genova, xxxv ; *M. leo*, Calabria, CAFFI, I Ragui di Calabria, 1895 : n. spp.
- Mystaria*, n. g., *rufolimbata*, *unicolor*, Sierra Leone, p. 989, SIMON, Hist. Nat. Araignees, i, n. sp.
- Ocyllus pallens*, Lower Burma, p. 301, THORELL, Spiders of Burma, n. sp.
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- Philodromus aureolus*, Clerck, *variegatus*, *similis*, p. 109, *pallens*, p. 110, *rufolimbatus*, *marmoratus*, p. 111, Hungary, KULCSZYSKI, Araneæ Hungariæ, i, n. subsp.
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- Phrynarachne papulata*, *aspera*, S. Tenasserim, p. 308, THORELL, Spiders of Burma, n. var.
- P. bimaculata*, Tharrawaddy, p. 308, THORELL, *t. c.*; *P. gracilipes*, Galla Country, p. 25, PAVESI, Ann. Mus. Genova, xxxv : n. spp.
- Physoplatys*, n. g., p. 1037; SIMON, Hist. Nat. Araignees, i.
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- Smodicinus*, n. g., p. 996; SIMON, *t. c.*
- S. coroniger*, Sierra Leone, p. 433, SIMON, Ann. Soc. ent. Belgique, xxxix, n. sp.
- Stephanopsis hirsuta*, Clarence River, p. 292, pl. x, fig. 4, RAINBOW, P. Linn. Soc. N. S. Wales (2) viii, n. sp.: name altered to *hispidula*; RAINBOW, *op. cit.* (2) x, p. 350.
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- Synaema madida*, Mexico, p. 153, CAMBRIDGE, *Araneidea* in Biol. Centr.-Amer.; *S. lineatum*, Singapore, p. 353, THORELL, Bull. Soc. ent. Ital. xxvi : n. spp.
- Synalus*, n. g. for *Stephanopsis angusta*, L. Koch, p. 1055; SIMON, Hist. Nat. Araignees, i.
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- Tagulis*, n. g., *granulosus*, 'Sierra Leone,' p. 973, SIMON, Hist. Nat. Araignees, i; *T. mystacina*, Ceylon, p. 432, SIMON, Ann. Soc. ent. Belgique, xxxix : n. spp.
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- Titidius*, n. g. for *Tmarus rubrosignatus*, Keys. ; SIMON, Hist. Nat. Araignees, i.
- Thomisus grubei*, Solib-Tshij, p. 337, SIMON, Bull. Ac. St. Petersb. (5) ii ; *T. vastus*, Bagamoyo, p. 33, pl. i, fig. 10, BÖSENBERG & LENZ, Jahresber. Hamburg. Anst. xii : n. spp.
- Tmarus pulchripes*, Singapore, p. 342, THORELL, Bull. Soc. ent. Ital. xxvi ; *T. latifrons*, Lower Burma, p. 298, THORELL, Spiders of Burma ; *T. horvathi*, Kutais, p. 25, KULCSZYNSKI, Termes. Fuzetek, xviii ; *T. mendax*, Mescala, p. 139, CAMBRIDGE, *Araneidea* in Biol. Centr.-Amer. : n. spp.
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- Xysticus pellar*, Amula, p. 138, CAMBRIDGE in Biol. Centr.-Amer. ; *X. albomaculatus*, Hungary, p. 94, KULCSZYNSKI, *Araneæ Hungariæ*, i ; *X. fraternus*, Long I., p. 90, BANKS, J. N. York Ent. Soc. 1895 ; *X. altaicus*, Altai, p. 338, SIMON, Bull. Ac. St. Petersb. (5) ii : n. spp.
- Zametopius trimeni*, Cape Town, p. 432, SIMON, Ann. Soc. ent. Belgique, xxxix, n. sp.

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- Philoponus lugubris*, Tharrawaddy, p. 125, THORELL, Spiders of Burma, n. sp.
- Modisimus maculatipes*, Teapa, *putus*, Teapa, p. 148, *inornatus*, Teapa, p. 149, CAMBRIDGE, *Araneidea* in Biol. Centr.-Amer., n. spp.
- Pholcus ornatus*, Teneriffe, p. 12, fig. 14, BÖSENBERG, Abh. Hamburg. Anst. xiii, No. 4 ; *P. calligaster*, p. 71, *infirmus*, p. 72, Rangoon, THORELL, Spiders of Burma : n. spp.
- Psilochorus nigrifrons*, p. 519, *lemniscatus*, p. 520, St. Vincent, SIMON, P. Zool. Soc. London, 1894, n. spp.
- Uloborus manicatus*, p. 127, *omædus*, p. 129, *limbatus*, p. 131, *truncatus*, p. 133, *mollis*, p. 134, Tharrawaddy, *leucosagma*, Tonghoo, p. 135, *ndatus*, Rangoon, p. 136, THORELL, Spiders of Burma ; *U. viridimicans*, p. 66, *sexfasciculatus*, p. 67, *semimucronatus*, *grammicus*, Philippines, SIMON, Ann. Soc. ent. France, lxii : n. spp.

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- Asceua tenera*, p. 29, *flexuosa*, p. 30, Tharrawaddy, THORELL, Spiders of Burma, n. spp.
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- Hermippus selectus*, Arussi-Galla, p. 504, PAVESI, *t. c.*, n. sp.
- Storena aethiopica*, Galla Country, p. 506, PAVESI, *t. c.*; *S. bergi*, Tierra del Fuego, p. 169, SIMON, An. Mus. Buenos Aires, iv; *S. decorata*, Rangoon, p. 23, *suavis*, Tenasserim, p. 25, THORELL, Spiders of Burma: n. spp.
- S. semiflava*, p. 77, *multiguttata*, Antipolo, p. 78; SIMON, Ann. Soc. ent. France, lxii.
- Suffucia heliophila*, Antipolo, p. 78; *tigrina*, Kodeikanal, p. 79, SIMON, *t. c.*, n. spp.
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- Zorocrates pictus*, Lower California, p. 106, SIMON, Bull. Mus. Paris, 1895; *Z. badius*, Lower California, p. 134, SIMON, Bull. Soc. zool. France, 1895, n. spp.

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XII. MYRIOPODA AND PROTOTRACHEATA.

BY

R. I. Pocock.

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- (7) Zur Kenntnis der Copulationsorgane der Juliden, über eine neue Juliden-Gattung und eine neue *Tachypodiulus*-Art. *T. c.* pp. 321-325.
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II. BIOLOGY.

A. ANATOMY, PHYSIOLOGY, EMBRYOLOGY, BIONOMICS, &c.

Relationship between *Chilopoda*, *Diplopoda*, and other *Arthropoda*; KINGSLEY.

Morphology and classification of *Pauropoda*; KENYON.

Morphology of *Pauropus* and *Scolopendrella*, and of the orders of *Myriopoda*; SCHMIDT (1, 2, 3).

Embryology of Diplopods; CHOLODKOVSKY.

Anatomy and histology of *Scutigera*; ADENSAMER.

Development of vitelline nucleus in *Scutigera*; BISOGNI.

Poison of Centipedes; Insect Life, vii, p. 260.—Poison gland of *Chilopoda*; DUBOSCQ (1, 2, 3).

Maternal instincts of *Scolopendra*; QUELCH, URICH.

Food of *Scutigera*; MURTFELDT.

On the digestive tract of *Chilognatha*; VISART.

Luminosity of *Linotenia*; THOMAS.

Malformation of *Himantarium*; BRÖLEMANN (6).

Lymphatic system of Myriapods; KOWALEWSKY.

General account of the natural history, anatomy, and embryology, &c., of *Myriopoda*; SINCLAIR.

Preparation of the nerve-endings of sense-organs; RATH.

Structure of copulatory feet of *Polydesmida*; ATTEMS (1): of *Julida*; ATTEMS (2): VERHOEFF: of *Lyiopetalida*; SILVESTRI (3).

On the European genera of *Julida*; VERHOEFF (8, 12), POCOCK (4).

B. DISTRIBUTION.

Palaearctic and Ethiopian Regions.

Ireland: CARPENTER (1, 2), POCOCK (2).

France: BRÖLEMANN (3, 5, 7, 9), GADEAU DE KERVILLE & LATZEL (3), GAZAGNAIRE.

Switzerland (Geneva): HUMBERT, VERHOEFF (5).

Italy: BERLESE; Lombardy, BRÖLEMANN (8); Liguria, POCOCK (8), SILVESTRI (1, 2, 7, 8).

Hamburg: LATZEL (1).—Rhine Province: VERHOEFF (1).

Bohemia: NÉMEC (1, 2).

Austro-Hungary: ATTEMS (3, 4), VERHOEFF (2, 4, 11, 13).

Corsica: POCOCK (1).

Madeira, Canary, and Salvage Is.: LATZEL (2): La Palma, REBEUR-PASCHWITZ.

Central Asia: TROTZIMA (1, 2).

Palestine and Syria: SILVESTRI (5).

S. Arabia: POCOCK (9).

Somaliland: SILVESTRI (12).

Camaroons: PORAT.

Loanda (W. Africa): COOK (1).

S.W. Africa : LENZ.

E. Africa : COOK (5).

Seychelles : BRÖLEMANN (4).

Nearctic and Neotropical Regions.

North America : *Craspedosomatidae* ; COOK & COLLINS.

West Indies : POCOCK (5, 6).

Central America : POCOCK (10).

Brazil : GOLDI.

Surinam : COOK (2).

Argentine Republic : SILVESTRI (6).

South America : SILVESTRI (11).

Oriental and Australasian Regions.

Malay Archipelago : POCOCK (3), SILVESTRI (10). Papuaasia : SILVESTRI (9).

China and Japan : POCOCK (4).

Solomon Islands : POCOCK (7).

Fiji Islands : COLENSO.

PALÆONTOLOGY.

Palæocampa, the type of the family *Palæocampidae* constitutes the order *Lophotricha*, of the subclass *Pselaphognatha* ; COOK, Ann. N. York Ac. ix, p. 2.

Xyloiolus, n. n. (*Xylobius*, Dawson, in part), is allied to the recent genus *Stemmatoiulus* ; COOK, t. c. p. 3.

Archicambala, n. g. for *Xylobius dawsoni*, Scudd., forms, with *Archiolus*, the family *Archiolidae* of the suborder *Cambaloidea* ; COOK, t. c. p. 6.

The *Archipolypoda* constitute a subclass of the *Diplopoda* ; COOK, t. c. p. 7.

III. SYSTEMATIC.

CHILOPODA.

SILVESTRI (9) recognises the following sections of this class : Subclass I.

Epinomorpha ; order 1. *Anartiostigmata*, new for *Scutigera* ; order 2.

Artiostigmata, new for *Lithobiidae*. Subclass II. *Anamorpha* ; order

1. *Oligostigmata* new for *Scolopendridae* ; order 2. *Pantastigmata*

new for *Geophilidae*.

POCOCK (10) divides the class as follows : Subclass I. *Anartiostigma*,

order *Scutigera*, new for *Scutigera*. Subclass II. *Artio-*

stigma ; order 1. *Lithobiomorpha*, new for *Lithobiidae* ; order 2.

Scolopendromorpha, new for *Scolopendridae*, *Scolopocryptopidae*, new ;

Cryptopidae, new ; *Newportiidae*, new ; order 3. *Geophilomorpha*, new

for *Geophilidae*.

COOK (4) recognises the superfamily *Scolopendroidæ* for the *Scolopendridæ* and the *Geophiloidæ* for the following families: *Gonibregmatidæ*, new; *Orygidæ*, new; *Himantariidæ*, new; *Disargidæ*, new; *Ballophilidæ*, new; *Schendylidæ*, new; *Dignathodontidæ*, new; *Geophilidæ* and *Dicellyphilidæ*, new.

SCUTIGERIDÆ.

Scutigera lincei, Wood, = *mexicana*, Sauss., *occidentalis*, Mein., Mexico, &c., p. 1, pl. i, fig. 1, *nigro-vittata*, Mein., Panama, p. 2, pl. i, fig. 2, figured and described; POCOCK, *Chilopoda* in Biol. Centr.-Amer.
Scutigera æthiopica, Shoa, p. 483, SILVESTRI, Ann. Mus. Genova, xxxv, n. sp.

LITHOBIIDÆ.

Henicops albipes, Tjibodas, p. 309, pl. xix, fig. 1, POCOCK in WEBER'S Zool. Ergebnisse, n. sp.
Lithobius brevicornis, Daday (= *transsylvanicus*, Latzel); VERHOEFF, Verh. Ges. Wien, xlv, p. 298.
L. leptopus, *brölemanni*, Sarawejo, p. 297, VERHOEFF, t. c. n. subsp.
L. fasciatus, Newp., *apenninigericus*, Apennines, p. 437, BRÖLEMANN, Mem. Soc. zool. France, vii, n. var.
L. patriarchalis, Naples, pt. lxxiv, No. 8, BERLESE, *Acari, Myriopoda*, &c.; *L. (Archilithobius) infossus*, Rome, p. 43, SILVESTRI, Boll. Soc. Rom. Zool. iii; *L. (Archilithobius) biporus*, Bracciano, p. 192, SILVESTRI, t. c. pt. v; *L. ocellus*, in cave near Sostri Ponente, p. 579, (*Archilithobius) excellens*, in cave of "Ginepro," p. 580, SILVESTRI, Ann. Mus. Genova, xxxiv; *L. orotavae*, Orotava, p. 117, *teneriffæ*, Teneriffe, LATZEL, Jahresber. Hamburg. Anst. xii; *L. decertens*, p. 248, *magnus*, p. 249, *alaicus*, p. 250, *ferganensis*, p. 252, Alai (Central Asia), TROTZINA, Horæ Soc. ent. Ross. xxviii; *L. magnificus*, S. Ural, p. 108, pl. i, TROTZINA, op. cit. xxxix; *L. shimensis*, Tsu Shima, *holstii*, Ashinoju, p. 349, POCOCK, Ann. Nat. Hist. (6) xv; *L. loræ*, New Guinea, p. 623, SILVESTRI, Ann. Mus. Genova, xxxiv; *L. seychellarum*, Seychelles, BRÖLEMANN, Mem. Soc. zool. France, 1895; *L. (Archilithobius) weberi*, Sumatra, p. 310, pl. xix, fig. 2, *javanicus*, Tjibodas, p. 311, pl. xix, fig. 3, POCOCK in WEBER'S Zool. Ergebnisse; *L. (Archilithobius) sumatranus*, Sumatra, p. 713, SILVESTRI, Ann. Mus. Genova, xxxiv; *L. macroceros*, Omilteme, p. 4, pl. i, fig. 3, *pontifex*, Amula, p. 5, pl. i, fig. 4, *humberti*, Omilteme, p. 5, fig. 5, *godmani*, Amula, p. 6, fig. 6, *salvini*, Omilteme, p. 7, fig. 7, *vulcani*, Volcan de Agua, p. 8, fig. 8, *decodontus*, Volcan de Acate-nango, p. 9, fig. 9, *stolli*, Volcan de Agua, p. 9, fig. 10, POCOCK, *Chilopoda* in Biol. Centr.-Amer. : n. spp.
L. aztecus, from Guerrero and Guatemale, p. 10, fig. 11, figured and described; POCOCK, *Chilopoda* in Biol. Centr.-Amer.

SCOLOPENDRIDÆ.

- Cormocephalus spinosissimus*, Shoa, p. 483, SILVESTRI, Ann. Mus. Genova, xxxv, n. sp.
- Cryptops canariensis*, Teneriffe, p. 119, LATZEL, Jahresber. Hamburg. Anst. xii; *C. ruficeps*, Sinkarah, p. 315, pl. xix, fig. 7, POCOCK in WEBER'S Zool. Ergebnisse, &c.; *C. lorix*, New Guinea, p. 628, SILVESTRI, Ann. Mus. Genova, xxxiv; *C. modiglianii*, Sumatra, p. 717, SILVESTRI, t. c.; *C. crassipes*, Argentine, p. 768, SILVESTRI, t. c. : n. spp.
- Heterostoma lorix*, [New Guinea, p. 631, *crassipes*, New Guinea, p. 632, SILVESTRI, t. c.
- Newportia balzanii*, Paraguay, p. 767, SILVESTRI, Ann. Mus. Genova, xxxiv; *N. spinipes*, Guerrero, p. 33, pl. iii, fig. 5, *rogersi*, Costa Rica, p. 34, pl. iii, fig. 6, POCOCK, Biol. Centr.-Amer. : n. spp.
- Ostogmus latidens*, Buitenzorg, p. 313, pl. xix, fig. 5, POCOCK in WEBER'S Zool. Ergebnisse; *O. lorix*, p. 627, *discretum*, p. 628, New Guinea, SILVESTRI, Ann. Mus. Genova, xxxiv; *O. niasense*, Nias, p. 715, *modiglianii*, Mentawai, p. 715, *nemorensis*, Sumatra, p. 716, SILVESTRI, t. c. : n. spp.
- Paracryptops weberi*, Poc., described and figured, p. 316, pl. xix, fig. 8, POCOCK in WEBER'S Zool. Ergebnisse; *P. breviunguis*, New Guinea, p. 629, SILVESTRI, Ann. Mus. Genova, xxxiv.
- Parotostigmus*, n. g., p. 25, *denticulatus*, Amula, Omilteme, p. 25, pl. ii, fig. 10, POCOCK, *Chilopoda* in Biol. Centr.-Amer., n. sp.
- Rhysida immarginata*, Porat, Central America, p. 26, pl. iii, fig. 1, *longipes*, Newp., Mazatlan, p. 27, pl. ii, fig. 11, figured and described; POCOCK, *Chilopoda* in Biol. Centr.-Amer.
- R. rugulosa*, Manindjau (Sumatra), p. 314, pl. xix, fig. 6, POCOCK in WEBER'S Zool. Ergebnisse, &c., n. sp.
- Otocryptops ferrugineus*, Linn., Guerrero, pl. iii, fig. 2, *melanostoma*, Newp., Guatemala, p. 29, pl. iii, fig. 3, figured and described; POCOCK, Biol. Centr.-Amer.
- Scolopendra valida*, Luc., *deserticola*, Arabia, *persica*, Persian Gulf, *balfouri*, Socotra, p. 297, POCOCK, J. Linn. Soc. xxv : n. subsp.
- S. longipleura*, Tucumani, p. 2, SILVESTRI, Boll. Mus. Torino, x; *S. metuenda*, Solomon Is., p. 423, POCOCK, Ann. Nat. Hist. (6) xvi; *S. pygmaea*, Amula, p. 15, pl. ii, fig. 8, *tenuitarsis*, Omilteme, p. 18, pl. ii, fig. 5, *pachygnatha*, Zacatecas, p. 23, pl. ii, fig. 3, POCOCK, *Chilopoda* in Biol. Centr.-Amer. : n. spp.
- S. copeana*, Wood, *gaumeri*, Honduras, p. 20, POCOCK, t. c., n. subsp.
- S. mediterranea*, n. n. to embrace *S. dalmatica*, Koch, *africana*, Verh., and *lusitanica*, n. subsp.; VERHOEFF, Berlin. ent. Zeitschr. xxxviii, p. 319, &c. *S. pomacea*, Koch, = *chichimeca*, Humb. & Sauss., *olmecca*, Humb. & Sauss., Cuernavaca, p. 15, pl. ii, fig. 7; *punctiventris*, Newp., = *inequidens*, Gerv., and *woodii*, Mein., Tampico, &c., p. 17, pl. ii, fig. 6; *heros*, Gir., Mexico, p. 18, pl. i, fig. 12; *copeana*, Wood,

- Mexico, p. 19, pl. ii, fig. 1; *sumichrasti*, Sauss., Guatemala, p. 20, pl. ii, fig. 4; *viridis*, Say, = *azteca*, *otomita*, *maya*, *tolteca*, p. 21, pl. ii, fig. 2: figured and described; Pocock, *Chilopoda* in Biol. Centr.-Amer.
- Scolopendrides*, Sauss., characterised, the 3 species, *mexicanus*, Humb. & Sauss., *ernsti*, Poc., *brevipes*, Poc., diagnosed, p. 30; Pocock, Biol. Centr.-Amer.
- S. stolli*, Quezaltenango, p. 31, pl. iii, fig. 4; Pocock, *t. c.*, n. sp.

GEOPHILIDÆ.

- Ballophilus*, n. g., p. 70, Cook, P. U. S. Mus. xviii, n. sp.
- Chomatobius mexicanus*, Humb. & Sauss., San Diego, Texas, pl. iii, fig. 13, figured; Pocock, *Chilopoda* in Biol. Centr.-Amer.
- Chomatophilus*, n. g., *smithi*, Amula, p. 39, pl. iii, fig. 12, Pocock, *t. c.*, n. sp.
- Ctenophilus*, n. g. of *Schendylidæ*, *africanus*, p. 71, Liberia, Cook, P. U. S. Mus. xviii, n. sp.
- Dicellyphilus*, n. g. for *Mecistocephalus limatus*, Wood; Cook, p. 61, *t. c.*
- Disargus*, n. g., for *Himantarium striatum*, Poc.; Cook, *t. c.*
- Geophilus*, Leach, type *carpophagus*, Leach, has for syn. *Strigamia*, Gray, and *Arthronomalus*, Newport; Cook, Amer. Natural. 1895, p. 866.
- G. aztecus*, Humb. & Sauss., Omilteme, p. 36, pl. iii, fig. 7, *toltecus*, Omilteme, p. 37, pl. iii, fig. 8, figured and described; Pocock in Biol. Centr.-Amer.
- G. godmani*, Omilteme, p. 37, pl. iii, fig. 11, *salvini*, Teapa, pl. iii, fig. 10, *stolli*, Guatemala, p. 38, pl. iii, fig. 9, Pocock, *Chilopoda* in Biol. Centr.-Amer.; *G. vinciguerra*, *romanus*, Rome, p. 194, SILVESTRI, Boll. Soc. Rom. Zool. iii, pt. v; *G. macleira*, Funchal, p. 120, LATZEL, Jahresber. Hamburg. Anst. xii; *G. porosus*, Ekundu, p. 22, *quadrisulcatus*, *æqualis*, *unguiculatus*, p. 23, Kamerun, *uliginosus*, Bibundi, *edentulus*, Kamerun, p. 24, *maculosus*, Bonge, pt. iv, p. 25, fig. 2, PORAT, Bih. Sveuska Ak. xx, No. 5; *G. paraguayensis*, Paraguay, p. 768, *armatus*, Argentine, p. 769, SILVESTRI, Ann. Mus. Genova, xxxiv; *G. (?) holstii*, Ashinoju, p. 352, pl. xi, fig. 1, Pocock, Ann. Nat. Hist. (6) xv; *G. borellii*, p. 2, *longitarsis*, p. 3, Paraguay, SILVESTRI, Ann. Mus. Torino, x : n. spp.
- Gonibregmatus insularis*, Island of Saleyer, p. 318, pl. xix, fig. 19, Pocock in WEBER'S Zool. Ergebnisse, n. sp.
- Lamnonyx*, n. g., type *leonensis*, p. 61, Cook, P. U. S. Mus. xviii, p. 61, n. sp.; also contains most of the species from the Old World previously referred to *Mecistocephalus*.
- Mecistocephalus gigas*, Haase, *cyclops*, Seychelles, p. 528, BRÖLEMANN, Mem. Soc. zool. France, 1895, n. var.
- M. smithi*, near Ningpo, p. 351, *mirandus*, Great Loo-Choo, p. 352, Pocock, Ann. Nat. Hist. (6) xv : n. spp.
- M.*, Newp., has for type *Geophilus attenuatus*, Say, = *ferrugineus*, C. Koch, *fulvus*, Wood; Cook, P. U. S. Mus. xviii, pp. 59-61.

- Megethmus*, n. g., for *Mecistocephalus microporus*, Haase ; COOK, P. U. S. Mus. xviii.
- Nannophilus*, n. g. for *Schendyla eximia*, p. 71 ; COOK, P. U. S. Mus. xviii.
- Notiphilides maximiliani*, Humb. & Sauss., Mexico, Guatemala, pl. iii, fig. 15, figured ; POCK, *Chilopoda* in Biol. Centr.-Amer.
- Orinophilus*, n. n. for *Orinomus oligopus*, Attems, p. 72 ; COOK, P. U. S. Mus. xviii.
- Orphæus (Aspidopleres) fusatus* (Koch), described and figured, p. 18, fig. 1 ; Bih. Svenska Ak. xx, pt. iv, No. 5.
- O. polypodus*, Paraguay, p. 768, SILVESTRI, Ann. Mus. Genova, xxxiv, n. sp.
- O. brevilabiatu*s, Newp., = *Chomatobius brasilianus*, Sauss., Central America, figured, pl. iii, fig. 14 ; POCK, *Chilopoda* in Biol. Centr.-Amer.
- Piostocephalus*, n. g. for *Geophilus tenuitarsis*, Poc. ; COOK, P. U. S. Mus. xviii.
- Schizotenia*, n. g. of *Geophilidæ*, *prognatha*, Liberia, p. 72, COOK, *t. c.*, n. sp.
- Tomotenia*, n. n. for *Strigamis parviceps*, Wood, p. 866 ; COOK, Amer. Natural. 1895.

PAUROPODA.

- Euryptauropus pocillifer*, Bevagna, p. 195, SILVESTRI, Boll. Soc. Rom. Zool. iii, pt. v, n. sp.

DIPLOPODA.

Pocock (3, 5) divides the *Chilognatha* into :—

- Order *Oniscomorpha*, for *Glomeridæ* and *Zephroniidæ*.
- Order *Limacomorpha*, new, for *Glomeridesmidæ*.
- Order *Helminthomorpha*, with suborders *Colobognatha*, *Callipodoidea*, *Chordeumoidea*, *Polydesmoidea*, and *Juloidea*.

COOK (7) gives the following classification of the *Diplopoda* :—

- Pselaphognatha* : Order *Ancyotricha*, new, for *Polyxenidæ* and Order *Lophotricha*, new, for *Palaocampidæ*.
- Chilognatha* : Order *Oniscomorpha* ; suborder *Glomeroidea*, new, and *Zephronioidea*, new.
- Order *Limacomorpha* ; suborder *Glomeridesmoidea*, new, and *Zephronidesmoidea*, new.
- Order *Colobognatha* ; suborder *Polyzonoidea*, for *Polyzonidæ*, *Siphonotidæ*, new, *Siphonophoridæ*, *Siphonorhinidæ*, new ; *Platydesmoidea* for *Platydesmidæ*, new ; *Siphonocryptoidea*, new, for *Siphonocryptidæ*, new.
- Order *Monocheta*, new ; suborder *Stemmatoiuloidea* for *Stemmatoiulidæ* ; suborder *Xyloiuloidea*, new, for *Xyloiulidæ*, new.

- Order *Merocheta*, new; suborder *Lysiopetaloides*, new, for *Lysiopetalidæ*; suborder *Craspedosomatoidea* for *Craspedosomatidæ*, *Heterochordeumidæ* and *Striariidæ*, new; suborder *Polydesmoidea* for *Ammodesmidæ*, new, *Augodesmidæ*, new, *Campodesmidæ*, new, *Chelodesmidæ*, new, *Cryptodesmidæ*, *Cyclodesmidæ*, new, *Gomphodesmidæ*, new, *Haplodesmidæ*, new, *Oniscodesmidæ*, *Oxydesmidæ*, new, *Paradoxosomatidæ*, *Platyrrhachidæ*, *Polydesmidæ*, *Strongylosomatidæ*, new, *Stylodesmidæ*, new, *Xystodesmidæ*, new.
- Order *Diplozeta*, new; suborder *Spirostreptoidea*, new, for *Spirostreptidæ* and *Trachystreptidæ*, new; suborder *Cumbaloidea*, new, for *Pseudonannolenidæ*, *Nannolenidæ*, new, *Cambalidæ*, *Cambalopsidæ*, new, *Archiiulidæ*, new; suborder *Iuloidea*, for *Iulidæ*, *Paraiulidæ*, new, *Pæromopidæ*, new, *Blaniulidæ*, new, *Isobatidæ*, new; suborder *Siphoniuloidea* for *Siphoniulidæ* (ordinal name *Rhinognatha* proposed in note for this suborder).
- Order *Anocheta*, new; suborder *Spiroboloidea* for *Spirobolidæ*.

PSELAPHOGNATHA.

POLYXENIDÆ.

- Lophoproctus*, n. g., Nervi, p. 505, *cæcus*, Nervi (Liguria), p. 506, POCOCK, Ann. Mus. Genova, xxxiv, n. sp.
- Polyxenus longisetis*, Mustique I., St. Vincent, p. 474, pl. xxxvii, fig. 1, POCOCK, J. Linn. Soc. xxiv; *P. albus*, Genoa, p. 506, POCOCK, Ann. Mus. Genova, xxxiv : n. spp.
- P. lucidus*, figured and described; BERLESE, pt. lxxv, No. 10, *Acari, Myriopoda*, &c.; and SILVESTRI, Boll. Soc. Rom. Zool. iii, p. 39.

ONISCOMORPHA, Poc.

POCOCK in WEBER'S Zool. Ergebnisse, &c., p. 321.

GLOMERIDÆ.

- Recharacterised; POCOCK in WEBER'S Zool. Ergebnisse, &c., p. 322.
- Glomeridella*, n. n. for *Latzelia*, Bollman, preocc.; BRÖLEMANN, Zool. Anz. xviii.
- Glomeris perplexa*, Hamburg, p. 107, LATZEL, Jahresber. Hamburg. Aust. xii; *G. kervillei*, Normandy, p. 219, LATZEL, Bull. Soc. Rouen, 1895; *G. albicornis*, Sinkarah, p. 323, *infuscatus*, Mount Singalang, p. 324, pl. xix, fig. 10, POCOCK in WEBER'S Zool. Ergebnisse, &c.; *G. modiglianii*, Nias, *formosa*, Benkolen, p. 720, *diversicolor*, Si-Rambé, p. 721, SILVESTRI, Ann. Mus. Genova, xxxiv; *G. bitæniata*, Val d'Ambria, p. 439, BRÖLEMANN, Mem. Soc. zool. France, vii : n. spp.

- G. biteniata, uniformis*, Madonna di Venese, BRÜLEMANN, *t. c.* ;
G. ornata, Koch, *helvetica*, Rhone, p. 284, VERHOEFF, Berlin. ent.
 Zeitschr. xxxix; *G. transalpina*, Koch, *oblongoguttata*, Tyrol, p. 17,
 VERHOEFF, Verh. Ges. Wien, xliiv : n. varr.

ZEPHRONIIDÆ, new.

- POCOCK in WEBER'S Zool. Ergebnisse, &c., iv, p. 325.
Arthrospæra, n. g., type *Zephronia heterosticta*, Newp., p. 410 ;
wroughtoni, Kanara, *thurstoni*, Nilghiri Hills, *bicolor*, Salem,
hendersoni, Kodaikanal, *disticta*, Yercaud, *nitida*, Kodaikanal, *dalyi*,
 Lone Cottage (Sheveroy), *fumosa*, Koimbatour, *dauidsoni*, Koim-
 batur, POCOCK, Ann. Nat. Hist. (6) xvi, pp. 411 & 412, n. spp.
Custanotherium, n. g., p. 413, *hosei*, Baram, *everettii*, N.-W. Borneo,
whiteheadi, Kina Balu, *porosum*, Philippine Is., *fulvicorne*, Albay,
hirsutellum, Palawan, p. 414, POCOCK, *t. c.* n. spp.
Cyliosoma, n. g. [type *Zephronia angulata*, Butl.], with *C. striatatum*,
 Greymouth (New Zealand), p. 44, POCOCK, *t. c.* n. sp.
Spheropæus, Brandt, recharacterised, p. 326 ; POCOCK in WEBER'S Zool.
 Ergebnisse, &c. ; POCOCK, Ann. Nat. Hist. (6) xvi, p. 412. *S. her-
 cules*, Brandt, syn. *banksiana*, *barbata*, Butl., redescrbed ; POCOCK
 in WEBER'S Zool. Ergebnisse, &c., pp. 326 & 327, pl. xx, fig. 1.
S. gladiator, Paningahan, p. 327, pl. xix, fig. 327, POCOCK in WEBER'S
 Zool. Ergebnisse, &c. ; *S. zonatus*, Malacca, p. 412, *bimaculatus*,
 Singapore, *variegatus*, loc. P, *stolli*, Batavia, POCOCK, Ann. Nat. Hist.
 (6) xvi ; *S. modiglianii*, Si-Rambé, *extinctus*, Nias, p. 722, SILVESTRI,
 Ann. Mus. Genova, xxxiv : n. spp.
Sphærotherium, Brandt, (= *Oligaspis*, Wood), p. 409, *monticola*, Table
 Mountain, p. 410, *granulatum*, Port Elizabeth, POCOCK, Ann. Nat.
 Hist. (6) xvi ; *S. forcipatum*, Seychelles, p. 529, pl. ii, fig. 22, BRÜLE-
 MANN, Mem. Soc. zool. France, 1895 : n. spp.
Zephronia, Gray, recharacterised ; POCOCK, p. 326, in WEBER'S Zool.
 Ergebnisse, &c., and Ann. Nat. Hist. (6) xvi, p. 413.
Z. nigriceps, Buitenzorg, p. 329, pl. xx, fig. 2, *rufipes*, Tjibodas, p. 331,
 POCOCK in WEBER'S Zool. Ergebnisse, &c., *anthracina*, Perak,
impunctata, Penang, *dolfusi*, Cochin China, p. 413, POCOCK, Ann. Nat.
 Hist. (6) xvi ; *Z. humilis*, Engano, p. 723, SILVESTRI, Ann. Mus.
 Genova, xxxiv ; *Z. albertisii*, Cape York, p. 635, SILVESTRI, Ann.
 Mus. Genova, xxxiv, n. spp.
Zoosphærium, n. g., type *Zephronia neptunus*, Butler ; POCOCK, Ann. Nat.
 Hist. (6) xvi, p. 410.

LIMACOMORPHA, n. order.

- POCOCK in WEBER'S Zool. Ergebnisse, &c., pp. 332 ; *id.* J. Linn. Soc.
 xxiv, p. 475.

GLOMERIDESMIDÆ, Latz.

POCOCK in WEBER'S Zool. Ergebnisse, &c., p. 332 ; *id.* J. Linn. Soc. xxiv, p. 475.

Glomeridesmus, Gerv., characterised, POCOCK in WEBER'S Zool. Ergebnisse, &c., p. 332 ; *id.* J. Linn. Soc. xxiv, p. 476 ; *S. sumatranus*, Mt. Singalang, p. 333, POCOCK in WEBER'S Zool. Ergebnisse, &c. ; *G. marmoreus*, St. Vincent, p. 476, pl. xxxvii, fig. 2, POCOCK, J. Linn. Soc. xxiv : n. spp.

Zephroniodesmus, n. g. for *Glomeridesmus sumatranus*, Poc. ; POCOCK, *t. c.* p. 476.

HELMINTHOMORPHA, Poc.

Recharacterised ; POCOCK in WEBER'S Zool. Ergebnisse, &c., p. 333. (Equivalent to the orders *Colobognatha*, *Monocheta*, *Merocheta*, *Diplocheta*, and *Anocheta*, of COOK.)

COLOBOGNATHA.

Recharacterised by POCOCK in WEBER'S Zool. Ergebnisse, &c., p. 334.

SIPHONOPHORIDÆ.

Characterised by POCOCK in WEBER'S Zool. Ergebnisse, &c., p. 335.

Siphonorhinus, n. g., POCOCK, *t. c.* p. 335 ; *S. pullipes*, Buitenzorg, p. 335, pl. xx, fig. 3, *angustus*, Buitenzorg, p. 336, POCOCK, *t. c.* ; *S. latus*, Si-Rambé, p. 724, SILVESTRI, Ann. Mus. Genova, xxxiv ; *S. hartii*, Trinidad, p. 375, POCOCK, Ann. Nat. Hist. (6) xiv : n. spp.

Bactrois, n. g. for *Siphonophora vittata*, Poc. ; COOK, Ann. N. York. Ac. ix, p. 2.

Siphonophora Br., recharacterised, *flaviceps*, Tjibodas, p. 336, pl. xix, fig. 12, *vittata*, Flores, p. 337, pl. xx, fig. 4, POCOCK in WEBER'S Zool. Ergebnisse, &c. ; *S. tenuicornis*, St. Vincent, p. 479, pl. xxxvii, fig. 4, *S. loriae*, *vinosa*, p. 636, *longirostris*, *scolopacina*, p. 637, New Guinea, SILVESTRI, Ann. Mus. Genova, xxxiv ; *S. modiglianii*, Si-Rambé, p. 725, SILVESTRI, Ann. Mus. Genova, xxxiv : n. spp.

POLYZONIDÆ, Gerv.

Recharacterised ; POCOCK in WEBER'S Zool. Ergebnisse, &c., p. 337.

Subfam. POLYZONINI, new.

POCOCK in WEBER'S Zool. Ergebnisse, &c., p. 337.

Siphonotus, Br., characterised, *formosus*, Tjibodas, p. 338, pl. xx, fig. 5, *elegans*, Tjibodas, *hicksoni*, Celebes, p. 339, POCOCK in WEBER'S Zool. Ergebnisse, &c. ; *purpureus*, St. Vincent, p. 479, pl. xxxvii, fig. 5, POCOCK, J. Linn. Soc. xxiv ; *S. sumatranus*, Si-Rambé, p. 725, *intermedius*, Engano, p. 726, SILVESTRI, Ann. Mus. Genova, xxxiv : n. spp.

Platyzonium, n. g. for *Cryptodesmus getschmanni*, Karsch ; COOK, Zool. Anz. xviii, p. 426.

Bdellotus, n. g. for *Siphonotus formosus*, Poc. ; COOK, Ann. N. York Ac. ix, p. 2.

Rhinotus, n. g. for *Siphonotus africanus* ; COOK, t. c. p. 2.

SIPHONOCRYPTINI, n. subfam.

POCOCK in WEBER'S Zool. Ergebnisse, &c., p. 339.

Siphonocryptus, n. g., *compactus*, n. sp., Mt. Singalang, p. 340, pl. xx, fig. 6 ;
POCOCK, t. c.

SIPHONIULIDÆ, n. fam.

POCOCK in WEBER'S Zool. Ergebnisse, &c., p. 340.

Siphoniulus, n. g., p. 340, *albus*, n. sp., Sumatra, p. 341, pl. xix, fig. 13 ;
POCOCK, t. c.

STEMMATOIULOIDEA.

Stemmatoiulus bellus, Monrovia, pp. 1116-1118, pls. xli & xlii, figg. 1-31,
pencilatus, W. Liberia, p. 1118, pl. xliii, figg. 32-46, *calvus*, W. Liberia
and Sierra Leone, p. 1119, pl. xliv, figg. 47-57, COOK, Amer. Natural.
1895, n. spp.

Stemmiulus nigricollis, Kamerun, p. 45, fig. 18, PORAT, Bih. Svenska Ak.
xx, pt. iv, No. 5, n. sp.

POLYDESMOIDEA.

AMMODESMIDÆ, n. fam.

COOK, P. U. S. Mus. xviii, p. 82.

Ammodesmus, n. g., *granum*, p. 82, COOK, t. c. n. sp.

Doratoesmus, n. n. for *Doratonotus*, Poc., preocc., p. 4 ; COOK, Ann. N.
York Ac. ix.

Doratonotus, n. g., p. 370, *armatus*, n. sp., Buitenzorg, p. 371, pl. xxii,
fig. 11 ; POCOCK in WEBER'S Zool. Ergebnisse, &c.

D. beccarii, Mt. Singalang, p. 747, SILVESTRI, Ann. Mus. Genova, xxxiv,
n. sp.

CAMPODESMIDÆ, n. fam.

COOK, P. U. S. Mus. p. 82, based on *Campodesmus carbonarius*, Scudder.

CHELODESMIDÆ, n. fam.

COOK, Ann. N. York Ac. ix, p. 4.

Chelodesmus, n. g., *marzii*, p. 4 ; COOK, t. c.

- Odontopeltis*, n. n. for *Rhacophorus*, Koch, preocc. : *O. vincentii*, St. Vincent, p. 514, pl. xxxix, fig. 4, *verrucosus*, p. 516, fig. 6, *formosus*, p. 517, fig. 7, *mammatus*, p. 518, fig. 8, Jamaica, POCOCK, J. Linn. Soc. xxiv ; *O. balzanii*, Masetenes, p. 769, *bovei*, Giabibbirri, p. 770, SILVESTRI, Ann. Mus. Genova, xxxiv ; *O. bovei*, Rio Apa, *bovellii*, Asuncion, p. 3, *salvadorii*, Rio Apa, *camerani*, Paraguay, *argentinae*, Tucumani, p. 4, *discrepans*, Asuncion, *proxima*, Salta, p. 5, SILVESTRI, Boll. Mus. Torino, x : n. spp.
- Priodesmus*, n. g., pp. 53-55, *acus*, Surinam, p. 55, pl. i, figg. 1-19, *para*, Para, p. 56, COOK, P. U. S. Mus. xviii, n. spp.
- Rhachodesmus*, n. n. for *Rhachis*, Sauss., preocc., p. 4 ; COOK, Ann. N. York Ac. ix.

CRYPTODESMIDÆ.

- Aporodesmus*, n. g., p. 41, for *Polydesmus gabonicus*, Luc., p. 41, fig. 12, and *Cryptodesmus knutsoni*, Porat ; PORAT, Bih. Svenska Ak. xx, pt. iv, No. 5.
- A. fulcatus*, *subrectangulus*, *crinitus*, fig. 14, p. 42, Kamerun, PORAT, t. c., No. 4, pt. v, n. spp.
- Aporodesmus*, n. g. for *Cryptodesmus vincentii*, p. 789 ; POCOCK, Ann. Mus. Genova, xxxiv.
- Cryptodesmoides*, n. g., *fea*, n. sp., Pegu, p. 790, fig. 1 ; POCOCK, t. c.
- Cryptodesmus vincentii*, St. Vincent, p. 510, pl. xxxix, fig. 2, POCOCK, J. Linn. Soc. xxiv ; *C. bicolor*, Sinkarah, p. 373, pl. xxi, fig. 5, *weberi*, Buitenzorg, p. 374, pl. xxii, fig. 13, *concolor*, Tjibodas, p. 376, pl. xxii, fig. 14, *sumatramus*, Manindjau, p. 376, pl. xxii, fig. 14, POCOCK in WEBER'S Zool. Ergebnisse, &c. ; *C. modiglianii*, Si-Rambé, *simillimus*, Pea Ragia, p. 747, SILVESTRI, Ann. Mus. Genova, xxxiv ; *C. modestus*, New Guinea, p. 647, SILVESTRI, t. c. ; *C. balzanii*, Paraguay, p. 773, fig. 6, SILVESTRI, t. c. : n. spp.
- Trichopeltis*, n. g. for *Cryptodesmus bicolor* ; POCOCK in WEBER'S Zool. Ergebnisse, &c., p. 374 (in note).
- T. doriae*, Yado, p. 792, fig. 2, *fea*, Chiala, p. 793, *watsoni*, North Chin Hills, p. 793, POCOCK, Ann. Mus. Genova, xxxiv, n. spp.
- Urodesmus*, n. g., p. 42, *erinaceous*, p. 43, fig. 16, *sexcarinatus*, p. 44, fig. 17, Kamerun, PORAT, Bih. Svenska Ak. xx, pt. iv, No. 5, n. spp.

CYCLODESMIDÆ, n. fam.

COOK, Ann. N. York Ac. ix, p. 4.

Cyclodesmus porcellanus, Jamaica, p. 509, pl. xxxix, fig. 1, POCOCK, J. Linn. Soc. xxiv, n. sp.

GOMPHODESMIDÆ, n. fam.

COOK, P. U. S. Mus. xviii, p. 82.

Astrodesmus, n. g., p. 83, *stellifer*, n. sp., Tana River, p. 86, pl. ii, figg. 1-11, pl. iii, figg. 1-9 ; COOK, t. c.

- A. luridus*, Karsch, Mombassa, figured and described; COOK, P. U. S. Mus. xviii, p. 88, pl. iv, figg. 11 & 12.
- Aulodesmus*, n. g., p. 83, for *Eurydesmus mossambicus*, Pet., p. 87, pl. iii, figg. 17 & 18, pl. vi, figg. 1-3, *oxygenus* (Pet.), p. 89, pl. iii, figg. 10-14, pl. vi, figg. 4-7, *laxus* (Gerst.), p. 90, pl. ii, figg. 12 & 13, figured and described; COOK, *t. c.*
- Gomphodesmus*, n. g., *castaneus*, n. sp., p. 83; COOK, *t. c.*
- Harmodesmus*, n. g., *nitens*, p. 83, COOK, *t. c.* n. sp.
- Marptodesmus*, n. g., p. 93, *chanleri*, Tana River, p. 95, pl. iv, figg. 1-10, COOK, *t. c.* n. sp.
- Sphenodesmus*, n. g., *rugulosus*, n. sp., p. 83; COOK, *t. c.* S. also contains *Eurydesmus cafrarius*, Porat, p. 93; COOK, *t. c.*
- Tycodesmus*, n. g., *medius*, n. sp., p. 83; COOK, *t. c.*
- T. fulcatus* (Karsch), p. 92, pl. iii, figg. 15 & 16, figured and described; COOK, *t. c.*

HAPLODESMIDÆ, n. fam.

- COOK, Ann. N. York Ac. ix. (= *Haplosomide*, n. fam.; SILVESTRI, Ann. Mus. Genova, xxxiv, p. 638, for *Haplosoma*, Verh.)
- Haplodesmus*, n. n. for *Haplosoma*, Verh., preocc., p. 4; COOK, Ann. N. York Ac. ix.
- Haplosoma*, n. g., p. 7, *strubelli*, Amboina, p. 8, VERHOEFF, Zool. Anz. xvii, n. sp.

OXYDESMIDÆ, n. fam.

- COOK, P. U. S. Mus. xviii, pp. 82 & 83.
- Anisodesmus*, n. g., *cerasinus*, n. sp., p. 99; COOK, *t. c.*
- Isodesmus*, n. g., *immarginatus*, p. 99, COOK, *t. c.* n. sp.
- Minodesmus*, n. g., *parallelus*, n. sp.; COOK, *t. c.*
- Orodsmus*, n. g., p. 99, *forceps*, E. Africa, p. 101, pl. iv, figg. 13-16, *bicolor*, Tana River, p. 102, pl. v, figg. 8-14, *unicolor*, Mombassa, p. 105, pl. vi, figg. 8-10; COOK, P. U. S. Mus. xviii, n. spp.
- O.* also contains *Polydesmus mastophorus*, Gerst., *Oxydesmus pectinatus*, Karsch, *fischeri*, Karsch, and *effulgens*, Karsch, described pp. 105-109, and figured on pls. v & vi; COOK, *t. c.*
- Oxydesmus flavocarinatus*, Alto Ganale, Guddà, p. 484, fig. 1, SILVESTRI, Ann. Mus. Genova, xxxv, n. sp.
- O. tuberculifrons*, Porat, *valdau*, Porat, *granulosus*, Beauv., *thomsoni*, Luc., Kameruns, pp. 35-37, figg. 7-9, described and figured; PORAT, Bih. Svenska Ak. xx, pt. iv, No. 5.
- Scytodesmus*, n. g., *kribi*, n. sp., p. 99; COOK, P. U. S. Mus. xviii.
- Tyloidesmus*, n. g., *crassipes*, n. sp., p. 99; COOK, *t. c.*

PLATYRRHACHIDÆ, n. fam.

POCOCK, Ann. Mus. Genova, xxxiv, p. 788.

Platyrhachus luciae, St. Lucia, p. 511, pl. xxxix, fig. 3, POCOCK, J. Linn. Soc. xxiv ; *P. andersonii*, Mergui, p. 788, POCOCK, Ann. Mus. Genova, xxxiv ; *P. humberti*, Buitenzorg, p. 345, pl. xix, fig. 15, *flavisternus*, Tjibodas, p. 346, pl. xix, fig. 16, *subalbus*, Buitenzorg, p. 347, pl. xix, fig. 17, *mirandus*, Sumatra, p. 348, pl. xx, fig. 7, *laticollis*, Manindjau, p. 349, pl. xx, fig. 8, *wanthopus*, Manindjau, p. 350, pl. xix, fig. 11, *weberi*, Ajer Mantjur, p. 351, pl. xx, fig. 9, *subspinosus*, Padang, p. 352, pl. xix, fig. 19, *monticola*, Mt. Singalang, p. 353, pl. xx, fig. 10, *verrucosus*, Muka Muka, p. 354, pl. xix, fig. 20, *submissus*, Manindjau, p. 355, pl. xxi, fig. 1, *bidens*, Paningahan, p. 356, pl. xxi, fig. 2, *œquidens*, Ajer Mantjur, p. 357, pl. xxi, fig. 3, *inœquidens*, Manindjau, p. 357, pl. xxii, fig. 1, POCOCK in WEBER'S Zool. Ergebnisse, &c. ; *P. pergranulosus*, New Guinea, p. 639, *loria*, New Guinea, p. 640, SILVESTRI, Ann. Mus. Genova, xxxiv ; *P. fumestus*, Siboga, p. 729, *permirabilis*, Ajer Mantjior, p. 730, *moliglianii*, Si-Rambé, p. 730, *proximatus*, Siboga, *tristis*, Nias, p. 731, *beccarii*, Mt. Singalang, p. 732, *inœqualis*, *castus*, p. 733, *faustus*, *repandus*, p. 734, Mt. Singalang, *marginellus*, Siboga, *cancelatus*, Mentavei, *convexus*, Mt. Singalang, p. 735, SILVESTRI, Ann. Mus. Genova, xxxiv : n. spp.

Fam. POLYDESMIDÆ.

Brachydesmus subterraneus, *spelæorum*, Adelsberg, p. 289, VERHOEFF, Verh. Ges. Wien, xlv, n. subsp.

B. broelemanni, p. 223, VERHOEFF, Zool. Anz. xviii ; *B. latzelii*, Rome, *verhoeffi*, Subiaco, p. 197, SILVESTRI, Boll. Soc. Rom. Zool. iii, pt. v ; *B. exiguus*, Lombardy, p. 441, *margaritatus*, Meldola, p. 443, *silvanus*, Malnate, p. 445, *reversus*, Bosnia, p. 447, BRÖLEMANN, Mem. Soc. zool. France, vii ; *B. attemsi*, Laibach, p. 284, *polydesmoides*, Sarawejo, p. 285, *dadayi*, Budapesth, p. 286, *carniolensis*, Adelsberg, p. 287, VERHOEFF, Verh. Ges. Wien, xlv : n. spp.

Goniodesmus, n. g. for *Polydesmus fissilobus*, Bröl., p. 5 ; COOK, Ann. N. York Ac. ix.

Polydesmus illyricus, p. 273, *abbazianus*, p. 276, Abbazia, VERHOEFF, Berlin. ent. Zeitschr. xxxviii ; *P. brachydesmoides*, Abbazia, p. 290, VERHOEFF, Verh. Ges. Wien, xlv ; *P. dispar*, Rome, *pulcher*, Subiaco, p. 43, SILVESTRI, Boll. Soc. Rom. Zool. iii ; *P. helveticus*, Switzerland, p. 284, *alticola*, Daubensee, p. 286, VERHOEFF, Berlin. ent. Zeitschr. xxxix ; *P. longicornis*, in cave of "Orso," p. 580, SILVESTRI, Ann. Mus. Genova, xxxiv ; *P. integratus*, Kamerun, p. 30, *parvulus*, Kamerun, p. 31, PORAT, Bih. Svenska Ak. xx, pt. iv, No. 5 ; *P. moorei*, Che Kiang, p. 357, pl. xi, fig. 4, *paludicola*, Ningpo, p. 357, pl. xi, fig. 5, *compactus*, Tsu Shima, p. 357, pl. xi, fig. 6, *dentiger*, Ashinoju, p. 358, pl. xi, fig. 7, POCOCK, Ann. Nat. Hist. (6) xv ; *P. platynotus*, Genoa, p. 508, fig. 10, *genuenssis*, Genoa, p. 509, fig. 1, *thomasi*, Lucerne, p. 519, fig. 7, *asthenestatus*, Florence, p. 519, fig. 8, POCOCK, Ann. Mus. Genova, xxxiv : n. spp.

- P. abbazianus*, Verh., = *rangifer*, Latzel, VERHOEFF, Verh. Ges. Wien, xlv, p. 291.
- Poratia*, n. g. for *Scytonotus digitatus*, Porat; COOK, Ann. N. York Ac. viii, p. 238.
- Propolydesmus*, n. subg. for *Polydesmus pectiniger*, p. 222; VERHOEFF, Zool. Anz. xviii.
- Scytonotus granulatus* (Say), syn. *S. scabricollis* and *laevicollis*, Koch, figured and described; COOK, Ann. N. York Ac. viii, pls. vi-ix. *S. nodulosus*, Koch, *arcticollis*, Pet., *cæsius*, Karsch, *woodianus*, Humb. & Sauss., *cavernarus*, Bollm., and *setiger* (Wood), Bollman, are probably not referable to *Scytonotus*, *sensu stricto*; COOK, *t. c.* pp. 235-237.

STRONGYLOSOMATIDÆ, n. fam.

- COOK, P. U. S. Mus. xviii, p. 82.
- Anoplodesmus*, n. g., p. 797, *anthracinus*, Rangoon, p. 798, fig. 5, *striolatus*, Tenasserim, p. 799, fig. 6, *pinguis*, Rangoon, p. 800, fig. 7, *obesus*, Meteleo, p. 801, POCOCK, Ann. Mus. Genova, xxxiv, n. spp.
- Centrodasmus*, n. g., p. 369, *typicus*, Manindjau, p. 370, pl. xxii, fig. 10; POCOCK in WEBER'S Zool. Ergebnisse, &c.
- C. discrepans*, Si-Rambé, p. 745, SILVESTRI, Ann. Mus. Genova, xxxiv, n. spp.
- Cnemodesmus*, n. g., p. 97, for *Paradesmus thysanopus*, Cook & Collins; COOK, P. U. S. Mus. xviii.
- Cryptoporus*, n. g., p. 38, *verrucosus*, p. 39, fig. 10, *dentosus*, p. 40, fig. 11, Kamerun, PORAT, Bih. Svenska Ak. xx, pt. iv, No. 5, n. spp.
- Eudasyptelis*, n. g. *pusillus*, Tenasserim, p. 796, fig. 4, POCOCK, Ann. Mus. Genova, xxxiv, n. sp.
- Iulidesmus*, n. g., *typicus*, Yungas, p. 773, SILVESTRI, *t. c.* n. sp.
- Habrodesmus*, n. g., *latus*, n. sp., p. 97, COOK, P. U. S. Mus. xviii.
- Habrodesmus* also contains *Strongylosoma hartmanni* and *aculeatum*, which are described and the latter figured by COOK, *t. c.* p. 98.
- Ophiodesmus*, n. g. for *Strongylosoma verhoeffi*, Brölem., p. 5; COOK, Ann. N. York Ac. ix.
- Orthomorpha bisulcata*, Rangoon, p. 808, *pilifera*, Rangoon, p. 809, fig. 11, *coxisternus*, Bhamo, p. 811, fig. 12, *miranda*, Rangoon, p. 812, fig. 13, *melanopleuris*, Teinzo, p. 813, *bistriata*, Bhamo, *divittata*, Shenmaga, *comotti*, Minhla, p. 814, *pardalis*, Palon, p. 816, *minlana*, Minhla, p. 816, fig. 20, *insularis*, Reef I., p. 817, fig. 15, *clivicola*, p. 819, *palonensis*, fig. 16, *monticola*, *gestri*, p. 820, Mt. Mooleyit, *oatesii*, S. Tenasserim, p. 821, *fusco-collaris*, Malwoon, p. 822, fig. 18, *doriae*, p. 37, fig. 19, *silvestris*, Upper Burma, p. 38, POCOCK, Ann. Mus. Genova, xxxiv; *O. roseipes*, Chusan I., p. 353, pl. xi, fig. 2, *swinhoei*, Chee Foo, p. 354, *holstii*, Gt. Loo Choo, p. 355, pl. xi, fig. 3, POCOCK, Ann. Nat. Hist. (6 xv : n. spp.

- Paradesmus dorsicornis*, Kamerun, p. 33, fig. 3, PORAT, Bih. Svenska Ak. xx, No. iv, pt. 5; *P. albonanus*, loc.?, p. 107, LATZEL, Jahresber. Hamburg. Anst. xii : n. spp.
- P. erythropus*, Luc., *sanguinicornis*, Porat, *aubryi*, Luc., from Kameruns, figured and described, pp. 32 & 33, figg. 4-6; PORAT, Bih. Svenska Ak. xx, pt. iv, No. 5.
- Prionopeltis*, n. g., p. 828, *planatus*, Andamans, fig. 21, *taurinus*, Rangoon, p. 830, fig. 22, *cervinus*, Malwoon, p. 831, fig. 23, POCOCK, Ann. Mus. Genova, xxxiv, n. spp.
- Scolodesmus*, n. g., *grallator*, p. 97, COOK, P. U. S. Mus. xviii, n. sp.
- Strongylosoma subalbum*, Paningahan, p. 360, *pygmeum*, Buitenzorg, p. 360, pl. xxii, fig. 2, *vinosum*, Flores, p. 361, pl. xxii, fig. 3, *carneum*, p. 362, pl. xxii, fig. 4, *semicarneum*, p. 363, pl. xxii, fig. 5, *nigricorne*, Manindjau, p. 364, pl. xxii, fig. 6, *subflavum*, Paningahan, p. 365, *subnigrum*, Manindjau, p. 365, pl. xxii, fig. 7, *flavicozis*, Paningahan, p. 366, pl. xxii, fig. 8, *weberi*, Buitenzorg, p. 367, pl. xxi, fig. 4, *couspicuum*, p. 368, pl. xxii, fig. 9, *atro-roseum*, Buitenzorg, p. 368, POCOCK in WEBER'S Zool. Ergebnisse, &c.; *S. ocellatum*, Rangoon, p. 801, fig. 8, POCOCK, Ann. Mus. Genova, xxxiv; *S. neglectum*, Shoar, p. 485, fig. 2, SILVESTRI, *op. cit.* xxxv; *S. fasciatum*, *maculatum*, p. 642, *versicolor*, *luxuriosum*, p. 643, *longipes*, *albipes*, *œnologum*, p. 644, *sanguineum*, *loriæ*, p. 645, SILVESTRI, *op. cit.* xxxiv; *S. vellutanum*, *hirtellum*, p. 738, *filum*, Si-Rambé, p. 739, *nanum*, Engano, p. 739, *elongatum*, Nias, *dentatum*, Si-Rambé, *infaustum*, Si-Rambé, p. 740, *niasense*, Nias, *inermis*, Si-Rambé, p. 741, *trifasciatum*, *modiglianii*, p. 742, *simillimum*, Mentavei, p. 743, SILVESTRI, *t. c.*; *S. montanum*, Yungas, p. 770, fig. 2, *balzani*, Yungas, p. 771, fig. 3, *sanctum*, Paraguay, fig. 4, *derelictum*, Masatenes, fig. 5, p. 772, SILVESTRI, *t. c.*; *S. scutigerinum*, Kamerun, p. 37, fig. 9, PORAT, Bih. Svenska Ak. xx, pt. iv, No. 5; *S. borellii*, Tucuman, p. 5, *camerani*, Chaco, *pseudomorphum*, Paraguay, *salvadorii*, Salta, *paraguayense*, Asuncion, p. 6, SILVESTRI, Ann. Mus. Torino, x; *S. erosum*, Bosnia, p. 454, BRÖLEMANN, Mem. Soc. zool. France, vii; *S. verhoeffi*, Ferte Melon, p. 147, BRÖLEMANN, Feuille Natural. 1895; *S. vejlovskyi*, NÉMEC, SB. Bohmisch. Ges. 1895, No. xii : n. spp.
- Tetracastrosterus*, n. g., p. 802, *subspinosus*, Puepoli, p. 803, fig. 9, POCOCK, Ann. Mus. Genova, xxxiv, n. sp.
- Trogodesmus*, n. g., *bicolor*, Bia-po, p. 804, fig. 10, *vittatus*, Palon, p. 806, *nigrescens*, Carin Cheba, p. 806, n. spp., POCOCK, *t. c.*

STYLODESMIDÆ, n. fam.

COOK, P. U. S. Mus. xviii, p. 82.

Styloidesmus, n. g., *horridus*, n. sp., p. 82, COOK, *t. c.*

Cynedesmus, n. g. for *C. formicola* and *Cryptodesmus ornamentatus*, Karsch, p. 5; COOK, P. U. S. Mus. ix.

Lophodesmus, n. g., *pusillus*, Flores, p. 372, pl. xxii, fig. 12, POCOCK in WEBER'S Zool. Ergebnisse, &c., n. sp.

XYSTODESMIDÆ, n. fam.

COOK, Ann. N. York Ac. ix, p. 4,

Fontaria lacustris, Wo See Lake, p. 359, pl. xi, fig. 8, *holstii*, Gt. Loo Choo, p. 360, pl. xi, fig. 9, *neptunus*, Gt. Loo Choo, p. 360, pl. xi, fig. 10, *variata*, Gt. Loo Choo, p. 361, pl. xi, fig. 15, *coarctata*, Japan, p. 361, pl. xi, fig. 11, POCKOCK, Ann. Nat. Hist. (6) xv, n. spp.

Pachydesmus, n. g. for *Fontaria crassicutis*, p. 5; COOK, Ann. N. York Ac. ix.

Rhysodesmus, n. g. for *Fontaria limax*, Sauss., p. 5; COOK, t. c.

Xystodesmus, n. g., p. 8, for *Fontaria martensii*, p. 5; COOK, t. c.

CHORDEUMOIDEA, n. suborder.

POCKOCK in WEBER'S Zool. Ergebnisse, &c., p. 341.

(= *Craspedosomatoidea*, COOK, Ann. N. York Ac. ix, p. 3.)

CHORDEUMIDÆ.

Aporogona, n. g. for *Craspedosoma crenulatum*, Latzel, p. 3; COOK & COLLINS, Ann. N. York Ac. ix.

Atractosoma latzeli, Verh., *gallicum*, p. 219, VERHOEFF, Zool. Anz. xviii, n. subsp.

A. confine, Etruria, pt. lxxiv, No. 9, *minutum*, Florence, No. 10, BERLESE, *Acari, Myriopoda, &c.*; *A. pusillum*, Monte Maggiore, p. 268, VERHOEFF, Berlin. ent. Zeitschr. xxxviii; *A. dorie*, Busalla, p. 510, fig. 2, *gestri*, Busalla, p. 511, fig. 3, POCKOCK, Ann. Mus. Genova, xxxiv. *A. helveticum*, p. 286, *montivagum*, p. 287, Switzerland, VERHOEFF, Berlin. ent. Zeitschr. xxxix; *A. menuniense*, Bevagna, p. 198, SILVESTRI, Boll. Soc. Rom. Zool. iii, pt. v; *A. camaldolense*, Camaldoli, p. 42, SILVESTRI, t. c.; *A. tridentinum*, *tirolense*, p. 20, *alticolum*, p. 21, Tyrol, VERHOEFF, Verh. Ges. Wien : n. spp.

A. carpathicum, *meridionale*, *latzeli*, *montivagum*, *helveticum*, *athesinum*, *pusillum*, characterised; VERHOEFF, Berlin. ent. Zeitschr. xxxix, pp. 288-290.

Bactropus, n. g., p. 53, *conifer*, Indiana, p. 54, pl. ix, figg. 172-176, COOK & COLLINS, Ann. N. York Ac. ix, n. sp.

Basigona, n. g. for *B. atthesinum*, p. 3, COOK & COLLINS, t. c.

Bomogona, n. g. for *B. lombardica* (Brölemann), p. 3; COOK & COLLINS, t. c.

Brammeria carinata, Bollm., characterised; COOK & COLLINS, p. 33, t. c.

Caseya, n. g., p. 84, *heteropus*, California, p. 85, COOK & COLLINS, t. c., n. sp.

Chelogona, n. g. for *C. carpathica* (Latz.), p. 3; COOK & COLLINS, t. c.

Chordeuma oculodistinctum, Monte Maggiore, p. 269, VERHOEFF, Berlin. ent. Zeitschr. xxxviii; *C. nodulosum*, Naye, p. 292, fig. 10, VERHOEFF, op. cit. xxxix : n. spp.

- Cleidogona*, n. g., p. 41, for *cæcioannulata*, Wood, p. 43, *vudii*, Cope, p. 51, *mexicanus*, Humb. & Sauss., p. 52, described; COOK & COLLINS, Ann. N. York Ac. ix.
- C. major*, Washington, p. 47, pls. vi & vii, figg. 110-137, *laminata*, ? Indiana, p. 48, pl. ix, figg. 164-171, *forceps*, loc. ?, p. 49, pl. ix, figg. 159-163, *fustis*, ? Indiana, p. 50, pl. viii, figg. 151-153, COOK & COLLINS, t. c. n. spp.
- Conotyta*, n. g., p. 70, *fischeri*, Central New York, p. 71, pls. iv & v, figg. 55-78, *leibergeri*, Idaho, p. 77, pl. vi, figg. 102-104, COOK & COLLINS, t. c. n. spp.
- C.* also contains *Craspedosoma atrolineatum*, *bollmani*, *glomeratum*, and *Scoterpes wyandotte*; COOK & COLLINS, t. c. pp. 75-78.
- Craspedosoma intermedium*, Subiaco, *pulchellum*, p. 199, *hispidulum*, Rome, p. 200, SILVESTRI, Boll. Soc. Rom. Zool. iii, pt. v, n. spp.
- C. flavescens*, Latz., *helveticum*, Genfer See, p. 291, VERHOEFF, Berlin. ent. Zoitschr. xxxix, n. var.
- Gryphogona*, n. g. for *Atractosoma latzeli*, Verh., p. 3; COOK & COLLINS, Ann. N. York Ac. ix.
- Haplogona*, n. n. for *Latzelia*, Verh., preocc., p. 3; COOK & COLLINS, t. c.
- Mastigona*, n. n. for *Poratia*, Verh., preocc., p. 3; COOK & COLLINS, t. c.
- Melogona*, n. n. for *Haasea*, Verh., preocc., p. 3; COOK & COLLINS, t. c.
- Latzelia*, n. g., p. 210, for *Chordeuma illyricum*, Verh., = *oculodistinctum*, Verh.; VERHOEFF, Zool. Anz. xviii.
- Nanogona*, n. g. for *N. polydesmoides*, Leach, p. 3; COOK & COLLINS, Ann. N. York Ac. ix.
- Ochogona*, n. g. for *Atractosoma pusillum*, Verh., p. 3; COOK & COLLINS, t. c.
- Poratia*, n. g., p. 217, for *Craspedosoma mutabile*; VERHOEFF, Zool. Anz. xviii.
- Phanogona*, n. g. for *P. bohémica* (Rosicky), p. 3; COOK & COLLINS, Ann. N. York Ac. ix.
- Pseudotremia cavernarum*, Cope, p. 36, *carterensis*, Packard, p. 40, re-characterised; COOK & COLLINS, t. c.
- Trachygona*, n. n. for *Trachysoma*, Attems, preocc., p. 3; COOK & COLLINS, t. c.
- Trichopetalum*, characterised, p. 62, *album*, New York, &c., p. 64, pls. ii & iii, figg. 22-29 & 36-45, *cornutum*, Indiana, p. 66, pl. iii, figg. 46-49, *unicum*, Bloomington, p. 66, pl. iii, fig. 51, COOK & COLLINS, t. c. : n. spp.
- Underwoodia*, n. g., p. 79, *iuloides*, Harger, p. 83; COOK & COLLINS, t. c.
- Verhoeffia*, n. n. for *Latzelia*, Verh. (preocc.); BRÖLEMANN, Zool. Anz. xviii, p. 459.
- Xiphogona*, n. g. for *X. flavescens*, Latzel; COOK & COLLINS, p. 3, Ann. N. York Ac. ix.
- Zygonopus whitei*, Ryder, Luray Cave, p. 60, described; COOK & COLLINS, t. c.

HETEROCHORDEUMIDÆ.

- Heterochordeuma*, recharacterised, POCOCK in WEBER'S Zool. Ergebnisse, &c., p. 341.
H. monticola, Mount Singalang, POCOCK, *t. c.* p. 342, pl. xix, figg. 14e-14h, n. sp.
H. doriae, figured, pl. xix, figg. 14a-14d; POCOCK, *t. c.*
H. platydesmoide, Si-Rambé, p. 727, SILVESTRI, Ann. Mus. Genova, xxxiv, n. sp.
Pocockia, n. g., p. 727, *sapiens*, Si-Rambé, p. 728, SILVESTRI, *t. c.*, n. sp.

LYSIOPETALOIDEA.

- COOK gives the following synonymy of the genera of *Lysiopetalidæ*, *Callipus*, Leach, type *Rissonius*, Leach, = *Lysiopetalum*, Verhoeff; *Lysiopetalum*, Brandt, type *fetidissimum* (Savi), syn. *Silvestria*, Verhoeff; *Spirostrephon*, Brandt, type *lactarium*, Say, syn. *Platops*, Nowp.; *Eurygyrus*, C. Koch, type *rufolineatus*, Koch; *Megastrephon*, n. g., type *xanthinum*, Nowp., p. 1019: Amer. Natural. 1895.
Lysiopetalum koelbeli, Fiume, p. 207, VERHOEFF, Zool. Anz. xviii; *L. vinciguerræ*, Umbria, p. 42, SILVESTRI, Boll. Soc. Rom. Zool. iii: n. spp.
Silvestria, n. subg. for *L. fetidissimum* and *alternans*; VERHOEFF, Zool. Anz. xviii.

CAMBALOIDEA.

CAMBALIDÆ.

- Cambala cavernicola*, Ngatau, p. 377, *dentata*, Buitenzorg, p. 378, POCOCK in WEBER'S Zool. Ergebnisse, &c.; *C. modiglianii*, Si-Rambé, p. 749, SILVESTRI, Ann. Mus. Genova, xxxiv: n. spp.
Cambalomorpha, n. g., p. 363, *formosa*, n. sp., Hong-Kong, p. 364; POCOCK, Ann. Nat. Hist. (6) xv.
Cambalopsis, n. g. for *Cambala calva*, Poc.; POCOCK, *t. c.* p. 363.
Namolene, Bollm., contains the species described as *Spirostreptus dominicanus*; POCOCK, J. Linn. Soc. xxiv, p. 481.
Trichocambala, n. g., p. 478, *elongata*, n. sp., Padang, p. 748; SILVESTRI, Ann. Mus. Genova, xxxiv.

PSEUDONANNOLENIDÆ, n. fam.

- SILVESTRI, Ann. Mus. Genova, xxxiv, p. 774.
Pseudonannolene, n. g., *typica*, Candelaria, p. 775, fig. 8, *bovei*, Giabibbirri, p. 776, fig. 9, SILVESTRI, *t. c.*; *P. borellii*, Asuncion, p. 7, *pusilla*, Chaco, *segmentata*, Rio Apa, *sulcatula*, Tucumani, p. 8, SILVESTRI, Ann. Mus. Torino, x: n. spp.

IULOIDEA.

(IULIDÆ, BLANIULIDÆ, AND PARAIULIDÆ.)

- Acanthoiulus*, n. subg. of *Pachyiulus*, for *fuscipes*, Koch; VERHOEFF, Verh. Ges. Wien, xlv.
- Anaulaciulus*, n. g., p. 366, *paludicola*, n. sp., Wo-Lee Lake, p. 366; POCOCK, Ann. Nat. Hist. (6) xv.
- Anoploiulus*, n. subg. of *Iulus*, for *pusillus*, Leach, p. 151; VERHOEFF, Verh. Ges. Wien, xlv.
- Blaniulus armatus*, p. 2, figg. 1-6, *palmatus*, p. 5, figg. 7-10, Bohemia, NÉMEC, SB. Bohmisch. Ges. 1895, pt. 2, No. xxxviii; *B. concolor*, S. France, p. 96, *dollfusi*, Lower Pyrenees, p. 98, BRÖLEMANN, Bull. Soc. zool. France, xix : n. spp.
- Bothroiulus*, n. subg. of *Palaioiulus*, for *mediterraneus*, Latz.; VERHOEFF, Verh. Ges. Wien, xlv.
- Chaitoiulus*, n. subg. of *Iulus*, p. 297; VERHOEFF, *op. cit.* xlv.
- Chromatoiulus*, n. subg. of *Iulus*, for *podabrus*, Latz., p. 152; VERHOEFF, *op. cit.* xlv.
- Cryptoiulus*, n. subg. (of *Iulus*), p. 14, for *I. italicus*, Latz.; VERHOEFF, *t. c.*
- Cylindroiulus*, n. subg. of *Iulus*, for *silvarum*, Mein., p. 151; VERHOEFF, *t. c.*
- Diploiulus* (?) *brownii*, Portofino, p. 518, fig. 6, POCOCK, Ann. Mus. Genova, xxxiv, n. sp.
- Eleutheroiulus*, n. subg. of *Palaioiulus*, for *oliveira*, Verh., p. 152; VERHOEFF, Verh. Ges. Wien, xlv.
- Enantiulus*, n. subg. of *Iulus*, p. 358; ATTEMS, Zool. Anz. xvii.
- Iulus* (? s.s.) *vallicola*, Che Kiang, p. 366, pl. xi, fig. 13, POCOCK, Ann. Nat. Hist. (6) xv; *I. thomasi*, Monaco, p. 514, fig. 4, *aleator*, Nervi & Monaco, p. 515, fig. 5, POCOCK, Ann. Mus. Genova, xxxiv; *I. spinifer*, Agram, p. 296, VERHOEFF, Verh. Ges. Wien, xlv; *I. blaniuloides*, Monte Maggiore, p. 270, *relictus*, Abbazia, p. 271, VERHOEFF, Berlin. ent. Zeitschr. xxxviii; *I. kraepelinorum*, Teneriffe, *salvagicus*, Salvage I., p. 121, LATZEL, Jahresber. Hamburg. Anst. xii; *I. riparius*, p. 26, *albovittatus*, p. 26, *nigrofuscus*, p. 28, Tyrol, VERHOEFF, Verh. Ges. Wien, xlv; *I. punicus*, Tunis, p. 460, BRÖLEMANN, Mem. Soc. zool. France, vii; *I. tirolensis*, Tyrol, p. 30, VERHOEFF, Verh. Ges. Wien, xlv : n. spp.
- I. pusillus*, Leach, *acutulus*, Hamburg, p. 108; LATZEL, Jahresber. Hamburg. Anst. xii. *I. trilineatus*, C. Koch, *affinis*, Tyrol, p. 28; VERHOEFF, Verh. Ges. Wien, xlv : n. varr.
- Leptoiulus*, n. subg. of *Iulus*, for *trilineatus*, Koch, p. 152; VERHOEFF, *t. c.*
- Leucoiulus*, n. subg. of *Iulus*, for *molybdinus*, Koch, p. 152; VERHOEFF, *t. c.*
- Mustigoiulus*, n. subg. of *Iulus*; ATTEMS, Zool. Anz. xvii, p. 358.

- Megaiulus*, n. subg. of *Pachyiulus*, for *unicolor*, p. 152; VERHOEFF, Verh. Ges. Wien, xlv.
- Megaphyllum*, n. g., p. 322, *projectum*, n. sp., p. 323; VERHOEFF, Zool. Anz. xvii.
- Mesoiulus*, n. subg. of *Palaioiulus*, for *karschi*, Verh.; VERHOEFF, Verh. Ges. Wien, xlv.
- M. mariae*, Venice, p. 520, fig. 9, POCOCK, Ann. Mus. Genova, xxxiv, n. sp.
- Micropodiulus*, n. g., p. 150, for *I. ligulifer*; VERHOEFF, Verh. Ges. Wien, xlv.
- Oncoiulus*, n. subg. of *Iulus*, for *fatidus*, Brandt; VERHOEFF, t. c. p. 151.
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- Pachyiulus (Acanthoiulus) berlesei*, Tyrol, p. 31, VERHOEFF, Verh. Ges. Wien, xlv, n. sp.
- P. berlesei*, Verh., *funzagoi*, Tyrol, p. 31, VERHOEFF, t. c., n. var.
- P. bosniensis*, Sarawejo, p. 292, VERHOEFF, op. cit. xlv; *P. festæ*, Libanon, p. 3, SILVESTRI, Ann. Mus. Torino, x : n. spp.
- Palaioiulus*, n. g., for *sabulosus*, Linn., var. *rubriventris*, n. var., Tyrol, p. 30; VERHOEFF, Verh. Ges. Wien, xlv.
- Paraiulus coreanus*, S.E. Corca, p. 365, pl. xi, fig. 12; POCOCK, Ann. Nat. Hist. (6) xv, n. sp.
- Ptyoiulus*, n. g. of *Paraiulidæ*, for *Iulus pennsylvanicus*, Brandt, p. 6; COOK, Ann. N. York Ac. ix.
- Schizophyllum*, n. subg. of *Iulus*, p. 224, for *lusitanum*, n. sp., Lusitania; VERHOEFF, Zool. Anz. xviii.
- Tachypodiulus*, n. g., p. 152, for *albipes*, Koch; VERHOEFF, Verh. Ges. Wien, xlv.
- T. styriacus*, p. 324, VERHOEFF, Zool. Anz. xvii, n. sp.
- Xestoiulus*, n. subg. of *Iulus*, for *blaniuloides*, Verh.; VERHOEFF, Verh. Ges. Wien, xlv.

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- Acanthiulus tuberculosus*, Kamerun, p. 53, fig. 20, PORAT, Bih. Svenska Ak. xx, pt. iv, No. 5, n. sp.
- Alloporus punctidives*, Candelaria, p. 77a, *americanus*, Giabibbirri, p. 780, SILVESTRI, Ann. Mus. Genova, xxxiv; *A. curtipes*, p. 48, *gyrifrons*, p. 49, fig. 19, Kamerun, PORAT, Bih. Svenska Ak. xx, No. 4, pt. 5 : n. spp.
- Archispirostreptus*, n. g., type *gigas*, Pet., p. 776, *libertinus*, Mosetenes, p. 777, fig. 10, *dorsalis*, Giabibbirri, fig. 11, *bovei*, Candelaria, p. 778, fig. 12, *microporus*, St. Ignazio, p. 779, SILVESTRI, Ann. Mus. Genova, xxxiv; *A. ragazzii*, Shoa, p. 488, fig. 6, *bottegi*, Ogaden, p. 489, fig. 7, *beccarii*, Abyssinia, p. 490, fig. 8, SILVESTRI, op. cit. xxxv; *A. borellii*, Tucumani, *compressicauda*, Asuncion, *camerani*, Salta, p. 9, *curiosus* Rio Apa, p. 10, SILVESTRI, Boll. Mus. Torino, x : n. spp.

- Ctenoiulus*, n. g., p. 704, *chatelainei*, n. sp., Loanda ; COOK, P. U. S. Mus. xvi.
- Lophostreptus*, n. g. of *Trachystreptidæ*, for *Glyphiulus magnus*, Karsch ; COOK, Ann. N. York Ac. ix.
- Odontopyge rubripes*, p. 485, *diversicolor*, p. 486, Alto Ganale Gudda, *longispina*, p. 486, fig. 3, *attenuata*, p. 487, fig. 4, *difficilis*, p. 488, Shoa, SILVESTRI, Ann. Mus. Genova, xxxv ; *O. trivialis*, p. 80, fig. 44, *bipartita*, p. 80, fig. 45, *grandis*, p. 81, fig. 46, *ecarinata*, p. 81, *accincta*, p. 82, fig. 47, *uncinata*, p. 83, Kamerun, PORAT, Bih. Svenska Ak. xx, pt. iv, No. 5 ; *O. paraguayensis*, Rio Apa, p. 11, SILVESTRI, Boll. Mus. Torino, x : n. spp.
- Plusioporos*, n. g., *salvadorii*, Central Paraguay, p. 10, *camerani*, Rio Apa, p. 10, SILVESTRI, Boll. Mus. Torino, x, n. spp.
- Rhynchoproctus*, n. g., *proboscideus*, Celebes, p. 380, pl. xvi, fig. 7, POCOCK in WEBER'S Zool. Ergebnisse, &c., n. sp.
- Spirostreptus sepia*, Seychelles, p. 535, BRÜLEMANN, Mem. Soc. zool. France, 1895 ; *S. fijiensis*, Fiji, p. 106, COLENSO, Tr. N. Zealand Inst. xxvi ; *S. antillanus*, W. Indies, p. 483, pl. xxxviii, fig. 1, POCOCK, J. Linn. Soc. xxiv ; *S. arabs*, Hadramaut, pp. 298 & 299, fig., POCOCK, op. cit. xxv ; *S. modiglianii*, Si-Rambé, p. 755, *mentaveensis*, Mentavei, p. 756, SILVESTRI, Ann. Mus. Genova, xxxiv ; *S. sjostedti*, p. 68, fig. 29, *elongatus*, p. 69, fig. 30, *canaliculatus*, p. 70, fig. 32, *sinuaticollis*, p. 72, fig. 34, *limbiger*, p. 73, fig. 36, *neglectus*, p. 74, fig. 37, *crenulatus*, p. 74, fig. 38, *pygmaeus*, p. 75, fig. 39, *atratus*, p. 75, fig. 40, *trachyurus*, p. 77, fig. 43, Kamerun, PORAT, Bih. Svenska Ak. xx, No. iv, pt. 5 : n. spp.
- S. intricatus*, Voges, fig. 28, p. 68, *cameroonensis*, Voges, p. 70, fig. 31, *sulcatus*, Voges, p. 71, fig. 33, *lavis*, Voges, p. 72, fig. 35, *carinatus*, Porat, fig. 41, *propinquus*, Porat, fig. 42, p. 76, figured and described ; PORAT, t. c. *S. vittatus*, Newp., = *fasciatus*, Newp., and *corticatus*, Por., Sumatra, described, p. 387, figured, pl. xxi, fig. 8, POCOCK in WEBER'S Zool. Ergebnisse, &c. *S. variabilis*, Cook & Collins, redescribed, p. 703 ; COOK, P. U. S. Mus. xvi.
- Thyropygus*, n. g., p. 380, *xanthonotus*, Buitenzorg, p. 381, *rubrolimbatus*, p. 381, pl. xxii, fig. 17, *rubrocinctus*, Paningahan, p. 382, pl. xxii, fig. 18, *weberi*, Alahan, Pandjang, p. 382, pl. xxii, fig. 19, *xanthurus*, Sinkarah, p. 383, pl. xxii, fig. 20, *erythropleurus*, Manindjau, p. 384, pl. xxi, fig. 6, *pachyurus*, Manindjau, p. 385, pl. xxii, fig. 21, POCOCK in WEBER'S Zool. Ergebnisse, &c. ; *T. inferorum*, Mt. Singalang, p. 780, *modiglianii*, Si-Rambé, p. 751, *ostentatus*, Pea Ragia, *caelestes*, Si-Rambé, p. 752, *luxuriosus*, Mentavei, p. 753, *elegans*, Mt. Singalang, p. 754, SILVESTRI, Ann. Mus. Genova, xxxiv : n. spp.
- T. javanicus*, Brandt, figured, pl. xxii, fig. 16 ; POCOCK in WEBER'S Zool. Ergebnisse, &c.
- Trachystreptus*, n. g., *cambaloides*, Liberia, n. sp., COOK, p. 5, Ann. N. York Ac. ix.

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- Rhinocricus*, Karsch, recharacterised, POCOCK, J. Linn. Soc. xxiv, p. 485.
- R. ramagei*, St. Lucia, *mandevillei*, Jamaica, p. 489, *gossei*, Jamaica, p. 490, pl. xxxviii, fig. 2, *holomelanus*, Jamaica, p. 492, *macropus*, St. Vincent, p. 493, pl. xxxviii, fig. 3, *maltzani*, St. Domingo, p. 495, fig. 5, *solitarius*, Jamaica, p. 496, fig. 6, *grenadensis*, Grenada, p. 498, fig. 11, *leucostigma*, Dominica, p. 500, fig. 8, *grammostictus*, St. Lucia, p. 501, *serpentinus*, St. Lucia, p. 501, fig. 9, *anguinus*, St. Lucia, p. 502, *leptopus*, St. Lucia, p. 503, *vincentii*, St. Vincent, p. 503, fig. 10, *sabulosus*, Jamaica, p. 504, fig. 12, *cockerellii*, Jamaica, p. 505, *townsendi*, Jamaica, p. 505, POCOCK, J. Linn. Soc. xxiv; *R. weberi*, Celebes, p. 391, pl. xxii, fig. 22, *semicinctus*, Flores, p. 392, pl. xxii, fig. 23, *xanthozonus*, Flores, p. 393, pl. xxii, fig. 24, *brachyproctus*, I. of Saleyer, p. 393, pl. xxii, fig. 25, *eumelanus*, Celebes, p. 394, pl. xxii, fig. 26, *hicksoni*, Celebes, p. 394, POCOCK in WEBER'S Zool. Ergebnisse, &c.; *R. gravis*, p. 647, *dives*, *montivagus*, p. 649, *loriae*, p. 650, New Guinea, *opulentus*, Cape York, p. 650, *beccarii*, Amboina, p. 651, *dimissus*, New Guinea, p. 652, *albertisii*, Goram, p. 652, *variabilis*, Aru, p. 653, SILVESTRI, Ann. Mus. Genova, xxxiv; *R. discors*, Salinas, p. 781, fig. 13, *bulzani*, Yungas, p. 781, *flavomarginatus*, Candelaria, p. 781, *civilis*, Candelaria, p. 782, fig. 14, *angustus*, S. Ignazio, p. 782, SILVESTRI, t. c.; *R. borellii*, Central Paraguay, p. 11, *indiscretus*, Chaco, *tucumanensis*, Tucuman, *persimilis*, dispar, Rio Apa, p. 12, SILVESTRI, Boll. Mus. Torino, x : n. spp.
- Spirobolellus*, n. g., p. 393, *chrysodirus*, Sumatra, p. 399, pl. xxii, fig. 30, *chrysoproctus*, Celebes, p. 400, *chrysogrammus*, Celebes, p. 400, n. spp., POCOCK in WEBER'S Zool. Ergebnisse, &c.
- S. perstriatus*, Si-Rambé, p. 758, *splendens*, Siboga, *modiglianii*, Padang, p. 759, *nanus*, Engano, p. 760, SILVESTRI, Ann. Mus. Genova, xxxiv, n. spp.
- Spirobolus dictyonotus*, loc. ?, p. 108, LATZEL, Jahresber. Hamburg. Anst. xii; *S. alluaudi*, Seychelles, p. 531, pl. i, figg. 9-14, BRÖLEMANN, Mem. Soc. zool. France, 1895; *S. punctidorsis*, p. 58, fig. 23, *leticollis*, p. 59, fig. 24, *angusticollis*, p. 60, fig. 27, Kamerun, PORAT, Bih. Svenska Ak. xx, No. iv, pt. 5; *S. walkeri*, Chusan Is., p. 367, pl. xi, fig. 14, POCOCK, Ann. Nat. Hist. (6) xv : n. spp.
- Thriniciulus*, n. g., p. 54 (type *Acanthiulus murrayi*, Poc.), *multicostis*, fig. 21, *laevicollis*, fig. 22, p. 55, n. spp., Kamerun, PORAT, Bih. Svenska Ak. xx, No. iv, pt. 5.
- Trigoniulus*, n. g. (type *Spirobolus goesi*, Porat), p. 484; POCOCK, J. Linn. Soc. xxiv.
- Trigoniulus reonus*, Flores, p. 396, pl. xxxiii, fig. 27, *megaloproctus*, Flores, p. 397, pl. xxii, fig. 28, *tachypus*, Saleyer, p. 397, pl. xxii, fig. 29, POCOCK in WEBER'S Zool. Ergebnisse, &c.; *T. abbreviatus*, p. 655, *ornatus*, p. 656, *concolor*, *pupuasia*, p. 657, New Guinea, *formosus*, Cape York, p. 657, SILVESTRI, Ann. Mus. Genova, xxxiv; *T. proximus*, Engano, p. 757, SILVESTRI, t. c. : n. spp.
- Thyroproctus*, n. g. for *T. townsendi*, n. sp., Jamaica, pl. xxxvii, fig. 6, POCOCK, p. 506, J. Linn. Soc. xxxiv.

PROTOTRACHEATA.

DENDY, A. The hatching of a *Peripatus* egg. P. Soc. Victoria, vi, pp. 118 & 119.

——. Description of *Peripatus oviparus*. P. Linn. Soc. N. S. Wales, x, pp. 195-200.

P. oviparus, Victoria, n. sp.

——. Note on a new variety of *Peripatus novæ-zelandiæ*, Hutton. Tr. N. Zealand Inst. xxvii, pp. 190 & 191.

P. suteri, Stratford, n. var.

——. Preliminary notes on the reproductive organs of *Peripatus oviparus*. Zool. Anz. xviii, pp. 264-266.

FLETCHER, J. J. On the specific identity of the Australian *Peripatus*, usually supposed to be *P. leuckarti*, Sanger P. Linn. Soc. N. S. Wales, x, pp. 172-194.

The following described :—*P. leuckarti*, Sanger, *typicus*, N. S. Wales, &c. (= *insignis*, Dendy), p. 185; *occidentalis*, inland from Perth, p. 185; *orientalis*, Queensland, p. 186 : n. varr.

HART, J. H. *Peripatus* in the West Indian Islands. Nature, li, p. 511.

POCOCK, R. I. Contributions to our knowledge of the *Arthropod* fauna of the West Indies. Pt. II. *Diplopoda* and *Malacopoda*. J. Linn. Soc. xxiv, pp. 518-524, with supplementary note on p. 542.

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SEDGWICK, A. *Peripatus*. In Cambridge Natural History edited by HARMER & SHIPLEY, vol. v, pp. 1-26, cuts, map of distribution.

SPENCER, BALDWIN. Note on the occurrence of *Peripatus insignis* in Tasmania. P. Soc. Victoria, vii, pp. 31 & 32.

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BY D. SHARP.

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INTRODUCTION.

THE amount of entomological work we record this year surpasses the previous maximum: the titles being 1251 in number, against 1173 last year. We find in this year's list several works of a more comprehensive nature than usual. COMSTOCK (245) discusses all the orders of Insects, limiting himself only by the extent of the North American fauna. The Recorder (1055) has published the first part of a work on the Natural History of the Insects of the whole world; and MIALL has given us a very interesting volume (767) on the Natural History of Aquatic Insects of our own country.

We are indebted for a monograph of the Pseudophyllides to HOFRATH BRUNNER VON WATTENWYL; to BRAUER & BERGENSTAMM (139) for the concluding part of their attempt to reorganise the system of one of the most complex divisions of *Diptera*. It will be generally regretted that the decease of Herr von Bergenstamm should have followed so closely on the completion of this work. RÉGIMBART'S revision of the *Dytiscide* of Africa and Madagascar is remarkable from the great proportion of new forms it describes of a family that has been previously not altogether a neglected one. The monograph of *Pepsis*, by LUCAS (705), and the completion of HANDLIRSCH'S series of papers (486) on the *Bombecini* deserve recognition; while HAMPSON'S (482) revision of the *Crambina* will no doubt prove very useful.

The valuable list by CHAMPION (197) of *Tenebrionide* described in the last twenty-five years, shows that the number of known genera and species has been just about doubled in that period, more species having been described in the last twenty-five years than in the previous century.

DYAR has published several important studies on the classification of Lepidopterous larvæ, which are perhaps more interesting to the phylogenetist than to the systematic worker or naturalist. UZEL'S work on *Thysanoptera* will be welcomed, as it deals with the most neglected of the orders of Insects; it is chiefly devoted to the *Thysanoptera* of Bohemia, but little material from other parts of the world having been at the author's disposal. After an interval of many years, the student of British *Lepidoptera* has another handbook for the determination of his species (764). MEYRICK'S system is based almost exclusively on wing-neruation, and therefore differs totally from that of STAINTON; time only can show whether SCUDDER is right in believing that the system of thirty years hence will be as different from Meyrick's as this is from Stainton's. GANGLBAUER'S second volume on the *Coleoptera* of Central Europe (416) is a valuable addition to the series of existing works on this part of the world's fauna.

In anatomy we find a series of papers on *Hymenoptera* by BORDAS; his account of the Malpighian tubes is comprehensive and succinct. Dr. MEIJER'S (754) illustrations of the compound stigmata of certain

Diptera are very interesting. VERHOEFF has continued his studies on the morphology of the abdomen and sexual organs of *Coleoptera*; he considers that the lady-birds (*Coccinellide*) are so different from other beetles that they should form a primary division of the order. PEYTOUREAU (863) has brought into collective form his studies on the external parts connected with the genital structures, and has accompanied them with some general considerations on the various views that are held as to the morphology and phylogeny of Insects. SPULER has given a very interesting paper (1096) on the scales and colour of *Lepidoptera*. As the result of an examination of the male organs of *Vespa germanica*, KLUGE (608) finds them so variable that he considers species should only be based on such distinctions with much caution.

HEYMONS has produced a very important work (502) on the embryology of *Orthoptera*, introducing us to new aspects on very important points. The same author's work (503) on the segmentation of the body, puts his views, on this apparently simple matter, in a concise form, though it is clear much still remains to be said on this subject.

HART'S paper (489) on the entomology of the Illinois river makes a considerable and pleasing addition to the literature of Insect transformations. JANET (556) has given us another of his valuable studies of Hymenopterous life. BRUCE'S report (150) renders it probable that the Tsetse fly is only a secondary agent in the spread of the disease so much dreaded in Africa. CUÉNOT has published an important paper on the physiology of *Orthoptera* (267). PÉREZ (851) has discussed a number of points in connection with the instincts and habits of *Hymenoptera*; some of his criticisms deal with points that have been traditional for perhaps too long. WEISMANN (1229) has returned to a favourite subject, the seasonal dimorphism of butterflies, and has published the results of some interesting experiments. The second part of EIMER'S work (326) discusses some of the wider points in connection with variation, he being strongly opposed to the ordinary views as to natural selection. Those who wish for an idea of some of the modern suggestions as to mimicry, phylogeny, variation, and the meaning of various terms proposed for use in discussion of these subjects will do well to refer to this work.

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5. —. Deux *Malachides* paléarctiques nouveaux. *T. c.* pp. cccliii & cccliv. [*Coleoptera.*]
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Insecta. S. Arabia, KIRBY (604).

Coleoptera. Caucasus, PIC (883), REITTER (940, 945), SCHWARZ (1030), TSCHITSCHÉRINE (1148).—S.E. Russia and Caucasus, SEMENOW (1046).

—Aden, FAIRMAIRE (351).—Arabia, CANDÈZE (180), GAHAN (414), NONFRIED (808), PIC (875).—W. Asia, JACOBSON (544), JAKOWLEFF (553).—Transcaspian, REITTER (934, 947), SEMENOW (1048).—Turkestan, REITTER (942).—Central Asia, REITTER (929), TSCHITSCHÉRIE (1148).

Hymenoptera. Central Asia, KOKOUYEW (614).—Turcomenia, MORAWITZ (785).

Lepidoptera. Central Asia, STAUDINGER, *Deutsche ent. Zeitschr. Lep.* viii, pp. 341–343.

Aphaniptera. Transcaspian, WAGNER (1179).

Rhynchota. Caucasus, HORVATH (521).—Aden, PUTON (906), REUTER (954).

4. AFRICA (TROPICAL AND SOUTH ; for NORTH AFRICA, see 3 (g.) ; for COMORO IS., see 5.)

Insecta. Giuba, *cf.* BOTTEGO.

Coleoptera. BRENSKE (143), CANDÈZE (180, 182), DESBROCHERS (282), EPPELSHEIM (341, 343), FAIRMAIRE (349), FAUST (358, 359, 360), GESTRO (425), GROUVELLE (467), HELLER (493), HORN (514, 516), JACOBY (548, 552), JAKOWLEFF (555), JORDAN (565, 566, 568), KERREMANS (589), KOLBE (615, 616, 617), KRAATZ (624, 625, 631, 632–640, 643, 644, 647, 649, 650, 652, 653), LESNE (687), LEWIS (693, 694), NONFRIED (808), OLIVIER (814), PIC (865, 867, 870, 880, 887, 888), RAFFRAY (909), RÉGIMBART (921, 924), SCHILSKY (1008), SCHMIDT (1012), SENNA (1053), SHIPP (1057), WEISE (1215, 1217, 1223, 1225).

Hymenoptera. ANDRÉ (29, 30), EMERY (328, 331, 334, 340), FOREL (384), HANDLIRSCH (486, 487), KOHL (613), KRIECHBAUMER (657), MAGRETTI (719), MAYR (750), STADELMANN (1097, 1098).

Lepidoptera. AURIVILLIUS (51–54), BUTLER (163–169), CARPENTER (186), DRUCE (297).—DE LA GARDE, Cape Good Hope, *Entomologist*, 1895, pp. 153–155.—HAMPSON (482), HOLLAND (505), LANZ (672), KARSCH (572, 573, 574), REBEL (916), ROTHSCHILD (985), SNELLEN (1077), STAUDINGER (1106), TRIMEN (1143), WARREN (1187).

Diptera. CORTI (259), WILLISTON (1241).

Rhynchota. BERGROTH (97, 100), CARLINI (184), HAGLUND (481), KARSCH (575–577), MONTANDON (782, 783), REUTER (954, 957), GERSTAECKER, *Homoptera* (423).—LEWIS, *Aleurodes* (699).—COCKERELL, *Coccidae* (212).

Neuroptera. *Odonata*, KARSCH (578), MACLACHLAN (717), NUNNEY (811).—*Mallophaga*, PIAGET (864).

Orthoptera. BRUNNER (152), SAUSSURE (1000, 1001), SAUSSURE & ZEHNTNER (1003).

5. MADAGASCAR, including SEYCHELLES and MASCARENE IS.

ALLARD (19), ALLUAUD (20–22), CANDÈZE (180) : list of the *Elatерidae* (179) ; FAIRMAIRE (347, 352, 353) ; *id.*, Madagascar and Seychelles (350, 354) ; *id.*, Comoro Is. (348), FAUST (359), JORDAN (566), KRAATZ

(626, 642), KÜNGKEL (664), LESNE (687, 689), LEWIS (694), NONFRIED (808), PIC (885), RÉGIMBART (924), SCHMIDT (1014), SENNA (1051), THÉRY (1128), WEISE (1215, 1221, 1223, 1225).

Hymenoptera. ANDRÉ (29), EMERY (333), FOREL (385, 387); *id.*, Réunion, ants (386); PÉREZ, Seychelles (853).

Lepidoptera. HAMPSON (482).

Diptera. GIGLIO-TOS, Seychelles (434).

Rhynchota. BERGROTH (99), HAGLUND (481).

Neuroptera. VAYSSIÈRE, *Epheméridæ* (1163); MACLACHLAN, *Odonata* (717); MARTIN, Seychelles, *Odonata* (739).

Orthoptera. BOLIVAR, Seychelles (124); *id.*, Réunion (125); BORMANS, Seychelles, *Forficulidæ*, pp. 387 & 388, *Ann. Soc. ent. France*, 1895; SAUSSURE (1000), SAUSSURE & ZEHNTNER (1003).

6. TROPICAL AND EASTERN ASIA, WITH JAPAN.

For outskirts see also 3, (a.), (g.), (h.). ARABIA, see 3 (h.).

Coleoptera. ALLARD, India (16-18); BLANDFORD, Ceylon (118); BOURGEOIS, Tonkin (136); CHIOBAUT, Burma (205), CANDÈZE (180); EPELSHEIM, India (342, 345), FAIRMAIRE (348); *id.*, Thibet (349); *id.*, Japan (349, 352); *id.*, Singapore (353, p. 11); *id.*, Indo-China (355); FAUST (359, 363); *id.*, Burma (361), FAUVEL (367); FLEUTIAUX, Indo-China (374); *id.*, India (375); GAHAN, Burma (412); GORHAM, India (443); *id.*, Burma (444); GROUVELLE, Burma (468), HELLER (493), HORN (514, 516); *id.*, Thibet (514); JORDAN (565-568); KARSCH, Ceylon (1012); KERREMANS (588), KRAATZ (630); *id.*, India (627, 628, 648); *id.*, Siam (622, 641); LESNE (687); *id.*, Japan (687); LEWIS, Japan (695-698); NONFRIED (808); *id.*, Japan (808); OLIVIER, China (816); *id.*, India (547); JACOBY (549); RAFFRAY, Singapore and Penang (908); REITTER, Korea (929); *id.*, Korea and China (935, 936, 941); RITSEMA, Thibet (972); SCHUCH, India (1019); SEMENOW, Mongolia (1045); SENNA, Malacca (1054); THÉRY, China (1126); TSCHITSCHÉRINE, Korea (1145); *id.*, China (1148); WATERHOUSE (1197); WEISE (1225); *id.*, India (1222, 1223, 1227).

Hymenoptera. EMERY, Burma (335); *id.*, Perak, Burma (340); FOREL (382); *id.*, Ceylon (386); KOHL, India (613); KOKOUYEW, N. China (614); KONOW, Japan (620); KRIECHBAUMER, Japan (657); ROTHNEY, India (982); VACHAL, Burma (1158).

Lepidoptera. ALPHÉRAKY (23), *id.*, Thibet (23); AUSTAUT, Thibet (55); CROWLEY (265); H. H. DRUCE, Mongolia (299), p. 593; HAMPSON (482); *id.*, India (483); MOORE, India (784); NICÉVILLE, India (799, 800, 801, 802, 804, 805, 806); POJUJADE, Mou-Pin (899, 900); ROTHSCHILD (988); *id.*, India (984, 990); STAUDINGER, Tibet (1104); *id.*, Chinese Mongolia (1105), SWINHÖE (1116); *id.*, India (1117, 1118); SEITZ, China (1043); SNEILLEN, Natuna Is. (1082); WALKER, Hong-Kong (1180), WARREN (1186, 1187); *id.*, Japan (1186, 1187); WATSON, list of Indian *Hesperidiæ* (1200); Bonin Is., *Lepidoptera*, see 2, INSULAR.

Diptera. BECKER, Malacca (80); SKUSE, India (1063); WULF, India (1247).

Rhynchota. BUCKTON, India (157); COCKERELL, *Coccidæ* (212); GERSTAECKER, India (423); MONTANDON (780); *id.*, Cochin China (783); NEWSTEAD, India, *Coccidæ* (798).

Neuroptera, Odonata. MACLACHLAN (717).

Orthoptera. BORMANS, Burma (135), BRUNNER (152), SAUSSURE (1001), SAUSSURE & ZEHNTER (1003).

7. ASIATIC ARCHIPELAGO, INCLUDING PAPUA.

**Coleoptera*. CANDÈZE (180); *id.*, Sumatra (181); EPPELSHEIM, Sumbawa, p. 408, Deutsche ent. Zeitschr. 1895; FAUST (359, 363); *id.*, Philippines (362); FAUVEL (367); FLEUTIAUX, Sumatra (377); GAHAN, Java (411, 412); GESTRO, Papua (424); GROUVELLE (469); *id.*, Java (470); *id.*, Sumatra (471); HELLER (493); *id.*, Philippines (495); *id.*, Papua (496); HORN (514, 516); *id.*, Sumatra, *Cicindelidæ* (518); JACOBY (549, 551); JORDAN (566, 568); *id.*, Borneo (567); KERREMANS (588); *id.*, Sumatra (590); KRAATZ (622, 649); *id.*, Borneo (623, 651, 654); *id.*, Philippines (629); LESNE, Celebes (687); LEWIS, Java (694); NON-FRIED (808); OLIVIER, Sumatra (814); PIC (869, 879, 888); *id.*, Sumatra (889); *id.*, Sumbava (868); POLL, Sumatra (894); Java (895); RAFFRAY (908); RÉGIMBART, Sumatra (923); RITSEMA (971); SCHMIDT, Borneo (1012); *id.*, Engano (1015); SENNA, New Guinea (1050); *id.*, Java (1052); *id.*, Philippines (1053); *id.*, New Guinea (1054); WEISE (1225); *id.*, Borneo (1223).

Hymenoptera. BINGHAM, Philippines (113); EMERY (340); *id.*, Sumatra, (331); HANDLIRSCH (486); *id.*, Timor (487); KOHL, New Guinea (613).

Lepidoptera. DOHRN, Sumatra (295); DRUCE (296), H. H. DRUCE (299); *id.*, Borneo, monograph of *Lycanidæ* (299); FRUHSTORFER (406), FURBRINGER (408) and PAGENSTECHER (841), HAMPSON (482); HUWE, Java (540); JORDAN & ROTHSCHILD (569), MABILLE (712); MARTIN, Sumatra (734, 735, 736); NICÉVILLE (802, 805, 806); *id.*, Java (804); POLL, Nias (893); RIPPON, New Guinea (968); RÖBER, Java (973); *id.*, Java and Sumatra (974); *id.*, Borneo (975); ROTHSCHILD (985, 988), SMITH (1069); *id.*, Taganac I., Borneo (1071); SMITH & KIRBY (1072), SNELLEN (1077); *id.*, Halmaheira (1078); *id.*, Sumatra (1080); *id.*, Natuna Is. (1082); *id.*, Talaut I. (1083); STAUDINGER, New Guinea (1101); *id.*, Sumbawa (1106); SWINHOE, Gilolo (1116); WARREN (1187).

Diptera. WULF, Java (1246, 1248); BRAUER & BERGENSTAMM (139).

Rhynchota. BERGROTH, New Guinea (98); GERSTAECKER (423); MONTANDON, Philippines (780); *id.*, New Guinea (781).

Odonata. MACLACHLAN, New Guinea (717); MARTIN, Borneo (737).

Orthoptera. BRUNNER (152), SAUSSURE (1000, 1001), SAUSSURE & ZEHNTER (1003).

* In vol. xxxi, this section was erroneously headed *Insecta*, instead of *Colcoptera*.

8. AUSTRALIA AND TASMANIA.

Coleoptera. BLACKBURN (114, 115), CANDÈZE (180), CHAMPION (195), FAUST (359), FLEUTIAUX (375), HELLER (493), JACOBY (549), JORDAN (565-568), LEA (683, 684), MASTERS (748), OLLIFF (819, 820), PIC (869), SLOANE (1068), THIÉRY (1128), WEISE (1225, 1226).

Hymenoptera. ANDRÉ (26), EMERY (339, 340), FOREL (383, 386), HANDLIIRSCH (486), KOHL (613).

Lepidoptera. FURBRINGER (408), PAGENSTECHE (841), North Australia and Thursday I.; HAMPSON (482), JORDAN & ROTHSCHILD (569).—Catalogue of Victorian *Heterocera* continued by LOWER, Victorian Natural. xi, p. 153, xii, pp. 9 & c.; OLLIFF (818), WARREN (1186, 1187).—Phillip I., WESTLEY, p. 164, Victorian Natural. xi.

Rhynchota. BERGROTH (95, 96); COCKERELL, *Coccidæ* (212); FROGGATT, *Coccidæ* (401); GERSTAECKER (423); MASKELL (741), list of *Coccidæ* of Australasia and Pacific Is.; *id.* (742), Australia and New Zealand; MONTANDON (781), REUTER (954, 957).

Termitidæ. FROGGATT (403).

Orthoptera. BRUNNER (152), SAUSSURE (1001), TEPPER (1121, 1122).

9. NORTH AMERICA.

Insecta. BLATCHLEY, Indiana, hibernating insects of (120); COCKERELL (232).—DAVIS, Staten I., pp. 140-143, J. N. York Ent. Soc. iii.—DITMARS, Connecticut, p. 62, *t. c.*—EVANS, the insect fauna of the Sudbury district, Ontario, Canad. Ent. xxvii, pp. 141-146 & 173-175.—GEDDES, Bermuda, Rep. ent. Soc. Ontario, xxv, pp. 25-27; GODMAN & SALVIN (441).—HARRINGTON, Ottawa, insects met with in winter (488).—HART, Illinois (489).—LAURENT, Somerset, Maine, Canad. Ent. xxvii, p. 322.—SCUDDER, Rhode I., Carboniferous fossil (1032).—SLOSSON, Alpine region of Mt. Washington, Ent. News Philad. vi, pp. 4-7 & 316-321.—SLOSSON, Florida, *t. c.* pp. 133-136; WEBSTER, Ohio (1210); WICKHAM, Bahamas, in Bull. Lab. Iowa, iii, Nos. 1 & 2.

Coleoptera. HENSHAW, Supplements to Catalogue (449); BAKER, Colorado (habits), Ent. News Philad. vi, pp. 27-29; BELON (86), BLAISDELL (116); BLAND, Pennsylvania, Ent. News Philad. vi, p. 185, BRENDL (142), CASEY (190, 191); DAGGETT, Lake Superior, p. 311, Ent. News Philad. vi; DURY, Cincinnati, *Mordellidæ*, J. Cincinnati Soc. xv, pp. 123-126; FALL, California, Ent. News Philad. vi, p. 108; HORN (513); *id.*, Lower California (512); HAMILTON, Lake Worth, Florida, Canad. Ent. xxvii, pp. 317-322; HARRINGTON, Ottawa, Ottawa Natural. ix, p. 179, and Rep. ent. Soc. Ontario, xxv, pp. 47-49; KEEN, list of *Coleoptera* collected at Massett, Queen Charlotte Is., B.C., Canad. Ent. xxvii, pp. 165-172 & 217-220; KNAUS, Nebraska, Ent. News Philad. vi, p. 284; LESNE (687); NONFRIED, Lower California (808); ROBERTS (976), SCHWARZ (1027, 1028); SCHWARZ, Pennsylvania, P. ent. Soc. Washington, iii, pp. 134-138; SCUDDER, Canadian fossil *Coleoptera* (1034); SLOSSON,

Florida, *Canad. Ent.* xxvii, p. 9; TOWNSEND, New Mexico and Arizona, habits, &c., *Canad. Ent.* xxvii, pp. 39-51; WICKHAM, Canada (1232); *id.*, supplement to the "List of the *Coleoptera* of Iowa city and vicinity," *Bull. Lab. Iowa*, iii, No. 3, pp. 36-40; WOLCOTT, Central Illinois, *Ent. News Philad.* vi, p. 309; Bahamas, see Antilles.

Hymenoptera. ASHMEAD (40, 41, 44-46, 49, 272); *id.*, Lower California (39); BAKER (64), COCKERELL (220, 235, 236, 238, 239, 240, 242) and p. 134, *Canad. Ent.* xxvii; COCKERELL & CASAD (243), DAVIDSON (273), DAVIS (274, 275, 276), DYAR (316, 317), EMERY (334, 337); *id.*, the origin of European and North American ants (336, 337); FOX (390-393); *id.*, Lower California (394); HANDLIRSCH (486); HARRINGTON, Canada, p. 156, *Canad. Ent.* xxvii; HOWARD (524, 525, 529) and p. 239, *P. ent. Soc. Washington*, iii; KING, ants of Lawrence, Mass., *Ent. News Philad.* vi, pp. 220-223; KOHL (613), LUCAS (705), MACGILLIVRAY (714, 715, 716), MARLATT (726), PROVANCHER (905), ROBERTSON (977); SLOSSON, Mt. Washington, *Ent. News Philad.* vi, pp. 276-280.

Lepidoptera. ALBRIGHT, California, p. 144, *Ent. News Philad.* vi; BÉGIN, Sherbrooke, *Natural. Canad.* xxii, pp. 74-77, &c.; BETHUNE, E. Canada (105); BEUTENMÜLLER, *Sphingide* of New York (106); BRUCE, Colorado, high mountains, *Ent. News Philad.* vi, pp. 73-76; CUNNINGHAM, Ft. Klamath, Oregon, *Ent. News Philad.* vi, p. 251; DANBY & GREEN, British Columbia, *Bull. Soc. British Columbia*, pp. 11-18, pl. i; DENTON, Wellesley, Mass., *Psyche*, vii, p. 263; DOD, Alberta, *Canad. Ent.* xxvii, pp. 176-178; DYAR (315); EDWARDS, Colorado (323); EHRMANN (325); EVANS, list of *Lepidoptera* taken at Sudbury, Ont., pp. 297-299, *Canad. Ent.* xxvii; J. F., Ottawa, *Ottawa Natural.* ix, p. 172, and *t. c.* p. 179; FOULKS, Maryland, *Ent. News Philad.* vi, p. 297; GROTE (463), GUMPPENBERG (477), HAMPSON (482); HANHAM, Winnipeg, p. 123, *Canad. Ent.* xxvii; HEATH, butterflies of Southern Manitoba, pp. 310 & 314, *Canad. Ent.* xxvii; FLETCHER, *t. c.* pp. 314 & 315. HULST (538); LONGLEY, Chicago, p. 314, *Ent. News Philad.* vi; MOFFAT, Canada, p. 147, *Canad. Ent.* xxvii; *id.*, Canada, pp. 38-41, *Rep. ent. Soc. Ontario*, xxvi; *id.*, Ontario, p. 280, *Canad. Ent.* xxvii; OTTOLENGUI (829); OSBURN, Tennessee, p. 245, &c., *Ent. News Philad.* vi; SCUDDER, Labrador, p. 319, *Psyche*, vii; *id.*, Massachusetts, p. 320, *t. c.*; SKINNER (1060, 1061), SMITH (1074, 1075); SMYTH, Virginia, *Ent. News Philad.* vi, p. 243; SOULE, Massachusetts, *Psyche*, vii, p. 203; WALSINGHAM (1182), WARREN (1186), and *Nov. Zool.* ii, p. 115.

Diptera. ALDRICH (14); BAKER, Colorado (habits), *Ent. News Philad.* vi, pp. 173 & 174; BANKS (68), COQUILLET (248-258); HOPKINS (507); JOHNSON (564); *id.*, *Diptera* of Florida (563); MARTEN (732); SNOW (1086-1089), and Supplementary list of *Syrphide*, pp. 249-262, *Kansas quart.* iii; TOWNSEND (1136, 1138); *id.*, California and Lower California (1137); WILLISTON (1238, 1242, 1243, 1245).

Aphaniptera. BAKER (61).

Rhynchota. BAKER (63); BERGROTH (96); COCKERELL, *Coccidae* (212, 218-223, 225-227, 230, 231, 234), and p. 325, Ent. News Philad. vi; DUZEE (306); GILLETTE (435); GILLETTE & BAKER (436); GODING (440); HEIDEMANN, p. 292, P. ent. Soc. Washington, iii; MASKELL (742); REUTER (954); SCUDDER, British Columbia, fossil Tertiary *Hemiptera* (1033).

Neuroptera. BANKS (67); *id.*, Lower California (66); *id.*, New York *Odonata*, p. 124, Ent. News Philad. vi; CALVERT, New York *Odonata* (176); *id.*, Lower California *Odonata* (178); KELLCOTT, *Odonata*, (589, 581); MACLACHLAN, *Odonata* (717); MORSE, *Odonatu* (789); PROVANCHER, *Odonata* (905).

Thysanoptera. PERGANDE (857).

Aptera. HARVEY (492).

Orthoptera. BRUNNER (154); HANCOCK, Washington (485); MOFFAT, Canada, Canad. Ent. xxvii, p. 52; MORSE (790, 791); SCUDDER, Canada (1041, 1038); *id.*, *Phasmidae* (1040); SPRAGUE, New England, p. 318, Psyche, vii.

10. CENTRAL AMERICA, INCLUDING MEXICO.

Insecta. GODMAN & SALVIN (441); COCKERELL, Chihuahua (233).

Coleoptera. CANDEZE (180); EPPELSHEIM, Deutsche ent. Zeitschr. 1895, p. 399; FLEUTIAUX (377), HELLER (494); HORN, Lower California (512); JORDAN (565, 566), LESNE (687), NONFRIED (808); *id.*, Lower California (808); OLIVIER (814), RÉGIMBART (923).

Hymenoptera. ASHMEAD, Lower California (39); COCKERELL (236), COCKERELL & CASAD (243), EMERY (337), FOREL (386), FOX (394), HANDLIRSCH (486), HOWARD (525), LUCAS (705).

Lepidoptera. DRUCE (296, 298), DUGÈS (302), DYAR (314, 315), HAMPSON (482), MABILLE (712), ROTHSCHILD (985), SCHAUS (1004-1006), SMITH & KIRBY (1072), AUSTEN (57), GIGLIO-TOS (433), JOHNSON (564), TOWNSEND (1136); *id.*, Lower California (1137); WILLISTON (1240, 1244).

Rhynchota. BERGROTH (97), GERSTAECKER (423), GRIFFINI (452), MONTANDON (778, 783).

Neuroptera. BANKS, Lower California (66); CALVERT, Lower California *Odonata* (178).

Orthoptera. BRUNER (151), BRUNNER (152), MORSE (791), SAUSSURE (1001).

11. ANTILLES.

Insecta. Jamaica, TOWNSEND, J. Inst. Jamaica, ii, p. 169; Grand Cayman, COCKERELL, p. 172, *t. c.*; WICKHAM, Tortugas, pp. 210-212, Ent. News Philad. vi.

Coleoptera. GAHAN (413); Bahamas, WICKHAM (1233).

Hymenoptera. Grenada, ASHMEAD (37); Jamaica, COCKERELL (234), HOWARD (532), LUCAS (705).

Lepidoptera. Butterflies of Barbados, CROMPTON, Entomologist, 1895 pp. 175-178; Dominica, DRUCE (296); St. Domingo, GUDMANN (473); Lesser Antilles, HAMPSON (484); Jamaica, WARREN (1187); Jamaica, WEYMER, Ent. Zeit. Stettin, lv, p. 332.

Diptera. Jamaica, TOWNSEND (1136, 1139, 1140).

Rhynchota. MEINERT (756); St. Vincent, UHLER (1153); COCKERELL, *Coccidæ* (231); Antigua, COCKERELL, *Coccidæ* (224); Grenada, COCKERELL, *Coccidæ* (214).

Orthoptera. BRUNNER (152).

12. SOUTH AMERICA.

Insecta. GODMAN & SALVIN (441).

Coleoptera. BELON (87); *id.*, Chili, *Lathridiidae* (85); CANDÈZE (180), FAUST (359), FLEUTIAUX (376, 377), GAHAN (413), GRIFFINI (451), HELLER (494), HORN (516, 517, 519); *id.*, Brazil and Patagonia (514); JACOBY (550), JORDAN (566, 568), KRAATZ (646), LESNE (687), LÉVEILLÉ (692), NONFRIED (808), OLIVIER (814, 815); *id.*, Chili (813); PIC (888, 889), RAFFRAY (910), RÉGIMBART (923), SHIPP (1056), WASMANN (1188), WATERHOUSE (1199), WEISE (1125).

Hymenoptera. ANDRÉ (28), ASHMEAD (47, 48); *id.*, Trinidad (43); EMERY (334); *id.*, Chili (330, 333); FOREL & EMERY in WASMANN (1188); GRIBODO, Chili (448); HANDLIRSCH (486, 487), KOHL (613), LUCAS (705); PROVANCHER, Trinidad, Natural. Canad. xxii, p. 97.

Lepidoptera. DOGNIN (293, 294) DRUCE (296, 298), FRUHSTORFER (404, 405), GODMAN & SALVIN (442), HAMPSON (482), MABILLE (712); PAGENSTECHER, *Lepidoptera* observed at sea off coast of S. America (842); POUJADE, Venezuela, Bull. Soc. ent. France, 1895, pp. cxl-cxlv; RÜBER (975), ROTHSCHILD (985); SEITZ, Bahia (1044); SCHAUS (1004), SMITH & KIRBY (1072), SNELLEN (1077), STAUDINGER (1106), THIERRY-MIEG (1129, 1130), WARREN (1187), WEYMER (1230), Falkland Is. and Juan Fernandez, see 2. INSULAR.

Diptera. AUSTEN (57), WILLISTON (1239, 1241).

Rhynchota. BERG, Tierra del Fuego (92); BERGROTH (96); COCKERELL, *Coccidæ* (212, 215, 216, 217, 219, 222, 228, 229, 231); GERSTAECKER (423), GRIFFINI (452), MONTANDON (778); REED, *Margurodes* (920); REUTER (954); URICH, Trinidad, *Coccidæ* (1156).

Odonata. Chili, SELYS, Act. Soc. Chili, v, pr.-v., p. lvi.

Aptera. PARONA (844); GIARD, Chili (429).

Orthoptera. BRUNNER (152), GIGLIO-TOS (432), SAUSSURE (1001), SAUSSURE & ZEHNTNER (1003).

PALÆO-ENTOMOLOGY.

[*Cf.* AMI (25), ANDRÉ (27), BRODIE (145), FRITSCH (400), MEUNIER (762), SCUDDER (1032-1036), UZEL (1157).]

Tabulation of the fossil *Blattidæ* of N. America, with remarks on *Mylocricide*, &c.; SCUDDER, Tr. R. Soc. Canada, xii, Sect. iv, pp. 147-153.

Mylacris packardii, figure and description; SCUDDER, p. 11, pl. i, e, g, Bull. U. S. Geol. Surv. No. 101.

Etblattina illustris, p. 12, pl. ii, i, sp., ip. 13, pl. ii, c, *clarkii*, p. 14, pl. ii, j, *scholfieldi*, p. 15, pl. ii, b, sp., pl. ii, k, *gorhami*, p. 16, pl. ii, a, *exilis*, p. 17, pl. ii, e, sp., pl. ii, h, *reliqua*, pl. ii, g, p. 18, Carboniferous, Rhode I.; SCUDDER, Bull. U. S. Geol. Surv. No. 101, n. spp.

Gerablattina scapularis, pl. ii, l, *fraterna*, pl. ii, d, e, Rhode I., Carboniferous, SCUDDER, p. 19, t. c. n. spp.

Paralogus, n. g. *Protophasmida*, p. 20, for *P. ceschnoides*, n. sp., p. 24, pl. i, a, b, Rhode I., Carboniferous; SCUDDER, t. c.

Rhaptidiopsis, n. g. *Neuropteroidea*, p. 10, for *R. diversipenna*, n. sp., Rhode I. Coal-field, p. 11, pl. i, e, d; SCUDDER, Bull. U. S. Geol. Surv. No. 101.

76 species of *Coleoptera* described from the petroleum beds of Galicia, by LEMNICKI, and noticed in *Psyche*, vii, p. 231.

Some fossil insects from Œningen, including critical remarks on several species described by Heer; SCUDDER, *Geol. Mag.* ii, pp. 116-122, pl. vi. The following are new:—

Coleoptera: *Carabidae*; *Calosoma heeri*, pl. vi, fig. 4, p. 120.

Diptera: *Mycetophilidae*; *Necromyza*, n. g. for *N. pedata*, n. sp., fig. 5, p. 121.

Odonata: *Stenolestes*, n. g. for *Agrion iris*, Heer, pl. vi, fig. 3, p. 119.

Orthoptera: *Acridium ævingense*, p. 118, pl. vi, fig. 2.

Note on some fossils from the schists of Solenhofen, with synonymical remarks; MEUNIER, pp. ccxxiii & ccxxiv, Bull. Soc. ent. France, 1895.

Five insects in the Permian of Bohemia mentioned; FRITSCH (400).

Note on the larval cases of a Permian Caddis-fly from Bohemia, *Psyche*, vii, p. 213.

Procalosoma giardi, mesozoic schists of Schernfeld; MEUNIER, p. 207, Bull. Soc. zool. France, n. sp.

SCUDDER, fossil Canadian *Coleoptera*, *Contr. Canad. Pal.* ii, contains the following novelties:—

Scolytidae: *Hylobiites cretaceus*, pl. ii, fig. 5, p. 30, n. sp.

Tenebrionidae: *Tenebrio calculensis*, p. 31, pl. iii, figg. 1-6, n. sp.

Chrysomelidae: *Cryptocephalites*, n. g. for *C. punctatus*, n. sp., pl. ii, fig. 4, p. 33.

Elateridae: *Limonius impunctus*, p. 37, pl. ii, fig. 3, n. sp.

Eu nemidae: *Fornax ledensis*, pl. iii, figg. 3 & 4, p. 39, n. sp.

Byrrhidae: *Byrrhus ottawaensis*, pl. ii, figg. 6-8, p. 40, n. sp.

Staphylinidae: *Arpedium stillicidii*, pl. ii, fig. 2, p. 42, n. sp.; *Geodromicus stivicide*, pl. ii, fig. 1, p. 43.

Carabidae: *Platynus dilapidatus*, pl. iii, fig. 2, p. 49.

Tertiary fossil ants in the Isle of Wight; BRODIE (145).

List of ants in Baltic amber; ANDRÉ (27).

Plagiolepis succini, Baltic amber, ANDRÉ, p. 81, Bull. Soc. zool. France, xx, n. sp.

Macromischa ? prisca, *id.*, p. 83, *t. c. n. sp.*

Brief note on some *Empidæ*, *Mycetophilidæ*, and *Tipulidæ* found in Tertiary amber; MEUNIER, pp. xiii-xv, Bull. Soc. ent. France, 1895.

SCUDDER, fossil Tertiary *Hemiptera* of British Columbia, Contr. Canad. Pal. ii, pp. 5-26. Contains descriptions of several previously known forms, and the following new:—

Fulgoridæ: *Ricania antiquata*, pl. i, fig. 3, p. 12.

Cercopidæ: *Cercopites torpescens*, p. 14, pl. i, fig. 1; *Cercopis grandescens*, p. 16, pl. i, fig. 2; *Stenecphora*, n. g. for *S. punctulata*, n. sp., p. 17, pl. i, fig. 9; *Dawsonites*, n. g. for *D. veter*, n. sp., p. 18, pl. i, fig. 10; *Stenolocris*, n. g., p. 18, for *S. venosa*, n. sp., p. 19, pl. i, fig. 11; *Ptysma-phora*, n. g., p. 20, for *P. fletcheri* [n. sp.], pl. i, fig. 6, p. 21; *Palæoptysma*, n. g. for *P. venosa* [n. sp.], pl. i, fig. 8, p. 21.

Note on insect remains, probably of Miocene epoch, in Vancouver; CHAGNON, Natural. Canad. xxii, pp. 109 & 110.

Aktea dubia, Münster, is a *Coleopteron*, and *Sciara prisca*, Germ., an *Ephemera*; SCUDDER, p. cxciv, Bull. Soc. ent. France, 1895.

Section on fossil *Thysanoptera*; UZEL, Mon. Thysan. pp. 286-295.

III.—SYSTEMATIC.

N.B.—The reference-numbers collected under the headings of the various groups refer to "Titles" on pp. 4-78, and are intended to give, in each case, a complete list of all memoirs containing anything of importance in connection with the group.

- Manual of insects; COMSTOCK (245).
 Natural history of insects, Pt. I; SHARP (1055).
 External structure of insects, including wing-neuration; COMSTOCK & KELLOGG (246).
 Discussion of Spuler's system of wing-neuration and nomenclature; PACKARD (834).
 Morphology of segments; HEYMONS (503).
 Morphology of the genital armour of insects; PEYTOUREAU (863).
 The natural history and structure of aquatic insects; MIALI (767).
 Key for determining the orders of immature aquatic insects; HART, Bull. Illinois Lab. iv, pp. 162-164.
 Cordyceps attacking insects in Australia; OLIFF (821 & 822).

(A.) COLEOPTERA.

- Structure of the labium discussed; WATERHOUSE (1196).
 Use of the tibial comb of beetles; BAKER in MIALI (767) pp. 376-378.
 Statistics of the families of European and Caucasian *Coleoptera*; VARRENDORFF, p. 259, Wien. ent. Zeit. 1895.
 Dates and habitats of numerous larvæ in Denmark; SCHLICK, Ent. Meddel. v, pp. 110-138.
 Fossil Canadian *Coleoptera*; SCUDDER (1034), see PALÆONTOLOGY, p. 112.

CICINDELIDÆ.

- [*Cf.* BENDERITTER (89), FALL (357), FLEUTIAUX (374 & 375), W. HORN (514-519), KOLBE (615), SEMENOW (1045, 1048).]
 Genera of *Cicindelide*; BENDERITTER (89).
 Table of N. African *Cicindelide*; BEDEL, pp. 2-13, Cat. N. Afrique (82).
 Termitophilous *Cicindelide*; WASMANN, pp. 289 & 290, Deutsche ent. Zeitschr. 1895.
 For many synonymical suggestions and remarks see HORN, pp. 94-102, Deutsche ent. Zeitschr. 1895.
 Supplement to catalogue of *Cicindelide* of AUSTRALIA; MASTERS (748).
Calochroa flavoguttata, E. India, HORN, p. 359, Deutsche ent. Zeitschr. 1895, n. sp.

- Cicindela*: distinctions of sexes, *C. formosa* and *venusta* distinctions; FALL, p. 176, Ent. News Philad. vi. *C. obliquefasciata* = (*dauidis*, Fairm.) p. 94, *chlorochila* = (*spinolæ*, Horn), p. 95, *cognata* = (*triramosa*, Koll.); HORN, Deutsche ent. Zeitschr. 1895. *C. dunedensis* = (*wakefeldi*, Bates), *C. elise* = (*simillima*, soror, Chaud.), *C. limosa*, Saund. = (*cinctella*, Chev.), *C. prinsepi*, Saund. = (*imperfecta*, *atelesta*, Chaud., *characteræ*, Sturm); FLEUTIAUX, p. cciv, Bull. Soc. ent. France, 1895. *C. trisignata*, n. var. *thebana*; DOESBURGH, p. 4, cut, Tijdschr. ent. xxxviii. *C. schrenki*, n. var. *transcaspica*; SEMENOW, p. 400, Horæ Soc. ent. Ross. xxix. *C. patagonica*, n. var. *bergiana*; HORN, p. 174, An. Mus. Buenos Aires, iv.
- C. jakolewi*, Transcaspian region, SEMENOW, p. 401, Horæ Soc. ent. Ross. xxix; *C. unica*, India, FLEUTIAUX, p. ccxlv, Bull. Soc. ent. France, 1895; *C. peringuéyi*, Togo, p. 359, *ribbei*, Solomon islands, p. 360, *albans*, W. Africa, p. 361, HORN, Deutsche ent. Zeitschr. 1895; *C. neumanni*, Usambara, KOLBE, p. 361, Ent. Zeit. Stettin, iv; *C. maxillaris*, Sumatra, HORN, p. 679, Ann. Mus. Genova, xxxiv; *C. denticollis*, New Guinea, *reedi*, Patagonia, p. 88, *barbata*, New Britain, p. 89, *obsoletesignata*, St. Catharina, p. 91, *goebeli*, Birma, p. 92, HORN, Deutsche ent. Zeitschr. 1895; *C. mixta*, Bolivia, HORN, p. 174, An. Mus. Buenos Aires, iv; *C. ritsemæ*, Argentina, HORN, p. 15, Deutsche ent. Zeitschr. 1895: n. spp.
- Collyris obscura*, *similis*, *cribrosa*, distinguished; LESNE, p. ccxcii, cuts, Bull. Soc. ent. France, 1895.
- C. nucleayi*, Thibet, p. 81, *dejeani*, China, *purpurea*, Java, p. 82, *dohertyi*, Sumatra, p. 83, *gracilicornis*, Java, p. 84, HORN, Deutsche ent. Zeitschr. 1895; *C. filicornis*, Philippines? p. 356, *nietneri*, Ceylon, p. 357, HORN, t. c.: n. spp.
- Cratohærea mandibularis*, Sengambia, HORN, p. 86, Deutsche ent. Zeitschr. 1895, n. sp.
- Ctenostoma schaumii*, Brazil, HORN, p. 354, Deutsche ent. Zeitschr. 1895, n. sp.
- Euryoda schmidt-goebeli*, Laos, HORN, p. 87, Deutsche ent. Zeitschr. 1895, n. sp.
- Neolaphyra*, n. n. for *Laphyra*; BEDEL, p. 3, Cat. N. Afrique.
- Odontochela* and *Euryoda*, distinctions; HORN, p. 101, Deutsche ent. Zeitschr. 1895.
- Pentacomia trispecularis*, Brazil, HORN, p. 358, Deutsche ent. Zeitschr. 1895, n. sp.
- Peridexia cribrata* = (*Phyllochroma argentina*, Lynch); HORN, p. 176, An. Mus. Buenos Aires, iv.
- Procephalus chaudoiri*, p. 353, *rugifer*, p. 354, Brazil, HORN, Deutsche ent. Zeitschr. 1895, n. spp.
- Pseudotetracha howitti* = (*Megacephala frenchi*, Sl.); FLEUTIAUX, p. cciv, Bull. Soc. ent. France, 1895.
- Tetracha australasiv*, n. var. *nickerli*; SRNKA, p. 269, Deutsche ent. Zeitschr. 1895.

- T. blackburni*, W. Australia, FLEUTIAUX, p. ccxlv, Bull. Soc. ent. France, 1895, n. sp.
Therates dimidiatus, n. var. *spinipennisoides*; HORN, p. 677, Ann. Mus. Genova, xxxiv. *T. fasciatus*, n. var. *quadrimaculatus*; HORN, p. 88, Deutsche ent. Zeitschr. 1895.

CARABIDÆ.

- [*Cf.* ALLUAUD (20, 21), BEDEL (83), BLACKBURN (114, 115), FAIRMAIRE (350, 353), GANGLBAUER (418), GESTRO (425), G. H. HORN (512), JABLONOWSKI (543), KOLBE (617), KRAATZ (648), MEUNIER (762), REITTER (928, 929, 932, 933, 940), SCHWARZ (1027), SLOANE (1068), TSCHITSCHÉRINE (1145–1148).]
 Phytophagous habits of certain species; ORMEROD, pp. 80–90, Rep. xix; JABLONOWSKI (543).
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 LANG & BEUTENMÜLLER continue their descriptions of N. American *Coleoptera*, dealing with a part of *Harpulinae*, J. N. York Ent. Soc. iii, pp. 73, &c., &c.
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 Remarks on Sloane's paper, P. Linn. Soc. N. S. Wales, 1895; BLACKBURN, pp. 27 & 28, Tr. R. Soc. S. Austral. xix.
 Fossil *Carabidæ*, see PALÆO-ENTOMOLOGY, p. 112.
Acalathus validulus, Amdo, TSCHITSCHÉRINE, p. 501, Horæ Soc. ent. Ross. xxix, n. sp.
Aëpus; natural history; MIALL (767), p. 375.
Agonochila koebeleri, *stictica*, Queensland, BLACKBURN, p. 201, Tr. R. Soc. S. Austral. xix, n. sp.
Amara sororcula, Issyk-Kul, TSCHITSCHÉRINE, p. 239, Horæ Soc. ent. Ross. xxix; *A. (Cyrtonotus) goniodera*, Korea, TSCHITSCHÉRINE, p. 164, t. c.; *A. (Percosia) eurydera* (= *laticollis*, Motsch.), Astrachan, TSCHITSCHÉRINE, p. 226, t. c.; n. spp.
Anophthalmus deubeli, Transsylvania, p. 261, *bernhaueri*, Carinthia, GANGLBAUER, Wien. ent. Zeit. 1895, n. spp.
Apenes limbata, California, HORN, p. 232, P. Calif. Ac. v, n. sp.
Bembidium varium, n. var. *heptapotamicum*; TSCHITSCHÉRINE, p. 232, Horæ Soc. ent. Ross. xxix.
B. (Notaphus) ruthenum, Sarepta, p. 298, *amurense*, Sofijsk, p. 300, TSCHITSCHÉRINE, Horæ Soc. ent. Ross. xxix; *B. lamprinum*, Akbes, REITTER, p. 79, Wien. ent. Zeit. 1895; *B. (Peryphidium*, n. subg.) *tjanschanicum*, Issyk-Kul, TSCHITSCHÉRINE, p. 233, Horæ Soc. ent. Ross. xxix; *B. jucundum*, Lower California, HORN, p. 230, P. Calif. Ac. v; n. spp.
Calathus furvus, Caucasus, TSCHITSCHÉRINE, p. 500, Horæ Soc. ent. Ross. xxix; *C. agonus*, p. 178, *vigil*, p. 181, Korea, TSCHITSCHÉRINE, t. c.; n. spp.

- Calleida macrospila*, Gallaland, GESTRO, p. 262, Ann. Mus. Genova, xxxv ;
C. coquereli, nossibiana, Madagascar, FAIRMAIRE, p. cclxxviii, Bull.
 Soc. ent. France, 1895 : n. spp.
- Carabominus*, n. g., for some Mexican species of *Calosoma* ; KOLBE, p. 57,
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- Carabomorphus*, n. g., p. 58, for *Carabus brachycerus*, Gerst., and *C. neu-*
manni, n. sp., East Africa, p. 60 ; KOLBE, SB. Ges. naturf. Berlin,
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- Carabophanus*, n. g. for *Calosoma caraboides*, Raff. ; KOLBE, p. 66, SB.
 Ges. naturf. Berlin, 1895.
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pomeranus, note on ; RADE, p. 17, Ent. Nachr. xxi. *C. nigrino-*
pomeranus, note on ; KRAATZ, p. 272, Deutsche ent. Zeitschr. 1895.
C. (Leptinocarabus) wulfnsi, n. var. *opacipennis* ; REITTER, p. 108,
 Wien. ent. Zeit. 1895.
- C. (Goniognathus) emmerichi*, p. 105, *banghaasi*, p. 106, Turkestan, *C.*
(Eurycarabus) fraterculus, Kórea, p. 107, *C. (Deroplectes) sphinx*,
 Turkestan, p. 108, *C. (Leptocarabus) semiopacus*, p. 109, *C. (Aulono-*
carabus) koreanus, Korea, *C. theanus*, Turkestan, p. 110, REITTER,
 Wien. ent. Zeit. 1895, n. spp.
- Casnonia fairmairei*, Gallaland, GESTRO, p. 259, Ann. Mus. Genova, xxxv,
 n. sp.
- Chlenius sericeus*, larva ; WICKHAM, p. 763, Amer. Natural. xxix.
- O. imitatus*, Herat, REITTER, p. 150, Wien. ent. Zeit. 1895 ; *C. semenowi*,
 Songaria, p. 494, *dostojevskii*, Buchara, p. 497, TSCHITSCHÉRINE,
 Horæ Soc. ent. Ross. xxix ; *C. paulæ*, p. 271, *luisæ*, p. 272, *schmidtii*,
 p. 274, Gallaland, GESTRO, Ann. Mus. Genova, xxxv : n. spp.
- Clivinopsis*, n. subg. of *Dyschirius* ; BEDEL, p. 47, Cat. Col. N. Afrique.
- Colpodes adonis*, Korea, TSCHITSCHÉRINE, p. 184, Horæ Soc. ent. Ross.
 xxix, n. sp.
- Cychnus elevatus*, larva ; WICKHAM, p. 762, Amer. Natural. xxix.
- Cymindis decora*, n. var. *stenodera* ; TSCHITSCHÉRINE, p. 229, Horæ Soc.
 ent. Ross. xxix.
- C. baicalensis*, Siberia, p. 332, *transvolgensis*, Samara, p. 333, SEMENOW,
 Horæ Soc. ent. Ross. xxix ; *C. stygia*, Issyk-Kul, TSCHITSCHÉRINE,
 p. 240, t. c. ; *C. (Menas) tschitscherini*, Mongolia, SEMENOW, p. 126,
 t. c. ; *C. californica*, California, HORN, p. 231, P. Calif. Ac. v :
 n. spp.
- Discoptera tschitscherini*, Caspian sea, SEMENOW, p. 125, Horæ Soc. ent.
 Ross. xxix, n. sp.
- Elaphrotatus*, n. subg. of *Elaphrus*, for *E. punctatus* and *cribratus* ; SEME-
 NOW, p. 308, Horæ Soc. ent. Ross. xxix.
- Elaphroterus*, n. subg. of *Elaphrus*, for *E. riparius*, &c. ; SEMENOW, p. 313,
 Horæ Soc. ent. Ross. xxix.
- Elaphrus* : n. subg., cf. *Elaphrotatus* and *Elaphroterus*.
- E. (Elaphroterus) jakolewi*, Russia, SEMENOW, p. 303, Horæ Soc. ent.
 Ross. xxix, n. sp.

- Eucamptognathus igneocinctus*, p. 9, *alluaudi*, *tenuestriatus*, p. 10, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique, 1895, n. spp.
- Eudema pungens*, p. clxxx, *volana*, p. clxxxi, Madagascar, ALLUAUD, Bull. Soc. ent. France, 1895, n. sp.
- Feronia* (*Pæcilus*) *excellens*, Issyk-Kul, TSCHITSCHÉRINE, p. 237, Horæ Soc. ent. Ross. xxix; *F. (Trigonognatha) coreana*, p. 165, *F. (Pterostichus) bellatrix*, p. 169, *audax*, p. 172, *pertinax*, *F. (Steropus) corusca*, p. 175, Korea, TSCHITSCHÉRINE, t. c. : n. spp.
- Glyptus insignis*, Gallaland, GESTRO, p. 277, Ann. Mus. Genova, xxxv, n. sp.
- Graphipterus galla*, Africa, GESTRO, p. 264, Ann. Mus. Genova, xxxv, n. sp.
- Harpalus crassus*, p. 158, *coruscus*, p. 161, Korea, TSCHITSCHÉRINE, Horæ Soc. ent. Ross. xxix; *H. akinini*, p. 214, *merus*, p. 216, *plustschewskyi*, p. 218, *foveiger*, p. 220, Astrachan, TSCHITSCHÉRINE, t. c. : n. spp.
- Hemitelestus*, n. n. for *Hemiteles*, Brullé nec Grav.; ALLUAUD, p. clxxix, Bull. Soc. ent. France, 1895.
- Homalosoma*: in New Zealand and Madagascar; KÜNCKEL, p. 93, Bull. Mus. Paris, i.
- Hypharpax habitans*, p. 134, *interioris*, p. 135, SLOANE, Tr. R. Soc. S. Austral. xix, n. spp.
- Inatibius barysomus*, notes on, with cut; KRAATZ, pp. 363 & 369, Deutsche ent. Zeitschr. 1895.
- Isotarsus aberthurii*, Nyassa, GESTRO, p. 268, Ann. Mus. Genova, xxxv, n. sp.
- Læmosthenes complanatus* = (*australis*, Blk.); FAUVEL, p. 92, Rev. Ent. franc. xiv.
- L. (Antisphodrus) glasunowi*, N. Persia, SEMENOW, p. 193, Horæ Soc. ent. Ross. xxix, n. sp.
- Limneum kocæ*, Slavonia, REITTER, p. 199, Wien. ent. Zeit. 1895, n. sp.
- Loxandrus australiensis*, Callabonna, SLOANE, p. 128, Tr. R. Soc. S. Austral. xix, n. sp.
- Mudecassa*, sub. *Glyphodactyla*, *madagascariensis*, Chaud. = (*coquereli*, Fairm.), ALLUAUD, p. 89, Bull. Soc. Zool. France, xx.
- M. mirabilis*, Madagascar, ALLUAUD, p. 90, t. c.; also Bull. Mus. Paris, i, p. 20: n. sp.
- Megalonychus amplipennis*, *acanthurus*, Gallaland, GESTRO, p. 280, Ann. Mus. Genova, xxxv, n. spp.
- Meladroma angustipenne*, E. Africa, GESTRO, p. 261, Ann. Mus. Genova, xxxv, n. sp.
- Nebria angustata* = (*microcephala*, Dan.); FAUVEL, p. 92, Rev. Ent. franc. xiv.
- Neocarenum blackburni*, Australia, SLOANE, p. 124, Tr. R. Soc. S. Austral. xix, n. sp.
- Nomaretus incompletus*, p. 271, *hubbardi*, p. 272, N. America, SCHWARZ, P. ent. Soc. Washington, iii, n. spp.
- Ocys trechoïdes*, Ordubad, REITTER, p. 258, Wien. ent. Zeit. 1895, n. sp.

- Ophonus dissors*, Issyk-Kul, TSCHITSCHÉRINE, p. 236, Horæ Soc. ent. Ross. xxix; *O. chinensis*, Amdo, TSCHITSCHÉRINE, p. 500, t. c.; *O. (Pardileus) coreanus*, Korea, TSCHITSCHÉRINE, p. 156, t. c. : n. spp.
- Orindromus*, n. g., p. 62, for *Carabus deckeni*, Gerst., and *O. gerstæckeri*, p. 64, *volkensi*, p. 65, n. spp., Kilimandjaro; KOLBE, SB. Ges. Naturf. Berlin, 1895.
- Pentagonica africana*, Gallaland, GESTRO, p. 263, Ann. Mus. Genova, xxxv, n. sp.
- Peryphidium*, n. subg. of *Bembidium*, q.v.
- Pogonus hypharpagioides*, p. 126, *zietzi*, p. 127, Australia, SLOANE, Tr. R. Soc. S. Austral. xix, n. spp.
- Pristonychus cavicola* attacked by fungus; ISTVÁNFFI, Termes. Fuzetek, xviii, p. 82.
- Pterostichus* (? *Derus*) *martini*, Algeria, BEDEL, p. cccxlv, Bull. Soc. ent. France, 1895, n. sp.
- Reicheia brisouti*, Algeria, BEDEL, p. 44, Cat. Col. N. Afrique, n. sp.
- Rhytisternus obtusus*, p. 129, *stuarti*, p. 131, *callabonnensis*, p. 132, SLOANE, Tr. R. Soc. S. Austral. xix, n. spp.
- Scarites occidentalis*, n. n. for *polyphemus* auct.; BEDEL, p. 39, Cat. Col. N. Afrique.
- Scopodes intricatus*, Queensland, BLACKBURN, p. 202, Tr. R. Soc. S. Austral. xix, n. sp.
- Stenolophus morio*, Mén. = (*nigripes*, Reitt.); TSCHITSCHÉRINE, p. 123, Horæ Soc. ent. Ross. xxix.
- Tachys ferrugatus*, Akbes, REITTER, p. 79, Wien. ent. Zeit, 1895; *T. (Tachyura) schmidti*, Issyk-Kul, TSCHITSCHÉRINE, p. 234, Horæ Soc. ent. Ross. xxix : n. spp.
- Taphoxenus (Pseudotaphoxenus) rufitarsis*, n. var. *major*; TSCHITSCHÉRINE, p. 228, Horæ Soc. ent. Ross. xxix.
- T. (Pseudotaphoxenus) formosus*, Mongolia, SEMENOW, p. 189, Horæ Soc. ent. Ross. xxix, n. sp.
- Tupinosthenes*, n. g. for *Calosoma cancellatum*, Esch.; KOLBE, p. 56, SB. Ges. naturf. Berlin, 1895.
- Trechus atriceps*, Macl., is a *Thenarotes*; BLACKBURN, p. 28, Tr. R. Soc. S. Austral. xix.
- T. oligops*, Algeria, BEDEL, p. cccxlv, Bull. Soc. ent. France, 1895, n. sp.
- Tropidocarabus*, n. g., p. 366, near *Carabus*, for *T. opacus*, p. 367, *klægeri*, p. 368, n. spp., Himalaya; KRAATZ, Deutsche ent. Zeitschr. 1895.
- Zubrus gibbus* and other plant-haunting *Carabidæ*; JABLONOWSKI (543).
- Zuphium hauseri*, Herat, REITTER, p. 149, Wien. ent. Zeit. 1895, n. sp.

HALIPLIDÆ.

[Cf. RÉGIMBART (924), WICKHAM (1232).]

- Haliplus abyssinicus*, Abyssinia, *nigrosignatus*, Congo, p. 6, *venustus*, p. 7, *rufescens*, *concolor*, p. 8, S. Africa, RÉGIMBART, Mem. Soc. ent. Belgique, iv, n. spp.

Peltodytes quadratus, Madagascar, RÉGIMBART, p. 10, Mem. Soc. ent. Belgique, iv, n. sp.

DYTISCIDÆ.

[*Cf.* BALLOWITZ (65), GRIFFINI (449, 451), LEA (684), MIALI (767), PEYTOUREAU (861), RÉGIMBART (921-924), WATERHOUSE (1199), WICKHAM (1232).]

Classification discussed; RÉGIMBART, p. 2, Mem. Soc. ent. Belgique, iv.

Flight of *Dytiscidæ*, and its preliminaries discussed; GRIFFINI (449).

Spermatozoa of various *Dytiscidæ*; BALLOWITZ (65).

Dytiscide of Canada tabulated; WICKHAM, Canad. Ent. xxvii, pp. 71, &c.

Agabus guttatus, metamorphoses; XAMBEU, p. 43, Mœurs, vi.

A. ambulator, *crypticoides*, Abyssinia, RÉGIMBART, p. 152, Mem. Soc. Belgique, iv, n. spp.

Bidessonotus, n. g., p. 331, for *pulicarius*, Aubé, and allies, with *B. melanocephalus*, Brazil, p. 332, *meicanus*, pl. 8, figg. 10 & 11, p. 333, Mexico, *tibialis*, Brazil, p. 337, RÉGIMBART, Ann. Soc. ent. France, 1895, n. spp.

Bidessus galla, Africa, RÉGIMBART, p. 187, Ann. Mus. Genova, xxxv; *B. sharpi*, W. Africa, p. 77, *sedilloti*, Tunis, p. 78, *granulum*, Congo, *longistrixa*, Madagascar, p. 79, *galla*, E. Africa, *ovoideus*, Natal, p. 81, *capitatus*, p. 83, *rivulorum*, Madagascar, *peringueyi*, S. Africa, p. 84, *geminodes*, Madagascar, p. 88, *dakarensis*, *africanus*, p. 90, *koppi*, p. 91, W. Africa, *flavoguttatus*, Madagascar, p. 93, *longipilis*, W. Africa, *octoguttatus*, Zanzibar, p. 94, *nubilus*, p. 95, *flavicans*, Congo, *alluaudi*, p. 96, *hygrotoides*, p. 97, Madagascar, RÉGIMBART, Mem. Soc. ent. Belgique, iv; *B. baeri*, Sumatra, &c., p. 326, *brasiliensis*, p. 328, pl. viii, fig. 7, *persimilis*, p. 329, fig. 8, Mexico, *dilatatus*, Brazil, p. 330, fig. 9, RÉGIMBART, Ann. Soc. ent. France, 1895; n. spp.

Canthydus biguttatus, *xanthinus*, E. Africa, RÉGIMBART, p. 187, Ann. Mus. Genova, xxxv; *C. sellatus*, Madagascar, p. 122, *biguttatus*, *minutus*, p. 123, *bellus*, p. 124, W. Africa, *sedilloti*, Abyssinia, p. 125, *rubropictus*, Natal, *xanthinus*, E. and W. Africa, p. 127, RÉGIMBART, Mem. Soc. ent. Belgique, iv: n. spp.

Clypeodytes, n. g. for a part of *Bidessus*; RÉGIMBART, p. 61, Mem. Soc. ent. Belgique, iv.

C. bedeli, W. Africa, p. 62, *meridionalis*, S. Africa, *seminulum*, Congo, p. 63, *lautus*, Gaboon, *hieroglyphicus*, Transvaal, p. 64, *curtulus*, Senegal, p. 65, *coarcticollis*, S. Africa, p. 66, RÉGIMBART, Mem. Soc. ent. Belgique, iv; *C. sumatrensis*, *marginicollis*, Sumatra, RÉGIMBART, p. 324, Ann. Soc. ent. France, 1895; n. spp.

Cœlambus and allies, characters; RÉGIMBART, p. 34, Mem. Soc. ent. Belgique, iv.

C. nodieri, Senegal, RÉGIMBART, p. 37, Mem. Soc. ent. Belgique, iv, n. sp. *Copelatus owas*, Africa and Madagascar, p. 190, *bottegoi*, Giuba, p. 191, RÉGIMBART, Ann. Mus. Genova, xxxv; *C. ferruginicollis*, p. 157, *ipiformis*, W. Africa, *pumilus*, Abyssinia, p. 158, *cinnamomeus*, Loango,

- parallelipipedus*, Congo, p. 159, *platynotus*, S. Africa, p. 160, *decemsulcatus*, W. Africa, *depauperatus*, Transvaal, p. 161, *pulicarius*, p. 162, *crassus*, p. 165, *nodieri*, p. 166, *assimilis*, p. 166, W. Africa, *ilybioides*, Madagascar, p. 167, *flavidus*, *pallidus*, W. Africa, p. 168, *ovas*, p. 169, Madagascar, *nigrostriatus*, *sordidipennis*, p. 170, W. Africa, *ruficapillus*, Madagascar, *bifasciatus*, p. 171, *variegatus*, p. 172, W. Africa, *botlegoi*, Abyssinia, *propinguus*, p. 174, *vigintisulcatus*, p. 175, *supplementaris*, *trilobatus*, p. 176, *anthracinus*, *mocquerysi*, p. 177, W. Africa, RÉGIMBART, Mem. Soc. ent. Belgique, iv : n. spp.
- Cybister pinguis*, E. Africa, RÉGIMBART, p. 192, Ann. Mus. Genova, xxxv ; *C. marginellus*, p. 212, *rufiventris*, *crassiusculus*, p. 214, *mocquerysi*, p. 217, W. Africa, *pinguis*, E. Africa, p. 220, *pruinosis*, Congo, p. 224, RÉGIMBART, Mem. Soc. ent. Belgique, iv : n. spp.
- Derovatellus obscurus*, *mocquerysi*, p. 12, *ruficollis*, p. 13, *fasciatus*, p. 14, W. Africa, RÉGIMBART, Mem. Soc. ent. Belgique, iv, n. spp.
- Desmopachria variolosa*, Sumatra or Mexico, p. 321, pl. 8, fig. 3, *grouvellei*, Mexico, p. 322, *ferrugata*, *attenuata*, Brazil, p. 323, RÉGIMBART, Ann. Soc. ent. France, 1895, n. spp.
- Dytiscus pisanus*, n. var. *kunstleri* ; PEYTOUREAU, p. xlii, Act. Soc. Bordeaux, 1894.
- D. herbeti*, Europe (part of *Dytiscus marginalis*), PEYTOUREAU, p. xxxiii, C.R. Soc. Bordeaux, 1894, n. sp.
- Graphoderes oberthuri*, Madagascar, RÉGIMBART, p. 206, Mem. Soc. ent. Belgique, iv, n. sp.
- Herophydrus gigas*, S. Africa, *quadrilineatus*, Abyssinia, p. 38, *capensis*, p. 40, *cœlamboides*, p. 42, S. Africa, *vittatus*, Mauritius, p. 43, *confusus*, *obsoletus*, p. 44, *biseriatus*, p. 45, *hyphoporoides*, p. 46, *assimilis*, p. 47, Madagascar, RÉGIMBART, Mem. Soc. ent. Belgique, iv, n. spp.
- Hydaticus mocquerysi*, Gaboon, *latior*, S. Africa, p. 185, *quadriguttatus*, *lativittis*, p. 186, *pœcilus*, p. 187, *severini*, p. 188, *speciosus*, p. 189, *testudinarius*, *laceratus*, p. 190, W. Africa, *plagiatus*, p. 194, *inconspicuus*, p. 195, Madagascar, *nebulosus*, *arcuatus*, p. 198, *tschoffeni*, p. 199, *staudingeri*, p. 200, W. Africa, *nigrotæniatus*, p. 202, Madagascar, *humeralis*, p. 203, Sierra Leone, *intermedius*, p. 204, Madagascar, *vitticollis*, Senegal, p. 205, RÉGIMBART, Mem. Soc. ent. Belgique, iv, n. spp.
- Hydutonychus*, not distinct from *Hydrovatus* ; RÉGIMBART, p. 110, Mem. Soc. ent. Belgique, iv.
- Hydrocanthus ferruginicollis*, Giuba, RÉGIMBART, p. 189, Ann. Mus. Genova, xxxv ; *H. ferruginicollis*, Somaliland, p. 128, *mocquerysi*, Congo, p. 129, *constrictus*, Madagascar, p. 130, RÉGIMBART, Mem. Soc. ent. Belgique, iv : n. spp.
- Hydroporus semirufus*, p. 317, pl. 8, fig. 1, *sanmarki*, p. 318, fig. 2, larvae described ; RÉGIMBART, Ann. Soc. ent. France, 1895.
- H. carinipennis*, Congo, p. 15, *nodieri*, Senegal, p. 16, *jurjurensis*, Algeria, p. 29, *canthydroides*, p. 30, *luridipennis*, *bicinctus*, p. 31, S. Africa, RÉGIMBART, Mem. Soc. ent. Belgique, iv, n. spp.

- Hydrovatus amplicornis*, p. 100, *difformis*, p. 101, *validicornis*, S. Africa, *senegalensis*, W. Africa, p. 102, *simoni*, S. Africa, *sharpi*, p. 103, *scymnoides*, *exochomoides*, p. 104, W. Africa, *duponti*, *testudinarius*, Madagascar, p. 106, *affinis*, *obscurus*, W. Africa, p. 108, *reticuliceps*, Cape Lopez, p. 109, *laticornis*, p. 110, *abrœoides*, p. 111, *oblongiusculus*, *gabonicus*, p. 112, W. Africa, *macrocerus*, Cape Town, p. 114, *frater*, p. 116, *oblongipennis*, p. 117, Senegal, RÉGIMBART, Mem. Soc. ent. Belgique, iv, n. spp.
- Hyphydrus separandus*, *circularis*, Madagascar, p. 53, *gabonicus*, p. 54, *opaculus*, p. 55, *perforatus*, p. 56, *flavicollis*, p. 58, W. Africa, RÉGIMBART, Mem. Soc. ent. Belgique, iv, n. spp.
- Lancetes varius*, n. var. *waterhousei*; GRIFFINI, p. 7, Boll. Mus. Torino, x, No. 194.
- L. borellii*, Tucuman, GRIFFINI, p. 8, Boll. Mus. Torino, x, No. 194; *L. ocularis*, W. Australia, LEA, p. 224, P. Linn. Soc. N. S. Wales, x: n. spp.
- Laccodytes*, n. g., p. 345, near *Laccophilus*, for *L. phalacroides*, Brazil, p. 346, pl. viii, fig. 18, *olibroides*, Brazil? p. 347, n. spp.; RÉGIMBART, Ann. Soc. ent. France, 1895.
- Laccophilus ampliatus*, Natal, p. 130, *modestus*, with var. *tostus*, p. 133, *nodieri*, *evaneszens*, p. 134, *livens*, p. 135, *mocquerysi*, *tschoffeni*, p. 139, W. Africa, *quindecimvittatus*, Abyssinia, *flavoscriptus*, Congo, p. 140, *desintegratus*, Loango, *bizonatus*, p. 143, *persimilis*, p. 144, *lenticulus*, p. 145, *flavosignatus*, *secundus*, p. 146, *leonensis*, p. 147, *gutticollis*, *sanguinosus*, p. 148, *orthogrammus*, W. Africa, *lineatoguttatus*, Transvaal, p. 150, RÉGIMBART, Mem. Soc. ent. Belgique, iv; *L. mocquerysi*, Trop. Africa, RÉGIMBART, Ann. Mus. Genova, xxxv; *L. perparvulus*, Mexico, *grouvellei*, Sumatra, RÉGIMBART, Ann. Soc. ent. France, 1895: n. spp.
- Megadytes levigatus* and allies, characters and synonymy; GRIFFINI, p. 4, No. 194, Boll. Mus. Torino, x.
- M. carcharius*, Paraguay, GRIFFINI, p. 5, Boll. Mus. Torino, x, n. sp.
- Neptosternus oblongus*, Madagascar, RÉGIMBART, p. 150, Mem. Soc. ent. Belgique, iv; *N. sumatrensis*, Sumatra, RÉGIMBART, p. 345, pl. viii, fig. 17, Ann. Soc. ent. France, 1895: n. spp.
- Notomicrus grouvellei*, Brazil, RÉGIMBART, p. 340, Ann. Soc. ent. France, 1895, n. sp.
- Rhantus stenonychus*, Madagascar, p. 179, *longulus*, Abyssinia, p. 181, *peringueyi*, Cape Town, p. 182, RÉGIMBART, Mem. Soc. ent. Belgique, iv; *R. elegans*, Mt. Roraima, WATERHOUSE, p. 494, Ann. Nat. Hist. xv: n. spp.
- Tyndallhydrus coriaceus*, Cape Town, RÉGIMBART, p. 98, Mem. Soc. ent. Belgique, iv, n. sp.
- Yola tschoffeni*, p. 69, *senegalensis*, p. 70, *nigrosignata*, p. 71, W. Africa, *natalensis*, p. 72, *subopaca*, p. 73, Natal, RÉGIMBART, Mem. Soc. ent. Belgique, iv: n. spp.

GYRINIDÆ.

[Cf. BLACKBURN (114), MEINERT (758), MIALL (767), RÉGIMBART (924), ROBERTS (976).]

Structure of the mouth of larva; MEINERT (758).

Aulonogyrus carinipennis, Madagascar, RÉGIMBART, p. 228, Mem. Soc. ent. Belgique, iv, n. sp.

Dineutes: monograph of N. American, with figg. of sexual characters; ROBERTS, Tr. Amer. ent. Soc. xxii, pp. 279-288, pls. v & vi.

D. hornii, *nigrior*, p. 284, *productus*, p. 285, N. America, ROBERTS, t. c.; *D. inflatus*, Victoria, BLACKBURN, p. 23, Tr. R. Soc. S. Austral. xix: n. spp.

Gyrinus striolatus = (*strigulosus*, Reg.); FAUVEL, p. 92, Rev. Ent. franc. xiv.

G. ignitus, Madagascar, RÉGIMBART, p. 230, Mem. Soc. ent. Belgique, iv, n. sp.

Orectogyrus fusciventris, E. Africa, p. 231, *perroti*, Madagascar, p. 232, *longilabris*, W. Africa, p. 235, RÉGIMBART, Mem. Soc. ent. Belgique, iv, n. spp.

HYDROPHILIDÆ.

[Cf. BLACKBURN (114), MIALL (767), HORN (512), SAHLBERG (999), WICKHAM (1232).]

Hydrophilidæ of Canada; WICKHAM, pp. 181-186, Canad. Ent. xxvii.

Berosus lapponicus, Lapland, SAHLBERG, p. 47, Medd. Soc. Faun. Fenn. xx; *B. munitipennis*, S. Australia, BLACKBURN, p. 30, Tr. R. Soc. S. Austral. xix: n. spp.

Cercyon aquaticus = (*bifenestratus*, Küst.); FAUVEL, p. 92, Rev. Ent. franc. xiv.

C. rufescens, Lower California, HORN, p. 233, P. Calif. Ac. v, n. sp.

Helochaeres lividus, var. *erythrocephalus* = (*subcompressus*, Rey); FAUVEL, p. 92, Rev. Ent. franc. xiv.

Helophorus asperatus, Rey, = (*crenatus*, Rey), *H. æneipennis*, Th., = (*aquaticus*, Fairm., *demoulini*, Math., *planicollis*, Th., *arcuatus*, *obscurus*, Rey, *balticus*, *latus*, Kuw.), *H. granularis* = (*discrepans*, Rey); FAUVEL, p. 92, Rev. Ent. franc. xiv. *H. rugosus*, injuring turnips; ORMEROD, pp. 91-93, Rep. xix.

Hydræna riparia = (*subdeficiens*, *sternalis*, Rey), *H. nigrita* = (*subimpressa*, Rey, *reysi*, Kuw.), *H. gracilis* = (*monticola*, Rey); FAUVEL, p. 92, Rev. Ent. franc. xiv.

Hydrocharis obtusatus, larva and pupa; WICKHAM, p. 168, pl., fig. 1, Ent. News Philad. vi.

H. rickseckeri, California, HORN, p. 233, P. Calif. Ac. v, n. sp.

Hydrochus palmerstoni, Australia, BLACKBURN, p. 29, Tr. R. Soc. S. Austral. xix, n. sp.

Notoberosus, n. g. for *N. zietzi*, n. sp., S. Australia; BLACKBURN, Tr. R. Soc. S. Austral. xix.

Octhebius marinus = (*deletus*, *meridionalis*, *subabruptus*, Rey), *O. æneus* = (*lutescens*, Kuw.), *O. metallescens* = (*fuscipalpis*, Rey); FAUVEL, p. 92, Rev. Ent. franc. xiv.

Philhydrus eyrensis, Australia, BLACKBURN, p. 29, Tr. R. Soc. Austral. xix, n. sp.

STAPHYLINIDÆ.

[*Cf.* BLACKBURN (115), CASEY (191), EPPELSHEIM (341-345), FAUVEL (365-367), GANGLBAUER (416), HOULBERT (523), KRAATZ (631), LEA (683), REITTER (933), WASMANN (1188).]

Remarks on Wasmann's Catalogue of Myrmecophilous and Termitophilous Insects, *Staphylinidæ*; FAUVEL (365).

Discussion of forms and habits of numerous Brazilian Myrmecophilous *Staphylinidæ*; WASMANN, Verh. Ges. Wien, 1895, pp. 137-179.

Suggestions as to synonymy of numerous European *Staphylinidæ*; FAUVEL, pp. 93-103, Rev. Ent. franc. xiv.

The genera of *Staphylinidæ* of France, with woodcuts; HOULBERT, Naturaliste, 1895, pp. 189, &c., &c.

Actobius flavicornis, Birma, FAUVEL, p. 261, Rev. Ent. franc. xiv, n. sp.

Acylophorus puncticeps, p. 275, *microcerus*, p. 276, Birma, FAUVEL, Rev. Ent. franc. xiv, n. spp.

Agacerus, n. g., near *Emus*, for *A. pectinatus*, n. sp., Birma; FAUVEL, p. 245, Rev. Ent. franc. xiv.

Aleochara incerta, India, EPPELSHEIM, p. 53, Wien. ent. Zeit. 1895, n. sp.

Aleuonota aurantiaca, n. n. for *rufotestacea*, of British authors, nec Kr., FAUVEL, p. 95; sexual characters of allies, p. 96: Rev. Ent. franc. xiv.

Algon tricolor, p. 272, *psittucus*, *semiaureus*, E. India, FAUVEL, Rev. Ent. franc. xiv, n. spp.

Alianta bigranosa, W. Africa, EPPELSHEIM, p. 118, Deutsche ent. Zeitschr. 1895, n. sp.

Amichrotus costatus, *semicyaneus*, Birma, FAUVEL, p. 269, Rev. Ent. franc. xiv, n. spp.

Anaulacaspis, n. subg. of *Falagria*, for *F. longipes*, Wollast; GANGLBAUER, p. 256, Käfer Mitteleur. ii.

Anisolinus auronotatus, *fusciiventris*, p. 270, *rufipennis*, p. 271, Birma, FAUVEL, Rev. Ent. franc. xiv, n. spp.

Anthobium viertli, Hungary, p. 748, *elongatum*, S. France, p. 754, GANGLBAUER, Käfer Mitteleur. ii, n. spp.

Anthophagus noricus, Rauris, GANGLBAUER, p. 707, Käfer Mitteleur. ii, n. sp.

Apatetica: characters, with notes on distinction of *Staphylinidæ* from *Silphidæ*; FAUVEL, pp. 190-192, Rev. Ent. franc. xiv.

A. viridipennis, p. 192, *sikkimi*, p. 193, Sikkim, FAUVEL, Rev. Ent. franc. xiv, n. spp.

Arpediopsis, n. subg. of *Deliphrum*, for *D. algidum*, Er.; GANGLBAUER, p. 724, Käfer Mitteleur. ii.

- Asemobius*, n. g. near *Zalobius*, for *A. calatus*, n. sp., California ; HORN, p. 238, P. Calif. Ac. v.
- Astenus ophis*, *birmanus*, Birma, FAUVEL, p. 222, Rev. Ent. franc. xiv, n. spp.
- Astilbus opacicollis*, Sikkim, EPELSHEIM, p. 385, Deutsche ent. Zeitschr. 1895, n. sp.
- Atheta bosnica*, Travnik, GANGLBAUER, p. 220, Käfer Mitteleur. ii ; *A. (Alaobia) obtusidens*, W. Africa, EPELSHEIM, Deutsche ent. Zeitschr. 1895 : n. spp.
- Barronica*, n. g., *Aleocharini*, p. 202, for *B. scorpio*, n. sp., Queensland, p. 203 ; BLACKBURN, Tr. R. Soc. S. Austral. xix.
- Belonuchus subdentatus*, W. Africa, EPELSHEIM, p. 130, Deutsche ent. Zeitschr. 1895 ; *B. rufoniger*, with var. *montanus*, p. 266, *tripunctatus*, *maculipennis*, p. 267, Birma, *æneipennis*, p. 268, Sumatra, etc., FAUVEL, Rev. Ent. franc. xiv : n. spp.
- Blebius palliatus*, Birma, FAUVEL, p. 203, Rev. Ent. franc. xiv, n. sp.
- Bothrys*, n. g., p. 185, near *Thoracophorus*, for *B. personatus*, n. sp., Birma, p. 186 ; FAUVEL, Rev. Ent. franc. xiv.
- Calliderma kraatzi*, p. 235, *aspericolle*, p. 236, Birma, FAUVEL, Rev. Ent. franc. xiv, n. spp.
- Caloderina*, n. g. for *Callicerus hierosolymitanus*, Saulcy ; GANGLBAUER, p. 267, Käfer Mitteleur. ii.
- Cilea subpunctata*, *diversicornis*, p. 122, *habrocerina*, p. 123, *minuscula*, p. 124, W. Africa, EPELSHEIM, Deutsche ent. Zeitschr. 1895 ; *C. holisina*, Birma, *cuprinicollis*, Tenasserim, FAUVEL, p. 279, Rev. Ent. franc. xiv : n. spp.
- Conosoma limuloides*, p. 441, *velocipes*, p. 442, *virginica*, *macer*, p. 443, *debilis*, p. 447, *subtilis*, p. 448, N. America, CASEY, Ann. N. York Ac. viii, n. spp.
- Conurus fasciipennis*, Pegu, EPELSHEIM, p. 389, Deutsche ent. Zeitschr. 1895 ; *C. virgula*, *plagiatus*, p. 282, *notatus*, Birma, *analisis*, Tenasserim, p. 283, *brevis*, *birmanus*, Birma, *suavis*, p. 284, Tenasserim, *dimerus*, Birma, p. 285, FAUVEL, Rev. Ent. franc. xiv : n. spp.
- Cryptobium abdominale*, Motsch, variation ; EPELSHEIM, p. 402, Deutsche ent. Zeitschr. 1895.
- C. gestroi*, Gallaland, EPELSHEIM, p. 208, Ann. Mus. Genova, xxxv ; *C. paricolor*, p. 401, *semiopacum*, p. 402, E. India, EPELSHEIM, Deutsche ent. Zeitschr. 1895 ; *C. mutator*, p. 236, *biforme*, *gastrale*, p. 237, *sharpi*, p. 238, *nisus*, p. 239, Birma, FAUVEL, Rev. Ent. franc. xiv : n. spp.
- Delopsis*, n. g. near *Trogophlæus*, for *D. cornuta*, p. 198, *seticornis*, p. 199, n. spp., Birma ; FAUVEL, Rev. Ent. franc. xiv.
- Dialycera*, n. subg. of *Phyllodrepa*, for *distincticornis*, Baudi ; GANGLBAUER, p. 743, Käfer Mitteleur. ii.
- Dianous verticosus*, Pegu, EPELSHEIM, p. 404, Deutsche ent. Zeitschr. 1895, n. sp.
- Dinarda hagensi*, note on ; FAUVEL, p. 94, Rev. Ent. franc. xiv.

- Dolicaon parviceps*, Pegu, FAUVEL, p. 234, Rev. Ent. franc. xiv, n. sp.
Ecitonilla claviventris, figure and note; WASMANN, p. 154, Verh. Ges. Wien, 1895.
Edaphus major, p. 205, *punctatus*, p. 206, Birma, FAUVEL, Rev. Ent. franc. xiv, n. spp.
Eleusis picta, p. 139, *fulvicornis*, p. 140, W. Africa, EPPELSHEIM, Deutsche ent. Zeitschr. 1895; *E. fœc*, p. 188, *vermicularis*, *viridans*, p. 189, *laticeps*, *pusilla*, p. 190, Birma, FAUVEL, Rev. Ent. franc. xiv : n. spp.
Erchomus pinguis, Gallaland, EPPELSHEIM, p. 198, Ann. Mus. Genova, xxxv, n. sp.
Eucibdelus krautzi, Pegu, p. 392, *javanicus*, Teugger Mts., p. 394, EPPELSHEIM, Deutsche ent. Zeitschr. 1895; *E. varius*, *fœc*, p. 247, *bicolor*, p. 248, Birma, FAUVEL, Rev. Ent. franc. xiv : n. spp.
Eucirrus, n. g., p. 215, near *Procirrus*, for *E. miricornis*, n. sp., Singapore, p. 216; FAUVEL, Rev. Ent. franc. xiv.
Eupiestus spinifer, p. 186, *fœc*, p. 187, *temporalis*, p. 188, Birma, FAUVEL, Rev. Ent. franc. xiv, n. spp.
Eurycerus, n. g. [changed to *Agacerus* on p. 245, *q.v.*]; FAUVEL, p. 244, Rev. Ent. franc. xiv.
Eurymitusa, n. g. for *Ocyusa crassa*, Eppelsh.; GANGLBAUER, p. 56, Käfer Mitteleur. ii.
Fauvelia, n. g. near *Myrmigaster*, for *M. permira*, n. sp., Bolivia; WASMANN, p. 174, cut, Verh. Ges. Wien, 1895.
Gyrophæna obsoleta, Austria, GANGLBAUER, p. 300, Käfer Mitteleur. ii, n. sp.
Hesperus krautzi, W. Africa, EPPELSHEIM, p. 129, Deutsche ent. Zeitschr. 1895; *H. inæqualis*, p. 258, *lavigatus*, p. 259, *wasmanni*, *fœc*, p. 260, *trimerus*, p. 261, Birma, FAUVEL, Rev. Ent. franc. xiv : n. spp.
Heterothops oculata, Tenasserim, FAUVEL, p. 275, Rev. Ent. franc. xiv, n. sp.
Holusus ambigenus, Birma, FAUVEL, p. 183, Rev. Ent. franc. xiv, n. sp.
Homalium fuistingi, Glatzer Mts., REITTER, p. 199, Wien. ent. Zeit. 1895, n. sp.
Homalota (Aleuonota), note on; CHAMPION, p. 47, Ent. Mag. 1895.
Hydrosmectina, n. subg. of *Atheta*, for *A. subtilissima* and *tenuissima*; GANGLBAUER, p. 232, Käfer Mitteleur. ii.
Lasiocara, n. subg. of *Amarochara*, for *Oxyopoda glabriventris*, Rye; GANGLBAUER, p. 100, Käfer Mitteleur. ii.
Lathrobium guttula, Birma, FAUVEL, p. 234, Rev. Ent. franc. xiv, n. sp.
Leistotrophus avrosparus, p. 245, *birmanus*, p. 246, Birma, FAUVEL, Rev. Ent. franc. xiv, n. spp.
Leptacinus fusciceps, Pegu, EPPELSHEIM, p. 399, Deutsche ent. Zeitschr. 1895; *L. gracilis*, Birma, FAUVEL, p. 240, Rev. Ent. franc. xiv : n. spp.
Leptochirus minutus, n. var. *cruentus*; FAUVEL, p. 181, Rev. Ent. franc. xiv.

- L. apicalis*, p. 68, *bifoveatus*, p. 69, Sikkim, EPPELSHEIM, Wien. ent. Zeit. 1895; *L. bipunctatus*, p. 180, *semirufus*, *antelope*, p. 181, *hoplites*, *atkinsoni*, *verrucifer*, p. 182, *variolosus*, p. 183, Birma, FAUVEL, Rev. Ent. franc. xiv; *L. exaratus*, p. 406, Burma, *caviceps*, Sumbawā, p. 408, EPPELSHEIM, Deutsche ent. Zeitschr. 1895: n. spp.
- Leptusa baldensis*, Tyrol, p. 280, *L. (Sipalia) fuscula*, Alpes Maritimes, p. 282, *ensifera*, Drôme, p. 284, GANGLBAUER, Käfer Mitteleur. ii, n. spp.
- Leucocraspedum rufum*, Birma, FAUVEL, p. 285, Rev. Ent. franc. xiv, n. sp.
- Leucoparyphus triangulum*, Gallaland, EPPELSHEIM, p. 198, Ann. Mus. Genova, xxxv, n. sp.
- Lispinodes bistriatus*, Birma, FAUVEL, p. 185, Rev. Ent. franc. xiv, n. sp.
- Lispinus acupunctus*, p. 137, *æthiops*, p. 138, W. Africa, EPPELSHEIM, Deutsche ent. Zeitschr. 1895; *L. birmanus*, *sublucens*, p. 184, *coriaceus*, p. 185, Birma, FAUVEL, Rev. Ent. franc. xiv: n. spp.
- Lomechusa strumosa*, development; WASMANN, p. 294, Deutsche ent. Zeitschr. 1895.
- Medon angulipennis*, W. Africa, EPPELSHEIM, p. 132, Deutsche ent. Zeitschr. 1895; *M. princeps*, p. 227, *auripilis*, *birmanus*, p. 228, *luctuosus*, *aspericollis*, p. 229, *discipennis*, *picipennis*, p. 230, *opacellus*, p. 231, Birma, FAUVEL, Rev. Ent. franc. xiv: n. spp.
- Megaconus vittula*, *lambda*, Birma, FAUVEL, p. 277, Rev. Ent. franc. xiv, n. spp.
- Megarthus umbonatus*, *birmanus*, Birma, FAUVEL, p. 194, Rev. Ent. franc. xiv, n. spp.
- Metoponcus cairnsensis*, Queensland, BLACKBURN, p. 204, Tr. R. Soc. S. Austral. xix, n. sp.
- Mitomorphus cupreolus*, Birma, FAUVEL, p. 240, Rev. Ent. franc. xiv, n. sp.
- Monista typica*, figure, habits; WASMANN, p. 176, Verh. Ges. Wien, 1895.
- Myllana regina*, *picticornis*, Birma, FAUVEL, p. 286, Rev. Ent. franc. xiv, n. spp.
- Myrmedonia hauseri*, male described; EPPELSHEIM, p. 54, Wien. ent. Zeit. 1895.
- M. (?) submetallica*, p. 114, *M. (Zyras) rudis*, W. Africa, *M. syriaca*, Syria, p. 116, EPPELSHEIM, Deutsche ent. Zeitschr. 1895; *M. waageni*, Pegu, p. 386, *bicolor*, Calcutta, *rufiventris*, Pegu, p. 388, EPPELSHEIM, Deutsche ent. Zeitschr. 1895: n. spp.
- Mycetoporus mulsanti*, n. n. for *tenuis*, Muls.; GANGLBAUER, p. 375, Käfer Mitteleur. ii.
- Naddia miniata*, Tenasserim, FAUVEL, p. 250, Rev. Ent. franc. xiv, n. sp.
- Nudobius lentus*, metamorphoses; XAMBEU, p. 35, Mœurs, vi.
- Ocypus picipennis*, metamorphoses; XAMBEU, p. 49, Mœurs, vi.
- Edichirus schultheissi*, Sumatra, *birmanus*, Birma, FAUVEL, p. 217, Rev. Ent. franc. xiv, n. spp.
- Olophrinus*, n. g., p. 280, near *Tachinoderus*, for *O. striatus*, n. sp., Birma, p. 281; FAUVEL, Rev. Ent. franc. xiv

- Omalius rivulare*, metamorphoses; XAMBEU, p. 44, Mœurs, vi.
Ontholestes, n. g. for *Leistotrophus*, auct. (*nea* Perty); GANGLBAUER, p. 417, Käfer Mitteleur. ii.
Oreostiba, n. subg. of *Atheta*, for *A. tibialis*, Heer; GANGLBAUER, p. 219, Käfer Mitteleur. ii.
Orphnebius nigerrimus, W. Africa, EPPELSHEIM, p. 117, Deutsche ent. Zeitschr. 1895; *O. hauseri*, India, EPPELSHEIM, p. 54, Wien. ent. Zeit. 1895 : n. spp.
Osorius opaculus, W. Africa, EPPELSHEIM, p. 134, Deutsche ent. Zeitschr. 1895; *O. calvus*, Himalaya, EPPELSHEIM, p. 406, *t. c.*; *O. scolytinus*, *puncipennis*, p. 195, *constrictus*, *pectinifrons*, *stricticollis*, p. 196, Birma, FAUVEL, Rev. Ent. franc. xiv : n. spp.
Othius transsilvanicus, Europe, GANGLBAUER, p. 471, Käfer Mitteleur. ii, n. sp.
Oxyroda confusa, Tyrol, GANGLBAUER, p. 66, Käfer Mitteleur. ii, n. sp.
Oxyporus 5-punctatus, ♂ characters; SCHWARZ, p. 147, P. ent. Soc. Washington, iii.
O. stigma, p. 203, *bucephalus*, Birma, *borneensis*, Sarawak, p. 204, FAUVEL, Rev. Ent. franc. xiv, n. spp.
Oxytelopsis, n. g., near *Trogophlæus*, p. 199, for *O. apicipennis*, *cimicoides*, p. 200, *pseudopsina*, p. 201, n. spp., Birma; FAUVEL, Rev. Ent. franc. xiv.
Oxytelus simulator, Gallaland, EPPELSHEIM, p. 212, Ann. Mus. Genova, xxxv; *O. colonus*, p. 135, *grandis*, p. 136, W. Africa, EPPELSHEIM, Deutsche ent. Zeitschr. 1895; *O. cephalotes*, p. 66, *hirtulus*, p. 68, Simla, EPPELSHEIM, Wien. ent. Zeit. 1895; *O. megaceros*, p. 201, *armiger*, *bellicosus*, p. 202, Birma, FAUVEL, Rev. Ent. franc. xiv : n. spp.
Pæderus xanthocerus, *crebrepunctatus*, p. 210, *duplex*, p. 211, Gallaland, EPPELSHEIM, Ann. Mus. Genova, xxxv; *P. annexus*, W. Africa, EPPELSHEIM, p. 133, Deutsche ent. Zeitschr. 1895; *P. capillaris*, p. 231, *fea*, *coxalis*, p. 232, *birmanus*, Birma, *schultheissi*, Sumatra, p. 233, FAUVEL, Rev. Ent. franc. xiv : n. spp.
Palestrinus waageni, Calcutta, EPPELSHEIM, p. 396, Deutsche ent. Zeitschr. 1895, n. sp.
Pammegus, n. g., *Staphylini*, near *Quedii*, for *flavipes*, Fauv.; FAUVEL, p. 271, Rev. Ent. franc. xiv.
Paragonus, n. g., near *Osorius*, for *P. birmanus*, Carin Cheba, FAUVEL, p. 197, Rev. Ent. franc. xiv, n. sp.
Parameotica, n. subg. of *Atheta*, for *A. laticeps*, Th., and *complana*, Mann.; GANGLBAUER, p. 228, Käfer Mitteleur. ii.
Paroxyroda, n. subg. of *Oxyroda*, for *O. lugubris*, Kr.; GANGLBAUER, p. 64, Käfer Mitteleur. ii.
Philonthus splendidulus, larva; KOLBE, p. 2, Zeitschr. ent. Breslau, xx.
P. inaequalis, p. 200, *holomelas*, p. 201 (p. 213 recognised as *Belonuchus abyssinus*, Fauv.), *somaliensis*, p. 202, *sericeiventris*, p. 203, *circumcinctus*, p. 204, *xanthoraphis*, p. 205, *pæderonimus*, p. 206, *bottegoi*,

- p. 207, Giuba, EPPELSHEIM, Ann. Mus. Genova, xxxv; *P. ager*, p. 59, *tractatus, obsoletus*, p. 61, India, EPPELSHEIM, Wien. ent. Zeit. 1895; *P. basicornis*, p. 124, *cupreonitens*, p. 125, *piceicosis, strigiventris*, p. 127, W. Africa, EPPELSHEIM, Deutsche ent. Zeitschr. 1895; *P. birmanus*, p. 261, *misellus*, p. 262, *circumductus, vagus*, p. 263, *dispersus, crassicornis, remotus*, p. 264, *distans, imitator*, p. 265, *leptocerus*, p. 266, Birma, FAUVEL, Rev. Ent. franc. xiv : n. spp.
- Phyllodrepoidea*, n. g. for *Deliphrum crenatum*, Grav.; GANGLBAUER, p. 724, Käfer Mitteleur. ii.
- Pinophilus variipes*, p. 218, *verticalis, genalis*, p. 219, *thoracicus, beccarii*, p. 220, Birma, *borneensis*, Sarawak, &c., p. 221, FAUVEL, Rev. Ent. franc. xiv, n. spp.
- Platydomene*, n. subg. of *Lathrobium*, for *L. angusticolle* and allies; GANGLBAUER, p. 507, Käfer Mitteleur. ii.
- Platyprosopus biseriatus*, E. India, EPPELSHEIM, p. 400, Deutsche ent. Zeitschr. 1895; *P. consularis, bilineatus*, Birma, FAUVEL, p. 239, Rev. Ent. franc. xiv : n. spp.
- Poromniusa*, n. g. for *Oxypoda procidua*, Er.; GANGLBAUER, p. 82, Käfer Mitteleur. ii.
- Procirrus fœv*, Birma, FAUVEL, p. 215, Rev. Ent. franc. xiv, n. sp.
- Pronomæa africana*, W. Africa, EPPELSHEIM, p. 120, Deutsche ent. Zeitschr. 1895, n. sp.
- Pseudopasilia*, n. subg. of *Atheta*, for *Leptusa testacea*, Bris.; GANGLBAUER, p. 211, Käfer Mitteleur. ii.
- Ptychandra*, n. subg. of *Atheta*, for *A. hepatica*, Er.; GANGLBAUER, p. 203, Käfer Mitteleur. ii.
- Pygostenus testaceus, fuscotestaceus, eppelsheimii, carinellus*, new forms; KRAATZ, pp. 141 & 142, Deutsche ent. Zeitschr. 1895.
- Quedius sturangi*, Alps, p. 404, *scribeæ*, Austria, p. 412, GANGLBAUER, Käfer Mitteleur. ii; *Q. filicornis*, India, EPPELSHEIM, p. 55, Wien. ent. Zeit. 1895; *Q. bipunctatus*, p. 390, *Q. (Microsaurus) apicicornis*, p. 391, E. India, EPPELSHEIM, Deutsche ent. Zeitschr. 1895; *Q. oculatus, intricatus*, Birma, FAUVEL, p. 274, Rev. Ent. franc. xiv; *Q. koebeleri*, Queensland, BLACKBURN, p. 203, Tr. R. Soc. S. Austral. xix : n. spp.
- Rhopolocera*, n. subg. of *Atheta*, for *A. clavigera*, Scriba; GANGLBAUER, p. 192, Käfer Mitteleur. ii.
- Rhyncochilus chrysites*, p. 248, *argenteus*, p. 249, *limbatus*, p. 250, Birma, FAUVEL, Rev. Ent. franc. xiv, n. spp.
- Saniderus*, n. g., near *Staphylinus*, for *S. ruficollis*, Birma, p. 257, *lævicollis*, Java, p. 258, n. sp.; FAUVEL, Rev. Ent. franc. xiv.
- Scimbalium asperiventre*, Birma, FAUVEL, p. 235, Rev. Ent. franc. xiv, n. sp.
- Staphylinus gemmatus*, p. 251, *trimaculatus, chrysostigma*, p. 252, *maculicollis, marmorellus*, p. 253, *virgulatus*, p. 254, *birmanus, basicornis*, p. 255, *curticornis, auronotatus*, p. 256, Birma, FAUVEL, Rev. Ent. franc. xiv; *S. (Trichoderma) bomfordi*, India, EPPELSHEIM, p. 56, Wien. ent. Zeit. 1895 : n. spp.

- Stenus crenicollis*, Simla, EPPELSHEIM, p. 65, Wien. ent. Zeit. 1895; *S. angusticollis*, Pegu, EPPELSHEIM, p. 405, Deutsche ent. Zeitschr. 1895; *S. nigrovirens*, p. 206, *annamita*, *collium*, *comes*, p. 207, *venator*, *pilicornis*, p. 208, *posticus*, *peraffinis*, p. 209, *abdominalis*, *virgula*, *stigmaticus*, p. 210, *circumflexus*, *fea*, p. 211, *gestroi*, *guttalis*, p. 212, *signifer*, *birmanus*, p. 213, *monomerus*, *wasmanni*, *gastralis*, p. 214, Birma, FAUVEL, Rev. Ent. franc. xiv : n. spp.
- Stilicoderus fea*, p. 224, *discalis*, *fenestratus*, p. 225, Birma, FAUVEL, Rev. Ent. franc. xiv, n. spp.
- Stilicopsis plagiata*, *strigella*, *umbilicata*, Birma, FAUVEL, p. 224, Rev. Ent. franc. xiv, n. spp.
- Stilicus gracilis*, Sikkim, EPPELSHEIM, p. 63, Wien. ent. Zeit. 1895; *S. subseriatus*, Pegu, EPPELSHEIM, p. 403, Deutsche ent. Zeitschr. 1895; *S. velutinus*, Birma, *ocularis*, Sumatra, FAUVEL, p. 226, Rev. Ent. franc. xiv : n. spp.
- Strobilocera*, n. subg. of *Atheta*, for *A. capitulata*, Eppelsh.; GANGLBAUER, p. 191, Käfer Mitteleur. ii.
- Sunius leptocerus*, Nagpore, EPPELSHEIM, p. 64, Wien. ent. Zeit. 1895, n. sp.
- Tanygnathus brevicollis*, Birma, FAUVEL, p. 276, Rev. Ent. franc. xiv, n. sp.
- Tachinoderus africanus*, W. Africa, EPPELSHEIM, p. 121, Deutsche ent. Zeitschr. 1895, n. sp.
- Tachinomorphus angularis*, Birma, FAUVEL, p. 278, Rev. Ent. franc. xiv, n. sp.
- Tachinus ganglbaueri*, Austria, EPPELSHEIM, p. 33, Soc. ent. x; *T. birmanus*, Birma, FAUVEL, p. 278, Rev. Ent. franc. xiv : n. spp.
- Tachyporus bicolor*, Gallaland, EPPELSHEIM, p. 199, Ann. Mus. Genova, xxxv; *T. flavopictus*, Birma, FAUVEL, p. 282, Rev. Ent. franc. xiv : n. spp.
- Tesba indica*, Pegu, p. 398, *collaris*, Guatemala, p. 399, EPPELSHEIM, Deutsche ent. Zeitschr. 1895, n. spp.
- Trichocosmetes praina*, India, EPPELSHEIM, p. 58, Wien. ent. Zeit. 1895, n. sp.
- Trogophleus schneideri*, Borkum I., GANGLBAUER, p. 659, Käfer Mitteleur. ii; *T. salicola*, Utah, CASEY, p. 450, Ann. N. York Ac. viii : n. spp.
- Typhlopasilia*, n. subg. of *Leptusa*, for *L. kaufmanni*, Bosnia, and *solifuga*, Nice, n. spp.; GANGLBAUER, p. 278, Käfer Mitteleur. ii.
- Velleius dilatatus*, habits; JANET, p. cxcv, Bull. Soc. ent. France, 1895.
- Xantholinus remotus*, Gallaland, EPPELSHEIM, p. 208, Ann. Mus. Genova, xxxv; *X. interocularis*, W. Africa, EPPELSHEIM, p. 131, Deutsche ent. Zeitschr. 1895; *X. annulatus*, p. 241, *indicus*, *fea*, p. 242, *gestroi*, *metallicus*, p. 243, Birma, FAUVEL, Rev. Ent. franc. xiv; *X. (Eulissus) rudis*, Sikkim, EPPELSHEIM, p. 62, Wien. ent. Zeit. 1895; *X. parvus*, Sikkim, EPPELSHEIM, p. 397, Deutsche ent. Zeitschr. 1895; *X. olliffi*, N. S. W., LEA, p. 589, P. Linn. Soc. N. S. Wales, ix : n. spp.

- Xenocephalus trilobita*, figure, habits, relation to *Cephaloplectus*; WASMANN, p. 160, Verh. Ges. Wien, 1895.
Xylostiba, n. subg. of *Phlæonomus*, for *monilicornis*, Gyll.; GANGLBAUER, p. 731, Käfer Mitteleur. ii.
Zalobius and allies, characters; HORN, p. 236, P. Calif. Ac. v.

PSELAPHIDÆ.

[Of. BRENDÉL (142), BROUN (149), GANGLBAUER (416), RAFFRAY (908-910).]

- The New Zealand species of *Pselaphus*, *Bryaxis*, *Sagola*, *Euplectus*, arranged in sections; BROUN, pp. 68-72, Ann. Nat. Hist. xv.
 Synonymical and other notes on N. American *Pselaphidæ*; BRENDÉL, Ent. News Philad. vi, pp. 184 & 185.
Amaurops kaufmanni, Dalmatia, GANGLBAUER, p. 858, Käfer Mitteleur. ii, n. sp.
Amblycerus, n. g. *Clavigerides*, for *A. reticulatus*, n. sp., Penang, pl. ii, fig. 11; RAFFRAY, p. 79, Rev. Ent. franc. xiv.
Ancystrocerus pallidus, p. 70, *punctatus*, p. 71, *rugicollis*, p. 72, *longicornis*, p. 73, Penang and Singapore, RAFFRAY, Rev. Ent. franc. xiv, n. spp.
Apharinodes miranda, Singapore, RAFFRAY, p. 61, pl. ii, fig. 5, Rev. Ent. franc. xiv, n. sp.
Batraxis: table of species; RAFFRAY, pp. 21-25, Rev. Ent. franc. xiv.
B. quadrata, p. 26, *truncaticornis*, p. 27, Singapore, *singhalensis*, Kandy, *pumilio*, Penang, p. 28, *instabilis*, p. 30, *obliqua*, p. 32, Penang, *calcarata*, Sumatra, p. 33, *gracilicornis*, p. 35, *brevis*, *elegans*, p. 36, *foveata*, p. 37, Penang and Singapore, RAFFRAY, Rev. Ent. franc. xiv, n. spp.
Bryaxis (*Reichenbachia*) *sulcicornis*, S. Africa, RAFFRAY, p. 389, Ann. Soc. ent. France, 1895; *B. mucronata*, p. 41, *B. (Reichenbachia) singapuriensis*, p. 42, Singapore, RAFFRAY, Rev. Ent. franc. xiv; *B. hectori*, New Zealand, BROUN, p. 73, Ann. Nat. Hist. xv; *B. (Reichenbachia) semirugosa*, N. America, BRENDÉL, p. 183, Ent. News Philad. vi: n. spp.
Bythinomorpha clavata, Singapore, RAFFRAY, p. 44, Rev. Ent. franc. xiv, n. sp.
Bythinus bosnicus, p. 819, *apfelbecki*, p. 834, Bosnia, *ædymerus*, Herzegovina, p. 832, GANGLBAUER, Käfer Mitteleur. ii, n. spp.
Centrophthalmus granosus, Singapore, RAFFRAY, p. 74, Rev. Ent. franc. xiv, n. sp.
Comatopselaphus puncticollis, p. 39, *longicornis*, pl. ii, fig. 9, p. 40, Singapore, RAFFRAY, Rev. Ent. franc. xiv, n. spp.
Cyathiger: table of species; RAFFRAY, pp. 46-52, Rev. Ent. franc. xiv.
C. variolosus, Penang, *heterocerus*, p. 53, *rufus*, p. 54, Singapore, *borneensis*, Borneo, p. 55, *inæspectus*, p. 56, *sericeus*, *viduus*, p. 57, *cribratus*, p. 58, Penang and Singapore, *similis*, Sumatra, p. 60, RAFFRAY, Rev. Ent. franc. xiv, n. spp.

- Disarthricerus*, n. g., connecting *Clavigerides* and *Pselaphides*, for *D. integer*, n. sp., Singapore, pl. ii, fig. 10, RAFFRAY, p. 78, Rev. Ent. franc. xiv.
- Ehantius schaufussi*, Sumatra, *fortis*, p. 63, *singapuriensis*, p. 64, Singapore, RAFFRAY, Rev. Ent. franc. xiv, n. spp.
- Euplectus tumipes*, p. 76, *parvulus*, p. 77, *modestus*, p. 78, *arohaensis*, p. 79, *foveiceps*, p. 80, *semiopacus*, p. 81, *pusillus*, p. 82, New Zealand, BROUN, Ann. Nat. Hist. xv, n. spp.
- Faronus brucki* and allies, characters, synonymy; RAFFRAY, pp. 17–20, Rev. Ent. franc. xiv.
- Lethenomus*, n. g. for *Tyropsis villosa*, Schauf.; RAFFRAY, p. 396, Ann. Soc. Ent. France, 1895.
- Nedarassus*, n. g., p. 44, *Bythinini*, for *N. punctatus*, n. sp., Penang, pl. ii, fig. 8, p. 45; RAFFRAY, Rev. Ent. franc. xiv.
- Neotyrus*, n. g. for *Tyropsis gibbicollis*, Schauf.; RAFFRAY, p. 396, Ann. Soc. ent. France, 1895.
- Ogmocerus rugosus*, S. Africa, RAFFRAY, p. 390, Ann. Soc. ent. France, 1895, n. sp.
- Pselaphodes* (probably in error for *Tyrus clavatus*, Singapore, RAFFRAY, p. 69, Rev. Ent. franc. xiv, n. sp.
- Pselaphus ventralis*, New Zealand, BROUN, p. 72, Ann. Nat. Hist. xv, n. sp.
- Pseudacerus*, n. g., p. 80, *Clavigerides*, for *P. furcatus*, n. sp., Penang, pl. ii, fig. 12, p. 81; RAFFRAY, Rev. Ent. franc. xiv.
- Pseudophanias cribricollis*, p. 75, *pilosus*, Penang, *heterocerus*, Singapore, p. 76, RAFFRAY, Rev. Ent. franc. xiv, n. spp.
- Sagola rugifrons*, p. 73, *spinifer*, *eminens*, p. 75, New Zealand, BROUN, Ann. Nat. Hist. xv, n. spp.
- Tanypleurus gibbicollis*, Singapore, RAFFRAY, p. 46, Rev. Ent. franc. xiv, n. sp.
- Tmesiphorus pilosus*, p. 65, *tuberculosis*, *transversus*, p. 66, *clavatus*, p. 67, Singapore and Penang, RAFFRAY, Rev. Ent. franc. xiv, n. spp.
- Tyropsis*, revision of; RAFFRAY, pp. 391–400, Ann. Soc. ent. France, 1895.
- T. cavifrons*, Chili, RAFFRAY, p. 400, Ann. Soc. ent. France, 1895, n. sp.
- Tyrus* : cf. *Pselaphodes*.

PAUSSIDÆ.

[Cf. GESTRO (425).]

- Ceratoderus bifasciatus*, its supposed larva; WASSMANN, p. 44, Deutsche ent. Zeitschr. 1895.
- Paussus antinorii*, redescription and figure; GESTRO, p. 301, Ann. Mus. Genova, xxxv.
- Pentaplatarthrus bottegi*, E. Africa, GESTRO, p. 298, Ann. Mus. Genova, xxxv, n. sp.

SCYDMÆNIDÆ, PLATYPSYLLIDÆ.

[Cf. HORN (512).]

Anthicus wollastoni is a Scydmaenid; CHAMPION, p. 75, Ent. Mag. 1895.

Eumicrus lucanus, Lower California, HORN, p. 235, P. Calif. Ac. v, n. sp.

Leptomastax: validity of the species; FIORI, pp. 1-3, Riv. ital. Sci. Nat.

xv.

Platypsyllus castoris, note; GRILL, p. 248, Ent. Tidskr. xvi: imago and larva, figures; FRIEDRICH (395).

SILPHIDÆ.

[Cf. BROUN (149), FAIRMAIRE (346), HORN (512), REITTER (932, 952), WASMANN (1195).]

On the larvæ of injurious *Silphidæ*, with plate; LAMPA, pp. 39-42, pl. i.

For some synonymy of European, see FAUVEL, p. 104, Rev. Ent. franc. xiv.

Aggytes rufus, Margelan, REITTER, p. 150, Wien. ent. Zeit. 1895, n. sp.

Anisotoma merckelliana, California, HORN, p. 234, P. Calif. Ac. v, n. sp.

Apatetica, cf. *Staphylinidæ*.

Bæosilpha, n. g., p. 84, for *B. rufescens*, n. sp., New Zealand, p. 85;

BROUN, Ann. Nat. Hist. xv.

Catopomorphus foreli, Oran, WASMANN, p. 47, Deutsche ent. Zeitschr. 1895, n. sp.

Catops bugnioni, redescribed; REITTER, p. 43, Wien. ent. Zeit. 1895.

Choleva marginalis, p. 87, *suturalis*, p. 88, New Zealand, BROUN, Ann. Nat. Hist. xv, n. spp.

Ipelates ruficollis, Akbès, FAIRMAIRE, p. cix, Bull. Soc. ent. France, 1895, n. sp.

Leptinus testaceus, 107 specimens in a nest of a field-mouse; DURY, p. 183, J. Cincinnati Soc. xiv.

Mesagyrtes, n. g., p. 85, for *M. scabripes*, n. sp., New Zealand, p. 86; BROUN, Ann. Nat. Hist. xv.

Necrophorus: table of the palæarctic species and varieties; REITTER, pp. 323-330, Ent. Nachr. xxi. *N. interruptus*, n. var. *centrimaculatus*; REITTER, p. 200, Wien. ent. Zeit. 1895.

Silpha: various species feeding on Dipterous larvæ; CLARK, p. 61, J. N. York Ent. Soc. iii. *S. opaca*, attacking beet; ORMEROD, pp. 57-59, Rep. xix. *S. surinamensis*, larva; WICKHAM, p. 170, Ent. News Philad. vi, pl., fig. 2.

Silphotelus, n. g., p. 83, for *S. nitidus*, n. sp., New Zealand, p. 84; BROUN, Ann. Nat. Hist. xv.

Thanatophilus sinuatus, larva; KOLBE, p. 2, Zeitschr. Ent. Breslau, xx.

SCAPHIDIIDÆ.

Scaphisoma pallipes, Togo, KRAATZ, p. 154, Deutsche ent. Zeitschr. 1895, n. sp.

HISTERIDÆ.

[*Cf.* LEWIS (693, 694), SCHMIDT (1011–1015).]

Notes on *Histeridæ* of the Canary Islands; SCHMIDT, pp. 175–179, Abeille, xxviii.

Abrcæus echinaceus, Zanzibar, SCHMIDT, p. 34, Ent. Nachr. xxi, n. sp.

Acritus rhenanus, nigricornis, characters, synonymy; FAUVEL, p. 109, Rev. Ent. franc. xiv.

A. madagascariensis, p. cxxxiii, *alluaudi*, p. cxxxiv, Madagascar, SCHMIDT, Bull. Soc. ent. France, 1895, n. spp.

Anaglymma: characters; SCHMIDT, p. 266, Deutsche ent. Zeitschr. 1895.

A. congonis, Togo, LEWIS, p. 262, Deutsche ent. Zeitschr. 1895, n. sp.

Apobletes frater, planipygus, Madagascar, SCHMIDT, p. cxxxii, Bull. Soc. ent. France, 1895, n. spp.

Carcinops togoensis, W. Africa, LEWIS, p. 265, Deutsche ent. Zeitschr. 1895, n. sp.

Epiechinus resimus, p. 32, *laceratus*, p. 33, Gaboon, SCHMIDT, Ent. Nachr. xxi, n. spp.

Eubrachium = (*Politulus*, Rag.), *Plegaderus pusillus*, referred to it; SCHMIDT, p. 179, Abeille, xxviii.

Gnathoncus punctulatus, rotundatus, extensive synonymy; FAUVEL, p. 109, Rev. Ent. franc. xiv.

Hister japonus, Motsch. = (*succicola*, Th.), *quinquestriatus*, Motsch. = (*14-striatus*, Mars.), but is distinct from the true *12-striatus*; LEWIS, p. 188, Ent. Mag. 1895.

H. niponicus, Japan, LEWIS, p. 188, Ent. Mag. 1895; *H. crenulatus*, p. 263, *bismarcki*, p. 264, Togo, LEWIS, Deutsche ent. Zeitschr. 1895; *H. divisifrons*, Ceylon, p. 28, *distinguendus, acuminatus*, Congo, p. 29, SCHMIDT, Ent. Nachr. xxi: n. spp.

Hololepta arcuata, Congo, LEWIS, p. 186, Ent. Mag. 1895; *H. malariae*, Togo, LEWIS, p. 261, Deutsche ent. Zeitschr. 1895: n. spp.

Idister modiglianii, Engano, SCHMIDT, p. 544, Ann. Mus. Genova, xxxiv, n. sp.

Notolister sulcicollis, 5-striatus, Nossibé, LEWIS, p. 187, Ent. Mag. 1895, n. spp.

Phelister saprinopterus, Congo, SCHMIDT, p. 27, Ent. Nachr. xxi, n. sp.

Phylloscelis strigata, Congo, SCHMIDT, p. 31, Ent. Nachr. xxi, n. sp.

Placodes intermedius, characters; SCHMIDT, p. 266, Deutsche ent. Zeitschr. 1895.

Platysoma pulvinatum, Madagascar, SCHMIDT, p. cxxxii, Bull. Soc. ent. France, 1895; *P. densatum*, p. 542, *minoratum*, p. 543, Engano, SCHMIDT, Ann. Mus. Genova, xxxiv; *P. terminatum*, p. 26, *brevimargo*, p. 27, Borneo, SCHMIDT, Ent. Nachr. xxi: n. spp.

Saprinus gratus, Cape Good Hope, SCHMIDT, p. 32, Ent. Nachr. xxi, n. sp.

Triballus pluristriatus, Java, LEWIS, p. 189, Ent. Mag. 1895; *T. punilio*, Borneo, KARSCH, p. 31, Ent. Nachr. xxi: n. spp.

Trypeticus africanus, Togo, LEWIS, p. 265, Deutsche ent. Zeitschr. 1895, n. sp.

PHALACRIDÆ.

- Ledorus*, n. n. for *Dolerus*, Guill. ; GUILLEBEAU, p. xxvii, Bull. Soc. ent. France, 1895.
- Litochrus coloratus*, *pulchellus*, p. 207, *noteroides*, *koebelci*, *tinctus*, *major*, p. 208, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xix, n. spp.
- Megistopalpus*, n. n. for *Megapalpus*, Guill. ; GUILLEBEAU, p. xxvii, Bull. Soc. ent. France, 1895.
- Merobrachys*, n. n. for *Micromerus*, Guill. ; GUILLEBEAU, p. xxvi, Bull. Soc. ent. France, 1895.
- Parasemus torridus*, *discoideus*, p. 211, *doctus*, *comes*, *modestus*, p. 212, *obsoletus*, *internatus*, p. 213, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xix, n. spp.
- Phalacrinus notabilis*, p. 214, with var. ? *dilutior*, *P. comis*, p. 215, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xix, n. spp.

NITIDULIDÆ.

[Cf. GROUVELLE (467, 470), KRAATZ (633).]

- Æthina* ? *pilosella*, Togo, KRAATZ, p. 150, Deutsche ent. Zeitschr. 1895, n. sp.
- Brachypeplus ater* = (*grouvellei*, Kr., *infra*) ; KRAATZ, p. 437, Deutsche ent. Zeitschr. 1895.
- B. grouvellei*, p. 145, *frater*, p. 146, Togo, KRAATZ, Deutsche ent. Zeitschr. 1895 ; *B. obesus*, Java, GROUVELLE, p. cclviii, Bull. Soc. ent. France, 1895 : n. spp.
- Carpophilus scutellaris*, Togo, KRAATZ, p. 147, Deutsche ent. Zeitschr. 1895, n. sp.
- Cryptarcha basimacula*, *maculipennis*, *marginicollis*, Togo, KRAATZ, p. 153, Deutsche ent. Zeitschr. 1895 ; *C. infima*, Java, GROUVELLE, p. cclix, Bull. Soc. ent. France, 1895 : n. spp.
- Cycharmus* : note on the supposed species described by Pic in 1894 ; REITTER, p. 164, Wein. ent. Zeit. 1895 : note on var. of the European ; PIC, pp. 89-91, Echange, xi.
- Epuræa* (*Micrurula*) *simoni*, S. Africa, GROUVELLE, p. 161, Ann. Soc. ent. France, 1895 ; *E. scutellaris*, p. 147, *bifasciata*, *ocularis*, p. 148, Togo, KRAATZ, Deutsche ent. Zeitschr. 1895 ; *E. fruhstorferi*, Java, GROUVELLE, p. cclviii, Bull. Soc. ent. France, 1895 : n. spp.
- Eropus*, n. g. *Rhizophagides*, for *E. simoni*, n. sp., Transvaal, GROUVELLE, Ann. Soc. ent. France, 1895, p. 162.
- Lordites costulatus* = (*testudinarius*, Reitt.) ; GROUVELLE, p. cclvii, Bull. Soc. ent. France, 1895.
- L. curvitiibus*, p. 151, *maculipennis*, p. 152, Togo, KRAATZ, Deutsche ent. Zeitschr. 1895, n. spp.
- Macrostola straminea*, mode of fertilising Aroid plants ; HUBBARD, Insect Life, vii, pp. 340-345.
- Meligethes metallicus* = (*theryi*, Guill.) ; GROUVELLE, p. cclvii, Bull. Soc. ent. France, 1895.

- M. africanus*, p. 150, *breviusculus*, p. 151, Togo, KRAATZ, Deutsche ent. Zeitschr. 1895; *M. reitteri*, *unidentatus*, *pectinatus*, *maculatus*, *longulus*, Europe, SCHILSKY, Kafer Eur. xxx : n. spp.
- Nitidula concolor*, Macl. = (*baileyi*, Blackb.), *obscurus*, Macl., being different; BLACKBURN, p. 31, Tr. R. Soc. S. Austral. xix.
- Platychora bimaculata*, Togo, KRAATZ, p. 149, Deutsche ent. Zeitschr. 1895, n. sp.
- Pocadius africanus*, Togo, KRAATZ, p. 152, Deutsche ent. Zeitschr. 1895, n. sp.
- Rhizophagus*: habits of various species, with reference to their attacking corpses; HEYDEN, pp. 380 & 381, Zool. Garten, xxxvi.

TROGOSITIDÆ.

- [*Cf. LÉVEILLÉ (692).*]
- Airora bicolor*, Bolivia, LÉVEILLÉ, p. 76, Act. Soc. Chili, v, n. sp.
- Alindria alluaudi*, *spectabilis*, noticed; LÉVEILLÉ, p. cccly, Bull. Soc. ent. France, 1895.
- Leptonysa*: table of characters; LÉVEILLÉ, pp. 80 & 81, Act. Soc. Chili, v.
- L. ornata*, Bahia, p. 77, *grouvellei*, p. 78, *germaini*, *boliviensis*, p. 79, Bolivia, LÉVEILLÉ, Act. Soc. Chili, v, n. spp.
- Micropeltis lanuginosa*, Chili, LÉVEILLÉ, p. 80, Act. Soc. Chili, v, n. sp.
- Tenebroïdes germaini*, Bolivia, LÉVEILLÉ, p. 76, Act. Soc. Chili, v, n. sp.

COLYDIIDÆ.

- [*Cf. BROWN (149), CASEY (191), GROUVELLE (467, 469), KRAATZ (635), SHARP (441).*]
- Aprostoma auberti*, Fairm. = (*Colydium levifrons*, Kr.); FAIRMAIRE, p. cclxxxii, Bull. Soc. ent. France, 1895.
- Bothrideres costatus*, Togo, KRAATZ, p. 161, Deutsche ent. Zeitschr. 1895; *B. obsoletus*, New Zealand, BROWN, p. 196, Ann. Nat. Hist. xv; *B. parvulus*, pl. xv, fig. 20, *depressus*, p. 489, *solitarius*, *subvittatus*, p. 490, Guatemala, SHARP, Biol. Centr.-Amer. Col. ii, pt. 1 : n. spp.
- Cerylon curtipes*, Guatemala, SHARP, p. 491, Biol. Centr.-Amer. Col. ii, pt. 1, n. sp.
- Chorites frater*, Java, GROUVELLE, p. 156, Bull. Mus. Paris, i, n. sp.
- Cicones undatus*, *pictus*, characters; FAUVEL, p. 107, Rev. Ent. franc. xiv.
- Colydium levifrons*, p. 157, *antennatum*, p. 158, *giganteum*, p. 159, Togo, KRAATZ, Deutsche ent. Zeitschr. 1895, n. spp.
- Cosmothorax*, n. g., p. 154, for *C. conrudti*, n. sp., Togo, p. 155, KRAATZ, Deutsche ent. Zeitschr. 1895.
- Coxelus thoracicus*, New Zealand, BROWN, p. 194, Ann. Nat. Hist. xv, n. sp.
- Diplotoma transvaalica*, Makapan, GROUVELLE, p. 163, Ann. Soc. ent. France, 1895, n. sp.
- Discoloma*: structural characters; SHARP, p. 296, Biol. Centr.-Amer. Col. vi, pt. 1.

- Emmaglæus raffrayi*, Dorey ; GROUVELLE, p. 157, Bull. Mus. Paris, i, n. sp.
Esarcus abeillei = (*cribratus*, Reitt.) ; ABELLE, p. ccx, Bull. Soc. ent. France, 1895.
Eupsilobius, n. g., type of a new group, p. 454, for *E. politus*, n. sp., Florida, p. 455 ; CASEY, Ann. N. York Ac. viii.
Lapethus discretus, figure, Biol. Centr.-Amer. Col. ii, pt. 1, pl. xv, fig. 22, noticed, p. 494.
Lascotonus, n. g., *Ditomini*, for *L. cylindricus*, n. sp., Ternate ; GROUVELLE, p. 156, Bull. Mus. Paris, i.
Leptosomatium, n. g., p. 156, for *L. quadraticeps*, *reitteri*, p. 157, n. spp., Togo ; KRAATZ, Deutsche ent. Zeitschr. 1895.
Leptosomatium (sub *Aprostoma*) *planifrons*, Westw. = (*quadraticeps*, Kr., *suprà*) ; FAIRMAIRE, Bull. Soc. ent. France, 1895.
Lytopeplus, n. g., p. 494, near *Lapethus*, for *L. compactus*, n. sp., Guatemala, p. 495, pl. xv, fig. 23 ; SHARP, Biol. Centr.-Amer. Col. ii, pt. 1.
Metopiastes vicinus, Dorey ; GROUVELLE, p. 156, Bull. Mus. Paris, i, n. sp.
Murmidiini, *Mychocerini*, *Lapethini*, and new group *Eupsilobiini*, discussed ; CASEY, pp. 451-454, Ann. N. York Ac. viii.
Petalophora raffrayi, Dorey ; GROUVELLE, p. 157, Bull. Mus. Paris, i, n. sp.
Philothermus politulus, p. 492, *cerylonicus*, *marginatus*, p. 493, Central America, SHARP, Biol. Centr.-Amer. Col. ii, pt. 1, n. spp.
Pycnocephalus, n. g., *Bothriderini*, for *P. validus*, p. 160, *angustus*, p. 161, n. spp., Togo ; KRAATZ, Deutsche ent. Zeitschr. 1895.
Taphrideres, n. g., p. 490, near *Bothrideres*, for *T. alternans*, n. sp., Guatemala, p. 491, pl. xv, fig. 21 ; SHARP, Biol. Centr.-Amer. Col. ii, pt. i.
Teredus glaber, *rufipes*, Togo, KRAATZ, p. 159, Deutsche ent. Zeitschr. 1895, n. spp.
Vitiacus costatus, n. var. *incertus* ; BROUN, p. 195, Ann. Nat. Hist. xv.

RHYSODIDÆ.

- [Cf. FAIRMAIRE (353), GROUVELLE (468, 469).]
Rhyzodes tubericeps and *canaliculatus*, distinguished ; FAIRMAIRE, p. 11, Ann. Soc. ent. Belgique, 1895.
R. grouvellei, Madagascar, FAIRMAIRE, p. 10, Ann. Soc. ent. Belgique, 1895 ; *R. fecæ*, Burma, GROUVELLE, p. 761, Ann. Mus. Genova, xxxiv ; *R. humeralis*, Celebes, *parvus*, *gracilicornis*, *vicinus*, *capito*, Dorey, GROUVELLE, p. 158, Bull. Mus. Paris, i : n. spp.
Rhyzodiastes, n. g. for *Rhyzodes parumcostatus*, Fairm., and *R. spissicornis*, n. sp., Singapore ; FAIRMAIRE, p. 11, Ann. Soc. ent. Belgique, 1895.
R. fairmairei, Burma, GROUVELLE, p. 762, Ann. Mus. Genova, xxxiv ; *R. raffrayi*, Celebes, GROUVELLE, p. 158, Bull. Mus. Paris, i : n. spp.

CUCUJIDÆ.

- [Cf. GROUVELLE (467, 469, 471), KRAATZ (636), WICKHAM (1232).]
Cucujidæ of Ontario and Quebec, tabulated ; WICKHAM, pp. 25-30, Canad. Ent. xxvii.

- Airaphilus simoni*, p. 163, *martini*, p. 164, S. Africa, GROUVELLE, Ann. Soc. ent. France, 1895, n. spp.
- Brontes africanus*, Gr. = (*africanus*, Kr., *infra*) ; KRAATZ, p. 437, Deutsche ent. Zeitschr. 1895.
- B. africanus*, Togo, KRAATZ, p. 162, Deutsche ent. Zeitschr. 1895, n. sp.
- Catogenus rufus*, Fab., and *Cucujus clavipes*, paired ; MOFFAT, p. 172, Canad. Ent. xxvii.
- Læmophlæus bouchardi*, *consobrinus*, p. ccxcviii, *foveicollis*, *tener*, p. ccxcix, Sumatra, GROUVELLE, Bull. Soc. ent. France, 1895 ; *L. insolens*, Dorey, GROUVELLE, p. 158, Bull. Mus. Paris, i : n. spp.
- Microbrontes bellus*, p. ccxcvi, *exiguus*, p. ccxcvii, Sumatra, GROUVELLE, Bull. Soc. ent. France, 1895, n. spp.
- Silvanus filum*, Togo, KRAATZ, p. 162, Deutsche ent. Zeitschr. 1895 ; *S. insignis*, Sumatra, GROUVELLE, p. ccc, Bull. Soc. ent. France, 1895 : n. spp.

CRYPTOPHAGIDÆ.

- [Cf. BLACKBURN (115), GROUVELLE (467), HORN (512), REITTER (948).]
- Atomaria linearis*, injuring beet ; ORMEROD, pp. 59-61, Rep. xix. *A. pallida* and *subferruginea*, characters ; CHAMPION, p. 175, Ent. Mug. 1895.
- A. myrmecophila*, Bohemia, REITTER, p. 310, Deutsche ent. Zeitschr. 1895, n. sp.
- Cænoscelis pallida* = (*brisouti*, Seidl.) ; FAUVEL, p. 105, Rev. Ent. franc. xiv.
- Cryptophagus punctipennis*, *pilosus*, distinguished ; FAUVEL, p. 104, Rev. Ent. franc. xiv.
- C. (Micrambe) simoni*, Transvaal, GROUVELLE, p. 165, Ann. Soc. ent. France, 1895, n. sp.
- Telmatophilus sharpi*, p. 216, *koebelei*, *cairnensis*, p. 217, *breviformis*, *stygius*, *singularis*, p. 218, Queensland, BLACKBURN, Tr. R. Soc. S. Austral. xix, n. spp.
- Tomarus bisignatus*, Arizona, HORN, p. 239, P. Calif. Ac. v, n. sp.

LATHRIDIIDÆ.

- [Cf. BELON (86-88), BROUN (149).]
- Oartodere pilifera*, characters discussed ; BELON, p. 96, Ann. Soc. ent. Belgique, 1895.
- C. lavithorax*, Chili, BELON, p. 98, Ann. Soc. ent. Belgique, 1895, n. sp.
- Corticaria normanna*, p. 99, *corsica*, p. 100, notes ; BELON, Ann. Soc. ent. Belgique, 1895.
- C. clarula*, New Zealand, BROUN, p. 197, Ann. Nat. Hist. xv, n. sp.
- Enicmus* : table of species ; BELON, p. 94, Ann. Soc. ent. Belgique, 1895.
- E. cordatus*, p. 91, *ferrugineus*, p. 92, N. America, BELON, Ann. Soc. ent. Belgique, 1895, n. spp.

- Holoparamesus niger* = (*argodi*, Croiss.), p. 78, *kunzei*, localities, p. 81 ;
 BELON, Ann. Soc. ent. France, 1895.
- H. microps*, Tangier, BELON, p. 79, Ann. Soc. ent. Belgique, 1895, n. sp.
- Lathridius lardarius*, variation, p. 88, *dimidiatus*, var. = (*fortuitus*), p. 90 ;
 BELON, Ann. Soc. ent. Belgique, 1895.
- L. (Covinomus) trifasciatus*, p. 481, *grouvellei*, p. 483, Bolivia, BELON,
 Ann. Soc. ent. Belgique, 1895 ; *L. sulcifrons*, New Zealand, BROUN,
 p. 196, Ann. Nat. Hist. xv : n. spp.
- Melanophthalma signata*, characters, p. 103, *picta*, Lec., description, p. 104,
gibbosa = (*corpulenta*, Motsch.) p. 105 ; BELON, Ann. Soc. ent.
 Belgique, 1895.
- Merophysini* : table of genera ; BELON, pp. 76 & 77, Ann. Soc. ent.
 Belgique, 1895.
- Metophthalmus* = (*Lithostygnus*, Broun), *M. sinuosus*, Bel. = (*costatus*,
 Broun) ; BELON, p. 83, Ann. Soc. ent. Belgique, 1895.
- M. (?) bicolor*, p. 85, *hispidus*, p. 86, Chili, BELON, Ann. Soc. ent. Belgique,
 1895, n. spp.
- Monotoma quadrifoveolata*, *rufa*, characters, synonymy ; FAUVEL, pp. 107
 & 108, Rev. Ent. franc. xiv. *M. rufa*, synonymy ; FAUVEL, Ent.
 Mag. 1895, p. 141.
- Neoplotera* is same as *Eucestus*, Woll., and does not belong to *Lathridiide* ;
 BELON, Rev. Ent. franc. xiv, p. 357.
- Rethusus*, Broun, characters and affinities ; BELON, pp. 100–103, Ann. Soc.
 ent. Belgique, 1895.
- Stephostichus liratus*, structure ; BELON, p. 87, Ann. Soc. ent. Belgique, 1895.

MYCETOPHAGIDÆ, THORICTIDÆ.

[Cf. LEA (684), REITTER (942), WASMANN (1192, 1193).]

- Diplocelus punctatus*, p. 227, *latus*, p. 228, Australia, LEA, P. Linn. Soc.
 N. S. Wales, x, n. spp.
- Esarcus* : cf. *Colydiidæ*.
- Tritoma picea*, larva ; KOLBE, p. 3, Zeitschr. Ent. Breslau, xx.
- Triphyllus multiguttatus*, p. 225, *minor*, p. 226, Australia, LEA, P. Linn.
 Soc. N. S. Wales, x, n. spp.
- Thorictus fairmairei*, *lethierryi*, habits ; CHABAUT, p. ccxcii, Bull. Soc. ent.
 France, 1895. *T. sericetosus* and allies, variation and synonymy ;
 REITTER, pp. 295 & 296, Deutsche ent. Zeitschr. 1895. *T. serie-*
setosus and allies, characters and synonymy ; WASMANN, pp. 41–43, t. c.
- T. paucisetæ*, Tunis, p. 43, *foreli*, Oran, p. 44, WASMANN, Deutsche ent.
 Zeitschr. 1895 ; *T. kraatzi*, Algeria, *politus*, Tripolis, WASMANN,
 p. 292, t. c. ; *T. postangulis*, *wasmanni*, Turkestan, REITTER, p. 296,
 t. c. : n. spp.

DERMESTIDÆ, BYRRHIDÆ.

[Cf. LEA (684), WEISE (1222).]

- Some *Dermestidæ*, herbivorous ; CHITTENDEN, p. 76, Rep. ent. Soc.
 Ontario, xxvi.

- Anthrenus socius*, Sydney, LEA, p. 228, P. Linn. Soc. N. S. Wales, x, n. sp.
Hadrotoma marginata, larva; KOLBE, p. 3, Zeitschr. ent. Breslau, xx.
Trogoderma trizonatum, var. *major*; PIC, p. 79, Echange, xi.
Aspidiphorus 4-guttatus, Himalaya, WEISE, p. 326, Deutsche ent. Zeitschr. 1895, n. sp.
Byrrhus arietinus, a valid species, characters; GERHARDT, pp. 12-16. Zeitschr. ent. Breslau, xx.

PARNIDÆ.

- [Cf. GROUVELLE (467), LEA (683), PIC (882), REITTER (928).]
 Notes on air-clothing of *Parnus*; KLETKE, pp. xx & xxi (Ver. Nachr.), Zeitschr. ent. Breslau, xx.
Elmis (Latelmis) carreti, Algeria, PIC, p. cxviii, Bull. Soc. ent. France, 1895; *E. v-fasciatus*, N. S. W., LEA, p. 590, P. Linn. Soc. N. S. Wales, ix : n. spp.
Erichnia, n. g. *Parnidarum*, p. 79, for *E. longicornis*, n. sp., Akbes, p. 80; REITTER, Wien. ent. Zeit. 1895.
Helmis georyssoides, incerta, capensis, descriptions and cuts; GROUVELLE, pp. 166 & 167, Ann. Soc. ent. France, 1895.
Parnus luridus = (*intermedius*, Kuw.), *P. pubescens*, Blanch., is merely nominal; GROUVELLE, p. cclviii, Bull. Soc. ent. France, 1895.
Pelonomus brasiliunus = (*Parnoides pectinicornis*, Kuw.); GROUVELLE, p. cclviii, Bull. Soc. ent. France, 1895.
Riolus nitens = (*multanti*, Kuw.); FAUVEL, p. 92, Rev. Ent. franc. xiv.
Stenelmis transvaalica, p. 167, *simoni*, p. 168, Transvaal, GROUVELLE, Ann. Soc. ent. France, 1895, n. spp.

LUCANIDÆ.

- [Cf. BLACKBURN (115), BROUN (149), CASEY (190), FAIRMAIRE (355), JAKOWLEFF (555), KRAATZ (650), NONFRIED (808), POLL (894, 895), WATERHOUSE (1197, 1199).]
 The species of *Lucanus* and *Pseudolucanus* discussed, with figures; PLANET, pp. 125, &c., &c., Naturaliste, 1895.
Ægus pengalenganus, p. 126, *preangerensis*, p. 127, Java, POLL, Notes Leyden Mus. xvii, n. spp.
Ceratognathus gilesi, Victoria, BLACKBURN, p. 215, Tr. R. Soc. S. Austral. xiv, n. sp.
Charagmophorus, n. g., near *Scortizus*, for *C. lineatus*, n. sp., Mt. Roraima; WATERHOUSE, p. 495, Ann. Nat. Hist. xv.
Cladognathus crenulidens, Tonkin, FAIRMAIRE, p. 173, Ann. Soc. ent. Belgique, 1895, n. sp.
Digonophorus, n. g., near *Cladognathus*, for *D. atkinsoni*, n. sp., Singapore; WATERHOUSE, p. 157, Ann. Nat. Hist. xvi.
Eurytrachelus niasicus, Nias I., NONFRIED, p. 280, Berlin. ent. Zeitschr. xl, n. sp.

- Homoderus gladiator*, Cameroons, JAKOWLEFF, p. 525, Horæ Soc. ent. Ross. xxix, n. sp.
- Metopodontus karnegieteri*, Sumatra, POLL, p. 63, Notes Leyden Mus. xvii; *M. volkmanni*, Sumatra, NONFRIED, p. 279, Berlin. ent. Zeitschr. xl : n. spp.
- Mitophyllus cylindricus, angusticeps*, New Zealand; BROUN, p. 199, Ann. Nat. Hist. xv.
- Nigidius spectabilis*, Cameroons, KRAATZ, p. 370, Deutsche ent. Zeitschr. 1895, n. sp.
- Platycerus keeni*, p. 153, Queen Charlotte I., *thoracicus*, p. 154, California, CASEY, Canad. Ent. xxvii, n. spp.
- Prosopocelus möllenkampi*, figure; KRAATZ, p. 287, Deutsche ent. Zeitschr. 1895.
- P. javanensis*, Lawang, POLL, p. 125, Notes Leyden Mus. xvii, n. sp.

SCARABÆIDÆ.

- [Cf. BLACKBURN (114), BRENSKE (143), BROUN (149), CASEY (191), FAIRMAIRE (346, 348, 350, 351, 353, 354), GESTRO (425), HELLER (496), HORN (512), KOLBE (615), KRAATZ (622, 627, 632, 646), LEA (683), LEWIS (698), MEINERT (755), NONFRIED (808), REITTER (928, 932, 934, 935, 947), SEMENOW (1045), SHIPP (1056-1059), SØRENSEN (1093), WATERHOUSE (1197): also *Cetoniini*, p. 146.]
- The spiracles of *Scarabæida* discussed; SØRENSEN (1093), pp. 87-99.
- Lamellicorn and other larvæ, structure of spiracles, respiration; MEINERT (755).
- Anatomy of stomatogastric nervous system in *Melolontha* and other *Coleoptera*; PAWLOWA (845).
- Melolontha* and other Lamellicorns, injuries in England from; ORMEROD, Rep. xix, p. 23.

Coprini.

- Aganocrossus*, n. subg. of *Aphodius*, q.v.
- Aphodius*: synonymy of the Japanese species; LEWIS, pp. 379-381 & 404, Ann. Nat. Hist. xvi. *A. tingens, punctato-sulcatus*, and allies, note; ABELLE, pp. ccix & ccx, Bull. Soc. ent. France, 1895. *A. lividus*, metamorphoses; XAMBEU, p. 74, Mœurs, vi. *A. rufipes*, egg and pupa; XAMBEU, p. 40, Mœurs, vi.
- A. proditor*, Gallaland, GESTRO, p. 326, Ann. Mus. Genova, xxxv; *A. (Aganocrossus, n. subg.) postpilosus*, China, REITTER, p. 209, Wien. ent. Zeit. 1895; *A. permodicus*, China, REITTER, p. 208, t. c.; *A. callabonnensis*, S. Australia, BLACKBURN, p. 32, Tr. R. Soc. S. Austral. xix : n. spp.
- A. tænius zietzi*, S. Australia, BLACKBURN, p. 32, Tr. R. Soc. S. Austral. xix, n. sp.
- Bolboceras nigro-plagiatum*, ♂; LEWIS, p. 385, Ann. Nat. Hist. xvi.

- B. nireus*, Akbes, REITTER, p. 81, Wien. ent. Zeit. 1895; *B. pilula*, Gallalund, GESTRO, p. 330, Ann. Mus. Genova, xxxv : n. spp.
- Calius*, n. g., near *Saprosites*, p. 381, for *C. denticollis*, n. sp., Japan, p. 382, cut; LEWIS, Ann. Nat. Hist. xvi.
- Canthon viridis*, food is vegetable; E. A. S., Insect Life, vii, p. 359.
- Catharsius ochus*, referred to *Copris*; LEWIS, p. 377, Ann. Nat. Hist. xvi.
- Circellium bacchus*, n. var. *waterhousei*; SHIPP, p. 37, Entomologist, 1895.
- Dynamopus*, n. g., *Hybosoridarum*, p. 336, for *D. athleta*, n. sp., W. Turkestan, p. 340; SEMENOW, Horæ Soc. ent. Ross. xxix.
- Geotrypes semicupreus* and *corinthius* are one species; FAIRMAIRE, p. ccxxix, Bull. Soc. ent. France, 1895. *G. levisstriatus*, Motsch., = (*amæus*, Jacobsohn); LEWIS, p. 386, Ann. Nat. Hist. xvi. *G. splendens*, Er., is distinct from *vernalis*; REITTER, p. 163, Wien. ent. Zeit. 1895.
- G. (Ceratotrypes) orichalceus*, Sikkim, FAIRMAIRE, p. ccv, Bull. Soc. ent. France, 1895; *G. (Phelotrypes) oshimanus*, Japan, p. ccxxvii, *G. (Odontotrypes) radiosus*, Thibet, p. ccxxviii, FAIRMAIRE, Bull. Soc. ent. France, 1895 : n. spp.
- Gymnopleurus peringuoyi*, n. n. for *modestus*, Poringuoy, nec Lansb.; SHIPP, p. 2, Entomologist, 1895.
- Hybosorus illigeri*, n. var. *nossibianus*; FAIRMAIRE, p. 17, Ann. Soc. ent. Belgique, 1895.
- H. tenuepunctatus*, Madagascar, FAIRMAIRE, p. 17, Ann. Soc. ent. Belgique, 1895, n. sp.
- Maraxes*, n. g., near *Uroxys*, for *M. dentifrons*, n. sp., Oshima; LEWIS, p. 376, woodcuts, p. 377, Ann. Nat. Hist. xvi.
- Ochodeus peninsularis*, Lower California, *californicus*, Pomona, HORN, p. 244, P. Calif. Ac. v, n. spp.
- Oniticellus setifer*, p. 143, *parvus*, p. 144, W. Africa, KRAATZ, Deutsche ent. Zeitschr. 1895; *O. subretusus*, *fissicollis*, p. 14, *gibbicollis*, p. 16, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique, 1895 : n. spp.
- Onitis anomalus*, Gallalund, GESTRO, p. 312, cut, Ann. Mus. Genova, xxxv, n. sp.
- Onthophagus gorhami*, n. n. for *granulifer*, Reit.; *humator*, n. n. for *humeralis*, McLeay; *hector*, n. n. for *haroldi*, Per.; *blackburni*, n. n. for *nitidior*, Blk.; SHIPP, p. 179, Entomologist, 1895. *O. biplugiatus*, Thoms., synonymy; SHIPP, p. 221, t. c.
- O. fassinus*, Akbès, FAIRMAIRE, p. cix, Bull. Soc. ent. France, 1895; *O. botegi*, p. 315, cut, p. 316, *boranus*, p. 317, *sidama*, p. 318, *ganalensis*, p. 320, Gallalund, GESTRO, Ann. Mus. Genova, xxxv; *O. nikkoensis*, *vacerrosus*, Japan, LEWIS, p. 378, Ann. Nat. Hist. xvi; *O. leai*, N. S. W., BLACKBURN, p. 31, Tr. R. Soc. S. Austral. xix : n. spp.
- Orphnus galla*, Africa, GESTRO, p. 328, Ann. Mus. Genova, xxxv, n. sp.
- Orubesa*, n. g., *Hybosorini*, for *O. perforata*, n. sp., Herat; REITTER, p. 150, Wien. ent. Zeit. 1895.

- Oxyomus jugosus*, Nagasaki, LEWIS, p. 383, Ann. Nat. Hist. xvi, n. sp.
Panelus, n. g. for *Temnoplectron parvulum*, figured; LEWIS, p. 375, Ann. Nat. Hist. xvi.
Parateuchus, n. g., type *A. morbillosus*; SHIPP, p. 221, Entomologist, 1895.
Phallops, Er. = (*Ephillopus*, Reit.); SHIPP, p. 178, Entomologist, 1895.
Pharaphodius putearius, China, REITTER, p. 208, Wien. ent. Zeit. 1895, n. sp.
Psammodius ainu, comis, Japan, LEWIS, p. 384, Ann. Nat. Hist. xvi, n. spp.
Saphobius tibialis, New Zealand, BROUN, p. 197, Ann. Nat. Hist. xv, n. sp.
Saprosites nara, Japan, LEWIS, p. 382, Ann. Nat. Hist. xvi, n. sp.
Scarabæus radama, Madagascar, FAIRMAIRE, p. 12, Ann. Soc. ent. Belgique, 1895, n. sp.
Tauronthophagus, n. g. for *Onthophagus rangifer*; SHIPP, p. 179, Entomologist, 1895.
Trox scaber, egg; XAMBEU, p. 34, Mœurs, vi.
T. niponensis, Japan, LEWIS, p. 387, Ann. Nat. Hist. xvi; *T. strzeleckensis*, S. Australia, BLACKBURN, p. 33, Tr. R. Soc. S. Austral. xix: n. spp.

Glaphyrini.

- Amphicoma syriaca* = (*angulata*, Fairm.); REITTER, p. 164, Wien. ent. Zeit. 1895. *A. angulata* and *syriaca* distinguished; FAIRMAIRE, p. cclxxxii, Bull. Soc. ent. France, 1895. *A. vulpes*, n. varr. *banghaasi*, p. 81, *aurigaster*, p. 82; REITTER, Wien. ent. Zeit. 1895.
Anthypna pectinata, Japan, LEWIS, p. 388, Ann. Nat. Hist. xvi, n. sp.

Melolonthini.

- Apogonia niponica*, Japan, LEWIS, p. 395, Ann. Nat. Hist. xvi, n. sp.
Archocamenta, n. g., near *Camenta*, for *A. flava*, n. sp., Gallaland; BRENSKE, p. 218, Ann. Mus. Genova, xxxv.
Aserica, n. g. for a part of *Serica*, including *S. japonica* and *orientalis*, Motsch.; LEWIS, p. 394, Ann. Nat. Hist. xvi.
Callabonica, n. g., *Heteronycidarum*, for *C. propria*, n. sp., S. Australia; BLACKBURN, Tr. R. Soc. S. Austral. xix.
Colpochila palpalis, S. Australia, BLACKBURN, p. 35, Tr. R. Soc. S. Austral. xix, n. sp.
Cryptotrogus and *Cyphonotus*, characters discussed; KRAATZ, pp. 409-413, Deutsche ent. Zeitschr. 1895.
Cyphonotus, components of this and allied genera; REITTER, pp. 206 & 207, Wien. ent. Zeit. 1895. *C. quedenfeldti*, noticed; BRENSKE, p. 397, Ent. Zeit. Stettin, lv. *C. testaceus* is probably ♂; and *oryctoides*, Sem., ♀ of one species; KRAATZ, p. 413, Deutsche ent. Zeitschr. 1895.
C. maximus, Transcaspian region, REITTER, p. 205, Wien. ent. Zeit. 1895, n. sp.

- Cyphonoxia brenskei*, Askhabad, REITTER, p. 152, Wien. ent. Zeit. 1895, n. sp.
- Dichecephala*, n. g., *Diphucephalarum*, for *D. abyssinica*, n. sp., Abyssinia; BRENSKE, p. 219, Ann. Mus. Genova, xxxv.
- Dicrania (Monocrania) unicolor*, p. 316, *D. morio*, p. 317, *D. (M.) metzii*, p. 319, Lagos, Brazil, KRAATZ, Deutsche ent. Zeitschr. 1895, n. spp.
- Diphucephala laticollis*, N. S. W., LEA, p. 591, P. Linn. Soc. N. S. Wales, ix, n. sp.
- Ectinohoplia suturalis*, de Borre, = (*luteostriata*, Brenske), *quadri-tuberculata*, Borre, = (*4-tuberculata*, Brenske); BRENSKE, p. 119, Ann. Soc. ent. Belgique, 1895.
- E. mus*, Himalaya, NONFRIED, p. 281, Berlin. ent. Zeitschr. xl, n. sp.
- Empecamenta*, n. g. near *Camenta*, for *E. pilifera*, n. sp., Gallaland; BRENSKE, p. 218, Ann. Mus. Genova, xxxv.
- Encya inermis*, Comoro Islands, FAIRMAIRE, p. 443, Ann. Soc. ent. Belgique, 1895, n. sp.
- Geotrogus deserticola*, metamorphoses; XAMBEU, p. 79, Mœurs, vi.
- Glyptoglossa*, n. g. for *Schizonycha lurida*, Burm.; BRENSKE, p. 223, Ann. Mus. Genova, xxxv.
- Granida albolineata* = (*Polyphylla schænfeldti*, Brenske); LEWIS, p. 400, Ann. Nat. Hist. xvi.
- Heptophylla*, Motsch., characters; LEWIS, p. 398, Ann. Nat. Hist. xvi.
- Heteronyx suturalis*, S. Australia, BLACKBURN, p. 37, Tr. R. Soc. S. Austral. xix, n. sp.
- Homaloplia ruricola* and *alternata*, distinguished, p. ccviii, with n. var. *intermedia*, p. ccix; ABEILLE, Bull. Soc. ent. France, 1895.
- H. flava*, Gallaland, BRENSKE, p. 217, Ann. Mus. Genova, xxxv, n. sp.
- Hoplia gracilipes*, Japan, LEWIS, p. 389, Ann. Nat. Hist. xvi; *H. brevis*, *tenebrosa*, p. 282, *hofmanni*, p. 283, Himalaya, *marginata*, Carin Cheba, *dombrovskii*, p. 284, *imitatrix*, Himalaya, *vittata*, S. W. China, p. 285, *mülleri*, E. Africa, p. 286, *albosignata*, Madagascar, p. 287, *cinereonebulosa*, Lower California, *tricolor*, Honduras, p. 288, NONFRIED, Berlin. ent. Zeitschr. xl: n. spp.
- Hypopholis setososquamosa*, Fairm., referred to *Pegylis*; BRENSKE, p. 222, Ann. Mus. Genova, xxxv.
- Lachnosterna inelegans*, p. 396, *niponensis*, p. 398, Japan, LEWIS, Ann. Nat. Hist. xvi, n. spp.
- Lepidioderma unulata*, *papuaana*, New Guinea, BRENSKE, p. 3, Abh. Mus. Dresden, 1894-95, No. 16, n. spp.
- Lepidiota bonguana*, New Guinea, BRENSKE, p. 2, Abh. Mus. Dresden, 1894-95, n. sp.
- Liparetrus distinctus*, *melanocephalus*, *aridus*, S. Australia, BLACKBURN, p. 34, Tr. R. Soc. S. Austral. xix; *L. tuberculatus*, N. S. W., LEA, P. Linn. Soc. N. S. Wales, ix, p. 592: n. spp.
- Mæchidius rugosus*, *tibialis*, habits; FROGGATT, p. 331, P. Linn. Soc. N. S. Wales, x.

- M. subcostatus*, New Guinea, HELLER, p. 1, Abh. Mus. Dresden, 1894-95, No. 16 [*M.*, n. sp., misplaced in *Coprini* in Zool. Rec. xxxi] : n. spp.
- Melolontha fuscotestacea*, ♂ noticed; REITTER, p. 81, Wien. ent. Zeit. 1895.
- Odontria obscura*, New Zealand, BROUN, p. 203, Ann. Nat. Hist. xv, n. sp.
- Pachycamenta*, n. g. near *Camenta*, p. 219, for *P. gestroi*, n. sp., Gallaland, p. 220 ; BRENSKE, Ann. Mus. Genova, xxxv.
- Pachynema dekindti*, Angola, NONFRIED, p. 280, Berlin. ent. Zeitschr. xl, n. sp.
- Pachypoides*: systematic position queried ; BRENSKE, p. 221, Ann. Mus. Genova, xxxv.
- Pegylis gestroi*, p. 221, *vestita*, p. 222, Gallaland, BRENSKE, Ann. Mus. Genova, xxxv, n. spp.
- Perissosoma tenuitarse*, Seychelles, FAIRMAIRE, p. cclxxviii, Bull. Soc. ent. France, 1895, n. sp.
- Pholidochris bremskei*, Togo, KOLBE, p. 362, Ent. Zeit. Stettin, lv, n. sp.
- Pæcilodiscus*, n. g., p. 201, near *Stethaspis*, for *P. pulcher*, n. sp., New Zealand, p. 202 ; BROUN, Ann. Nat. Hist. xv.
- Polyphylla pacifica*, California, CASEY, p. 607, Ann. N. York Ac. viii, n. sp.
- Psilodonthia*, n. g., p. 200, for *P. viridescens*, n. sp., New Zealand, p. 201 ; BROUN, Ann. Nat. Hist. xv.
- Rhizotrogus tschitscherini*, Kara-Kum, SEMENOW, p. 128, Horæ Soc. ent. Ross. xxix ; *R. tedshenensis*, Transcaspian region, p. 196, *kizilkumensis*, W. Turkestan, p. 198, *glasunowi*, Transcaspian, p. 200, *jakowlowi*, Kizil-Kum, p. 201, *R. (Amphimallus) kirgisiscus*, Kazaliusk, p. 203, SEMENOW, t. c. ; *R. kokujewi*, p. 251, *rarentzowi*, p. 252, W. Asia, SEMENOW, t. c. ; *R. niponicus*, Japan, LEWIS, p. 399, Ann. Nat. Hist. xvi : n. spp.
- Scelophysa ornatissima*, S. Africa, NONFRIED, p. 281, Berlin. ent. Zeitschr. xl, n. sp.
- Schizomycha squamulata*, p. 223, *parvula*, *gallana*, *bottegoi*, p. 224, Gallaland, BRENSKE, Ann. Mus. Genova, xxxv, n. spp.
- Serica brunnea*, life-history ; XAMBEU, Mœurs, vi, p. 33.
- S. gallana*, Africa, BRENSKE, p. 217, Ann. Mus. Genova, xxxv ; *S. similis*, p. 391, *nigrovariata*, *angulata*, p. 392, *quadrifoliata*, *brevicornis*, p. 393, *higonia*, p. 394, Japan, LEWIS, Ann. Nat. Hist. xvi : n. spp.
- Sericania mimica*, Japan, LEWIS, p. 390, Ann. Nat. Hist. xvi, n. sp.
- Thyce pistoria*, p. 607, *roversi*, p. 608, California, CASEY, Ann. N. York Ac. viii, n. spp.

Rutelini.

- Adoretus gullanus*, p. 224, *bottegoi*, *fairmairei*, *spinus*, *minutulus*, p. 225, *lineatus*, p. 226, Gallaland, BRENSKE, Ann. Mus. Genova, xxxv ; *A. javana*, Sumbawa, p. 250, *borneensis*, Borneo, p. 251, *parallelus*, Siam, p. 252, KRAATZ, Wien. ent. Zeit. 1895 : n. spp.
- Ammogenia*, n. g., p. 341, near *Anomala*, for *A. lanuginosa*, p. 343, *rarentzowi*, p. 345, n. spp.; Transcaspian region, SEMENOW, Horæ Soc. ent. Ross. xxix.

- Anisoptia koenigi*, Transcaspien, REITTER, p. 309, Deutsche ent. Zeitschr. 1895, n. sp.
- Anomala costifera*, Korca, REITTER, p. 209, Wien. ent. Zeit. 1895, n. sp.
- Cyrtolophus*, n. g., near *Adoretus*, for *C. grandicornis*, n. sp., Madagascar ; FAIRMAIRE, p. 17, Ann. Soc. ent. Belgique, 1895.
- Echmatophorus*, n. g., near *Cælidia*, p. 158, for *E. pascoei*, n. sp., Penang, p. 159 ; WATERHOUSE, Ann. Nat. Hist. xvi.
- Parastasia fevrieri*, Japan, *ceramensis*, Ceram, NONFRIED, p. 289, Berlin. ent. Zeitschr. xl, n. spp.
- Popilia insularis*, Oshima, LEWIS, p. 403, Ann. Nat. Hist. xvi, n. sp.
- Rhinhyptia suturalis*, Kashmir, p. 104, *nigrifrons*, Sulieman range, p. 105, *ruficollis*, Calcutta, p. 106, KRAATZ, Deutsche ent. Zeitschr. 1895, n. spp.
- Spodochlamys poulloni*, Colombia, SHIPP, Ent. Mag. 1895, p. 117, n. sp.

Dynastini.

- Callienemis latreillei*, near Bordeaux and in Brittany ; JOIGNY, p. xxix, C.R. Soc. Bordeaux, 1895.
- Horonotus* and *Palmerstonia*, characters and sexes ; BLACKBURN, p. 40, Tr. R. Soc. S. Austral. xix.
- Hyphoryctes*, n. g., p. 37, near *Pentodon*, for *H. maculatus*, n. sp., Cape York, p. 38 ; BLACKBURN, Tr. R. Soc. S. Austral. xix.
- Macrator*, n. g., near *Heteronychus*, for *M. hauseri*, n. sp., Herat ; REITTER, p. 151, Wien. ent. Zeit. 1895.
- Novapus nitidus*, Queensland, p. 38, *bidentatus*, Centr. Australia, p. 39 ; BLACKBURN, Tr. R. Soc. S. Austral. xix, n. spp.
- Pseudoryctes moustrosus*, p. 39, W. Australia, *trifidus*, p. 40, Queensland, BLACKBURN, Tr. R. Soc. S. Austral. xix, n. spp.
- Semanopterus rectangulus*, p. 41, *persimilis*, p. 42, *dentatus*, *carinatus*, p. 43, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xix, n. spp.
- Vertumnus* = (*Orator*, Sém.) ; FAIRMAIRE, p. cccliii, Bull. Soc. ent. France, 1895.
- V. arabicus*, Aden, FAIRMAIRE, p. cccliii, Bull. Soc. ent. France, 1895, n. sp.
- Xyloryctes faunus*, Arizona, CASEY, p. 609, Ann. N. York Ac. viii, n. sp.

Cetoniini.

[Cf. BLACKBURN (114), FAIRMAIRE (349, 353, 354, 355), GESTRO (425), HELLER (495, 496), JORDAN (565, 567), KOLBE (616), KRAATZ (625, 626, 628-631, 642, 645, 647, 649, 651-654), KÜNCKEL (664), LEWIS (698), NONFRIED (808), SCHUCH (1019-1021).]

Classification of *Cetoniidae* noticed ; SCHUCH (1019-1021). There is no certain means of distinguishing what are new names in this work, and the Recorder may therefore have made some mistakes.

Classification, with suggestion for a division into prototypic and true *Cetoniides* ; KOLBE, pp. 271-274, Ent. Zeit. Stettin, lvi.

Acanthovalgus, n. g., near *Valgus*, for *A. marquardi*, n. sp., Borneo ; KRAATZ, p. 444, Deutsche ent. Zeitschr. 1895.

- Amaurina*, n. subg. of *Leucocelis*, q.v.
- Anochilia flavipennis*, n. varr. *nigra*, p. 53, *rufa*, p. 54; KÜNCKEL, Bull. Mus. Paris, i.
- A. flacourti*, *frobervillei*, Madagascar, KÜNCKEL, Bull. Mus. Paris, i, p. 54 ;
A. picipes, Madagascar, KRAATZ, p. 221, Deutsche ent. Zeitschr. 1895 :
 n. spp.
- Anthracopharis*, n. g., p. 139, *Schizorrhinides*, for *A. atra*, n. sp., Queensland, p. 140 ; SCHOCH (1021).
- Anthracophora ceylonensis*, Ceylon, KRAATZ, p. 110, Deutsche ent. Zeitschr. 1895, n. sp.
- Aphonia*, n. g., for part of *Lomaptera* ; SCHOCH (1019) p. 35.
- Aphonia*, Schoch, note on ; HELLER, p. 8, Abh. Mus. Dresden, 1894-95, No. 16.
- Argyrophegges*, n. g., p. 441, *Goliathidarum*, for *A. kolbei*, n. sp., Usambara, p. 442 ; KRAATZ, Deutsche ent. Zeitschr. 1895.
- Atania*, n. g. for *Teniodera anthracina* ; SCHOCH (1019) p. 40.
- Atania egregia*, n. varr. *A. maculata*, *fruhstorferi* ; KRAATZ, p. 288, Deutsche ent. Zeitschr. 1895.
- Cephalocosmus*, n. g., near *Mycteristes*, for *C. moensis*, n. sp., Himalaya, KRAATZ, p. 106, Deutsche ent. Zeitschr. 1895, n. sp.
- Cetonia guillotii*, ♂ ; FAIRMAIRE, p. 173, Ann. Soc. ent. Belgique, 1895.
C. aurata, life-history notes ; XAMBEU, p. 82, Mœurs, vi.
- C. ochroplagiata*, Philippines, HELLER, p. 283, ent, Deutsche ent. Zeitschr. 1895 (cf. *Pœcilophana*, *infra*), n. sp.
- Chilamblys bicolor*, Nossi-bé, KRAATZ, p. 78, Deutsche ent. Zeitschr. 1895, n. sp.
- Clinteria ornaticollis*, Abyssinia, NONFRIED, p. 291, Berlin. ent. Zeitschr. xl ; *C. undulata*, E. India, SCHOCH (1019) p. 62 : n. spp.
- Coptomia ellisi*, p. 54, *oliveri*, p. 55, Madagascar, KÜNCKEL, Bull. Mus. Paris, i, n. spp.
- Coquerelia*, numerous varr. ; KRAATZ, p. 222, Deutsche ent. Zeitschr. 1895.
- Coryphocera blanda*, Kiukiang, JORDAN, p. 266, Ent. Zeit. Stettin, lvi, n. sp.
- Cotinorrhina*, n. g. for *columbica*, Burm. ; SCHOCH (1019), p. 26.
- Cymophorus limbatus*, Gallaland, GESTRO, p. 340, Ann. Mus. Genova, xxxv, n. sp.
- Cyrtothyrea*, n. subg. of *Leucocelis*, q.v.
- Diplognatha gagates*, var. *bipunctata*, note ; KRAATZ, p. 320, Deutsche ent. Zeitschr. 1895.
- Eccoptocnemis seminigra*, note ; KRAATZ, p. 443, Deutsche ent. Zeitschr. 1895.
- Elaphinis vermiculata*, Abyssinia, p. 381, *carinicollis*, p. 382, Caffraria, *multiguttata*, Central Africa, p. 383, KRAATZ, Deutsche ent. Zeitschr. 1895, n. spp.
- Elassochiton*, n. subg. of *Mausoleopsis*, for *M. albomarginata*, Lansb., &c. ; KOLBE, p. 287, Ent. Zeit. Stettin, lvi.

- Erythroderma*, n. subg. of *Leucocelis*, for *rubra*, G. & P.; KOLBE, p. 285, Ent. Zeit. Stettin, lvi.
- Genyodonta jansonii*, Gallaland, GESTRO, pp. 337 & 338, cuts, Ann. Mus. Genova, xxxv, n. sp.
- Glycyphana distigma*, Borneo, KRAATZ, p. 376, Deutsche ent. Zeitschr. 1895, n. sp.
- Glyptotheca whiteheadi*, ♀; KRAATZ, p. 370, Deutsche ent. Zeitschr. 1895.
- Gnathocera trivittata* var., *afzelii* var., noticed; KRAATZ, p. 320, Deutsche ent. Zeitschr. 1895.
- Gnorimus cupreus*, Sultanabad, KRAATZ, p. 415, Deutsche ent. Zeitschr. 1895, ? n. sp.
- Goliathus giganteus*, n. varr. *nigripes*, *apicalis*; KRAATZ, p. 440, Deutsche ent. Zeitschr. 1895.
- G. intermedius*, Camerouns, KRAATZ, p. 438, cuts, Deutsche ent. Zeitschr. 1895, n. sp. ?
- Grammopyga*, n. subg. of *Leucocelis*, q.v.
- Hegemus pagesi*, Adowa, NONFRIED, p. 290, Berlin. ent. Zeitschr. xl, n. sp.
- Heterorrhina schadenbergi*, Philippines, HELLER, p. 281, cuts, Deutsche ent. Zeitschr. 1895, n. sp.
- Hologymnia*, n. g. for *Gymnetis pyrthonota*, Burm.; SCHUCH (1019), p. 28: but is only *Desicasta*, Th.; SCHUCH (1020), p. 68.
- Homalothyrea*, n. g. for *Leucocelis franki*, Jans.; KOLBE, p. 288, Ent. Zeit. Stettin, lvi.
- Homothyrea*, n. g. for *Leucocelis thoracica*, *heleneæ*; KOLBE, p. 287, Ent. Zeit. Stettin, lvi.
- Hybothorax*, n. g. for *Epistalagma cornuta*, Kr.; KRAATZ, p. 80, Deutsche ent. Zeitschr. 1895.
- Ischiopsopha*, table of characters of species, p. 7; *I. lucivorax*, n. var. *rufopilosa*, p. 6; HELLER, Abh. Mus. Dresden, 1894-95, No. 16.
- I. hyla*, fig. 5, *macfarlanei*, p. 6, New Guinea; HELLER, Abh. Mus. Dresden, 1894-95, No. 16; *I. tibialis*, Solomon Is., p. 372, *similis*, Admiralty Is., p. 373, KRAATZ, Deutsche ent. Zeitschr. 1895; *I. bourkei*, Queensland, BLACKBURN, p. 44, Tr. R. Soc. S. Austral. xix: n. spp.
- Leucocelis*, divided into subgenera *Grammopyga*, with n. sp., *Erythroderma*, for *L. rubra*; *Amaurina* for *spoliata*, *lunata*, *cognata*, *polysticta*, *annulipes*, *Cyrtothyrea*, with n. sp.; KOLBE, Ent. Zeit. Stettin, lvi, pp. 284-286. *L. aeneicollis*, n. varr. *minor*, *nigroaenea*; KOLBE, p. 293, t. c.
- L. albosparsa*, Transvaal, SCHUCH (1021), p. 110 [? n. sp.]; *L. (Grammopyga) cincta*, Central Africa, p. 285, *L. (Cyrtothyrea) brevis*, Transvaal, p. 286, KOLBE, Ent. Zeit. Stettin, lvi; *L. plebeia*, *albostricta*, p. 290, with varr. *atrocaerulea*, *elegans*, p. 291, *niansana*, Tropical Africa, *discolor*, Transvaal, p. 292, KOLBE, Ent. Zeit. Stettin, lvi; *L. nickerti*, S. Zambesi, KRAATZ, p. 362, Deutsche ent. Zeitschr. 1895: n. spp.

- Lomaptera batchiana*, n. var. *cuprascens*, *L. papua* = (*amberbakiana*, Th., *chloris*, Gestro, *virens*, Blanch.), p. 375, *L. validipes*, n. var. *viridula*, p. 376; KRAATZ, Deutsche ent. Zeitschr. 1895.
- L. pallidipes*, Waigiou, KRAATZ, p. 374, Deutsche ent. Zeitschr. 1895; *L. analoga*, *limbata*, New Guinea, HELLER, p. 9, Abh. Mus. Dresden, 1894-95, No. 16; *L. sumatrana*, Sumatra, p. 291, *schochi*, Moluccas, p. 292, NONFRIED, Berlin. ent. Zeitschr. xl : n. spp.
- Lonchothyrea*, n. g. for *Tephrea mozambica*, Bert.; KOLBE, p. 289, Ent. Zeit. Stettin, lvi.
- Lophophora*, n. g. near *Chilambys*, for *L. fasciculata*, *rufipes*, n. spp., Madagascar; KRAATZ, p. 220, Deutsche ent. Zeitschr. 1895.
- Macronota prænobilis*, Celebes, KRAATZ, p. 378, Deutsche ent. Zeitschr. 1895, n. sp.
- Megalorrhina harrisi*, n. var. *peregrina*; KOLBE, p. 274, Ent. Zeit. Stettin, lvi.
- Melanosa aterrima*, W. China, NONFRIED, p. 293, Berlin. ent. Zeitschr. xl, n. sp.
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BUPRESTIDÆ.

- [*Cf.* ABEILLE (1, 2, 3, 6), BLACKBURN (114), FAIRMAIRE (346, 355), GAHAN (414), GESTRO (425), JORDAN (565), KERREMANS (588-590), LEA (683), NONFRIED (808), PIC (875, 881), REITTER (927, 930, 932), SEMENOW (1045, 1046), THÉRY (1126, 1127, 1128).]
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- Chrysodema oschimana*, Japan, NONFRIED, p. 297, Berlin. ent. Zeitschr. 1895; *C. fuscitarsis*, Mindanao, p. 194, *andamana*, Andaman Is., p. 195, *fairmairei*, Philippines, p. 196, *sumatrensis*, Sumatra, *granulosa*, Philippines, p. 197, *fulgida*, Halmahera, p. 198, *cuprea*, Sulu Is., p. 199, KERREMANS, Ann. Soc. ent. Belgique, 1895: n. spp.
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- Dicerca validiuscula*, Transcaucasus, SEMENOW, p. 319, Horæ Soc. ent. Ross. xxix, n. sp.
- Endelus quadraticollis*, Sumatra, KERREMANS, p. 534, Ann. Mus. Genova, xxxiv, n. sp.
- Eurythyrea oxiana*, p. 254, W. Turkestan, *era*, E. Siberia, p. 256, SEMENOW, Horæ Soc. ent. Ross. xxix, n. spp.
- Iridotania ocularis*, Andaman Is., p. 192, *javana*, Java, *palawana*, Palawan, p. 193, KERREMANS, Ann. Soc. ent. Belgique, 1895; *I. soror*, Sumatra, KERREMANS, p. 526, Ann. Mus. Genova, xxxiv: n. spp.
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- Melobasis iridescens*, p. 332, *splendida*, p. 333, larvæ; FROGGATT, P. Linn. Soc. N. S. Wales, x.
- Philanthaxia cupricauda*, Philippines, *clara*, Cochin China, KERREMANS, p. 212, Ann. Soc. ent. Belgique, 1895, n. spp.
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- Trachelobrachys elegans*, Tonkin, *pictipennis*, Kiangsi, FAIRMAIRE, p. 175, Ann. Soc. ent. Belgique, 1895, n. spp.
- Trachys cavata*, Syria, ABEILLE, p. xxiii, Bull. Soc. ent. France, 1895; *T. bactriana*, E. Bukhara, SEMENOW, p. 351, Horæ Soc. ent. Ross.

xxix ; *T. somala*, Africa, GESTRO, p. 349, Ann. Mus. Genova, xxxv ;
T. ealis, accepta, p. 535, *ambrosa*, p. 536, *confinis, pusilla*, p. 537,
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 Sumatra, KERREMANS, Ann. Mus. Genova, xxxiv ; *T. socialis*,
 N. S. W., LEA, p. 592, P. Linn. Soc. N. S. Wales, ix : n. spp.

THROSCIDÆ, MONOMMIDÆ.

[*Cf.* FLEUTIAUX (376, 377).]

Supplement to Fleutiaux's supplement to Catalogue of *Monommidæ* ;
 CHAMPION, Ann. Soc. ent. Belgique, xxxix, pp. 6 & 7.

Aulonothroscus brasiliensis, grouvellei, confusus, Brazil, p. 158, *sumatrensis,*
striatus, Sumatra, *mexicanus*, Mexico, p. 159, *incertus, minutissimus,*
rufus, p. 160, Sumatra, FLEUTIAUX, Ann. Soc. ent. Belgique, 1895 :
 n. spp.

Drapetes minimus, p. 160, *angustus*, p. 161, Brazil, FLEUTIAUX, Ann. Soc.
 ent. Belgique, 1895, n. spp.

Paradrappetes, n. g. for *P. villosus*, n. sp., Bolivia, and *D. angustus*,
 Fleut. ; FLEUTIAUX, p. cccxc, Bull. Soc. ent. France, 1895.

Trixaqus dermestoides, copulation ; VERHOEFF, p. 263, Ent. Nachr. xxi.

EUCNEMIDÆ.

[*Cf.* BLACKBURN (115), FLEUTIAUX (377), LEA (683).]

Adelothyreus vicinus, Brazil, FLEUTIAUX, p. 167, Ann. Soc. ent. Belgique,
 1895, n. sp.

Dromæolus nicotiana, Sumatra, p. 162, *carinifrons*, Brazil, *grouvellei*,
 p. 163, Sumatra, FLEUTIAUX, Ann. Soc. ent. Belgique, 1895 ; *D.*
nigricollis, p. 593, *thoracicus*, p. 595, N. S. W., LEA, P. Linn. Soc.
 N. S. Wales, ix : n. spp.

Dyscolocerus basalis, N. S. W., LEA, p. 596, P. Linn. Soc. N. S. Wales,
 ix, n. sp.

Fornax tabaci, angustus, Sumatra, FLEUTIAUX, p. 164, Ann. Soc. ent.
 Belgique, 1895 ; *F. coloratus*, Queensland, BLACKBURN, p. 219, Tr.
 R. Soc. S. Austral. xix : n. spp.

Lycæon: Hemiopsida mastersi referred to this ; LEA, p. 230, P. Linn. Soc.
 N. S. Wales, x.

L. ? concolor, N. S. W., LEA, P. Linn. Soc. N. S. Wales, ix, p. 595, n. sp.
Microrhagus parvulus, Brazil, p. 165, *horni*, Mexico, *velutinus*, Sumatra,
 p. 166, FLEUTIAUX, Ann. Soc. ent. Belgique, 1895, n. spp.

ELATERIDÆ.

[*Cf.* BLACKBURN (114), BROUN (149), BUYSSON (172), CANDÈZE (179-182),
 CHAMPION (441), FLEUTIAUX (374, 377), LEWIS (698), REITTER
 (933, 938, 950), SCHWARZ (1030, 1031), SEMENOW (1045), WATER-
 HOUSE (1199).]

Elaterids attacked by *Cordyceps* in Trinidad ; GIARD, p. clxxxi, Bull.
 Soc. ent. France, 1895.

- Mode of attracting *Pyrophorus*; SIMON, p. clxxxiii, Bull. Soc. ent. France, 1895.
- Achrestus fulvovittatus*, pl. xv, fig. 2, *venustus*, fig. 4, Nicaragua, CHAMPION, p. 340, Biol. Centr.-Amer. Col. iii, pt. 1, n. spp.
- Alelocera foveata*, Madagascar, CANDÈZE, p. 52, Ann. Soc. ent. Belgique, 1895; *A. tessellata*, Borneo and Philippines, *javana*, Java, CANDÈZE, p. 6, Elat. nouv. v : n. spp.
- Eolus facetus*, pl. xvi, fig. 1, *obliquus*, fig. 5, *pulchellus*, fig. 6, *melliculus*, fig. 9, variation, p. 366, *circumscripatus*, fig. 12, *trilineatus*, fig. 13, *rodriguezii*, fig. 25, *pictus*, fig. 15, *vittatus*, figg. 16 & 17, *cruciger*, fig. 18, figured; Biol. Centr.-Amer. Col. iii, pt. 1.
- Æ.* (*Pseudæolus*) *madagascariensis*, Antananarivo, *dubius*, p. 27, *diminutivus*, Bolivar, *laureatus*, *inquietus*, Brazil, p. 28, *gavisus*, Venezuela, *minutissimus*, *amasius*, p. 29, *minimus*, *fleutiauxi*, Brazil, p. 30, CANDÈZE, Elat. nouv. v; *Æ. bimucronatus*, pl. xv, fig. 23, p. 360, *hexastigma*, fig. 27, p. 361, *trimaculatus*, pl. xvi, fig. 2, *testudineus*, fig. 3, p. 362, *tripartitus*, fig. 4, *fumatus*, p. 363, *hæmorrhoidalis*, p. 364, *marginatus*, fig. 7, p. 365, *panamensis*, fig. 8, p. 366, *tropicalis*, figg. 10 & 11, p. 367, *yucatanus*, fig. 14, p. 369, *rugipennis*, fig. 19, *atriceps*, fig. 20, p. 371, *vermiculatus*, fig. 21, p. 372, *nigritulus*, fig. 22, *discoideus*, fig. 23, p. 373, *ovipennis*, fig. 24, p. 374, Central America, CHAMPION, Biol. Centr.-Amer. Col. iii, pt. 1; *Æ. grouvellei*, Brazil, FLEUTIAUX, p. 168, Ann. Soc. ent. Belgique, 1895 : n. spp.
- Agonischius florentinii*, with varr. *fusciventris*, *obscuricollis*, p. 688, *cribratus*, p. 689, Tonkin, FLEUTIAUX, Ann. Soc. ent. France, lxiii; *A. stolatus*, *melanurus*, Sumatra, CANDÈZE, p. 499, Ann. Mus. Genova, xxxiv; *A. sternalis*, Java, p. 61, *distinctus*, Borneo, *metallicus*, *monticola*, p. 62, *longus*, *atkinsoni*, p. 63, Darjeeling, *tenuivittis*, Bengal, *exceptus*, Java, p. 64, CANDÈZE, Elat. nouv. v : n. spp.
- Agræus schönfeldti*, Borneo, *catulus*, Java, CANDÈZE, p. 11, Elat. nouv. v, n. spp.
- Agriotes picipennis*, metamorphoses; XAMBEU, Mœurs, vi, p. 46.
- A. ciocolatinus*, Mexico, CANDÈZE, p. 61, Elat. nouv. v, n. sp.
- Agrypnella*, n. g. for *A. eburnea*, n. sp., Santarem, and *Cryptohypnus squamifer*, Cand.; CHAMPION, p. 414, Biol. Centr.-Amer. Col. iii, pt. 1.
- Agrypnus antennatus*, Cape, CANDÈZE, Elat. nouv. v, p. 5, n. sp.
- Alaus strix*, Java, CANDÈZE, p. 15, Elat. nouv. v, n. sp.
- Anchastomorphus*, n. g., for a part of *Anchastus*, p. 399, the following being figured, *phedrus*, pl. xviii, fig. 2, *apicalis*, fig. 3, *suturalis*, fig. 4; the following n. sp., *quadriguttatus*, Guatemala, p. 401, pl. xviii, fig. 6; CHAMPION, Biol. Centr.-Amer. Col. iii, pt. 1.
- Anchastus* (sub *Monelasmus*) *augusti*, pl. xvii, fig. 18, *moratus*, fig. 27, figured; Biol. Centr.-Amer. Col. iii, pt. 1.
- Anchastus brevicollis*, Madagascar, CANDÈZE, p. 64, Ann. Soc. ent. Belgique, 1895; *A. sanguineus*, pl. xvii, fig. 14, *ruficollis*, fig. 15, p. 391, *discoi-*

- deus*, fig. 16, *circumcinctus*, fig. 17, p. 392, *diversus*, fig. 19, p. 393, *melanurus*, fig. 20, *seminiger*, fig. 21, p. 394, *maculicollis*, fig. 22, *bilineatus*, fig. 23, p. 395, *flavovittatus*, figg. 24–26, p. 396, *flavomaculatus*, fig. 28, p. 397, *forticornis*, *lateritius*, p. 398, *tenuistriatus*, p. 399, pl. xviii, fig. 1, Central America, CHAMPION, Biol. Centr.-Amer. Col. iii, pt. 1; *A. crux-nigra*, *longipennis*, *grouvellei*, p. 170, *difficilis*, p. 171, Brazil, FLEUTIAUX, Ann. Soc. ent. Belgique, 1895; *A. rufipennis*, Java, p. 40, *ornatus*, Venezuela, *seminalis*, p. 41, *pygmæus*, Brazil, *posticus*, Paraguay, *benignus*, Bolivia, p. 42, *austerus*, Tijuca, p. 43, CANDÈZE, Elat. nouv. v : n. spp.
- Anilicoides*, n. g., *Crepidomenites*, for *A. depressus*, n. sp., Australia; CANDÈZE, p. 52, Elat. nouv. v.
- Anoplischiopsis*, n. g., including *Ischiodontus crocicollis*, Cand., and the following n. spp. from Central America: *A. basimaculatus*, p. 301, pl. xiii, fig. 16, *bivittatus*, fig. 17, *flavovittatus*, fig. 18, p. 302, *fuscipennis*, *lineatocollis*, pl. xiv, fig. 2, p. 303, *luteus*, p. 304; CHAMPION, Biol. Centr.-Amer. Col. iii, pt. 1.
- Anoplischius* (sub *Heterocrepidius*) *glis*, Cand. = (*A. catulus*, Cand.); CHAMPION, p. 306, Biol. Centr.-Amer. Col. iii, pt. 1.
- A. piliger*, pl. xiii, fig. 19, *parvulus*, p. 306, *teapensis*, p. 307, *chalcopterus*, fig. 23, *semianeus*, p. 308, *sobrinus*, *mexicanus*, pl. xiii, fig. 20, p. 309, *variabilis*, *furvus*, p. 310, *lucidus*, pl. xiv, fig. 5, *maculicollis*, fig. 3, p. 311, *divisus*, pl. xiii, fig. 21, *elegans*, fig. 25, p. 312, *lineatus*, fig. 24, *flavicollis*, pl. xiv, fig. 4, p. 313, *sanguinicollis*, pl. xiii, fig. 22, p. 314, *foveifrons*, pl. xiv, fig. 6, *pallidus*, p. 315, Central America, CHAMPION, Biol. Centr.-Amer. Col. iii, pt. 1, n. spp.
- Aphanobius badius*, Java, CANDÈZE, p. 58, Elat. nouv. v; *A. permacer*, Sumatra, CANDÈZE, p. 499, Ann. Mus. Genova, xxxiv : n. spp.
- Aphileus ferox*, Queensland, BLACKBURN, p. 50, Tr. R. Soc. S. Austral. xix, n. sp.
- Aptopus pruinosis*, pl. xix, fig. 1, *lateralis* (varr. = *basalis*, *spadiceus*, *coucolor*, Er.), pl. xviii, figg. 23–27, notices, p. 422, *campylinus*, pl. xix, fig. 11, figured; CHAMPION, Biol. Centr.-Amer. Col. iii, pt. 1.
- A. collaris*, pl. xix, fig. 5, p. 419, *longipennis*, *longicollis*, *rufomarginatus*, fig. 6, p. 420, *chiriquensis*, *vicinus*, fig. 8, p. 421, *erichsoni*, fig. 9, p. 423, *uniformis*, *constrictus*, p. 424, *fuscipes*, *omillemanus*, p. 425, Central America, CHAMPION, Biol. Centr.-Amer. iii, pt. 1, n. spp.
- Arachnodima*, n. g., p. 54, *Dimites*, for *A. opaca*, n. sp., p. 55, Australia; CANDÈZE, Elat. nouv. v.
- Arraphes biguttatus*, Perak, CANDÈZE, p. 44, Elat. nouv. v; *A. americanus*, Mexico, &c., CHAMPION, p. 413, pl. xviii, fig. 22, Biol. Centr.-Amer. Col. iii, pt. 1 : n. spp.
- Aeëbis*, n. g., near *Heterocrepidius*, p. 487, for *A. modiglianii*, n. sp., p. 488, Sumatra; CANDÈZE, Ann. Mus. Genova, xxxiv.
- Athous culosirus*, Greece, REITTER, p. 201, Wien. ent. Zeit. 1895; *A. cotesi*, Hindostan, CANDÈZE, p. 49, Elat. nouv. v; *A. prænobilis*, Japan, LEWIS, p. 407, Ann. Nat. Hist. xvi : n. spp.

- Atractodes illinitus*, Merida, CANDÈZE, p. 23, *Elat. nouv. v*, n. sp.
- Atractosomus mucronatus*, *fusiformis*, pl. xiii, fig. 14, p. 299, *cribricollis*, *curticollis*, fig. 15, p. 300, Central America, CHAMPION, *Biol. Centr.-Amer. Col. iii*, pt. 1, n. spp.
- Caldeonius*, n. g., p. 67, *Ludiites*, for *C. suturalis*, n. sp., Madagascar, p. 68; CANDÈZE, *Ann. Soc. ent. Belgique*, 1895.
- Cardiophorus lethierryi* = (*henoni*), *vevillarius*, *adjutor*, *pauper*, characters, *incanus* = (*versicolor*, Muls.), *equiseti* = (*agnatus*, Cand.), *rubripes*, variation; SCHWARZ, p. 37, *Deutsche ent. Zeitschr.* 1895. *C. aptopoides*, pl. xix, fig. 2, *brevis* = (*devector*, Cand.), fig. 3, *vulneratus* (Horn, nec Cand.), fig. 4, figured, variation described, pp. 416 & 417; CHAMPION, *Biol. Centr.-Amer. Col. iii*, pt. 1.
- C. nubilosus*, Caucasus, SCHWARZ, p. 37, *Deutsche ent. Zeitschr.* 1895; *C. undans*, *temperatus*, *apicalis*, p. 65, *decretus*, p. 66, Madagascar, CANDÈZE, *Ann. Soc. ent. Belgique*, 1895; *C. ferrugatipes*, Darjeeling, *tenggerensis*, Java, p. 45, *paleatus*, Cochin China, *bombycinus*, Darjeeling, p. 46, *devector*, Chihuahua, p. 47, CANDÈZE, *Elat. nouv. v*; *C. florentini*, Tonkin, FLEUTIAUX, p. 687, *Ann. Soc. ent. France*, lxiii; *C. mexicanus*, Jalapa, CHAMPION, p. 418, *Biol. Centr.-Amer. Col. iii*, pt. 1 : n. spp.
- Cardiorhinus bellus*, Bolivia, CANDÈZE, p. 55, *Elat. nouv. v*, n. sp.
- Cardiotarsus plebeius*, Madagascar, CANDÈZE, p. 66, *Ann. Soc. ent. Belgique*, 1895, n. sp.
- Chalcolepidius monachus*, Chihuahua, CANDÈZE, p. 16, *Elat. nouv. v*, n. sp.
- Cosmesus flavipes*, Corrientes, *bizonatus*, *vulneratus*, p. 59, *retrotactus*, Brazil, *tricolor*, La Plata, *mitigatus*, *tetraspilotus*, Bolivia, p. 60, CANDÈZE, *Elat. nouv. v*, n. spp.
- Crepidomenus encolus*, Victoria, CANDÈZE, p. 51, *Elat. nouv. v*, n. sp.
- Crepidius emarginatus*, figured, pl. xiv, fig. 1, *Biol. Centr.-Amer. Col. iii*, pt. 1.
- Cryptohypnus* and *Hypnoidus*, distinctions; CHAMPION, p. 93, *Ent. Mag.* 1895. *C. ovalis*, note on; CANDÈZE, p. 493, *Ann. Mus. Genova*, xxxiv.
- C. albitactus*, Madagascar, CANDÈZE, p. 64, *Ann. Soc. ent. Belgique*, 1895; *C. bellulus*, Sumatra, CANDÈZE, p. 494, *Ann. Mus. Genova*, xxxiv; *C. mexicanus*, Mexico, FLEUTIAUX, p. 171, *Ann. Soc. ent. Belgique*, 1895 : n. spp.
- Dayakus*, n. g., near *Ischiodontus* for *D. angularis*, n. sp., Borneo, CANDÈZE, p. 22, *Elat. nouv. v*.
- Deromecus trivittatus*, Mexico, CHAMPION, p. 405, pl. xviii, fig. 12, *Biol. Centr.-Amer. Col. iii*, pt. 1, n. sp.
- Diadochus*, n. g., p. cdvi, near *Estodes*, for *D. antiqui*, n. sp., Barcelona, p. cdvii; H. DU BUYSSON, *Bull. Soc. ent. France*, 1895.
- Dicronychus plumosus*, Somaliland, CANDÈZE, p. 21, *Elat. nouv. v*, n. sp.
- Dilobitarsus ramusculus*, p. 47, *mirificus*, *sobrinus*, p. 48, Togo, CANDÈZE, *Deutsche ent. Zeitschr.* 1895; *D. alluaudi*, p. 52, *vicinus*, *signifer*, p. 53, Madagascar, CANDÈZE, *Ann. Soc. ent. Belgique*, 1895 : n. spp.

- Diploconus superbus*, Tonkin, FLEUTIAUX, p. 687, Ann. Soc. ent. France, lxiii; *D. partitus*, *pellucidus*, p. 494, *parvicollis*, p. 496, Sumatra, CANDÈZE, Ann. Mus. Genova, xxxiv; *D. seminiger*, Siam, p. 47, *cantharus*, Philippines, p. 48, CANDÈZE, Elat. nouv. v: n. spp.
- Diplophaenicus*, n. g., p. 68, *Plastocerites*, for *D. alluaudi*, n. sp., Madagascar, p. 69, CANDÈZE, Ann. Soc. ent. Belgique, 1895.
- Dorygonus pumilus*, p. 24, *brunneus*, p. 25, Madagascar, CANDÈZE, Elat. nouv. v, n. spp.
- Drasterius stigmaticus*, Yemen, CANDÈZE, p. 33, Elat. nouv. v; *D. minus*, Madagascar, CANDÈZE, p. 61, Ann. Soc. ent. Belgique, 1895; *D. variabilis*, Sumatra, FLEUTIAUX, p. 169, t. c.; *D. meridionalis*, pl. xvi, fig. 26, p. 375, *flavipes*, p. 376, Mexico, CHAMPION, Biol. Centr.-Amer. Col. iii, pt. 1: n. spp.
- Elastrus rubricatus*, Madagascar, CANDÈZE, p. 61, Ann. Soc. ent. Belgique, 1895, n. sp.
- Elater sanguineus*, var. = (*rubidus*, Cand.); H. DU BUYSSON, p. cdvii, Bull. Soc. ent. France, 1895. *E. arctus*, figured, pl. xvii, fig. 1, Biol. Centr.-Amer. Col. iii, pt. 1.
- E. auripes*, Silesia, REITTER, p. 200, Wien. ent. Zeit. 1895; *E. monachus*, p. 61, *ofella*, *ambraensis*, *murinus*, *senilis*, p. 62, Madagascar, CANDÈZE, Ann. Soc. ent. Belgique, 1895; *E. gaganinus*, p. 33, Amurland, *insularis*, *holosericeus*, Madagascar, *rufivellus*, Borneo, p. 34, CANDÈZE, Elat. nouv. v: n. spp.
- Elius stuppeus*, Siam, CANDÈZE, p. 21, Elat. nouv. v, n. sp.
- Eudactylus grandini*, figure, pl. xv, fig. 1, Biol. Centr.-Amer. Col. iii, pt. 1.
- E. partitus*, Nicaragua, p. 338, pl. xv, fig. 5, *eburatus*, fig. 3, p. 339, Panama, CHAMPION, Biol. Centr.-Amer. Col. iii, pt. 1, n. spp.
- Glyphonyx gestroi*, p. 500, *variatus*, *accedens*, p. 501, Sumatra, CANDÈZE, Ann. Mus. Genova, xxxiv; *G. dugesi*, Mexico, *bicolor*, Japan, p. 66, *inconsultus*, Java, *carinifrons*, Perak, p. 67, CANDÈZE, Elat. nouv. v: n. spp.
- Hemirhipus ferrugineus*, Guatemala, CANDÈZE, p. 15, Elat. nouv. v, n. sp.
- Heterocrepidius insularis*, Sumatra, CANDÈZE, p. 486, Ann. Mus. Genova, xxxiv; *H. megalops*, Costa Rica, CHAMPION, p. 297, pl. xiii, fig. 13, Biol. Centr.-Amer. Col. iii, pt. 1; *H. macconnelli*, Mt. Roraima, WATERHOUSE, p. 496, Ann. Nat. Hist. xv: n. spp.
- Heteroderes senegalensis*, Senegal, *tschoffeni*, Congo, p. 31, *intermedius*, Borneo, *vagus*, Buenos Ayres, p. 32, CANDÈZE, Elat. nouv. v; *H. senex*, Madagascar, CANDÈZE, p. 60, Ann. Soc. ent. Belgique, 1895; *H. proximus*, *drasteroides*, Indo-China, FLEUTIAUX, p. 686, Ann. Soc. ent. France, lxiii; *H. granulatus*, *gibbulus*, pl. xv, fig. 26, Mexico, CHAMPION, Biol. Centr.-Amer. Col. iii, pt. 1: n. spp.
- Horistonotus hæmorrhoidalis*, *dilaticornis*, pl. xix, fig. 12, p. 431, *obliteratus*, p. 432, *truncatus*, fig. 14, *sulcifer*, fig. 15, p. 433, *duplicatus*, *flavipes*, p. 434, *mixtus*, *rotundicollis*, p. 435, *bicinctus*, fig. 16, *nigricornis*, p. 436; *fasciatus*, fig. 17, p. 437, *discoideus*, fig. 18, *apterus*, fig. 19,

- p. 438, *zunilensis*, p. 439, Central America, CHAMPION, Biol. Centr.-Amer. Col. iii, pt. 1 ; *H. brasiliensis*, Brazil, FLEUTIAUX, p. 172, Ann. Soc. ent. Belgique, 1895 : n. spp.
- Hypnoidus*, subg. *Zoroehrus*, characters of palæarctic species ; REITTER, pp. 87-91, Ent. Nachr. xxi. *H. cucullatus*, pl. xviii, fig. 13, *mexicanus*, fig. 20, figured ; CHAMPION, Biol. Centr.-Amer. Col. iii, pt. 1.
- H. quadrinavus*, Lenkorau, p. 87, *equicollis*, Ordubad, p. 88, *ararius*, W. Baikal, p. 89, *pilosellus*, p. 90, *murinus*, *arasicola*, p. 91, Ordubad, REITTER, Ent. Nachr. xxi ; *H. canescens*, p. 409, *guatemalensis*, *teapensis*, pl. xviii, fig. 15, p. 410, *quadriplagiatus*, fig. 17, *tetrapilotus*, fig. 18, p. 411, *quadrisignatus*, fig. 19, p. 412, Central America, CHAMPION, Biol. Centr.-Amer. Col. iii, pt. 1 : n. spp.
- Ischiodontus posticus*, pl. xiv, fig. 8, *anceps*, fig. 11, *cyanopterus*, fig. 13, *erythroderus*, figg. 21 & 22, figured ; CHAMPION, Biol. Centr.-Amer. Col. iii, pt. 1.
- I. carinicornis*, pl. xiv, fig. 7, p. 318, *yucatecus*, p. 319, *elongatus*, p. 320, *angustatus*, fig. 9, *subparallelus*, p. 321, *atricornis*, p. 322, *chiriquensis*, fig. 10, p. 323, *bultatus*, fig. 12, p. 324, *resplendens*, fig. 14, *virens*, p. 327, *metallicus*, fig. 15, p. 328, *denticornis*, fig. 16, *prasinopterus*, fig. 17, p. 329, *æneipennis*, *marginatus*, fig. 18, p. 330, *viridis*, fig. 19, p. 331, *griseipilis*, fig. 20, p. 332, *melas*, fig. 25, *rufiventris*, p. 333, *aterrimus*, p. 334, *brevis*, fig. 23, p. 335, *debilis*, fig. 24, *limbatus*, fig. 26, p. 336, *bifasciatus*, fig. 27, p. 337, Central America, CHAMPION, Biol. Centr.-Amer. Col. iii, pt. 1 ; *I. posticus*, Honduras, p. 22, *serrula*, Bolivia, p. 23, CANDÈZE, Elat. nouv. v : n. spp.
- Lacon procellosus*, p. 54, *planatus*, *castaneipennis*, *biforatus*, p. 55, *sticticus*, *conspurcatus*, *arctior*, *laxatus*, p. 56, *minimus*, p. 57, Madagascar, CANDÈZE, Ann. Soc. ent. Belgique, 1895 ; *L. massiei*, *candezei*, Indo-China, FLEUTIAUX, p. 685, Ann. Soc. ent. France, lxiii ; *L. tabaci*, Sumatra, FLEUTIAUX, p. 167, Ann. Soc. ent. Belgique, 1895 ; *L. quadriguttatus*, Sumatra, CANDÈZE, p. 485, Ann. Mus. Genova, xxxiv ; *L. palliatus*, *argentatus*, p. 7, *hamatus*, *alboscutatus*, p. 8, Madagascar, *cithareus*, Java, *scutellaris*, Japan, Liu-Kiu, *pinguis*, Australia, p. 9, CANDÈZE, Elat. nouv. v ; *L. zietzi*, S. Australia, BLACKBURN, p. 48, Tr. R. Soc. S. Austral. xix : n. spp.
- Limonius koltzei*, E. Siberia, REITTER, p. 256, Wien. ent. Zeit. 1895, n. sp.
- Lomemus puncticollis*, New Zealand, BROWN, p. 234, Ann. Nat. Hist. xv, n. sp.
- Ludius germanus*, Sumatra, CANDÈZE, p. 498, Ann. Mus. Genova, xxxiv ; *L. rufopilosus*, *parallelus*, p. 56, *hirticornis*, Java, *maceratus*, Bengal, p. 57, *rubicundus*, Mexico, *gracilipes*, Brazil, p. 58, CANDÈZE, Elat. nouv. v : n. spp.
- Megapenthes brasiliensis*, pl. xvii, fig. 2, figured ; Biol. Centr.-Amer. Col. iii, pt. 1. *M. bilasus*, description amended ; CANDÈZE, p. 489, Ann. Mus. Genova, xxxiv.

- M. extraneus, distractus, umbilicatus*, p. 63, *apicipennis*, p. 64, Madagascar, CANDÈZE, Ann. Soc. ent. Belgique, 1895 ; *M. preligatus, tractabilis*, p. 490, *squalens*, p. 491, Sumatra, CANDÈZE, Ann. Mus. Genova, xxxiv ; *M. contaminatus, punctulatus*, p. 35, *seniculus, macilentus*, p. 36, *nefastus*, Java, *madidus*, Fiji, p. 37, CANDÈZE, Elat. nouv. v ; *M. furvus*, p. 377, *rubiginus*, p. 378, *cinnamomeus, cincticollis*, pl. xvii, fig. 4, p. 379, *bicarinatus, mexicanus*, p. 380, *sobrius, asperatus*, p. 381, *longitarsis, melanotoides*, pl. xvii, fig. 3, p. 382, *badius*, fig. 5, *conicicollis*, p. 383, *fusiformis*, fig. 6, p. 384, Central America, CHAMPION, Biol. Centr.-Amer. Col. iii, pt. 1 : n. spp.
- Melanotus scribanus*, Philippines, p. 48, *telum*, Darjeeling, p. 49, CANDÈZE, Elat. nouv. v ; *M. massiei*, Laos, FLEUTIAUX, p. 688, Ann. Soc. ent. France, lxiii ; *M. ursulus*, Sumatra, CANDÈZE, p. 497, Ann. Mus. Genova, xxxiv : n. spp.
- Melanoxanthus bistellatus*, Gaboon, p. 37, *imitator*, Madagascar, *hemionus*, Philippines, p. 38, *bicolor*, Perak, *abdominalis*, Australia, p. 39, CANDÈZE, Elat. nouv. v ; *M. elongatus*, Sumatra, FLEUTIAUX, p. 169, Ann. Soc. ent. Belgique, 1895 ; *M. geminus, unipunctatus*, p. 491, *quintus, frictus, cruciellus*, p. 492, *partitus, cinnamomeus*, p. 493, Sumatra, CANDÈZE, Ann. Mus. Genova, xxxiv : n. spp.
- Melantho niger*, Madagascar, CANDÈZE, p. 67, Ann. Soc. ent. Belgique, 1895 ; *M. trisulcatus*, Madagascar, CANDÈZE, p. 50, Elat. nouv. v : n. spp.
- Meristhus squameus*, Congo, *biguttatus*, Perak, *nigritulus*, Sumatra, CANDÈZE, p. 10, Elat. nouv. v, n. spp.
- Monadicus nanus*, Brazil, CANDÈZE, p. 44, Elat. nouv. v, n. sp.
- Monelasmus* : recharacterized and reformed ; CHAMPION, p. 390, Biol. Centr.-Amer. Col. iii, pt. 1.
- Monocrepidius rodriguezii*, pl. xv, fig. 6, *flavangulus*, var. *vittatus*, fig. 7, *lividus*, fig. 8, *parallelus*, fig. 10, *nocturnus*, fig. 12, *exclamationis*, fig. 14, *varians*, fig. 18, *pictus*, figg. 19 & 20, *bellus*, fig. 21, figured ; Biol. Centr.-Amer. Col. iii, pt. 1.
- M. tonkinensis*, Lang-Son, FLEUTIAUX, p. 686, Ann. Soc. ent. France, lxiii ; *M. commodus*, p. 48, *inamœnus*, p. 49, S. Australia, BLACKBURN, Tr. R. Soc. S. Austral. xix ; *M. differens*, Brazil, FLEUTIAUX, p. 168, Ann. Soc. ent. Belgique, 1895 ; *M. propinquus, modestissimus*, Bolivia, *insulsus*, Argentine Rep., CANDÈZE, p. 26, Elat. nouv. v ; *M. pruinosus*, p. 344, *rubidus*, p. 345, pl. xv, figg. 9 & 9a, *annulicornis*, p. 346, *angusticollis*, p. 347, fig. 11, *notatus*, p. 348, fig. 13, *belti*, fig. 16, *rugicollis*, p. 349, *inconstans*, fig. 15, p. 351, *bipustulatus*, fig. 17, p. 352, *mexicanus*, fig. 22, *sempustulatus*, fig. 24, p. 355, *parvulus*, fig. 25, p. 356, Central America, CHAMPION, Biol. Centr.-Amer. Col. iii, pt. 1 : n. spp.
- Morostoma testaceipenne*, Madagascar, CANDÈZE, Elat. nouv. v, n. sp.
- Nomopleus insularis*, Madagascar, CANDÈZE, p. 70, Elat. nouv. v, n. sp.
- Ophidius macleay (sic)*, Australia, CANDÈZE, p. 51, Elat. nouv. v, n. sp.
- Otocryptus radula*, Sumatra, CANDÈZE, p. 14, Elat. nouv. v, n. sp.

- Paracardiophorus*, n. g. for *Card. musculus*, Er., and others; SCHWARZ, p. 40, Deutsche ent. Zeitschr. 1895.
- Paranius*, n. g., near *Psiloniscus*, for *P. mexicanus*, n. sp., Durango, pl. xviii, fig. 11; CHAMPION, Biol. Centr.-Amer. Col. iii, pt. 1.
- Penia fruhstorferi*, Java, p. 53, *opatroides*, Darjeeling, p. 54, CANDÈZE, Elat. nouv. v, n. spp.
- Phedomenus sikoraë*, Madagascar, CANDÈZE, p. 25, Elat. nouv. v; *P. flavangulus*, p. 59, *scitus*, p. 60, Madagascar, CANDÈZE, Ann. Soc. ent. Belgique, 1895 : n. spp.
- Physorhinus distigma*, varr. = (*cephalicus*, *sericeus*, Cand.), p. 386, figured, pl. xvii, figg. 7 & 8, *stellatus*, fig. 13; CHAMPION, Biol. Centr.-Amer. Col. iii, pt. 1. *P. fuscus*, n. n. for *Anchastus frontalis*, Horn; HORN, p. 385, Biol. Centr.-Amer. Col. iii, pt. 1.
- P. quadrinotatus*, p. 387, pl. xvii, fig. 10, *cruciatus*, fig. 11, p. 388, *longicornis*, fig. 12, p. 389, Central America, CHAMPION, Biol. Centr.-Amer. Col. iii, pt. 1; *P. boliviensis*, Bolivia, CANDÈZE, p. 40, Elat. nouv. v : n. spp.
- Pleonomus tschitscherini*, W. Turkestan, SEMENOW, p. 137, Horæ Soc. ent. Ross. xxix, n. sp.
- Pomachilius spinifer*, pl. xviii, fig. 16, *mucronatus*, Panama, CHAMPION, p. 406, Biol. Centr.-Amer. Col. iii, pt. 1; *P. latus*, Brazil, FLEUTIAUX, p. 171, Ann. Soc. ent. Belgique, 1895; *P. vagus*, Venezuela, *minor*, Bolivia, CANDÈZE, p. 43, Elat. nouv. v : n. spp.
- Psephus viridipennis*, p. 18, *incultus*, *confusus*, p. 19, Gaboon, *unicolor*, Somaliland, *javanus*, Java, p. 20, CANDÈZE, Elat. nouv. v, n. spp.
- Psiloniscus sticticus*, pl. xviii, fig. 7, *apicalis*, fig. 9, *brunneus*, fig. 10, figured; CHAMPION, Biol. Centr.-Amer. Col. iii, pt. 1.
- P. costaricensis*, Irazu, CHAMPION, Biol. Centr.-Amer. Col. iii, pt. 1, p. 402, pl. xviii, fig. 8, n. sp.
- Pyrophorus mutatus*, Rio, CANDÈZE, p. 50, Elat. nouv. v, n. sp.
- Sericus henoni*, Constantine, CANDÈZE, p. 65, Elat. nouv. v, n. sp.
- Silesis tonkinensis*, *florentini*, Tonkin, FLEUTIAUX, p. 690, Ann. Soc. ent. France, lxiii; *S. anthrax*, Sumatra, CANDÈZE, p. 502, Ann. Mus. Genova, xxxiv; *S. atripennis*, Borneo, p. 67, *crocatus*, Japan, *granarius*, *griseus*, Darjeeling, p. 68, *procaæ*, Java, p. 69, CANDÈZE, Elat. nouv. v : n. spp.
- Simodactylus tasmani*, Fiji Is., CANDÈZE, p. 24, Elat. nouv. v, n. sp.
- Smilicerus belti*, figured, pl. xviii, fig. 14, Biol. Centr.-Amer. Col. iii, pt. 1.
- Spheniscosomus* = (*Melanotopsis*, Lew.); CANDÈZE, p. 497, Ann. Mus. Genova, xxxiv.
- S. flavipennis*, Sumatra, CANDÈZE, p. 496, Ann. Mus. Genova, xxxiv, n. sp.
- Tetralobus curticolis*, Transvaal, *dabbenci*, Albert Nyanza, p. 17, *pumilus*, Queensland, p. 18, CANDÈZE, Elat. nouv. v, n. spp.
- Tilolarsus furinosus*, morosus, Togo, CANDÈZE, p. 48, Deutsche ent. Zeitschr. 1895; *T. insulsus*, Madagascar, CANDÈZE, p. 57, Ann. Soc. ent. Belgique, 1895; *T. spissicollis*, p. 12, *hexagonus*, *rusticus*, p. 13, Madagascar, CANDÈZE, Elat. nouv. v : n. spp.

Triplonychus carinatus, pl. xix, fig. 7, p. 426, *trivittatus*, fig. 10, *parvulus*, fig. 13, p. 427, Central America, CHAMPION, Biol. Centr.-Amer. Col. iii, pt. 1, n. spp.

Zeaglophus, n. g., near *Chrosis*, p. 234, for *Z. pilicornis*, n. sp., New Zealand, p. 235; BROUN, Ann. Nat. Hist. xv.

RHIPICERIDÆ.

Callirhipis pascoei, Penang, WATERHOUSE, p. 159, Ann. Nat. Hist. xvi, n. sp.

Horatocera, n. g., p. 35, for *H. niponica*, n. sp., Japan, p. 36; LEWIS, Ann. Nat. Hist. xvi.

DASCILLIDÆ.

[*Cf.* BROUN (149), FAIRMAIRE (348), HORN (512), LEA (683, 684), LEWIS (697).]

Cinnabarium, n. g. for *C. seminigrum*, n. sp., Birma; FAIRMAIRE, p. ccvi, Bull. Soc. ent. France, 1895.

Cyphon mckerrowi, New Zealand, BROUN, p. 237, Ann. Nat. Hist. xv, n. sp.

Cyprobius terrenus, New Zealand, BROUN, p. 236, Ann. Nat. Hist. xv, n. sp.

Drupeus, n. g., near *Epilichas*, for *D. lætabilis*, p. 102, *vittipennis*, *brevis*, p. 103, n. spp., Japan; LEWIS, Ann. Nat. Hist. xvi.

Epilichas brunneicornis, p. 100, *atricolor*, *niponicus*, p. 101, Japan, LEWIS, Ann. Nat. Hist. xvi, n. spp.

Eubrianax = (*Placonycha*); LEWIS, p. 104, Ann. Nat. Hist. xvi.

E. granicollis, pl. vi, fig. 2, *pellucidus*, Japan, LEWIS, p. 104, Ann. Nat. Hist. xvi, n. spp.

Helodes flavicollis = (*Sacodes protectus*, Har.); LEWIS, p. 106, Ann. Nat. Hist. xvi.

H. dux, p. 106, *inornatus*, *scapularis*, p. 107, Japan, LEWIS, Ann. Nat. Hist. xvi; *H. scalaris*, N. S. W., LEA, p. 230, P. Linn. Soc. N. S. Wales: n. spp.

Paralichas = (*Eucteis*); LEWIS, p. 99, Ann. Nat. Hist. xvi.

Prionocyphon sexmaculatus, Japan, LEWIS, p. 105, Ann. Nat. Hist. xvi, n. sp.

Ptilodactyla ramea, Japan, LEWIS, Ann. Nat. Hist. xvi, p. 107, n. sp.

Scirtes ovatulus, *sobrinus*, Japan, LEWIS, p. 105, Ann. Nat. Hist. xvi; *S. humeralis*, Lower California, HORN, p. 240, P. Calif. Ac. v: n. spp.

Sclerocyphon striatus, p. 597, *serratus*, p. 598, *basicollis*, p. 599, N. S. W., LEA, P. Linn. Soc. N. S. W. ix, n. spp.

Veronatus amplus, New Zealand, BROUN, p. 237, Ann. Nat. Hist. xv, n. sp.

MALACODERMIDÆ.

- [Cf. ABEILLE (5), BLACKBURN (114), BOURGEOIS (136), BROUN (149), CASEY (191), FAIRMAIRE (346), FLACH (373), GESTRO (425), GORHAM (443), HORN (512), KRAATZ (624, 644), LEA (683, 684), LEWIS (697), OLIVIER (813-817), PIC (875), PROCHAZKA (903, 904), REITTER (928-933), SCHILSKY (665, 1008), VERHOEFF (1167), WEISE (1219, 1224).]
- Melyridæ* distinguished as a family from *Malachiidæ*; CASEY, p. 456, Ann. N. York Ac. viii.
- Monograph of N. American *Melyrinæ*, with tables of genera, &c.; CASEY, Ann. N. York Ac. viii, pp. 457-606.
- List of *Lampyridæ* of Algeria; OLIVIER, p. 65, Bull. Soc. zool. France, xx.
- Adasytes*, n. g., p. 539, near *Listrus*, for *A. laciniatus*, n. sp., California, p. 540; CASEY, Ann. N. York Ac. viii.
- Æthra latastei*, Chili, OLIVIER, p. 339, Act. Soc. Chili, iv, and p. 31, Nov. Zool. ii, n. sp.
- Allocotoma*, n. g., *Telephoridæ*, for *A. torticornis*, n. sp., India; GORHAM, p. 316, Ann. Soc. ent. Belgique, 1895.
- Allonyx denudatus*, *disjunctus*, California, p. 590, CASEY, Ann. N. York Ac. viii, n. spp.
- Allymeris*, n. g., p. 600, for *Melyris basalis* and *cribrata*, Lec., and *A. floridana*, n. sp., Florida, p. 601; CASEY, Ann. N. York Ac. viii.
- Apalochrus depictus*, India, GORHAM, p. 317, Ann. Soc. ent. Belgique, 1895, n. sp.
- Asydates*, n. g., for *A. rufiventris*, p. 464, *explanatus*, p. 465, n. spp., California; CASEY, Ann. N. York Ac. viii.
- Atelstes heydeni*, Turkey, FLACH, p. 45, Wien. ent. Zeit. 1895, n. sp.
- Athemus*, n. g., for *Telephorus suturellus*, Motsch., and *Cantharis attristata*, Kies.; LEWIS, p. 110, Ann. Nat. Hist. xvi.
- Attalus regulus*, Gallaland, GESTRO, p. 354, Ann. Mus. Genova, xxxv; *A. elongatulus*, Japan, LEWIS, p. 117, Ann. Nat. Hist. xvi; n. spp.
- Axinotarsus marginalis*, larva; KOLBE, p. 5, Zeitschr. ent. Breslau, xx.
- Balanophorus macleayi*, N.W. Australia, LEA, p. 261, P. Linn. Soc. N. S. Wales, x, n. sp.
- Biurus pennatus*, Japan, LEWIS, p. 114, Ann. Nat. Hist. xvi, n. sp.
- Calochromus vesticollis*, Burma, GORHAM, p. 301, Ann. Soc. ent. Belgique, 1895, n. sp.
- Calyptocephalus comatus*, Surinam, OLIVIER, Nov. Zool. ii, p. 31, n. sp.
- Cantharis fusca*, larva; KOLBE, p. 4, Zeitschr. ent. Breslau, xx.
- C. diabolica*, Akbès, REITTER, p. 82, Wien. ent. Zeit. 1895, n. sp.
- Carpururus picipennis*, *nigrinus*, India, GORHAM, p. 321, Ann. Soc. ent. Belgique, 1895; *C. blackburni*, p. 247, *carinaticeps*, p. 248, *impunctatus*, p. 249, *angustatus*, p. 250, *basiventris*, p. 251, *longicollis*, p. 252, *latipennis*, p. 253, *testaceipes*, p. 254, *lepidus*, p. 255, *pictipes*, p. 256, *apiciventris*, with var. *dubius*, p. 257, *bifoveatus*, p. 258, Australia, LEA, P. Linn. Soc. N. S. Wales, x; n. spp.

- Celsus*, n. g., near *Dasytes*, p. 118, for *C. spectabilis*, n. sp., Japan, p. 119, pl. vi, fig. 10; LEWIS, Ann. Nat. Hist. xvi.
- Ceralliscus raffrayi*, var. *nigrifrons*; PIC, p. 80, Echange, xi.
- C. chobauti*, Algeria, PIC, p. 79, Echange, xi, n. sp.
- Cerapheles zolleri*, Turkey, FLACH, p. 45, Wien. ent. Zeit. 1895, n. sp.
- Cradytes*, n. g., p. 533, for *C. longicollis*, n. sp., Arizona, p. 534, and *Pristoscelis serricollis* and *serrulatus*, Lec.; CASEY, Ann. N. York Ac. viii.
- Cratomorphus*: list of species; OLIVIER, pp. cxlv-cxlvii, Bull. Soc. ent. France, 1895.
- C. junior*, Ecuador, *besckei*, Brazil, OLIVIER, p. cxlvii, Bull. Soc. ent. France, 1895; *C. distinctus*, p. 32, *æqualis*, p. 33, Rio de Janeiro, *signativentris*, Mexico, p. 34, OLIVIER, Nov. Zool. ii: n. spp.
- Cyphonocerus marginatus*, Japan, LEWIS, p. 115, Ann. Nat. Hist. xvi, n. sp.
- Danacæa*: tabulation of palæarctic; PROCHAZKA, pp. 7-35, Verh. Ver. Brunn, xxxiii. *Danacæa* and *Amauronia*, relations; GORHAM, p. 322, Ann. Soc. ent. Belgique, 1895. *Danacæa*: synonymy of several species; PROCHAZKA, p. 295, Wien. ent. Zeit. 1895. Synonymy of some recent species; CHOBAUT, p. clv, Bull. Soc. ent. France, 1895. Notes on some litigious European species and varr. *apicalis*, *reyi*, *opacula*, *pallidipalpis*; PIC, pp. 52-54, Echange, xi.
- D. æquilata*, Crimea, *citrina*, Beyrout, *flava*, Caucasus, *ganglbaueri*, Crete, p. 31, *heydani*, Asturias, *micans*, Caucasus, *ornata*, Portugal, p. 32, *reitteri*, Caucasus, *reyi*, Europe, *robusta*, Caucasus, p. 34, *rostrata*, Greece, *satanus*, Caucasus, p. 35, PROCHAZKA, Verh. Ver. Brunn, xxxiii; *D. prochazkæ*, Algeria, PIC, p. 79, Echange, xi: n. spp.
- Dasytastes*, n. g., p. 582, for *D. remissus*, p. 583, *otiosus*, p. 584, *dispar*, p. 585, *bicolor*, p. 586, N. America, n. spp.; CASEY, Ann. N. York Ac. viii.
- Dasytellus*, n. g., p. 564, near *Dasytes*, for *D. concinnus*, p. 565, *prætenuis*, *exilis*, p. 566, *inconspicuus*, p. 567, *degener*, *elegantulus*, p. 569, *subovalis*, p. 570, N. America; CASEY, Ann. N. York Ac. viii.
- Dasytes villiger*, n. n. for *delagrangei*, Schilsky; PIC, p. ccol, Bull. Soc. ent. France, 1895. *D. flavescens*, var. *biskrensis*; PIC, p. 80, Echange, xi. *D. plumbeus*, larva; KOLBE, p. 5, Zeitschr. ent. Breslau, xx.
- Dasytes meridionalis*, *reticulatus*, *productus*, *orientalis*, *mulstanti*, *murinus*, *hauseri*, *parvulus*, *brenskoi*, Europe, &c., SCHILSKY, Käfer Eur. xxx; *erratus incertus*, France, *similis*, Algeria, *recticollis*, Syria, *subdepressus*, N. Africa, *emarginatus*, Mogador, *acutus*, *acutangulus*, Algeria, *certzeni*, Morea, SCHILSKY, op. cit. xxxi; *D. transversefasciatus*, Akbès, REITTER, p. 83, Wien. ent. Zeit. 1895; *D. mæstus*, *cambiensis*, *D. (Amauronia?) discretus*, India, GORHAM, p. 323, Ann. Soc. ent. Belgique, 1895; *D. constrictus*, Japan, LEWIS, p. 118, Ann. Nat. Hist. xvi; *D. nigripes*, New Zealand, BROWN, p. 238, Ann. Nat. Hist. xv; *D. obtusus*, p. 573, *expansus*, *nitens*, p. 574, *dissimilis*, p. 576, *fustidiosus*, *macer*, p. 577, *depressulus*, p. 579, *minutus*, p. 580, *lineellus*, p. 581, N. America, CASEY, Ann. N. York Ac. viii: n. spp.

- Dasytiscus ragusa*, Sicily, PROCHÁZKA, Natural. Sicil. xiv, p. 139, n. sp.
Diaphanes olivieri, p. 302, *planus*, p. 303, India, GORHAM, Ann. Soc. ent. Belgique, 1895, n. spp.
Divales maculipennis, *kraatzii*, *weisci*, Europe, SCHILSKY, Käfer Eur. xxx, n. spp.
Dodecatoma fuscicornis, India, GORHAM, p. 309, Ann. Soc. ent. Belgique, 1895, n. sp.
Dolichosoma maximum, Sarepta, SCHILSKY, Käfer Eur. xxx, 52, n. sp.
Drilaster unicolor, Japan, LEWIS, p. 115, Ann. Nat. Hist. xvi, n. sp.
Dryptelytra vittipennis, Panama, OLIVIER, p. 30, Nov. Zool. ii, n. sp.
Ebaeus lepidus, Tiflis, Abeille, p. cecliv, Bull. Soc. ent. France, 1895; *E. dorsalis*, India, GORHAM, p. 321, Ann. Soc. ent. Belgique, 1895: n. spp.
Elianus, n. g. for *E. rugiceps*, n. sp., Japan, pl. vi, fig. 4; LEWIS, Ann. Nat. Hist. xvi.
Eudasytes, n. g., p. 460, for *E. amplus*, p. 461, *oblongus*, p. 462, *ursinus*, p. 463, n. spp., N. America; CASEY, Ann. N. York Ac. viii.
Eurelymis, n. g., p. 602, for *Melyris atra* and *flavipes*, Lec., and *E. speculifer*, n. sp., Utah, p. 603; CASEY, Ann. N. York Ac. viii.
Hadrocnemus, n. g., p. 59, near *Apalochrus*, for *H. conradti*, *cæruleus*, W. Africa, p. 60, *srnke*, E. Africa, *purpuripennis*, p. 61, *tenuicornis*, *viridis*, p. 62, W. Africa, n. spp.; KRAATZ, Deutsche ent. Zeitschr. 1895.
Hadrocnemus spectabilis, with var. *4-pustulatus*, Africa, KRAATZ, p. 271, Deutsche ent. Zeitschr. 1895, n. sp.
Haplocnemus (Holcopleura) reitteri, Smyrna, *H. (Ischnopalpus) subcostatus*, Marocco, *syriacus*, Haifa, *ragusa*, Sicily, *H. lateralis*, Caspian, *algericus*, Algiers, *heydeni*, Constantinople, SCHILSKY, Käfer Eur. xxx; *H. maurus*, Marocco, SCHILSKY, *op. cit.* xxxi: n. spp.
Helcogaster foveiceps, p. 237, *gagatinus*, p. 238, *ruficornis*, *canaliculatus*, p. 239, *marginicollis*, p. 240, *parallelus*, p. 241, *conconviceps*, p. 242, *major*, p. 243, *fuscitarsis*, p. 244, *varius*, p. 245, with var. *pallidipennis*, p. 246, *tuberculatus*, p. 246, Australia, LEA, P. Linn. Soc. N. S. Wales, x, n. spp.
Heteromastix gagaticeps, p. 233, *mcdonaldi*, p. 234, *mirabilis*, p. 235, *crassicornis*, p. 236, Australia, LEA, P. Linn. Soc. N. S. Wales, x, n. spp.
Hydaspes andrewesi, p. 307, *bourgeoisii*, p. 308, India, GORHAM, Ann. Soc. ent. Belgique, 1895, n. spp.
Iethyurus atriceps, Japan, LEWIS, p. 114, Ann. Nat. Hist. xvi, n. sp.
Idgia belli, *viridescens*, India, p. 319, *apicata*, p. 320, Malacca, GORHAM, Ann. Soc. ent. Belgique, 1895, n. spp.
Laius niponicus, Japan, LEWIS, p. 116, Ann. Nat. Hist. xvi; *L. bourgeoisii*, Gallaland, GESTRO, p. 354, Ann. Mus. Genova, xxxv; *L. eremita*, Central Australia, BLACKBURN, p. 51, Tr. R. Soc. S. Austral. xix: n. spp.
Lamprocera torquata, Paraguay, OLIVIER, p. 29, Nov. Zool. ii, n. sp.
Lamprophorus tardus, N. India, GORHAM, p. 302, Ann. Soc. ent. Belgique, 1895, n. sp.

- Lampyris noctiluca*, n. var. *carreti*; OLIVIER, p. 212, Rev. Sci. Bourbonnais, viii. *L. splendidula*, its parasitic Acarien; GRUVEL, Mem. Soc. zool. France, viii, p. 173.
- L. angustula*, Akbès, FAIRMAIRE, p. cx, Bull. Soc. ent. France, 1895, n. sp.
- Ledocas scutellatus*, Paraguay, OLIVIER, p. 30, Nov. Zool. ii, n. sp.
- Leptovectura*, n. g. near *Allonys*, for *L. adspersa*, n. sp., New Mexico; CASEY, p. 594, Ann. N. York Ac. viii.
- Listromimus*, n. g. for *L. sericatus*, n. sp., Nevada; CASEY, p. 538, Ann. N. York Ac. viii.
- Listrus interstitialis*, p. 545, *montanus*, p. 546, *amplicollis*, p. 547, *densicollis*, p. 548, *plenus*, *subcaneus*, p. 549, *maculosus*, p. 550, *pardalis*, p. 551, *clavicornis*, *uniformis*, p. 552, *extricatus*, p. 554, *fidelis*, p. 556, *tritus*, *confusus*, p. 557, *variegatus*, p. 558, *incertus*, *annulatus*, p. 559, *rubripes*, p. 560, *concurrentis*, p. 561, *balteellus*, p. 562, *famelicus*, *ornatulus*, p. 563, N. America, CASEY, Ann. N. York Ac. viii, n. spp.
- Lucidota atra*, larva; WICKHAM, Bull. Lab. Iowa, iii, No. 3, p. 31, pl. i, fig. 1.
- Lucio guttifera*, Brazil, OLIVIER, p. 29, Nov. Zool. ii, n. sp.
- Luciola congouana*, W. Africa, OLIVIER, p. 34, Nov. Zool. ii; *L. bourgeoisi*, p. cxlviii, *dauidis*, p. cxlix, China, OLIVIER, Bull. Soc. ent. France, 1895; *L. complanata*, *acerra*, p. 304, *tincticollis*, p. 305, India, *ochracea*, Ceylon, p. 306, GORHAM, Ann. Soc. ent. Belgique, 1895: n. spp.
- Lycostomus lateritius*, Burma, *purpureivestis*, India, GORHAM, p. 299, Ann. Soc. ent. Belgique, 1895, n. spp.
- Malachius parilis*, metamorphoses; XAMBEU, p. 69, Mœurs, vi, and p. 19, Naturaliste, 1895.
- M. eximius*, Japan, LEWIS, p. 117, Ann. Nat. Hist. xvi, n. sp.
- Malacogaster akbesiana*, Syria, FAIRMAIRE, p. cx, Bull. Soc. ent. France, 1895, n. sp.
- Malchinus carinicollis*, Roumania, WEISE, p. 213, Deutsche ent. Zeitschr. 1895, n. sp.
- Maltharchus mæsiacus*, Turkey, WEISE, p. 215, Deutsche ent. Zeitschr. 1895, n. sp.
- Malthinus flaveolus*, larva; KOLBE, p. 4, Zeitschr. Ent. Breslau, xx.
- M. merklii*, Turkey, WEISE, p. 214, Deutsche ent. Zeitschr. 1895, n. sp.
- Malthodes bifurcatus* and *spectabilis*, probably one; WEISE, p. 215, Deutsche ent. Zeitschr. 1895. *M. atramentarius*, Kies., referred to *Paramalthodes*, and redescribed; WEISE, pp. 17-19, Wien. ent. Zeit. 1895.
- M. kobensis*, Japan, LEWIS, p. 115, Ann. Nat. Hist. xvi; *M. lucanus*, Lower California, HORN, p. 240, P. Calif. Ac. v: n. spp.
- Mastinocerus opaculus*, Arizona, HORN, p. 241, P. Calif. Ac. v, n. sp.
- Mecomyceter facetus*, N. America, CASEY, p. 597, Ann. N. York Ac. viii, n. sp.
- Megalophthalmus egregius*, Panama, OLIVIER, p. 31, Nov. Zool. ii, n. sp.
- Melyris*: characters; PIC, pp. 123 & 124, Echange, xi.

- Ochotyra* and *Dioptoma*, systematic position, &c. ; GORHAM, p. 310, Ann. Soc. ent. Belgique, 1895.
- Omincus*, n. g. near *Dasytes*, for *O. humeralis*, pl. vi, fig. 11, n. sp., Japan ; LEWIS, p. 119, Ann. Nat. Hist. xvi.
- Periebæus punctatus*, India, GORHAM, p. 320, Ann. Soc. ent. Belgique, 1895, n. sp.
- Phosphæus hemipterus*, position of light-organs in various stages ; VERHOEFF, pp. 208-213, Verh. Ver. Rheinland, li.
- Podabrus heydeni* = (*reinii*, Heyd.) ; LEWIS, p. 108, Ann. Nat. Hist. xvi.
- P. lictorius*, Japan, LEWIS, p. 109, Ann. Nat. Hist. xvi, n. sp.
- Pseudallonyx*, n. g., p. 593, for *Allonyx plumbeus*, Lec. ; CASEY, Ann. N. York Ac. viii.
- Psilothryx plumbeus*, Togo, SCHILSKY, p. 164, Deutsche ent. Zeitschr. 1895, n. sp.
- Pterydrius*, n. g. *Drilides*, for *P. debilis*, n. sp., Akbès ; REITTER, p. 202, Wien. ent. Zeit. 1895.
- Pyrocellia sternalis*, Tonkin, BOURGEOIS, p. cxxxix, Bull. Soc. ent. Franco, 1895, n. sp.
- Rhadalus lecontei*, Arizona, CASEY, p. 606, Ann. N. York Ac. viii, n. sp.
- Sesalia basalis*, India, GORHAM, p. 307, Ann. Soc. ent. Belgique, 1895, n. sp.
- Selenurus granulatus*, p. 231, *tricolor*, p. 232, Australia, LEA, P. Linn. Soc. N. S. Wales, x, n. spp.
- Silis* ? *notaticollis*, p. 314, *lineatus*, India, *S. fuscitarsis*, p. 315, Burma, GORHAM, Ann. Soc. ent. Belgique, 1895 ; *S. pectinata*, Japan, LEWIS, p. 112, pl. vi, fig. 3, Ann. Nat. Hist. xvi : n. spp.
- Sisyphorus bicolor*, referred to *Cleridæ* ; LEWIS, p. 122, Ann. Nat. Hist. xvi.
- Stenocladus* = (*Hydaspes*) ; BOURGEOIS, p. cxxxix, Bull. Soc. ent. France, 1895.
- Sydates*, n. g. near *Trichochrous*, for *S. zonatus*, n. sp., Texas, p. 537 ; CASEY, Ann. N. York Ac. viii.
- Sydatopsis*, n. g. near *Trichochrous*, for *S. longicornis*, n. sp., Lower California ; CASEY, p. 536, Ann. N. York Ac. viii.
- Telegeusis*, n. g., p. 242, *Drilini*, for *T. debilis*, n. sp., Lower California, p. 243 ; HORN, P. Calif. Ac. v.
- Telephorus* : in Zool. Rec., 1879, *Ins.* p. 65, species of this genus are misplaced in *Cantharis* ; LEWIS, p. 98, Ann. Nat. Hist. xvi.
- T. temporalis*, *bipuncticollis*, India, GORHAM, p. 312, Ann. Soc. ent. Belgique, 1895 ; *T. dichrous*, *viaticus*, p. 111, *vulcanus*, p. 112, Japan, LEWIS, Ann. Nat. Hist. xvi : n. spp.
- Trichalus raymondi*, *auritus*, p. 600, *insignis*, p. 601, *distinctus*, p. 602, N. S. W., LEA, P. Linn. Soc. N. S. Wales, ix, n. spp.
- Trichochrous compactus*, *brevis*, p. 474, *agrestis*, p. 476, *fraternus*, p. 477, *castus*, *sinuosus*, p. 479, *transversus*, p. 480, *sparsus*, *ciliatus*, p. 481, *discipulus*, p. 484, *femoralis*, p. 485, *simulans*, p. 486, *modestus*, *separatus*, p. 487, *pudens*, p. 488, *indigens*, *incipiens*, p. 489, *inopocens*, *apicalis*,

- p. 492, *egenus*, p. 493, *nubilatus*, *suffusus*, p. 495, *propinquus*, p. 496, *fulvovestitus*, *exiguus*, p. 497, *testaceus*, p. 498, *fallax*, p. 499, *inequalis*, *subcalvus*, p. 500, *funebri*, p. 501, *vittiger*, *prominens*, p. 502, *cuspidatus*, *indutus*, p. 503, *fimbriatus*, p. 504, *pruinosis*, p. 505, *seriellus*, p. 506, *sobrinus*, p. 507, *mucidus*, p. 508, *vilis*, p. 509, *insignis*, p. 510, *curticollis*, p. 511, *varius*, p. 512, *remotus*, *conspersus*, p. 514, *mexicanus*, p. 515 [North Mexico], *lobatus*, p. 516, *hystrix*, p. 517, *barbaræ*, p. 518, *tectus*, p. 519, *villosus*, p. 520, *irrasus*, *crinifer*, p. 521, *fulvescens*, p. 523, *sexualis*, p. 524, *sonomæ*, p. 525, *lucidus*, *reversus*, p. 527, *nigrinus*, p. 528, *rusticus*, p. 530, *politus*, p. 531, *stricticollis*, p. 532, N. America, CASEY, Ann. N. York Ac. viii, n. sp.
- Troglops ganglbaueri*, Beyrout, ABEILLE, p. ccliii, Bull. Soc. ent. France, 1895, n. sp.
- Tylocerus nigripennis*, *fumipennis*, India, GORHAM, p. 311, Ann. Soc. ent. Belgique, 1895, n. spp.
- Vectufa*, n. g., p. 591, near *Allonyx*, for *V. longiceps*, Arizona, *albicans*, Utah, n. spp., p. 592; CASEY, Ann. N. York Ac. viii.
- Vesta xanthopyga*, Sumatra, OLIVIER, p. 32, Nov. Zool. ii, n. sp.
- Xerasia*, n. g. near *Melyris*, for *X. variegata*, pl. vi, fig. 12, n. sp., Japan; LEWIS, Ann. Nat. Hist. xvi.
- Xylobanus atricollis*, India, GORHAM, p. 300, Ann. Soc. ent. Belgique, 1895, n. sp.
- Zygia*: characters; PIC, p. 125, Echange, xi.

CLERIDÆ.

- [Cf. ALLUAUD (22), FAIRMAIRE (352), REITTER (928), WICKHAM (1232).]
Cleride of Canada; WICKHAM, pp. 247-253, Canad. Ent. xxvii.
- Clerus mutilliformis*, Akbès, REITTER, p. 83, Wien. ent. Zeit. 1895, n. sp.
- Evenus cupido*, Madagascar; ALLUAUD, p. cclix, Bull. Soc. ent. France, 1895.
- Necrobia pilifera* and *konowi*, queried as *N. rufipes*; ABEILLE, p. ccviii, Bull. Soc. ent. France, 1895.
- Opilo germanus*, distinctive characters; ABEILLE, p. ccvii, t. c.
- O. perroti*, Madagascar, FAIRMAIRE, p. cclxxxix, t. c.
- Orthrius madurensis*, India, GORHAM, p. 295, Ann. Soc. ent. Belgique, 1895, n. sp.
- Tenerus belgamensis*, India, GORHAM, p. 297, t. c.
- Tillicera aurivillosa*, India, GORHAM, p. 295, t. c.

LYMEXYLONIDÆ, CUPESIDÆ.

- [Cf. FAIRMAIRE (347), KRAATZ (637), LEA (683).]
Atractocerus ater, *pygmaeus*, Togo, KRAATZ, p. 163, Deutsche ent. Zeitschr. 1895, n. spp.
- Hylecoetus linearis*, N. S. W., LEA, p. 603, P. Linn. Soc. N. S. Wales, ix, n. sp.
- Lymexylon sericeum*, note on larva; RILEY, p. 181, P. ent. Soc. Washington, iii.

Cupes lugubris, Madagascar, FAIRMAIRE, p. clxxi, Bull. Soc. ent. France, 1895, n. sp.

PTINIDÆ.

[Cf. ABEILLE (7), GRANDJEAN (446), PIC (873, 875, 877, 878, 882).]

Anobium hirtum, metamorphoses; XAMBEU, p. 76, Mœurs, vi. *A. panicum*, eating tablets of powdered meat; MÉGNIN, p. 133, Bull. Soc. zool. France, xx.

Dorcatoma dresdensis, larval habits; KOLBE, p. 6, Zeitschr. ent. Breslau, xx.

Eurostoptinus, n. subg. of *Eurostus*, for *E. algericus*, n. sp., Algeria; PIC, p. 80, Echange, xi.

Eutaphrus soubironi, N. Africa, PIC, p. 102, Echange, xi, n. sp.

Microptinus reitteri, Sicily, p. 99, *nitidus*, Tangier, *tournieri*, Algeria, p. 100, PIC, Echange, xi, n. spp.

Nicobium hirtum, injuring books; SCHWARZ, p. 396, Insect Life, vii.

Pseudoptinus kabilianus, Algeria, PIC, p. 80, Echange, xi, n. sp.

Ptilinus pectinicornis, larva; KOLBE, p. 5, Zeitschr. ent. Breslau, xx.

Ptinus: synopsis (commencement) of European; PIC, Feuille. Natural. xxvi, pp. 26-29. *P. fairmairei*, n. n. for *senilis*, Fairm.; PIC, p. 102, Echange, xi.

Ptinus (Bruchus) maculosus, France, ABEILLE, p. ccxlvii, Bull. Soc. ent. France, 1895; *P. (Eutaphrus) bedeli*, Algeria, PIC, p. 51, Echange, xi; *P. (Pseudoptinus) grandjeani*, Algeria, PIC, p. cxxix, Bull. Soc. ent. France, 1895; *P. (Pseudoptinus) dayensis* (var. of *grandjeani*, Pic ?), PIC, p. 50, Echange, xi; *P. hirsutus*, Syria, *P. (Bruchus) merkli*, Asia Minor, PIC, p. 101, Echange, xi; *P. pici*, Biskra, GRANDJEAN, p. 70, Rev. Sci. Bourbon, viii : n. spp.

BOSTRYCHIDÆ.

[Cf. LESNE (687, 689).]

Apate laticornis, Obock, LESNE, p. 178, Ann. Soc. ent. France, 1895, n. sp.

Bostrychus künckeli, Madagascar, LESNE, p. clxxviii, Bull. Soc. ent. France, 1895; *B. elongatus*, Tonkin, *granulifrons*, Brazil, p. 170, *fairmairei*, Chili, *penicillatus*, Mexico, *iniquus*, W. Africa, p. 171, *fasciatus*, Brazil, *bedeli*, Colombia, *caudatus*, Senegal, p. 172, *spectabilis*, California, *uncipennis*, *hamatipennis*, Indo-Malay region and Madagascar, p. 173, *parallelus*, Indo-Malay region, *bengalensis*, E. India, *laminifer*, Brazil, *canophradoides*, Indo-Malay region, p. 174, *restitus*, Argontino Rep., p. 175, LESNE, Ann. Soc. ent. France, 1895 : n. spp.

Dinoderus minutus = (*brevis*); HORN, p. 326, Ent. News Philad. vi.

D. speculifer, p. 169, *japonicus*, Japan, *pilifrons*, E. India, *perpunctatus*, warm regions of the earth, p. 170, LESNE, Ann. Soc. ent. France, 1895, n. spp.

- Heterarthron parvidens*, Bahia, LESNE, p. 169, Ann. Soc. ent. France, 1895, n. sp.
- Heteropsoa*, n. g., near *Stenomera*, for *H. australis*, n. sp., S. Africa; LESNE, p. 169, Ann. Soc. ent. France, 1895.
- Phonapate*, n. g., for *Apate frontalis*, Fahr.; LESNE, p. 178, Ann. Soc. ent. France, 1895.
- Sinoxylon declive*, larva; WICKHAM, p. 33, Bull. Lab. Iowa, iii, No. 3, pl. i, fig. 2.
- S. capillatum*, Kashmir, *japonicum*, Japan, p. 175, *villosum*, *transvaalense*, S. Africa, *sudanicum*, E. Africa, *succisum*, Senegal, p. 176, *marseuli*, Celebes, *brazzai*, Congo, p. 177, LESNE, Ann. Soc. ent. France, 1895, n. spp.
- Stenomera assyria*, Mesopotamia, LESNE, p. 169, Ann. Soc. ent. France, 1895, n. sp.
- Xylopertha dominicana* and *religiosa*, distinctions; LESNE, p. clxxviii, Bull. Soc. ent. France, 1895.
- X. simplicipennis*, Tonkin, *plurispinis*, Africa, LESNE, p. 177, Ann. Soc. ent. France, 1895, n. spp.

CICOIDÆ.

[*Cf.* BROUN (149), JACOBSON (545).]

- Cis bidentatus* feeding on stale bread; FLETCHER, p. 100, Ent. Mag. 1895.
- C. petropolitanus*, Russia, JACOBSON, p. 520, Horæ Soc. ent. Ross. xxix; *C. fulgens*, *pygmaeus*, *lobipes*, New Zealand, BROUN, p. 239, Ann. Nat. Hist. xv: n. spp.

TENEBRIONIDÆ.

- [*Cf.* ALLARD (18), BLACKBURN (114), BLAISDELL (116), BROUN (149), CASEY (191), CHAMPION (197), DESBROCHERS (283), FAIRMAIRE (350, 353, 354), GAHAN (414), GESTRO (425), HORN (512), KOLBE (615), LEA (683), LESNE (688), LEWIS (695), REITTER (932, 933, 941, 951), SEIDLITZ (1042), SEMENOW (1045).]
- List of the *Tenebrionidæ* described since the Munich Catalogue, showing that the number of genera now amounts to 1013, and of the species to 9285; CHAMPION, Mem. Soc. ent. Belgique, iii.
- Acontodactylus*, n. g. for *Cossyphus minutissimus*; DESBROCHERS, p. 5, Frelon, iv.
- Adelostoma longiceps*, Tunis, *hauseri*, Lebanon, REITTER, p. 203, Wien. ent. Zeit. 1895, n. spp.
- Adesmia tuberculifera*, p. 289, *assimilis*, p. 290, S. Arabia, GAHAN, J. Linn. Soc. xxv, n. spp.
- Alphitophagus bifasciatus*, Say = (*quadripustulatus*, Steph.); CHAMPION, p. 283, Ent. Mag. 1895.
- Amarsenes interstitialis*, *modestus*, Madagascar, FAIRMAIRE, p. 29, Ann. Soc. ent. Belgique, 1895, n. spp.

- Ammobius pseudocæsius*, Turkestan, REITTER, p. 156, Wien. ent. Zeit. 1895, n. sp.
- Ammozeum bulla*, Transcaspian region, SEMENOW, p. 353, Horæ Soc. ent. Ross. xxix, n. sp.
- Arthrodes asperulus*, E. Africa, GESTRO, p. 365, Ann. Mus. Genova, xxxv, n. sp.
- Blapstini* : table of characters of N. American genera ; CASEY, pp. 616 & 617, Ann. N. York Ac. viii.
- Camaria transversicollis*, Madagascar, FAIRMAIRE, p. 445, Ann. Soc. ent. France, 1895, n. sp.
- Camariodes purpurascens*, Madagascar, FAIRMAIRE, p. cclxxix, Bull. Soc. ent. France, 1895, n. sp.
- Cataphronetis hellenica*, Med. region, *tenicornis*, *quadricollis*, *hauseriana*, Turkestan, REITTER, p. 148, Ent. Nachr. xxi, n. spp.
- Catomidius*, n. subg. of *Hedyphanes* ; SEIDLITZ, p. 791, Ins. Deutschl. v.
- Charodes fuscatus*, New Zealand, BROUN, p. 241, Ann. Nat. Hist. xv, n. sp.
- Cælocnemis sulcata*, Utah, CASEY, p. 615, Ann. N. York Ac. viii, n. sp.
- Cælus latus*, *curtulus*, California, CASEY, p. 612, Ann. N. York Ac. viii, n. spp.
- Centorus bedeli*, Algeria, LESNE, p. 109, Bull. Mus. Paris, i, n. sp.
- Cerenopus angustatus*, female ; HORN, p. 252, pl. xx, figg. 4 & 5, P. Calif. Ac. v.
- Chemolamus nitidipes*, p. 447, *subviolaceus*, p. 448, Madagascar, FAIRMAIRE, Ann. Soc. ent. France, 1895, n. spp.
- Conibius* divided into three subgenera, *Conibius*, *Ooconibius*, *Euconibius* ; CASEY, p. 618, Ann. N. York Ac. viii.
- Coniontis sanfordii*, California, BLAISDELL, p. 235, Ent. News Philad. vi ;
C. globulina, California, *farallonica*, Farallone Is., CASEY, p. 610, Ann. N. York Ac. xviii : n. spp.
- Conisattus*, n. g., near *Eusattus*, for *C. rectus*, n. sp., Oregon ; CASEY, p. 614, Ann. N. York Ac. viii.
- Cossyphus* : revision of European and Mediterranean ; DESBROCHERS, pp. 2-21, Frelon, iv.
- Demetrius*, n. g., near *Lorelus*, for *D. carinulatus*, n. sp., New Zealand, BROUN, p. 243, Ann. Nat. Hist. xv.
- Dolichoderus ruguliceps*, p. 23, *opaculus*, *ambiguus*, p. 24, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique, 1895, n. spp.
- Echocerus cornutus*, habits ; TRAISET, p. cclvi, Bull. Soc. ent. France, 1895.
- Eleodes armata*, n. var. *impotens* ; BLAISDELL, p. 236, Ent. News Philad. vi.
- E. confinis*, California, BLAISDELL, p. 237, Ent. News Philad. vi, n. sp.
- Ephidonium parvicollis*, S. Australia, BLACKBURN, p. 52, Tr. R. Soc. S. Austral. xix, n. sp.
- Euconibius*, n. subg. of *Conibius*, for *C. gagates*, Horn ; CASEY, p. 618, Ann. N. York Ac. viii.
- Eusattus nanus*, California, CASEY, p. 613, Ann. N. York Ac. viii, n. sp.
- Hedyphanes* (*Stenomacidius*) *acutangulus*, Syria, *hirtipennis*, Central Asia, *H. (Catomidius) rhynchophorus*, Algeria, *H. cordicollis*, Kurdistan, *parvicollis*, Askhabad ; SEIDLITZ, Ins. Deutschl. v, n. spp.

- Helopidesthes*, n. g., near *Helops*, for *H. coriarius*, n. sp., Madagascar, FAIRMAIRE, p. 446, Ann. Soc. ent. Belgique, 1895.
- Helops stenotrichoides*, California, BLAISDELL, p. 238, Ent. News Philad. iv ; *H. (Raiboscelis) latimargo*, Asia Minor, *H. (Entomogonus) egregius*, Asia Minor, *obtusus*, Cyprus, *H. pullus*, Caucasus, *corrugatus*, Syria, *corrugosus*, Asia Minor, p. 750, *globoicollis*, Cyprus, *arabs*, Algeria, *priapus*, Asia Minor, *strigicollis*, Macedonia, *granulifer*, Spain, *zoroster*, Persia, *granicollis*, Eur. Turkey, *granosus*, Amasia, *tripolitanus*, Tripolis, *kobeltii*, Tunis, p. 751, *calvus*, Syria, *mauritanicus*, Mauritania, *carinatus*, Caucasus, *hirtus*, Algeria, *H. (Cylindrinotus) nitidus*, Syria, *constrictus*, Armenia, *H. (Odocnemis) dasypus*, Amasia, *H. (Stenomax) excavatus*, Tauria, *propheta*, Persia, p. 752, *amasiae*, Amasia, *cretensis*, Crete, *seriegranatus*, Eur. Turkey, *intrusicollis*, Cyprus, *H. (Omaleis) protensulus*, Spain, *abeillei*, Corsica, *hispanus*, Spain, *ponticus*, Asia Minor, *cambysses*, Persia, p. 753, *H. (Xanthomus) ovulum*, Creta, *H. (Catomus) prolixus*, Spain, *frivaldskyi*, Turkey, SEIDLITZ, Ins. Deutschl. v : n. spp.
- Himatismus (Asphena) koltzei*, Kashgar, REITTER, p. 155, Wien. ent. Zeit. 1895; *H. luctuosus*, Madagascar, FAIRMAIRE, p. 444, Ann. Soc. ent. Belgique, 1895 : n. spp.
- Histeromimus*, n. g., *Erodiides* for *H. arabicus*, n. sp., Hadramaut ; GAHAN, p. 288, J. Linn. Soc. ix.
- Hoplocephala cavifrons*, Nossi-Bé, FAIRMAIRE, p. 445, Ann. Soc. ent. Belgique, 1895, n. sp.
- Hoplonyx casatii*, Lake Edoardo, GESTRO, p. 381, Ann. Mus. Genova, xxxv, n. sp.
- Hypocaulus*, n. g., p. 27, near *Porphyryba*, for *H. laticornis*, n. sp., Madagascar, p. 28 ; FAIRMAIRE, Ann. Soc. ent. Belgique, 1895.
- Leptodes tschitscherini*, N. Persia, SEMENOW, p. 139, Horæ Soc. ent. Ross. xxix, n. sp.
- Megeleates*, n. g., near *Eleates*, p. 623 for *M. sequoiarum*, n. sp., California, p. 624 ; CASEY, Ann. N. York Ac. viii.
- Melanocratus*, n. g., near *Stizopus*, p. 21, for *M. validipes*, n. sp., Madagascar, p. 22 ; FAIRMAIRE, Ann. Soc. ent. Belgique, 1895.
- Melaxumia*, n. g., *Tentyrinides*, for *M. acutangula*, n. sp., N. Mongolia, pl. ii, fig. 1 ; REITTER, p. 280, Wien. ent. Zeit. 1895.
- Menimus lavicollis*, New Zealand, BROWN, p. 242, Ann. Nat. Hist. xv, n. sp.
- Misolampidius clavicus* = (*morio*, Kolbe) ; LEWIS, p. 448, Ann. Nat. Hist. xv.
- Nephodes maroccanus*, Marocco, *rasus*, Algeria, SEIDLITZ, Ins. Deutschl. v, n. spp.
- Nesogena suturata*, p. 448, *obscurovirens*, p. 449, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique, 1895, n. spp.
- Nocibiotus*, n. g., p. 618, near *Conibius*, for *granulatus*, Lec, *crassipes*, Casey, and the following n. spp., *gracilis*, California, p. 619, *acutus*, p. 620 *caudatus*, *rubripes*, p. 621, Arizona ; CASEY, Ann. N. York Ac. viii

- Nycteropus bicolor*, Madagascar, FAIRMAIRE, p. 25, Ann. Soc. ent. Belgique, 1895, n. sp.
- Oocnibius*, n. subg. of *Conibius* for *C. opacus*, Lec. ; CASEY, p. 618, Ann. N. York Ac. viii.
- Osternus*, n. g., near *Camariodes*, for *O. opacicollis*, n. sp., Madagascar; FAIRMAIRE, p. 446, Ann. Soc. ent. Belgique, 1895.
- Paranemia bicolor*, Mongolia, REITTER, p. 157, Wien. ent. Zeit. 1895, n. sp.
- Paraphanes dumbrelli*, N. S. W., LEA, p. 603, P. Linn. Soc. N. S. Wales, ix, n. sp.
- Paraphylax binodosus*, New Zealand, BROWN, p. 240, Ann. Nat. Hist. xv, n. sp.
- Phaleria attenuata*, Seychelles, FAIRMAIRE, p. 445, Ann. Soc. ent. Belgique, 1895, n. sp.
- Phellopsis suberea* and *amurense* are distinct ; LEWIS, p. 447, Ann. Nat. Hist. xv.
- Phrynocolus parvulus*, Gallaland, GESTRO, p. 372, Ann. Mus. Genova, xxxv, n. sp.
- Pilozyx*, n. g., *Misolampides* for *P. foveatus*, n. sp., Madagascar ; FAIRMAIRE, p. 23, Ann. Soc. ent. Belgique, 1895.
- Pimelia bottegi*, p. 369, *limosa*, p. 370, E. Africa, GESTRO, Ann. Mus. Genova, xxxv, n. spp.
- Platydemia asymmetricum* and allies, male characters, &c. ; CHAMPION, p. 47, Ent. Mag. 1895.
- Platyscelis (Platynoscelis) hauseri*, Turkestan, REITTER, p. 156, Wien. ent. Zeit. 1895 ; *P. strigicollis*, Japan, LEWIS, p. 447, Ann. Nat. Hist. xv : n. spp.
- Praogena longicornis*, Madagascar, FAIRMAIRE, p. 448, Ann. Soc. ent. Belgique, 1895, n. sp.
- Probatiscus*, n. subg. of *Helops* ; SEIDLITZ, pp. 697 and cover, Ins. Deutschl. v.
- Przevalskia pilosissima*, S. Turkestan, REITTER, p. 155, Wien. ent. Zeit. 1895, n. sp.
- Pseudasida*, n. g., near *Machla* for *P. obesa*, n. sp., Madagascar ; FAIRMAIRE, p. 444, Ann. Soc. ent. Belgique, 1895.
- Pterohelæus fraternus*, Central Australia, BLACKBURN, p. 51, Tr. R. Soc. S. Austral. xix, n. sp.
- Scotinesthes*, n. g., *Asidides*, for *S. acuticosta*, p. 19, *costulatus*, p. 20, n. spp., Madagascar ; FAIRMAIRE, Ann. Soc. ent. Belgique, 1895.
- Scytosoma*, n. g., *Tentyrinides*, for *S. arcibasis*, n. sp., pl. ii, fig. 2, with var. *æqualis*, Mongolia, p. 281, and *Scytis opaca* ; REITTER, p. 281, Wien. ent. Zeit. 1895.
- Sphenariopsis adeodati*, E. India, ALLARD, p. cciii, Bull. Soc. ent. France, 1895, n. sp.
- Stenogena*, n. g. for *S. madecassa*, n. sp., Diego-Suarez ; FAIRMAIRE, p. 44, Ann. Soc. ent. Belgique, 1895.
- Stenogena xanthopus*, *apicata*, p. cclxxix, *gentilis*, *terminatus*, p. cclxxx, Bull. Soc. ent. France, 1895 ; *S. filicornis*, Madagascar, FAIRMAIRE, p. 449, Ann. Soc. ent. Belgique, 1895 : n. spp.

- Stenomacidius*, n. subg. of *Helyphanes*; SEIDLITZ, p. 791, *Ins. Deutschl.* v.
Strongylium semipurpureum, Madagascar, FAIRMAIRE, p. 30, *Ann. Soc. ent. Belgique*, 1895; *S. episcopale*, p. 365, *ducale*, p. 366, *fischeri*, p. 368, *suspicax*, *stuhlmanni*, p. 369, *balubanum*, p. 370, *buttneri*, *baumanni*, p. 371, *conralti*, p. 372, *elegantulum*, *fraternum*, p. 373, Tropical Africa, KOLBE, *Ent. Zeit. Stettin*, lv : n. spp.
- Suarezius*, n. g., near *Asidobothris*, for *S. gibbosulus*, n. sp., Madagascar; FAIRMAIRE, *Ann. Soc. ent. Belgique*, 1895.
- Tenebrio punctipennis*, Europe, SEIDLITZ, p. 639, *Ins. Deutschl.* v, n. sp.
- Tetraphyllus*: generic positions of its species; FAIRMAIRE, p. 26, *Ann. Soc. ent. Belgique*, 1895.
- T. alternicolor*, *cyanipennis*, p. 26, *laminatus*, p. 27, Madagascar, FAIRMAIRE, *Ann. Soc. ent. Belgique*, 1895, n. spp.
- Thriptera longipilis*, Turkestan, REITTER, p. 156, *Wien. ent. Zeit.* 1895, n. sp.
- Tonibius*, n. g., near *Notibius*, for *sulcatus*, Lec., and *alternatus*, Cas.; CASEY, p. 622, *Ann. N. York Ac.* viii.
- Triphalus cribricollis*, Lower California, HORN, p. 251, *P. Calif. Ac.* v, n. sp.
- Vieta lutulenta*, p. 374, *grixonii*, p. 375, Gallaland, GESTRO, *Ann. Mus. Genova*, xxxv, n. spp.
- Xanthothoeia angusticornis*, Giuba, GESTRO, p. 378, *Ann. Mus. Genova*, xxxv, n. sp.
- Zophosis aromatum*, p. 358, *rhantoides*, p. 360, *vesmei*, p. 361, *caudei*, p. 362, *foveiceps*, p. 364, Gallaland, GESTRO, *Ann. Mus. Genova*, xxxv, n. spp.

CISTELIDÆ.

- [*Cf.* BLACKBURN (114), BROUN (149), CHAMPION (195), FAIRMAIRE (346, 354), LEWIS (695), REITTER (928, 932).]
- Allecula cryptomeria*, p. 250, *noctivaga*, *simiola*, p. 251, Japan, LEWIS, *Ann. Nat. Hist.* xv; *A. luctuosa*, Tasmania, CHAMPION, p. 216, *Tr. ent. Soc. London*, 1895 : n. spp.
- Apellatus tasmanicus*, Hobart, CHAMPION, p. 215, *Tr. ent. Soc. London*, 1895, n. sp.
- Chromomæa nigriceps*, Tasmania, CHAMPION, p. 215, *Tr. ent. Soc. London*, 1895, n. sp.
- Cistela pachymorpha*, p. 449, *conicicollis*, p. 450, Madagascar, FAIRMAIRE, *Ann. Soc. ent. Belgique*, 1895, n. spp.
- Cteniopus intermedius*, p. cx, *nigrifrons*, p. cxi, Akbès, FAIRMAIRE, *Bull. Soc. ent. France*, 1895, n. spp.
- Gonodera luperoides*, Akbès, REITTER, p. 83, *Wien. ent. Zeit.* 1895, n. sp.
- Homotrysis arida*, *sitiens*, *callabonensis*, Australia, BLACKBURN, p. 53, *Tr. R. Soc. S. Austral.* xix; *H. bicolor*, Tasmania, p. 217, *scabrosa*, W. Australia, p. 218, CHAMPION, *Tr. ent. Soc. London*, 1895 : n. spp.
- Hymenorus veterator*, Japan, LEWIS, p. 252, *Ann. Nat. Hist.* xv, n. sp.

- Iophon*, n. g., p. 224, for *I. myrmecophilus*, n. sp., N.W. Australia, p. 225, pl. vi, fig. 4 ; CHAMPION, Tr. ent. Soc. London, 1895.
- Metistete costatipennis*, N.W. Australia, CHAMPION, p. 221, Tr. ent. Soc. London, 1895, n. sp.
- Mycetochares collina, mimica, scutellaris*, Japan, LEWIS, p. 253, Ann. Nat. Hist. xv, n. spp.
- Nocar depressiusculus*, Macl. = (*debilis*, Blackb.) ; BLACKBURN, p. 55, Tr. R. Soc. S. Austral. xix.
- Nypsius*, n. g. for *N. œneopiccus*, p. 219, *foveatus*, p. 220, pl. vi, fig. 1, n. spp., Tasmania ; CHAMPION, Tr. ent. Soc. London, 1895.
- Omedes apterus*, New Zealand, BROUN, p. 244, Ann. Nat. Hist. xv, n. sp.
- Otys*, n. g., p. 221, near *Scaletomerus*, for *O. harpalinus*, p. 222, *pallens, armatus*, pl. vi, fig. 2, n. spp., W. Australia, CHAMPION, Tr. ent. Soc. London, 1895.
- Taxes*, n. g., near *Hymenorus*, for *T. depressus*, pl. vi, fig. 3, p. 226, *alphiobioides*, p. 227, n. spp., W. Australia ; CHAMPION, Tr. ent. Soc. London, 1895.

PYTHIDÆ.

- [Cf. ALLUAUD (22), BROUN (149), CHAMPION (195), LEA (683, 684), LEWIS (695).]
- Istrisia*, n. g., near *Salpingus*, for *I. rufobrunnea*, n. sp., Japan ; LEWIS, p. 254, Ann. Nat. Hist. xv.
- Lissodema ainuum, plagiatum*, p. 255, *pictipenne*, p. 256, *beatulum, dentatum*, p. 257, *validicorne, tomaroides, minutum*, p. 258, Japan, LEWIS, Ann. Nat. Hist. xv, n. spp.
- Rhinosimus pallidipennis*, N. S. W., LEA, p. 604, P. Linn. Soc. N. S. Wales, ix, n. sp.
- Salpidema*, n. subg. of *Salpingus*, q.v.
- Salpingus niponicus*, Japan, LEWIS, p. 255, Ann. Nat. Hist. xv ; *S. splendens*, p. cœclvi, *avus, frater*, *S. (Salpidema, n. subg.) soror*, p. cœclvii, Madagascar, ALLUAUD, Bull. Soc. ent. France, 1895 ; *S. ornatus*, New Zealand, BROUN, p. 245, Ann. Nat. Hist. xv : n. spp.
- Trichosalpingus ornatus*, p. 262, *pallipes*, p. 263, *lateralis*, p. 264, Australia, LEA, P. Linn. Soc. N. S. Wales, x, n. spp.

MELANDRYIDÆ.

- [Cf. CHAMPION (195), LEA (683, 684), LEWIS (695).]
- Abdera scriptipennis*, Japan, LEWIS, p. 269, Ann. Nat. Hist. xv, n. sp.
- Bonzicus*, n. g., near *Melandrya*, p. 270, for *B. hypocrita*, n. sp., Japan, p. 271, pl. viii, fig. 4 ; LEWIS, Ann. Nat. Hist. xv.
- Ctenoplectron agile*, Tasmania, CHAMPION, p. 233, pl. vi, fig. 8, Tr. ent. Soc. London, 1895, n. sp.
- Dirca flavitarsis*, pl. viii, fig. 3, *validicornis*, p. 266, *erotyloides, dentat-maculata*, p. 267, *obscura, parvula, femoralis*, p. 268, Japan, LEWIS,

- Ann. Nat. Hist. xv ; *D. 4-maculata, lignivora*, Australia, LEA, p. 266, P. Linn. Soc. N. S. Wales, x ; *D. velutina*, p. 230, *venusta*, p. 231, pl. vi, fig. 5, Tasmania, CHAMPION, Tr. ent. Soc. London, 1895 : n. spp.
- Euryzilora*, n. g., near *Zilora*, for *E. lividipennis*, n. sp., Japan ; LEWIS, p. 265, Ann. Nat. Hist. xv.
- Eustrophus niponicus*, Japan, LEWIS, p. 259, Ann. Nat. Hist. xv, n. sp.
- Holostrophus orientalis, dux*, p. 259, *4-maculatus, unicolor*, p. 260, Japan, LEWIS, Ann. Nat. Hist. xv, n. spp.
- Hypulus cingulatus, higonius*, p. 269, *acutangulus*, p. 270, Japan, LEWIS, Ann. Nat. Hist. xv, n. spp.
- Ivania*, n. g., near *Melandrya*, for *I. coccinea*, n. sp., Japan, pl. viii, fig. 5 ; LEWIS, p. 271, Ann. Nat. Hist. xv.
- Melandrya gloriosa*, p. 272, *modesta, niponica, atricolor*, pl. viii, fig. 6, p. 273, *ruficollis*, fig. 7, *ordinaria*, p. 274, *pictipennis*, fig. 8, p. 275, Japan, LEWIS, Ann. Nat. Hist. xv, n. spp.
- Microscapha fenilis, lata*, Japan, LEWIS, p. 262, Ann. Nat. Hist. xv, n. spp.
- Mikadonius*, n. g., near *Serropalpus* for *M. gracilis*, n. sp., Japan, pl. viii, fig. 2 ; LEWIS, p. 264, Ann. Nat. Hist. xv.
- Mystes*, n. g., p. 235, for *M. planatus*, n. sp., Tasmania, p. 236, pl. vi, fig. 7 ; CHAMPION, Tr. ent. Soc. London, 1895,
- Nothus (Osphya) orientalis*, Japan, LEWIS, p. 276, Ann. Nat. Hist. xv, n. sp.
- Orchesia elegantula*, p. 260, *imitans, ocellaris*, p. 261, *marseuli*, p. 262, Japan, LEWIS, Ann. Nat. Hist. xv ; *O. austrina*, Tasmania, CHAMPION, p. 234, Tr. ent. Soc. London, 1895 ; *O. macleayi*, N. S. W., LEA, p. 606, P. Linn. Soc. N. S. Wales, ix ; *O. saltatoria*, Australia, LEA, p. 265, P. Linn. Soc. N. S. Wales, x : n. spp.
- Phlæotrya bellicosa*, Japan, LEWIS, p. 266, Ann. Nat. Hist. xv, n. sp.
- Scotodes niponicus*, Japan, LEWIS, p. 276, Ann. Nat. Hist. xv, n. sp.
- Scraptia laticollis, australis*, p. 239, *punctatissima*, p. 240, Tasmania, CHAMPION, Tr. ent. Soc. London, 1895, n. spp.
- Serropalpus niponicus*, Japan, LEWIS, p. 263, Ann. Nat. Hist. xv, n. sp.
- Synchroa crepuscula*, pl. viii, fig. 1, *melanotoides*, Japan, LEWIS, p. 263, Ann. Nat. Hist. xv, n. spp.
- Talayra*, n. g., p. 232, for *T. orchesioides*, n. sp., Tasmania, p. 233, pl. vi, fig. 6 ; CHAMPION, Tr. ent. Soc. London, 1895.
- Tellias*, n. g., p. 236, for *T. fumatus*, n. sp., Tasmania, p. 237, pl. vi, fig. 9, CHAMPION, Tr. ent. Soc. London, 1895.

LAGRIIDÆ.

- [*Cf.* CHAMPION (195), FAIRMAIRE (353 & 354), GESTRO (425), LEA (683), LEWIS (695).]
- Arthromacra viridissima, sumptuosa*, p. 277, *higonæ*, p. 278, Japan, LEWIS, Ann. Nat. Hist. xv, n. spp.
- Eutrapela robusticeps*, Japan, LEWIS, p. 276, Ann. Nat. Hist. xv, n. sp.

- Lagria pinguicula*, p. 384, *sextittata*, p. 385, Gallaland, GESTRO, Ann. Mus. Genova, xxxv; *L. tenuicollis*, Madagascar, FAIRMAIRE, p. 450, Ann. Soc. ent. Belgique, 1895; *L. hydropica*, p. 30, *tumidipennis*, *vittulata*, p. 31, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique, 1895; *L. œneoviolacea*, p. 228, *australis*, p. 229, W. Australia, CHAMPION, Tr. ent. Soc. London, 1895; *L. formicicola*, N. S. W., LEA, p. 607, P. Linn. Soc. N. S. Wales, ix: n. spp.
- Lagrioida australis*, Tasmania, CHAMPION, p. 238, Tr. ent. Soc. London, 1895, n. sp.
- Macrolagria*, n. g., near *Arthromacra* for *M. fujisana*, p. 422, *hirsuta*, p. 423, n. spp., Japan; LEWIS, Ann. Nat. Hist. xv.
- Nemostira gracilior*, *janthinipennis*, p. 33, *cribricollis*, p. 34, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique, 1895, n. spp.

ANTHICIDÆ, PEDILIDÆ, incl. XYLOPHILIDÆ.

[Cf. CASEY (191), CHAMPION (195), CHOBAUT (204), KRAATZ (638), LEA (683 & 684), LEWIS (695), PIC (865-870, 879, 880-883, 885-889), VAULOGER (1161).]

Monograph of the North American *Anthicidæ*; CASEY, Ann. N. York Ac. viii, pp. 624-809.

Amblyderus obesus, p. 743, *albicans*, *parviceps*, p. 744, *gracilentus*, p. 745, *punctiger*, p. 747, *arenarius*, p. 748, N. America, CASEY, Ann. N. York Ac. viii, n. spp.

Anthicomorphus, n. g., for *A. suturalis*, p. 428, *niponicus*, *cruralis*, p. 429, n. spp., Japan; LEWIS, Ann. Nat. Hist. xv.

Anthicus: list of species of the groups, *Cyclodinus* and *Brevicomus*; PIC, p. 52, Echange, xi. *A. fairmairei*, habits; CHOBAUT, p. cclxxvii, Bull. Soc. ent. France, 1895. *A. albanyensis* n. n. for *inflatus*, Champ., PIC, p. ccl, t. c. *A. ustulatus*, n. var. *persicus*, PIC, p. 785, Ann. Mus. Genova, xxxiv. *A. wollastoni*, referred to *Scydmanidæ*; CHAMPION, p. 75, Ent. Mag. 1895.

A. minutissimus, Morocco, *selvei*, Spain, p. 195, *fortissimus*, Algeria, p. 196, PIC, Abeille, xxviii; *A. (Cyclodinus) latior*, Algeria, PIC, p. cxxix, Bull. Soc. ent. France, 1895; *A. vaucheri*, Tangier, CHOBAUT, p. clvi, t. c.; *A. (Stenidius) pygidialis*, *A. (Cyclodinus) dorie*, Persia, p. 784, *A. semicalvus*, Asia Minor, p. 785, *A. (Aulacoderus) sulcicollis*, Persia, p. 786, PIC, Ann. Mus. Genova, xxxiv; *A. amblyderoides*, *ragazzii*, p. 586, *antinorii*, p. 587, Abyssinia, PIC, t. c.; *A. raffrayi*, Abyssinia, PIC, p. 59, Naturaliste, 1895; *A. bottegoi*, *gestroi*, Gallaland, PIC, p. 231, Ann. Mus. Genova, xxxv; *A. lethierryi*, Zanzibar, PIC, p. 19, Echange, xi; *A. soarezicus*, *jéjunus*, Madagascar, PIC, p. cclxxx, Bull. Soc. ent. France, 1895; *A. inflatipes*, p. 666, *posticatus*, *alluaudi*, p. 667, W. Africa, PIC, Ann. Soc. ent. France, lxiii; *A. litorosus*, p. 429, *cohares*, *extus*, p. 430, *perileptoides*, p. 431, Japan, LEWIS, Ann. Nat. Hist. xv; *A. grouvellei*, p. 63, *sodalis*, *rubidus*, p. 64, Sumatra, PIC, Bull. Soc. zool. France, xx; *A. egregius*, Sumbawa, PIC, p. xxxvi,

- Bull. Soc. ent. France, 1895; *A. bangi*, Sumbawa, p. 79, *opacicollis*, N. Fribourg, p. 80, PIC, Naturaliste, 1895; *A. maturus*, *gracilicornis*, *malayensis*, Sumbara, p. 94, *amplipennis*, N. Fribourg, p. 107, *amplithorax*, Brazil, p. 108, PIC, Naturaliste, 1895; *A. adelaidæ*, p. 253, *unicinctus*, p. 254, pl. vi, fig. 13, *segregatus*, p. 256, *inflatus*, *paululus*, p. 257, *scabricollis*, p. 258, pl. vi, fig. 14, Australia, *tasmanicus*, Hobart, *discoideus*, W. Australia, p. 259, *baudiniensis*, p. 260, *monostigma*, Baudin I., *tridentatus*, pl. vi, fig. 15, p. 261, *walkeri*, p. 262, *cavifrons*, W. Australia, *australis*, Tasmania, p. 263, *stenomorphus*, p. 264, *excavatus*, p. 265, W. Australia, CHAMPION, Tr. ent. Soc. London, 1895; *A. politulus*, p. 612, *demissus*, p. 613, *latus*, *similis*, p. 614, *confertus*, p. 615, *exiguus*, p. 616, *glabriceps*, p. 617, *pallipes*, p. 618, *pulehrior*, p. 619, N. S. W., LEA, P. Linn. Soc. N. S. Wales, ix; *A. rectifasciatus*, *scutellatus*, p. 271, *inglorious*, p. 272, *triangularis*, p. 273, *lemodioides*, p. 274, *cancellatus*, p. 275, *pignerator*, p. 276, *inornatus*, *simulator*, p. 277, *geminatus*, p. 278, *ovipennis*, p. 279, *delicatulus*, p. 280, Australia, LEA, P. Linn. Soc. N. S. Wales, x; *A. hecate*, p. 693, *simiolus*, p. 694, *pinguescens*, p. 696, *compositus*, p. 698, *ovicollis*, p. 699, *hastatus*, p. 701, *protectus*, p. 702, *solidus*, *subcalvus*, p. 703, *monticola*, *cephalotes*, p. 705, *decrepitus*, *mercurialis*, p. 707, *gilensis*, *præceps*, p. 709, *seminotatus*, *parallelus*, p. 710, *ancilla*, p. 711, *sodalis*, *heroicus*, p. 712, *stellatus*, *auriger*, p. 714, *saucius*, *vulneratus*, p. 715, *junctus*, p. 716, *decorellus*, p. 717, *vagans*, p. 718, *peninsularis*, *nympha*, p. 719, *obliquus*, p. 720, *innocens*, *inscitus*, p. 721, *amœnus*, p. 722, *militaris*, p. 724, *helvinus*, *lutulentus*, p. 725, *agilis*, *herifuga*, p. 726, *mundus*, p. 727, *convexulus*, p. 729, N. America, CASEY, Ann. N. York Ac. viii: n. spp.
- Ariotus*, n. g., p. 788, for *Xylophilus quercicola*, Schwarz, and *A. subtropicus*, n. sp., Florida, p. 789; CASEY, Ann. N. York Ac. viii.
- Arussia*, n. g., near *Eurygenius*, p. 229, for *A. gestroi*, n. sp., Gallaland, p. 230, PIC, Ann. Mus. Genova, xxxv.
- Axylophilus*, n. g., p. 808, for *A. yuccæ*, n. sp., Florida, p. 809; CASEY, Ann. N. York Ac. viii.
- Baulius*, n. g., for *Anthicus tenuis*, Lec.; CASEY, p. 650, Ann. N. York Ac. viii.
- Bogusus*, n. sp. & g., p. 584, for *B. tomoderoides*, n. sp., Abyssinia, p. 585, PIC, Ann. Mus. Genova, xxxiv.
- Corphyra newmanni*, on Meloë; HARRINGTON, p. 48, Rep. ent. Soc. Ontario, xxv.
- Dilandius*, n. g., p. 642, for *D. myrmecops*, *unicus*, n. spp., N. America, p. 643; CASEY, Ann. N. York Ac. viii.
- Elonus*, n. g., p. 774, for *E. princeps*, n. sp., Canada, p. 775, and *Xylophilus basalis* and *nebulosus*, Lec.; CASEY, Ann. N. York Ac. viii.
- Emelinus*, n. g., p. 777, for *Xylophilus melsheimeri*, Lec., and *E. ashmeadi*, n. sp., Florida, p. 778; CASEY, Ann. N. York Ac. viii.
- Eurygenius niponicus*, Japan, LEWIS, p. 423, pl. viii, fig. 9, Ann. Nat. Hist. xv, n. sp.

- Formicomus senegalensis*, Africa, PIC, p. 666, Ann. Soc. ent. France, lxiii ;
F. (Anthelephilus) gestroi, p. 583, *nigricornis*, p. 584, Abyssinia,
 PIC, Ann. Mus. Genova, xxxiv ; *F. raffrayi*, Abyssinia, PIC, p. 59,
 Naturaliste, 1895 ; *F. maximus*, p. cclxxviii, *alluaudi*, p. cclxxix,
 Madagascar, PIC, Bull. Soc. ent. France, 1895 ; *F. unifasciatus*,
dentatipes, p. 7, *staudingeri* with var. *nigricollis*, *pygidialis*, Banguéy,
rufithorax, Cook's Town, *bangi*, Borneo, p. 8, *terminatus*, Banguéy,
 p. 9, PIC, Echange, xi ; *F. nigripennis*, N. W. Australia, CHAMPION,
 p. 252, Tr. ent. Soc. London, 1895 ; *F. posticalis*, p. 609, *villosi-*
pennis, p. 610, N. S. W., LEA, P. Linn. Soc. N. S. Wales, ix ;
F. elegans, N. W. Australia, LEA, p. 270, P. Linn. Soc. N. S.
 Wales, x : n. spp.
- Formicilla evanescens*, p. 646, *gilensis*, p. 647, N. America, CASEY, Ann. N.
 York Ac. viii, n. spp.
- Ganascus*, n. g., p. 803, for *Xylophilus ventricosus*, Lec., and *G. opimus*,
 p. 805, *palliatus*, p. 806, n. spp., N. America ; CASEY, Ann. N. York
 Ac. viii.
- Hemantus*, n. g., p. 682, for *Anthicus floralis*, L., and *H. enodis*, p. 684,
scenicus, p. 685, *rixator*, p. 686, n. spp., N. America ; CASEY, Ann. N.
 York Ac. viii.
- Hypsogenia eva*, China, SEMENOW, p. 361, Horæ Soc. ent. Ross. xxix, n. sp.
- Lappus*, n. g., p. 656, for a part of *Anthicus* and the following n. spp. :—
pinalicus, p. 658, *vigilans*, p. 659, *cursor*, *alacer*, p. 660, *nubilatus*,
 p. 661, *lividus*, p. 662, *asperulus*, *canonicus*, p. 664, *ornatellus*, p. 665,
vividus, *bipartitus*, p. 666, *turgidicollis*, *subtilis*, p. 667, *animatus*, *soliv-*
vagans, p. 688, N. America, CASEY, Ann. N. York Ac. viii.
- Leptaleus amplipes*, Madagascar, PIC, p. cclxxix, Bull. Soc. ent. France,
 1895, n. sp.
- Macratrìa arussiensis*, Gallaland, PIC, p. 230, Ann. Mus. Genova, xxxv ;
M. lviceps, Togo, KRAATZ, p. 200, Deutsche ent. Zeitschr. 1895 ;
M. apicalis, p. 424, *fluviatilis*, *antennalis*, p. 425, Japan, LEWIS, Ann.
 Nat. Hist. xv ; *M. biguttata*, Sumatra, p. 133, *amplithorax*, *staudin-*
geri, Banguéy, *pubescens*, *pygmaea*, Balabac, Borneo, p. 134, PIC,
 Echange, xi ; *M. intermedia*, p. 268, *analisis*, p. 269, Australia, LEA,
 P. Linn. Soc. N. S. Wales, x ; *M. ovicollis*, *brunnea*, N. America,
 CASEY, p. 638, Ann. N. York Ac. viii : n. spp.
- Malporus*, n. g., p. 651, for *Anthicus formicarius*, Laf., *cinctus*, Say, and
M. properus, p. 653, *blandus*, p. 654, n. spp., N. America ; CASEY,
 Ann. N. York Ac. viii.
- Mastoremus*, n. g., p. 630, for *M. longicornis*, n. sp., Arizona, p. 631 ;
 CASEY, Ann. N. York Ac. viii.
- Mecynotarsus subparallelus*, Cazamanca, PIC, p. 665, Ann. Soc. ent. France,
 xliii ; *M. beccarii*, Abyssinia, PIC, p. 583, Ann. Mus. Genova, xxxiv ;
M. niponicus, Japan, LEWIS, p. 427, Ann. Nat. Hist. xv ; *M. apici-*
pennis, p. 607, *amabilis*, p. 608, N. S. W., LEA, P. Linn. Soc. N. S.
 Wales, ix ; *M. flavicans*, N. America, CASEY, p. 772, Ann. N. York
 Ac. viii : n. spp.

- Micranthicus*, n. g. for *M. brachypterus*, n. sp., N. W. Australia, CHAMPION, p. 266, pl. vi, fig. 16, Tr. ent. Soc. London, 1895.
- Nathicus*, n. g. for *N. virginica*, n. sp., N. America; CASEY, p. 655, Ann. N. York Ac. viii.
- Notozus numidicus*, n. var. *cloueti*; CHOBOUT, p. cccxlvii, Bull. Soc. ent. France, 1895.
- N. bedeli*, Algeria, VAULOGER, p. 193, Abeille, xxviii; *N. henoni*, Algeria, BEDEL, t. c.; *N. raffrayi*, Abyssinia, PIC, p. 582, Ann. Mus. Genova, xxxiv; *N. vicinus*, Gallaland, PIC, p. 230, op. cit. xxxv; *N. daimio*, Japan, LEWIS, p. 426, Ann. Nat. Hist. xv; *N. balteatus*, p. 759, *montanus*, *microcerus*, p. 760, *spatulifer*, p. 761, *debilitans*, p. 762, *lustrellus*, *nevadensis*, p. 763, *humboldti*, p. 764, *austinianus*, p. 765, *flicornis*, *dinocerus*, p. 766, *desertus*, p. 767, *constrictus*, *robustus*, p. 768, *alameda*, p. 769, *pictus*, p. 770, N. America, CASEY, Ann. N. York Ac. viii : n. spp.
- Octhenomus malayanus*, Sumbawa, PIC, p. xxxvi, Bull. Soc. ent. France, 1895; *O. minutus*, Ashanti, PIC, p. 73, Naturaliste, 1895; *O. obscurus*, Zanzibar, PIC, p. 20, Echange, xi : n. spp.
- Pergetus*, n. g. for *Eurygenius campanulatus*, Lec.; CASEY, p. 636, Ann. N. York Ac. viii.
- Phomalus*, n. g., p. 785, for *Xylophilus brunnipennis*, Lec., and *P. saginatus*, n. sp., California, p. 787; CASEY, Ann. N. York Ac. viii.
- Pseudariotus*, n. g., p. 790, for *P. amicus*, n. sp., Florida, and *Xylophilus notatus*, Lec., p. 791; CASEY, Ann. N. York Ac. viii.
- Retocomus*, n. g., p. 628, for the N. American species of *Eurygenius* and *R. gratus*, *decorellus*, n. spp., California, p. 629; CASEY, Ann. N. York Ac. viii.
- Sandyles*, n. g. for *Xylophilus ptinoides*, Schwarz; CASEY, p. 807, Ann. N. York Ac. viii.
- Sapintus*, n. g., p. 732, for *Anthicus pubescens*, Laf., and others, and *S. rusticus*, p. 734, *colonus*, *hispidulus*, p. 736, *festinans*, p. 739, *mollis*, p. 740, *timidus*, p. 741, n. spp., N. America; CASEY, Ann. N. York Ac. viii.
- Scanylus*, n. g., p. 800, for *S. pruinosis*, *luteolus*, n. spp., N. America, p. 801; CASEY, Ann. N. York Ac. viii.
- Stereopalpus femoralis*, Japan, LEWIS, p. 424, Ann. Nat. Hist. xv; *S. incanus*, p. 632, *variipes*, *indutus*, p. 633, *nimius*, *rufipes*, p. 634, *impressicollis*, p. 635, *subalbicans*, p. 636, N. America, CASEY, Ann. N. York Ac. viii : n. spp.
- Syzeton blackburni*, p. 621, *immaculatus*, p. 622, N. S. W., LEA, P. Linn. Soc. N. S. Wales, ix, n. spp.
- Syzetonellus sordidus*, p. 626, *humeralis*, p. 627, N. S. W., LEA, P. Linn. Soc. N. S. Wales, ix, n. spp.
- Syzetoninus 4-foveatus*, p. 623, *impressicollis*, *S. P. variegatus*, p. 624, *crassicornis*, p. 626, N. S. W., LEA, P. Linn. Soc. N. S. Wales, ix; *S. parallelus*, *basicornis*, Australia, LEA, p. 281, P. Linn. Soc. N. S. Wales, x : n. spp.

- Tanarthropsis*, n. subg. of *Tanarthrus*, q.v.
- Tanarthrus* (n. subg. *Tanarthropsis*), p. 750, *brevipennis*, p. 751, *nubifer*, p. 752, *tricolor*, p. 753, *densus*, p. 754, N. America, CASEY, Ann. N. York Ac. viii, n. spp.
- Tanilotes*, n. g., p. 798, for *T. lacustris*, n. sp., Wisconsin, p. 799, and *Xylophilus densus*, Cas. ; CASEY, Ann. N. York Ac. viii.
- Thicanus*, n. g., p. 670, for *Anthicus texanus*, Laf., *rejectus*, Lec., *californicus*, Laf., and *T. minuis*, p. 672, *franciscanus*, p. 673, n. spp., N. America; CASEY, Ann. N. York Ac. viii.
- Tomoderus major*, Russia, PIC, p. clxxiv, Bull. Soc. ent. France, 1895 ; *T. maculatus*, *elongatus*, Sumatra, PIC, p. 63, Bull. Soc. zool. France, xx ; *T. brevicornis*, N. S. W., LEA, p. 611, P. Linn. Soc. N. S. Wales, ix ; *T. impressulus*, N. Carolina, CASEY, p. 649, Ann. N. York Ac. viii : n. spp.
- Vacusus*, n. g., p. 674, for *Anthicus latus*, Laf., &c., and *V. supplex*, p. 676, *monitor*, p. 677, *arcanus*, p. 679, *desertorum*, *promineus*, p. 680, *suspectus*, p. 682, n. spp., N. America ; CASEY, Ann. N. York Ac. viii.
- Vanonus*, n. g., p. 791, for *Xylophilus piceus*, Lec., *X. tuberculifer*, Ham., and *V. calvescens*, p. 793, *vigilans*, p. 795, *huronius*, *sagax*, p. 796, *floridanus*, *wickhami*, p. 797, n. spp., N. America ; CASEY, Ann. N. York Ac. viii.
- Xylophilus impressus*, Lec., referred to *Cnopus*, Champ. ; CASEY, Ann. N. York Ac. viii, p. 803.
- X. pectinicornis*, p. 249, pl. vi, fig. 12, *morulus*, Tasmania, *fluctuosus*, p. 250, *albonotatus*, p. 251, N. W. Australia, CHAMPION, Tr. ent. Soc. London, 1895, n. spp.
- Zonantes*, n. g., p. 779, for part of *Xylophilus*, and *Z. hubbardi*, p. 782, *schwarzi*, p. 783, *triscapis*, p. 784, n. spp., N. America ; CASEY, Ann. N. York Ac. viii.

PYROCHROIDÆ.

[Cf. LEA (684), LEWIS (695).]

- Lemodes elongata*, p. 282, *corticalis*, p. 284, N. S. W., LEA, P. Linn. Soc. N. S. Wales, x, n. spp.
- Pyrochroa higonie*, *episcopalis*, Japan, LEWIS, p. 432, Ann. Nat. Hist. xv, n. spp.

MORDELLIDÆ.

[Cf. CHAMPION (195), FAIRMAIRE (354), LEA (684), SCHILSKY (665).]

- Anaspella clavicornis*, Marocco, SCHILSKY, Kafer Eur. xxxi, p. 59, n. sp.
- Anaspis ruficollis* and *geoffroyi*, varr.; CHAMPION, p. 207, Ent. Mag. 1895.
- A. ayfelbecki*, Bosnia, *A. (Larisia) caucasica*, Araxes Valley, SCHILSKY, Kafer Eur. xxx ; *A. græca*, Greece, *emarginata*, Mongolia, *curvicrus*, Caucasus, *viennensis*, Europe, *regimbarti*, Normandy, *latipalpis*, Germany, *incognita*, Spain, *pictipennis*, Araxes Valley, *A. (Larisia) reitteri*, Mongolia, *setulosa*, Crete, *A. (Silaria) ornata*, Greece, SCHILSKY, op. cit. xxxi, n. spp.

- Mordella waterhousei*, n. n. for *obliqua*, Wat., nec Leconte, CHAMPION, p. 267, Tr. ent. Soc. London, 1895.
- M. duplicata*, Asia Minor, SCHILSKY, Kafer Eur. xxxi; *M. ornata*, *quadrioculata*, p. 451, *lateplagiata*, *tetraspilota*, *homochroa*, *compacta*, p. 452, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique, 1895; *M. graphiptera*, p. 267, Tasmania, *w-album*, p. 269, W. Australia, *fulvonotata*, *pygmea*, *parva*, p. 270, Tasmania, *fuscipilis*, W. Australia, p. 271, CHAMPION, Tr. ent. Soc. London, 1895; *M. dumbrelli*, p. 285, *18-maculata*, p. 286, *laticeps*, p. 287, *festiva*, p. 289, *H-fasciata*, p. 290, *fugitiva*, *raymondi*, p. 292, *œmula*, *mastersi*, p. 293, *6-lineata*, *ignota*, p. 294, *alboscuteclata*, p. 295, *inconspicua*, *tristis*, p. 296, *uniformis*, *rufipes*, p. 297, *fusca*, *setipes*, p. 298, *pulchra*, p. 299, *pallida*, *waterhousei*, p. 300, *V-fasciata*, with varr. *venusta*, p. 301, and *modesta*, p. 302, *distincta*, *wiburdi*, p. 302, *longipes*, p. 303, Australia, LEA, P. Linn. Soc. N. S. Wales, x : n. spp.
- Mordellistena rufifrons*, Croatia, *signicollis*, Haifa, *reitteri*, Asia Minor, SCHILSKY, Kafer Eur. xxx; *acuticollis*, Vienna, *weisei*, Algiers, *brevicornis*, Caucasus, *hirtipes*, Europe, *gracilicornis*, Asia Minor, *luteipalpis*, Germany, *M. (Tolida) schusteri*, Vienna, *græca*, *rugipennis*, Greece, SCHILSKY, op. cit. xxxi; *M. aspersa*, p. 271, *austrina*, *jucunda*, p. 272, Australia, CHAMPION, Tr. ent. Soc. London, 1895 : n. spp.
- Stenalia hispana*, Spain, *merkli*, Turkey, SCHILSKY, Kafer Eur. xxxi, n. spp.

RHIPIPHORIDÆ.

- [Cf. CHAMPION (195), CHOBAUT (203, 205), REITTER (932).]
Emenadia luteipennis, ♂ var.; CHAMPION, p. 274, Tr. ent. Soc. London, 1895.
- Macrosiugon* = (*Emenadia*), *M. flabellata*, life-history; CHOBAUT, p. 181, Abeille, xxviii: synopsis of the Mediterranean species; BEDEL, pp. 184-192, t. c.
- Myiodes antoniae*, Ordubad, REITTER, p. 157, Wien. ent. Zeit. 1895, n. sp.
- Pseudorhipidius*, n. subg., cf. *Rhipidius*.
- Rhipidius (Pseudorhipidius) canaliculatus*, Burma, CHOBAUT, p. 145, Ann. Mus. Genova, xxxiv, n. sp.

CANTHARIDÆ.

- [Cf. ABEILLE (2), CHAMPION (195), FAIRMAIRE (353), GESTRO (425), HORN (512), LEWIS (695), PIC (875, 881), SEMENOW (1049).]
Anisarthrocera, n. g. for *Rhampholyssa batesi*; SEMENOW, p. 517, Horæ Soc. ent. Ross. xxix.
- Cantharis caruleata*, p. 34, *pyrrhoderæ*, p. 35, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique, 1895, n. spp.
- Cephaloon sakuræ*, Japan, LEWIS, Ann. Nat. Hist. xv, p. 444, n. sp.
- Coryna arussina*, CORMOSO, GESTRO, p. 389, Ann. Mus. Genova, xxxv, n. sp.

- Ctenopus semenowi*, Kashgar, REITTER, p. 157, Wien. ent. Zeit. 1895, n. sp.
- Diaphorocera*: characters of the species; BEDEL, p. 180, Abeille, xxviii.
- Glasnovia*, n. g. *Hapalidarum*, p. 355, for *G. afghanica*, p. 358, *caspiica*, p. 360, n. spp., Transcaspian region; SEMENOW, Horæ Soc. ent. Ross. xxix.
- Lytta senilis*, Syria, ABEILLE, p. xxiv, Bull. Soc. ent. France, 1895, n. sp.
- Macrobasis languida*, Lower California, HORN, p. 252, P. Calif. Ac. v, n. sp.
- Meloë*: habits and abundance of larvæ in Canada; HARRINGTON, pp. 90 & 91, Ottawa Natural. ix.
- Mylabris seneca*, p. 391, *rorifera*, p. 392, *hypolachna*, p. 393, *funeraria*, p. 395, cuts, Gallaland, GESTRO, Ann. Mus. Genova, xxxv, n. spp.
- Rhampholyssa steveni*, variation = (*komarowi*, Reitt.); SEMENOW, p. 518, Horæ Soc. ent. Ross. xxix.
- Sitarida minor*, Tasmania, CHAMPION, p. 274, pl. vi, fig. 11, Tr. Ent. Soc. London, 1895, n. sp.
- Zonabris 18-punctata*, ? v. *senifasciatus*; PIC, p. 81, Echange, xi.
- Z.—*Mylabris argentifer* (*Decatoma*), Algeria, PIC, p. 81, Echange, xi; Z. *sefrensis* (*allardi*, var. ?), Algeria, PIC, p. 12, Rev. Sci. Bourbonnais, viii: n. spp.

CEMERIDÆ.

- [Cf. BLACKBURN (114), CHAMPION (195), FAIRMAIRE (354), LEWIS (695), REITTER (928, 932), SEMENOW (1046).]
- Ananca strigicollis*, *striola*, *adumbrata*, Madagascar, FAIRMAIRE, p. 453, Ann. Soc. ent. Belgique, 1895; *A. zietzi*, S. Australia, BLACKBURN, p. 55, Tr. R. Soc. S. Austral. xix: n. spp.
- Anoncodes dispar*, metamorphoses; XAMBEU, p. 37, Mœurs, vi.
- A. sambucea*, Japan, LEWIS, p. 439, Ann. Nat. Hist. xv, n. sp.
- Asclera brunneipennis*, *nigrocyanea*, Japan, LEWIS, p. 440, Ann. Nat. Hist. xv; *A. atkinsoni*, p. 244, *sublineata*, p. 245, Tasmania, CHAMPION, Tr. ent. Soc. London, 1895: n. spp.
- Chrysanthia flavipes* = (*oralis*, Fairm.); REITTER, p. 164, Wien. ent. Zeit. 1895.
- C. viatica*, Japan, LEWIS, p. 443, Ann. Nat. Hist. xv, n. sp.
- Copidita macleayi*, Tasmania, p. 242, *torrida*, p. 243, *bipartiti*, p. 244, W. Australia, CHAMPION, Tr. ent. Soc. London, 1895, n. spp.
- Ditylus ruficollis*, Japan, LEWIS, p. 434, Ann. Nat. Hist. xv, n. sp.
- Dohrnia miranda* = (*Ithaca ianthina*, Oll.); CHAMPION, p. 28, Ent. Mag. 1895.
- D. simplex*, Tasmania, CHAMPION, p. 246, Tr. ent. Soc. London, 1895, n. sp.
- Eobia florilega*, *ambusta*, Japan, LEWIS, p. 438, Ann. Nat. Hist. xv, n. spp.
- Nacerdes* (*Pachychirus*) *tschitscherini*, Sarepta; SEMENOW, p. 249, Horæ Soc. ent. Ross. xxix, n. sp.

- Edemera confusa*, Turkestan, REITTER, p. 158, Wien. ent. Zeit. 1895 ;
Ed. manicata, concolor, p. 442, *robusta*, p. 443, Japan, LEWIS, Ann.
 Nat. Hist. xv : n. spp.
Oncomera venosa, Japan, LEWIS, p. 441, Ann. Nat. Hist. xv, n. sp.
Ovadis carinicolis, Japan, LEWIS, p. 439, Ann. Nat. Hist. xv, n. sp.
Patiala, n. g. near *Xanthochroa*, for *P. antennata*, pl. viii, fig. 12, p. 434,
ocularis, deformis, p. 435, n. spp., Japan ; LEWIS, Ann. Nat. Hist. xv.
Pseudolyceus hæmorrhoidalis, fig., pl. vi, fig. 10, *cinctus*, Guér., is a var.,
 p. 247 ; CHAMPION, Tr. ent. Soc. London, 1895.
Stolius, n. g. near *Microtonus*, for *S. vagepictus*, n. sp., Japan ; LEWIS,
 p. 433, Ann. Nat. Hist. xv.
Techmessa ruficollis, Tasmania, CHAMPION, p. 248, Tr. ent. Soc. London,
 1895, n. sp.
Xanthochroa atriceps, ainu, Japan, LEWIS, p. 436, Ann. Nat. Hist. xv,
 n. spp.

CURCULIONIDÆ.

- [*Cf.* APFELBECK (33), ARGOD-VALLON (35), BLACKBURN (114, 115), BROWN
 (149), CASEY (191), DESBROCHERS (282, 284-287), FAIRMAIRE (350,
 353), FAUST (358-364), GANGLBAUER (417), GESTRO (425), HELLER
 (493, 494, 496), HORN (512), LEA (683, 684), MEYER (763), NITSCHÉ
 (807), OLLIFF (820), PETRI (860), PIC (871), REITTER (926, 933, 935,
 936, 937, 939, 941, 943-946), RÜBSAAMEN (992), STIERLIN (1108,
 1109), SCHULTZE (1023, 1024), THOMSON (1131), TOURNIER (1135).]
Acalles kruperi, description amended ; FAUST, p. 360, Ent. Zeit. Stettin,
 lv.
A. dilatatus, Florida, CASEY, p. 838, Ann. N. York Ac. viii, n. sp.
Acherus nigricans, n. var. ? *femoralis* ; FAUST, p. 222, Ent. Zeit. Stettin,
 lvi.
Acicnemis festiva, p. 260, *mansueta*, p. 261, Burma, FAUST, Ann. Mus.
 Genova, xxxiv, n. spp.
Aclees africanus, Togo, p. 231, *fatuus*, Zanzibar, p. 232, FAUST, Deutsche
 ent. Zeitschr. 1895 ; *A. birmanus*, Bhamò, FAUST, p. 231, Ann. Mus.
 Genova, xxxiv : n. spp.
Acopturus, n. g. for *C. maculatus*, Boh. ; HELLER, p. 61, Abh. Mus.
 Dresden, 1894-95, No. 11.
Acythopeus pascoei, Philippines, p. 16, *javanicus*, Java, p. 17, FAUST,
 Ent. Zeit. Stettin, lvi, n. spp.
Adaleres, n. g., *Otiorynchide*, near *Dyslobus*, p. 816, for *A. ovipennis*,
 p. 816, *humeralis*, p. 818, n. spp., California ; CASEY, Ann. N. York
 Ac. viii.
Agametis rosea, Burma, HELLER, p. 5, Abh. Mus. Dresden, 1892-93, No. 2 ;
A. segnis, Burma, FAUST, p. 291, Ann. Mus. Genova, xxxiv : n. spp.
Aleides parvus, p. 235, *conradti, aschanticus*, p. 236, W. Africa, FAUST,
 Deutsche ent. Zeitschr. 1895 ; *A. venosus*, p. 239, *satelles*, p. 240,
improvidus, p. 241, *haruspax*, p. 243 (*lichen, luxuriosus*, varr. ? of

- saundersii*, Pasc.), *fecæ*, p. 245, *mysticus*, p. 246, *funestus*, p. 247, *obesus*, p. 248, *frenatus*, p. 249, *corniculus*, p. 250, *æmulus*, *pavidus*, p. 251, *tutus*, p. 252, *bimaculatus*, p. 253, *ludificator*, p. 254, *porosus*, p. 255, *scenicus*, p. 256, Burma, *nepalensis*, Nepal, p. 253, FAUST, Ann. Mus. Genova, xxxiv : n. spp.
- Alophus singularis* = (*foraminosus*, Stierl.); REITTER, p. 163, Wien. ent. Zeit. 1895. *A. triguttatus*, *obsoletus*, not distinct, synonymy; FAUVEL, p. 115, Rev. Ent. franc. xiv.
- Amnesia tumida*, p. 813, *discors*, p. 814, *debilis*, p. 815, N. America, CASEY, Ann. N. York Ac. viii, n. spp.
- Amorphoidea dorsalis*, Philippines, FAUST, p. 12, Ent. Zeit. Stettin, lvi, n. sp.
- Anaemerus cerberus*, Burma, FAUST, p. 171, Ann. Mus. Genova, xxxiv, n. sp.
- Anchistosiphilia*, n. g., p. 42, near *Ospilia*, for *A. decorata*, n. sp., W. Africa, p. 43; HELLER, Abh. Mus. Dresden, 1892-93, No. 2.
- Anius carinicollis*, Burma, FAUST, p. 360, Ann. Mus. Genova, xxxiv, n. sp.
- Anopsilus*, Kirsch = (*Balbus*, Pasc.); FAUST, p. 359, Ent. Zeit. Stettin, lv.
- Anthonomus grandis*, habits; TOWNSEND, Insect Life, vii, p. 295. *A. nigrinus*, habits; CHITTENDEN, t. c. p. 350.
- Aphyonotus*, n. g., *Laparocerinarum*, p. 239, for *O. zophosioides*, p. 240, *pectorosus*, p. 242, *sodalis*, p. 243, *lepidopterus*, p. 244, n. spp., Gallaland; FAUST, Ann. Mus. Genova, xxxv.
- A. nitidus*, E. Africa, GESTRO, p. 411, Ann. Mus. Genova, xxxv, n. sp.
- Apioccephalus 10-maculatus*, Madagascar, FAIRMAIRE, p. cclxxxii, Bull. Soc. ent. France, 1895, n. sp.
- Apion*: revision of the palæarctic species continued; DESBROCHERS, Frelon, iv, pp. 32-56 & 145-152, &c. *A. æneum*, metamorphoses; XAMBEU, p. 250, Naturaliste, 1895.
- A. gallacianum*, Galicia, p. 36, *batnense*, Algeria, p. 39, *hungaricum*, Hungary, *germanicum*, Germany, p. 44, *crassiusculum*, France, p. 47, *frontale*, Syria, p. 142, *tunicense*, Tunis, p. 147, *arcirostre*, Sarepta, *tenuirostre*, Tunis, p. 149, *libanicum*, *obesulum*, Syria, p. 174, *incertum* (? = *assimile*, Wenck.), p. 178, *oblitum*, Italy, p. 182, *interjectum*, Algeria, p. 187, *caiffense*, Syria, p. 188, *hirticorne*, Algeria, p. 192, *coxale*, Italy, p. 195, DESBROCHERS, Frelon, iv; *A. niloticum*, Egypt, *brevipilis*, Oran, *delagrangei*, Akbès, DESBROCHERS, p. 83, Frelon, iv; *A. segne*, Togo, FAUST, p. 232, Deutsche ent. Zeitschr. 1895 : n. spp.
- Aplotes lateritius*, p. 338, *bisulcatus*, p. 340, Burma, FAUST, Ann. Mus. Genova, xxxiv, n. spp.
- Apocyrus miser*, *gibbicollis*, p. 8, *sparsus*, p. 9, Philippines, FAUST, Ent. Zeit. Stettin, lvi, n. spp.
- Apoderus flavobenus*, variation; FAUST, p. 360, Ent. Zeit. Stettin, lv.
- A. latipennis*, variation, p. 155, *flaviceps*, n. var. *cyclops*, *A. semiannulatus*, var. *bistrispinosus*, p. 157; FAUST, Ann. Mus. Genova, xxxiv.

- A. porri*, Giuba, GESTRO, p. 408, Ann. Mus. Genova, xxxv; *A. blandus*, p. 155, *tentator*, p. 157, *A. (Centrocorynus) amulus*, p. 158, *A. (Cycnotrachelus) caruleatus*, p. 159, Burma, FAUST, Ann. Mus. Genova, xxxiv; *A. (Trachelophorus) filicollis*, Madagascar, FAIRMAIRE, p. 36, Ann. Soc. ent. Belgique, 1895 : n. spp.
- Aporhynchus*, n. g., near *Cyclomaurus* [for what is not stated]; DESBROCHERS, p. 160, Frelon, iv.
- Aprepes motschoulskyi*, Irkutsk, FAUST, p. 97, Horæ Soc. ent. Ross. xxix, n. sp.
- Apries histrio*, Burma, FAUST, p. 286, Ann. Mus. Genova, xxxiv, n. sp.
- Aramigus fulleri*, habits; SCHWARZ, p. 145, P. ent. Soc. Washington, iii.
- Archocopturus*, n. g. for *Copturus regalis*, Boh.; HELLER, p. 56, Abh. Mus. Dresden, 1894-95, No. 11.
- Arhines tutus*, p. 194, *lanugineus*, p. 195, Burma, *sirbenus*, Cochin China, p. 194, FAUST, Ann. Mus. Genova, xxxiv, n. spp.
- Asemus lentus*, p. 179, *mixtus*, p. 180, *pertusiventris*, p. 181, *fea*, p. 182, Burma, *plumbeus*, p. 183, *lacordairei*, p. 180, India, FAUST, Ann. Mus. Genova, xxxiv, n. spp.
- Astycus flavovittatus* = (*A. virgatus*, Desb.), *A. griseus* referred to *Leproplus*; FAUST, p. 359, Ent. Zeit. Stettin, lv.
- Axytesta gestroi*, *lugubris*, p. 15, *arachnopus*, p. 16, New Guinea, HELLER, Abh. Mus. Dresden, 1894-95, No. 16, n. spp.
- Aterpus cultratus*, larva; FROGGATT, p. 327, P. Linn. Soc. N.S. Wales, x.
- Athesapeuta*, n. g. *Baridiini*, p. 313, for *Baridius subsignatus* and *lineolato-fasciatus*, Motsch., and the following n. spp., *vinculata*, *pinguis*, p. 315, *secura*, p. 316, Burma, *bengalica*, India, *chinensis*, Shanghai, p. 316, *aurantiaca*, Burma, p. 317; FAUST, Ann. Mus. Genova, xxxiv.
- Attelabus (Lamprolabus) gestroi*, p. 161, *A. (Paramecolabus) fea*, p. 162, *humerosus*, p. 163, Burma, FAUST, Ann. Mus. Genova, xxxiv, n. spp.
- Auletes (Auletobius) gestroi*, Burma, FAUST, p. 169, Ann. Mus. Genova, xxxiv, n. sp.
- Azides dorsalis*, larva, habits; FROGGATT, p. 329, P. Linn. Soc. N.S. Wales, x.
- Balaninurus*, n. g., *Zygopides*, for *B. longipes*, p. 51, *plicatulus*, Cayenne, *arachnoides*, p. 52, *pulex*, Amazons, *miniatus*, Mexico, p. 53, n. spp.; HELLER, Abh. Mus. Dresden, 1894-95, No. 11.
- Balaninus*: characters of palæarctic; *B. turbatus*, n. var. *montivagus*; REITTER, Wien. ent. Zeit. 1895, pp. 253-255.
- B. longipennis*, Greece, REITTER, Wien. ent. Zeit. 1895, p. 254; *B. kola*, Senegal, DESBROCHERS, p. clxxvi [habits, PÉREZ, l. c.], Bull. Soc. ent. France, 1895; *B. pertinax*, p. 13, *bicolor*, p. 14, *axillaris*, p. 15, Philippines, FAUST, Ent. Zeit. Stettin, lvi : n. spp.
- Bangasternus (Cœlostethus, Cap.)*, characters of palæarctic; REITTER, p. 257, Wien. ent. Zeit. 1895.
- B. araxis*, Ordubad, REITTER, l. c., n. sp.
- Baridius albosparsus*, Burma, FAUST, p. 298, Ann. Mus. Genova, xxxiv, n. sp.

- Baris pusiola, decorata*, p. 247, *excellens, amanda*, p. 248, W. & S. Africa, FAUST, Deutsche ent. Zeitschr. 1895; *B. speculifera*, p. 299, *anxia*, p. 300, *impressipennis*, p. 301, *quinquemaculata*, p. 302, *dorica*, p. 303, *amica*, p. 304, Burma, *himalayana*, India, p. 304, FAUST, Ann. Mus. Genova, xxxiv : n. spp.
- Barypithes antoni*, Hungary, REITTER, p. 204, Wien. ent. Zeit. 1895, n. sp.
- Brachycerus batrachus*, p. 405, *bottegi*, p. 406, Gallalund, GESTRO, Ann. Mus. Genova, xxxv, n. spp.
- Bradybatus delagrangi*, Akbès, DESBROCHERS, p. 82, Frelon, iv, n. sp.
- Camptorhinus antiquus*, Togo, FAUST, p. 242, Deutsche ent. Zeitschr. 1895; *C. affinis*, p. 281, *serobicollis*, p. 282, Burma, FAUST, Ann. Mus. Genova, xxxiv : n. spp.
- Canephorus* distinguished from *Melanocyphus*, which = (*Melactus*, Pasc.); FAUST, p. 358, Ent. Zeit. Stettin, lv.
- Catoclephe*, n. g., p. 220, *Aterpida*, for *C. minans*, n. sp., Central Australia, p. 221, BLACKBURN, Tr. R. Soc. S. Austral. xix.
- Catoptes spermophilus*, p. 405, *æqualis*, p. 407, New Zealand, BROWN, Ann. Nat. Hist. xv, n. spp.
- Celia asperula*, Burma, FAUST, p. 232, Ann. Mus. Genova, xxxiv, n. sp.
- Centrinopsis ebeninus*, Philippines, FAUST, p. 18, Ent. Zeit. Stettin, lvi, n. sp.
- Cercidocerus birmanus*, p. 343, *carinensis*, p. 344, *hypocritus*, p. 345, *pygmaeus*, p. 346, *pictus*, p. 347, Burma, FAUST, Ann. Mus. Genova, xxxiv, n. spp.
- Cercophorus chloritis*, Burma, FAUST, p. 184, Ann. Mus. Genova, xxxiv, n. sp.
- Ceuthorrhynchidius nigroterminatus*, and *crotchi*, synonymy; SCHULTZE, p. 435, Deutsche ent. Zeitschr. 1895. *C. nigroterminatus* = (*crotchi*); CHAMPION, p. 194, Ent. Mag. 1895.
- C. campanella*, Turkey, p. 423, *rhenanus*, Coblenz, p. 424, SCHULTZE, Deutsche ent. Zeitschr. 1895, n. spp.
- Ceutorhynchus feunicus*, n. n. for *gyllenhali*, Faust; FAUST, p. 361, Ent. Zeit. Stettin, lv. *C. campestris* and allies, characters; SCHULTZE, p. 267, Deutsche ent. Zeitschr. 1895. *C. chalybeus* and allies, synonymy; SCHULTZE, pp. 417-422, Deutsche ent. Zeitschr. 1895. *C. pollinarius* = (*glauclus*, Boh.); *inaffectatus* and *arator* are two valid species, the former = (*sulcipennis*, Schultze, *infra*); *fallax* and *glabrostris* are also valid; *dimidiatus*, Friv., noticed; *variegatus*, Ol. and *campestris*, Gyll. are one, notwithstanding the opinion of the writer, *suprà*; SCHULTZE, t. c. pp. 430 & 431. *C. syrtes* and allies, characters, *id.*, t. c. pp. 431-433. *C. marginatus* and *mölleri*, characters, *id.*, t. c. pp. 434 & 435. *C. sulcicollis*, ravages; ORMEROD, Rep. xix, pp. 15-18.
- C. pectoralis*, Europe, = (*chalybeus*, Weise, olim), WEISE, p. 437, Deutsche ent. Zeitschr. 1895; *C. möguntiacus*, Europe, SCHULTZE, p. 420, t. c.; *C. sulcipennis*, France, p. 424, *anescens*, Askhabad, p. 425, *ponticus*, Amasia, p. 426, *fulvipes*, Spain, p. 427, *imperialis*,

- Caucasus, p. 428, SCHULTZE, Deutsche ent. Zeitschr. 1895; *C. herbsti*, Sarepta, p. 104, *gyllenhali*, Europe, p. 105, *cupidus*, *sibiricus*, Irkutsk, p. 106, FAUST, Horæ Soc. ent. Ross. xxix: n. spp.
- Chirozetes*: species tabulated; HELLER, Abh. Mus. Dresden, 1892-93, No. 2, p. 7.
- C. enganus*, Engano, p. 8, *diversocornutus*, Perak, p. 9, *auromaculatus*, Nias I., p. 10, HELLER, Abh. Mus. Dresden, 1892-93, No. 2, n. spp.
- Chærorhinus intrusus*, Pyrenees, REY, p. 50, Echange, xi, n. sp.
- Cionus parcenotatus*, Akbès, DESBROCHERS, p. 84, Frelon, iv, n. sp.
- Celiodes* (sub. *Stenocarax*) *schuppeli*, Boh. = (*hoffmanni*, Weise, and *pubdicus*, Rott.); SCHULTZE, p. 430, Deutsche ent. Zeitschr. 1895.
- C. rubicundus*, n. var. *nigritarsis*; HARTMANN, p. 315, t. c.
- C. proximus*, Dalmatia, FAUST, p. 422, Deutsche ent. Zeitschr. 1895; *C. dentimanus*, Turkestan, REITTER, p. 31, Wien. ent. Zeit. 1895: n. spp.
- Colobodes hystrix*, Burma, FAUST, p. 263, Ann. Mus. Genova, xxxiv, n. sp.
- Conarthrus nasutus*, Burma, FAUST, p. 363, Ann. Mus. Genova, xxxiv, n. sp.
- Conopisthen*, n. g., p. 256, near *Cyrtopisthen*, for *C. pruinatum*, n. sp., Togo, p. 257; FAUST, Deutsche ent. Zeitschr. 1895.
- Conotrachelus lecontei*, n. n. for *adpersus*, Kirsch; FAUST, p. 359, Ent. Zeit. Stettin, iv.
- C. lucanus*, Lower California, p. 257, *echinatus*, p. 258, Arizona, HORN, P. Calif. Ac. v, n. spp.
- Copturomimus*, n. g., *Zygopides*, for *C. ochrofuscatus*, Columbia, p. 63, *cinereus*, Mexico, p. 64, n. spp.; HELLER, Abh. Mus. Dresden, 1894-95, No. 11.
- Copturophanus*, n. subg. of *Copturosomus*, q. v.
- Copturosomus*, n. g., p. 61, for *Copturus carinatus*, *affaber*, *rorulentus*, and the following n. spp., *nasutus*, Buenos Ayres, *C. (Copturophanus) gibbus*, Brazil, p. 62; HELLER, Abh. Mus. Dresden, 1894-95, No. 11.
- Copturus sobrinus*, Lower California, HORN, p. 256, P. Calif. Ac. v.; *C. (Lamellocopturus) lamella*, Cayenne, *cervinus*, Peru, p. 20, *C. (Macrocopturus) linter*, Amazons, *recurvicauda*, p. 22, *maximus*, *colymbus*, p. 23, *kirschi*, Cayenne, *fausti*, Peru, p. 24, *lineicollis*, Cayenne, *martæ*, Columbia, p. 25, *carbonarius*, *cayennensis*, p. 26, *anthracinus*, p. 27, Cayenne, *C. marmoreus*, Brazil, p. 27, *mexicanus*, Oaxaca, p. 28, *abnormis*, Brazil, *crenatus*, Cayenne, p. 29, *sulcatus*, Brazil, p. 30, *conturbatus*, Mexico, *zygopsicus*, Santa Rita, p. 31, *torquatus*, *lamprothorax*, p. 32, *neohispanicus*, Mexico, *albotorquatus*, p. 33, *amazonicus*, Amazons, *lætus*, p. 34, *nobilis*, *decussatus*, p. 35, Cayenne, *miles*, Brazil, p. 36, *mimus*, Columbia, *gracilis*, p. 37, *quadricinctus*, Mexico, *severini*, New Grenada, p. 38, *balyi*, Cayenne, *chlorus*, Amazons, p. 39, *lutifemoris*, Brazil, *scolopax*, p. 40, *C. (Cyphocopturus) cognatus*, Amazons, *jekeli*, Cayenne, p. 41, *tristis*, *griseus*, Amazons, p. 42, *griseus*, var. *episternalis*, Cayenne, *C. (C. ?) venustus*, p. 43, *festus*, p. 44, Cayenne, *C. (Eucopturus)*

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- Corigetus figulus* referred to *Sepiomus*; FAUST, p. 360, Ent. Zeit. Stettin, lv.
- C. molitor*, p. 198, *filicornis*, p. 199, *subsulcatus*, p. 200, *testatus*, *fec.*, p. 201, *bidentulus*, p. 203, *gestroi*, p. 204, Burma, FAUST, Ann. Mus. Genova, xxxiv, n. spp.
- Coryssopus lascivus*, Togo, FAUST, p. 243, Deutsche ent. Zeitschr. 1895, n. sp.
- Cossonus fraudiger*, p. 258, *varipes*, p. 259, Togo, FAUST, Deutsche ent. Zeitschr. 1895, n. spp.
- C. argutus*, *bimaculatus*, p. 337, with var. *hæmaticus*, p. 368, *foveicollis*, p. 368, *carinensis*, p. 369, Burma, FAUST, Ann. Mus. Genova, xxxiv, n. spp.
- Cryptocordylus*, n. g., p. 222, *Sphenophorini*, for *C. quadrimaculatus*, n. sp., Central Africa, p. 223, FAUST, Ent. Zeit. Stettin, lvi.
- Cryptorhynchus poricollis*, Burma, FAUST, p. 287, Ann. Mus. Genova, xxxiv, n. sp.
- Cubicorhynchus taurus*, Central Australia, BLACKBURN, p. 220, Tr. R. Soc. S. Austral. xix, n. sp.
- Cyamobolus trivittatus*, Pasc., referred to *Asyteta*; HELLER, p. 15, Abh. Mus. Dresden, 1894-95, No. 16.
- C. tricinctus*, Halmaheira, FAUST, p. 98, Ent. Zeit. Stettin, lvi, n. sp.
- Cylindrocopturus*, n. g. for several N. American species of *Copturus*; HELLER, p. 56, Abh. Mus. Dresden, 1894-95, No. 11.
- Cyphicerus interruptus*, with varr. *amphibolus* and *confluens*, p. 205, *marginatus*, p. 206, *lineellus*, p. 207, *indagator*, p. 208, *mutator*, p. 209, *nubilus*, p. 210, *venalis*, *egenus*, p. 211, *patricius*, p. 212, Burma, FAUST, Ann. Mus. Genova, xxxiv, n. spp.
- Cyphocopturus*, n. subg., see *Copturus*.
- Cyphus sulcifrons*, Asia Minor, ARGOD-VALLON, p. xxviii, Bull. Soc. ent. France, 1895, n. sp.
- Cyrtopisthen kraatzii*, Togo, FAUST, p. 255, Deutsche ent. Zeitschr. 1895, n. sp.
- Cyrtorhinus squamiger*, Ashanti, FAUST, p. 257, Deutsche ent. Zeitschr. 1895, n. sp.
- Cyrtotrachelus dux*, variation discussed; FAUST, pp. 319, 320, Ann. Mus. Genova, xxxiv.
- C. fecæ*, p. 320, *birmanicus*, p. 321, Burma, FAUST, Ann. Mus. Genova, xxxiv, n. spp.
- Dactylotus nitidulus*, Kuku-noor, FAUST, p. 96, Horæ Soc. ent. Ross. xxix, n. sp.
- Daedania*, characters of species, p. 10, *D. onca*, n. var. *philippenensis*, *elaphus*, ♂ described, p. 11; HELLER, Abh. Mus. Dresden, 1892-93, No. 2.
- Damurus*, n. g. *Zygopides*, for *D. subtilis*, n. sp., Brazil; HELLER, p. 55, Abh. Mus. Dresden, 1894-95, No. 11.

- Demimæa*, Pasc., referred to *Gonipterini*; FAUST, p. 224, Ann. Mus. Genova, xxxiv.
- Dendrostygnus*, n. g., near *Tychanus*, p. 409, for *D. calcaratus*, n. sp., New Zealand, p. 410, BROWN, Ann. Nat. Hist. x.
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- Dermatodina*, n. g., *Cneorhinorum*, p. 81, for *D. vitiosa*, n. sp., Java, p. 82, FAUST, Ent. Zeit. Stettin, lvi.
- Desmidophorus brachmanum*, Darjeeling, FAUST, p. 263, Ann. Mus. Genova, xxxiv, n. sp.
- Diathetes kukenthali*, Halmaheira, FAUST, p. 104, Ent. Zeit. Stettin, lvi, n. sp.
- Dichotrachelus luzei*, Carniolia, GANGLBAUER, p. 180, Verh. Ges. Wien, 1895, n. sp.
- Diocalandra*, n. g., for *Calandra frumenti*, Fab.; FAUST, p. 353, Ann. Mus. Genova, xxxiv.
- Dorytomus cephalotes*, Taschkent, p. 102, *ruber*, Transbaikal, p. 103, FAUST, Horæ Soc. ent. Ross. xxix, n. spp.
- Dyslobus lecontei*, p. 811, *verrucifer*, p. 812, N. America, CASEY, Ann. N. York Ac. viii, n. spp.
- Dysopirhinus albosparsus*, New Guinea, HELLER, p. 16, Abh. Mus. Dresden, 1894-95, No. 16, n. sp.
- Dyspnoetus*, n. g., *Calandrini*, for *D. dignus*, p. 357, *morio*, p. 358, *lineellus*, E. India, p. 359, n. spp., Burma; FAUST, Ann. Mus. Genova, xxxiv.
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- Emexaure constricta*, Malacca, HELLER, p. 35, Abh. Mus. Dresden, 1892-93, No. 2, n. sp.
- Entomoderus letourneuxi*, Egypt, PIC, p. 29, Echange, xi, n. sp.
- Epilaris venusta* referred to *Decophthalmus*; FAUST, p. 360, Ent. Zeit. Stettin, lv.
- Epiliasius*, n. g., near *Phytoscaphus*, for *E. querulus*, *obtusipennis*, n. spp., Burma; FAUST, Ann. Mus. Genova, xxxiv.
- Epiphanops*, n. g., for *Epiphanæus jucundus*, *dohrni*, *persicus*; REITTER, p. 303, Deutsche ent. Zeitschr. 1895.
- Episomus pudibundus*, p. 185, *sennæ*, p. 186, *auriculatus*, p. 187, *profanus*, with var. *punctiger*, p. 189, *nigropustulatus*, *versutus*, p. 191, *repandus*, p. 193, Burma, FAUST, Ann. Mus. Genova, xxxiv; *E. celebensis*, p. 89, Celebes, *nobilis*, *kraatzii*, Borneo, p. 90, FAUST, Ent. Zeit. Stettin, lvi : n. spp.
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- Eucopturus*, n. subg., see *Copturus*.
- Eugnathus tenuipes*, Burma, FAUST, p. 223, Ann. Mus. Genova, xxxiv, n. spp.
- Eumecops fasciculifer*, Mongolia, REITTER, p. 281, pl. ii, fig. 3, Wien. ent. Zeit. 1895, n. sp.
- Euops togoensis*, *semiviolaceus*, W. Africa, FAUST, p. 234, Deutsche ent. Zeitschr. 1895; *E. (Synaptops) fulgidus*, Burma, FAUST, p. 164, Ann. Mus. Genova, xxxiv : n. spp.
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- Eurhynchus laevior*, larva; FROGGATT, p. 328, P. Linn. Soc. N. S. Wales, x. *E. superbus*, New Guinea, HELLER, p. 12, Abh. Mus. Dresden, 1894-95, No. 16, n. sp.
- Eurysternus*, n. g., for *Cleonus limis*, Mén.; FAUST, p. 359, Ent. Zeit. Stettin, lv.
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- Glochinnorrhinus cooki*, Cooktown, FAUST, p. 227, Ent. Zeit. Stettin, lvi; *G. evandilius*, Queensland, LEA, p. 306, P. Linn. Soc. N. S. Wales, x : n. spp.
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- Heterophasis congruens*, Burma, FAUST, p. 370, Ann. Mus. Genova, xxxiv, n. sp.
- Hoplitopales? nothus*, Togo, FAUST, p. 245, Deutsche ent. Zeitschr. 1895, n. sp.
- Hoplocopturus*, n. g., *Zygopides*, for *Copturus armatus*, Boh. (= *ruficeps*, Kirsch), p. 50, and *H. leptopus*, n. sp., Mexico, p. 51; HELLER, Abh. Mus. Dresden, 1894-95, No. 11.
- Hypera plantaginis*, nymph; XAMBEU, p. 51, Mœurs. vi.
- Ichthyopisthen togoense*, W. Africa, FAUST, p. 254, Deutsche ent. Zeitschr. 1895, n. sp.
- Ischnotrachelus setosus*, Togo, FAUST, p. 226, Deutsche ent. Zeitschr. 1895, n. sp.
- Isoperus*, n. g., p. 4, *Scythropinae*, for *I. signatus*, p. 5, *irroratus*, p. 6, n. spp., Philippines; FAUST, Ent. Zeit. Stettin, lvi.
- Ita crassirostris* = (*Rhinospalthus chobauti*, Desb.); BEDEL, p. xxii, Bull. Soc. ent. France, 1895.
- Ixalma* and *Celia*, distinguished, systematic position; FAUST, p. 232, Ann. Mus. Genova, xxxiv.
- Lamellocopturus*, n. subg., see *Copturus*.
- Laodia lineata*, p. 17, *tristis*, p. 18, Philippines, FAUST, Ent. Zeit. Stettin, lvi, n. spp.

- Laodice lunulata, funebris, consueta*, referred to *Rhinoscapa*; FAUST, p. 95, Ent. Zeit. Stettin, lvi.
- Larinus brevisculus*, p. 92, *crassiusculus*, p. 93, Akbès, DESBROCHERS, Frelon, iv; *L. haroldi*, Togo, FAUST, p. 229, Deutsche ent. Zeitschr. 1895: n. spp.
- Lechriops*, note on its characters and composition; HELLER, p. 14, Abh. Mus. Dresden, 1894-95, No. 11.
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- Leptobaris castanea*, characters amended, = (*Stenodema ferruginea*, Faust); FAUST, p. 360, Ent. Zeit. Stettin, lv.
- Leptoschoinus maculatus*, sexes, n. var. *cordiger*; FAUST, p. 361, Ent. Zeit. Stettin, lv.
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- Lissorhinus*, systematic position; FAUST, p. 359, Ent. Zeit. Stettin, lv.
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- Lixosomus penicillatus* = (*fairmairei*, Faust); FAUST, p. 361, Ent. Zeit. Stettin, lv.
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- Macrocopturus*, n. subg., see *Copturus*.
- Macrotimorus*, n. g., *Zygopides* for *M. monstruosus*, n. sp., Brazil?; HELLER, p. 59, Abh. Mus. Dresden, 1894-95, No. 11.
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- Magdalis*: table of palæarctic; REITTER, pp. 297-302, Deutsche ent. Zeitschr. 1895.

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- Miarus jakolevi*, Irkutsk, FAUST, p. 104, Horæ Soc. ent. Ross. xxix, n. sp.
- Miccotrogus damryi*, Sardinia, DESBROCHERS, p. 77, Frelon, iv, n. sp.
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- Milophorus acerbus*, Togo, FAUST, p. 226, Deutsche ent. Zeitschr. 1895, n. sp.
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- Mnemyne notaticollis*, Peru, HELLER, p. 12, Abh. Mus. Dresden, 1894-95, No. 11, n. sp.
- Mnemyurus*, n. g. *Zygopides*, for *M. caloderes*, n. sp., Cayenne; HELLER, p. 54, Abh. Mus. Dresden, 1894-95, No. 11.

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- Myocalandra*, n. g. near *Calandra* for *M. discors*, n. sp., Burma; FAUST, p. 354, Ann. Mus. Genova, xxxiv.
- Nanophyes unicolor*, Togo, FAUST, p. 234, Deutsche ent. Zeitschr. 1895, n. sp.
- Nassophasis pictipes* = (*Hilipomorphus subfusciatus*, Desb.); FAUST, p. 359, Ent. Zeit. Stettin, lv.
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- Ontocteterus*, n. g. *Anthonominae*, for *O. scutellaris*, n. sp., Philippines; FAUST, p. 11, Ent. Zeit. Stettin, lvi.
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- Orthochates ursus*, Greece, DESBROCHERS, p. 153, Frelon, iv, n. sp.
- Orthosinus salutaris*, Burma, FAUST, p. 359, Ann. Mus. Genova, xxxiv, n. sp.
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- Strophosomus (Neliocarum) sagittiformis*, Carcassonne, DESBROCHERS, p. 81, Frelon, iv, n. sp.
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[*Cf.* DESBROCHERS (284), FAIRMAIRE (353), SENNA (1050-1054), SHARP (441).]

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- Acratus chontalensis*, pl. iii, figg. 13 & 14, p. 76, *apicalis*, p. 77, *flum*, fig. 15, p. 78, Central America, SHARP, Biol. Centr.-Amer. Col. iv, pt. 6, n. spp.
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- Arrhenodes funebris*, pl. ii, fig. 12, p. 44, *concolor*, fig. 13, p. 45, Central America, SHARP, Biol. Centr.-Amer. Col. iv, pt. 6, n. spp.
- Brenthus anchorago*, variation of stature; SHARP, p. x, P. ent. Soc. London, 1895.
- B. championi*, pl. iii, fig. 3, p. 65, *rufescens*, fig. 4, p. 67, *guatemalensis*, *variegatus*, *chiriquensis*, p. 68, *multilineatus*, *clavipes*, fig. 5, p. 69, *quadrilineatus*, fig. 6, *sculptipennis*, p. 70, *laticornis*, fig. 7, p. 71, Central America, SHARP, Biol. Centr.-Amer. Col. iv, pt. 6, n. spp.
- Cacopsalis*, n. g., ? near *Eupsalis*, p. 33, for *C. rudis*, n. sp., Mexico, pl. ii, fig. 2, p. 34; SHARP, Biol. Centr.-Amer. Col. iv, pt. 6.
- Carcinopisthius papuanus*, New Guinea, SENNA, p. 555, Ann. Mus. Genova, xxxiv, n. sp.
- Clæoderes guatemalensis*, Guatemala, SHARP, p. 52, pl. iii, fig. 1, Biol. Centr.-Amer. Col. iv, pt. 6, n. sp.
- Cordus armaticeps*, New Guinea, SENNA, p. 559, Ann. Mus. Genova, xxxiv, n. sp.
- Cyphagogus sculptilis*, *appendiculatus*, *costipennis*, redescribed; FAIRMAIRE, pp. 36 & 37, Ann. Soc. ent. Belgique, 1895.
- Episphales rugicollis*, pl. ii, fig. 5, p. 36, *optatus*, fig. 6, *facilis*, *similis*, fig. 7, p. 37, *minor*, *elegans*, fig. 8, p. 38, *championi*, p. 39, Central America, SHARP, Biol. Centr.-Amer. Col. iv, pt. 6, n. spp.
- Estenorhinus*, characters; SHARP, p. 43, t. c.
- E. guttatus*, Panama, SHARP, t. c. p. 43, pl. ii, fig. 11, n. sp.
- Eupsalis somalica*, Somaliland, SENNA, p. 57, Notes Leyden Mus. xvii, n. sp.
- Hemipsalis*, n. g., near *Eupsalis*, p. 34, for *H. crassus*, n. sp., Nicaragua, pl. ii, fig. 3, p. 35; SHARP, Biol. Centr.-Amer. Col. iv, pt. 6.
- Hephebocerus mexicanus*, Central America, SHARP, p. 19, pl. i, fig. 17, Biol. Centr.-Amer. Col. iv, pt. 6, n. sp.
- Heterobrenthus*, n. g., near *Rhaphirhynchus*, for *H. distans*, n. sp., Central America, pl. ii, fig. 9; SHARP, p. 42, Biol. Centr.-Amer. Col. iv, pt. 6.
- Homæolizus*, n. g. for *H. salvini*, n. sp., Panama, pl. i, fig. 16; SHARP, p. 18, Biol. Centr.-Amer. Col. iv, pt. 6.

- Hovasius*, n. g., p. 291, *Ithysteninae*, for *H. alluaudi*, n. sp., Madagascar, p. 292; SENNA, Ann. Soc. ent. Belgique, 1895.
- Miolispa metallica*, n. var., *integrivitta*; SENNA, p. 361, Ann. Soc. ent. Belgique, 1895.
- M. discors*, Penang, p. 358, *pygmaea*, *jordani*, p. 369, *simulans*, p. 362, *nonfriedi*, p. 363, New Guinea, *poweri*, Malacca, p. 364, SENNA, Ann. Soc. ent. Belgique, 1895, n. spp.
- Microsebus malgasicus*, Madagascar, SENNA, p. 290, Ann. Soc. ent. Belgique, 1895; *M. loricae*, New Guinea, SENNA, p. 554, Ann. Mus. Genova, xxxiv : n. spp.
- Microtrachelizus brevisulcatus*, New Guinea, SENNA, p. 558, Ann. Mus. Genova, xxxiv, n. sp.
- Nemobrenthus*, n. g., near *Nemocephalus*, p. 71, for *N. cneipennis*, n. sp., Panama, p. 72, pl. iii, fig. 8; SHARP, Biol. Centr.-Amer. Col. iv, pt. 6.
- Nemocephalus femoratus*, p. 74, pl. iii, fig. 12, *deplanatus*, p. 75, *puncticeps*, p. 76, Central America, SHARP, Biol. Centr.-Amer. Col. iv, pt. 6, n. spp.
- Nemocoryna*, n. g., p. 72, for *N. godmani*, pl. iii, fig. 9, *sericata*, fig. 10, n. spp., Central America, p. 73; SHARP, Biol. Centr.-Amer. Col. iv, pt. 6.
- Psalobrenthus*, n. g., p. 41, for *P. solitarius*, n. sp., Costa Rica, pl. ii, fig. 10; SHARP, Biol. Centr.-Amer. Col. iv, pt. 6. [Cf. *Ubanius*, *infra*.]
- Pseudorychodes fruhstorferi*, Java, SENNA, p. 53, Notes Leyden Mus. xvii, n. sp.
- Rhaphirhynchus filicornis*, pl. ii, fig. 17, *longulus*, fig. 18, p. 54, *principalis*, fig. 19, p. 55, *obscurus*, fig. 20, p. 56, *auricollis*, p. 58, *anomalis*, *jansonii*, p. 59, *chiriquensis*, p. 60, *sennai*, p. 61, *deceptor*, p. 62, Central America, SHARP, Biol. Centr.-Amer. Col. iv, pt. 6, n. spp.
- Rhynchoneus*, n. g., near *Arrhenodes*, for *R. belli*, n. sp., Nicaragua, pl. ii, fig. 14; SHARP, p. 47, Biol. Centr.-Amer. Col. iv, pt. 6.
- Stereobates*, n. g., near *Stereodermus*, p. 16, for *S. pedator*, pl. i, fig. 14, *gracilis*, p. 17, Mexico, *chiriquensis*, Panama, pl. i, fig. 15, p. 18, n. spp.; SHARP, Biol. Centr.-Amer. Col. iv, pt. 6.
- Stereodermus longiceps*, pl. i, fig. 6, *latirostris*, p. 9, *carinatus* with var. *tenuis*, *chontalensis*, p. 10, *breviceps*, *dentipennis*, fig. 7, p. 11, *mitratus*, fig. 8, p. 12, *godmani*, fig. 9, *zunilensis*, fig. 10, *puncticollis*, p. 13, *dentipes*, *barbirostris*, p. 14, *calvus*, fig. 11, *nigriceps*, fig. 12, p. 15, *flum*, fig. 13, p. 16, Central America, SHARP, Biol. Centr.-Amer. Col. iv, pt. 6, n. spp.
- Taphroderes rectus*, pl. i, fig. 1, *mexicanus*, p. 3, *tostus*, *apicalis*, *beltianus*, fig. 2, p. 4, *ventralis*, fig. 3, *oscillator*, fig. 4, p. 5, Central America, SHARP, Biol. Centr.-Amer. Col. iv, pt. 6, n. spp.
- Teramocerus belli*, Nicaragua, SHARP, p. 78, pl. iii, figg. 16 & 17, Biol. Centr.-Amer. Col. iv, pt. 6, n. sp.
- Tmetogonus chiriquensis*, figure; Biol. Centr.-Amer. Col. iv, pt. 6, pl. iii, fig. 2.

- Trachelizus advena*, *oscillator*, pl. i, fig. 19, p. 20, *dispar*, fig. 20, p. 21, *lineatus*, fig. 21, *cognatus*, *elevatus*, fig. 22, p. 22, *hirtellus*, p. 23, *seriatus*, *serratus*, fig. 23, p. 24, *frontalis*, *sternalis*, p. 25, *nigricornis*, *robustus*, p. 26, *occlusus*, p. 27, *fracticornis*, fig. 24, p. 28, *arduus*, *filiformis*, p. 29, *geminatus*, *optatus*, p. 30, *laticollis*, *ducalis*, fig. 25, *prolixus*, fig. 26, p. 31, Central America, SHARP, Biol. Centr.-Amer. Col. iv, pt. 6, n. spp.
- Tycheus curvidens*, n. var. *signatus*; SHARP, p. 63, Biol. Centr.-Amer. Col. iv, pt. 6.
- Ubanius potens*, Central America, SHARP, p. 164, Notes Leyd. Mus. xvii; figured [as *Ubanius cneus*], pl. ii, fig. 4, *id.*, Biol. Centr.-Amer. Col. iv, pt. 6.
- Ulocerus laticornis*, Nicaragua, pl. iii, fig. 18, p. 79, *sordidus*, Panama, *mexicanus*, Mexico, p. 80, SHARP, Biol. Centr.-Amer. Col. iv, pt. 6, n. spp.
- Uropterus gestroi*, New Guinea, SENNA, p. 562, Ann. Mus. Genova, xxxiv, n. sp.
- Vasseletia*, n. g. for *Trachelizus vasseleti*, Boh., figured, pl. ii, fig. 1; SHARP, p. 32, Biol. Centr.-Amer. Col. iv, pt. 6.

ANTHRIBIDÆ.

- [*Cf.* ABEILLE (8), ALLARD (18), BROUN (149), FAIRMAIRE (350), JORDAN (566, 568), KOLBE (615), REITTER (932).]
- Acorynus frontalis*, Perak, *emarginatus*, Philippines, p. 148, *lavicollis*, Sumatra, *dohrni*, Ceylon, p. 151, *apatenioides*, *punctipennis*, Perak, p. 152, *biguttatus*, Borneo, p. 153, *carinifrons*, Assam, p. 155, *luzonicus*, p. 156, *analis*, p. 157, *cineraceus*, p. 158, *pallipes*, p. 159, Luzon, JORDAN, Ent. Zeit. Stettin, lvi, n. spp.
- Anaulodes*, n. g., near *Polycorynus*, for *A. cylindricus*, n. sp., Togo; KOLBE, p. 396, Ent. Zeit. Stettin, lv.
- Aneurrhinus convexicollis*, Togo, KOLBE, p. 391, Ent. Zeit. Stettin, lv; *A. cylindricus*, Madagascar, JORDAN, p. 195, *op. cit.* lvi: n. spp.
- Ankelita*, n. g., near *Sintor*, for *A. lineata*, n. sp., Madagascar; JORDAN, Ent. Zeit. Stettin, lvi, p. 142.
- Anocerastes variegatus*, Cameroons, KOLBE, p. 384, Ent. Zeit. Stettin, lv, n. sp.
- Anthrribus flavipilus*, N. Zealand, BROUN, p. 417, Ann. Nat. Hist. xv, n. sp.
- Apolecta depressipennis*, *puncticollis*, Borneo, p. 179, *fasciata*, Luzon, p. 180, *minor*, Perak, p. 181, JORDAN, Ent. Zeit. Stettin, lvi; *A. maculata*, Philippines, JORDAN, p. 264, *t. c.*: n. spp.
- Aræocerus bifoveatus*, Wlk., referred to *Directarius*, and *Hylesinus irresolutus*, Wlk., to *Aræocerus*; JORDAN, pp. 203 & 204, Ent. Zeit. Stettin, lvi.
- A. centrimaculatus*, E. India, ALLARD, p. cciv, Bull. Soc. ent. France, 1895, n. sp.

- Aræocorynus eurous*, Cape York, JORDAN, p. 265, Ent. Zeit. Stettin, lvi, n. sp.
- Aulodes albicans*, E. Africa, KOLBE, p. 396, Ent. Zeit. Stettin, lv, n. sp.
- Basitropis lutosus*, Luzon, JORDAN, p. 194, Ent. Zeit. Stettin, lvi, n. sp.
- Cuccorhinus* and *Cratoparis*, distinctions and components; JORDAN, p. 202, Ent. Zeit. Stettin, lvi.
- C. lateripictus*, New Guinea and Queensland, p. 201, *disconotatus*, Ceylon, p. 203, JORDAN, Ent. Zeit. Stettin, lvi, n. spp.
- Caranistes africanus*, Usambara, KOLBE, p. 397, Ent. Zeit. Stettin, lv, n. sp.
- Cedus torvus*, Madagascar, JORDAN, p. 163, Ent. Zeit. Stettin, lvi, n. sp.
- Cercomorphus bicolor*, Tunis, *bos*, Syria, ABEILLE, p. cccxxvi, Bull. Soc. ent. France, 1895, n. spp.
- Commista*, n. g., near *Apatenia*, for *C. latifrons*, n. sp., N. Australia; JORDAN, p. 248, Ent. Zeit. Stettin, lvi.
- Cornipila*, n. g., p. 159, for *C. luteipes*, n. sp., Perak, p. 160; JORDAN, Ent. Zeit. Stettin, lvi.
- Cratoparis koltzei*, Ussuri, REITTER, p. 159, Wien. ent. Zeit. 1895, n. sp.
- Decataphanes punctipennis*, p. 245, *occultus*, p. 246, W. Africa, *fuliginosus*, p. 247, Transvaal, JORDAN, Ent. Zeit. Stettin, lvi, n. spp.
- Dendrotrogus angustipennis*, p. 191, *fea*, p. 192, Birma, JORDAN, Ent. Zeit. Stettin, lvi, n. spp.
- Deuteroerates longicollis*, Usambara, KOLBE, p. 387, Ent. Zeit. Stettin, lv, n. sp.
- Directarius convexipennis*, Perak, JORDAN, p. 166, Ent. Zeit. Stettin, lvi, n. sp.
- Doticus pestilens*, larva; FROGGATT, p. 330, P. Linn. Soc. N. S. Wales, x.
- Epicerastes*, n. g., for part of *Anocerastes* and the following n. spp., *convexicollis*, p. 385, *costiger*, *sericans*, p. 386, *dorsalis*, p. 387, Tropical Africa; KOLBE, Ent. Zeit. Stettin, lv,
- Eugigus pupa*, Baru, p. 132, *whiteheadi*, Luzon, p. 133, JORDAN, Ent. Zeit. Stettin, lvi, n. spp.
- Exechesops latifrons*, Mombasa, KOLBE, p. 383, Ent. Zeit. Stettin, lv, n. sp.
- Gibber*, n. g., p. 176, near *Hypseus*, for *G. tuberculatus*, n. sp., Perak, p. 177; JORDAN, Ent. Zeit. Stettin, lvi.
- Gulamentus*, n. g., p. 200, near *Phlæobius*, for *G. cylindricus*, n. sp., Congo, p. 201; JORDAN, Ent. Zeit. Stettin, lvi.
- Gymnognathus compar*, p. 167, *cincticollis*, p. 168, Upper Amazons, *robustus*, Para, p. 169, *acutangulus*, *clathratus*, p. 170, *ornatus*, p. 171, Upper Amazons, *bohlsi*, Paraguay, p. 172, *flexuosus*, p. 173, *varicornis*, p. 174, Upper Amazons, JORDAN, Ent. Zeit. Stettin, lvi, n. spp.
- Gymnognathus molitor*, Cayenne, p. 249, *brevirostris*, *tenuis*, p. 250, *affinis*, p. 251, Brazil, JORDAN, Ent. Zeit. Stettin, lvi, n. spp.
- Gynandrocerus præcox*, W. Africa, KOLBE, p. 390, Ent. Zeit. Stettin, lv; *G. puncticollis*, Madagascar, JORDAN, p. 195, *op. cit.* lvi : n. spp.

- Habrissus asellus*, Ceylon, p. 177, *fasciatus*, Malacca, p. 178, JORDAN, Ent. Zeit. Stettin, lvi, n. spp.
- Homæotropis*, n. g., p. 381, *Stenocerina*, for *H. tuberculata*, n. sp., Usambara, p. 382; KOLBE, Ent. Zeit. Stettin, lv.
- Hucus latus*, Perak, p. 160, *lineatocollis*, Luzon, p. 161, *vestitus*, *lateralis*, Perak, p. 162, JORDAN, Ent. Zeit. Stettin, lvi, n. spp.
- Hypselotropis*: a valid genus, characters; JORDAN, p. 124, Ent. Zeit. Stettin, lvi, n. spp.
- H. albatu*s, Costa Rica, p. 125, *pectoralis*, Upper Amazons, p. 127, JORDAN, Ent. Zeit. Stettin, lvi, n. spp.
- Litocerus philippinensis*, p. 144, *plagiatus*, p. 145, Luzon, *picturatus*, Perak, p. 146, *annulipes*, Ceylon, p. 147, JORDAN, Ent. Zeit. Stettin, lvi, n. spp.
- Litotropis pustulosus*, Madagascar, p. 192, *semiustus*, Ceylon, p. 193, JORDAN, Ent. Zeit. Stettin, lvi, n. spp.
- Mecocerina*, n. g., p. 164, for *Acorymus amabilis*, Pasc., and *M. xenoceroides*, n. sp., Luzon, p. 165; JORDAN, Ent. Zeit. Stettin, lvi.
- Mecocerus philippinensis*, Mindanao, p. 137, *assimilis*, Java, *gibbifer*, Philippines, p. 138, *vestitus*, p. 139, *oculatus*, p. 140, W. Africa, JORDAN, Ent. Zeit. Stettin, lvi; *M. fasciculatus*, p. 374, *laci-fasciatus*, *barombinus*, p. 375, *inornatus*, p. 376, Tropical Africa, KOLBE, Ent. Zeit. Stettin, lv : n. spp.
- Mecotropis nigropictus*, Luzon, p. 135, *marmoreus*, Borneo, p. 136, JORDAN, Ent. Zeit. Stettin, lvi, n. spp.
- Nessiara flavosignata*, Perak, JORDAN, p. 175, Ent. Zeit. Stettin, lvi, n. sp.
- Ozotomerus rugicollis*, Borneo, *discoidalis*, Luzon, JORDAN, p. 196, Ent. Zeit. Stettin, lvi, n. spp.
- Peltorrhinus*, n. g., p. 382, *Tropiderinae*, for *P. latirostris*, n. sp., Togo, p. 383; KOLBE, Ent. Zeit. Stettin, lv.
- Phaulimia lineata*, Perak, JORDAN, p. 176, Ent. Zeit. Stettin, lvi, n. sp.
- Phlæbiopsis*, n. g., near *Phlæobius*, for *P. sansibarica*, n. sp., E. Africa; KOLBE, Ent. Zeit. Stettin, lv.
- Phlæobius albimaculatus*, E. India, ALLARD, p. cciv, Bull. Soc. ent. France, 1895; *P. pallipes*, Perak, p. 197, *albescens*, no locality, p. 198, JORDAN, Ent. Zeit. Stettin, lvi; *P. podicalis*, p. 391, *posticatus*, *catenatus*, p. 392, *albifrons*, p. 393, *variegatus*, *affinis*, *humilis*, p. 394, Tropical Africa, KOLBE, Ent. Zeit. Stettin, lv : n. spp.
- Phlæophilus decoratus*, Madagascar, JORDAN, p. 199, Ent. Zeit. Stettin, lvi, n. sp.
- Phlæotragus*: characters and sections; JORDAN, pp. 130-132, Ent. Zeit. Stettin, lvi.
- Platynorrhynchus* (Chev.), n. g., p. 380, near *Tophoderes*, for *P. dorso-vittis*, n. sp., Togo, p. 381; KOLBE, Ent. Zeit. Stettin, lv.
- Ptychoderes rugicollis*, Panama, JORDAN, p. 122, Ent. Zeit. Stettin, lvi, n. sp.
- Rawasia communis*, Assam, *annulipes*, Birma, JORDAN, p. 188, Ent. Zeit. Stettin, lvi, n. spp.

- Sintor philippinensis*, Luzon, JORDAN, p. 141, Ent. Zeit. Stettin, lvi, n. sp.
Spinictotropis, n. g., p. 379, near *Cedus*, for *S. albofasciata*, n. sp., Usambara, p. 380; KOLBE, Ent. Zeit. Stettin, lv.
Stenocerus paraguayensis, Paraguay, JORDAN, p. 167, Ent. Zeit. Stettin, lvi, n. sp.
Syntrophoderes, n. g., p. 377, near *Trophoderes*, for *S. nodifer*, Usambara, *guineensis*, Cameroons, n. spp., p. 378; KOLBE, Ent. Zeit. Stettin, lv.
Telala, n. g., p. 143, near *Sintor*, for *T. armigera*, n. sp., N. S. Wales, p. 144; JORDAN, Ent. Zeit. Stettin, lvi.
Trophoderes anatinus, Angola, *acutangulus*, Togo, KOLBE, p. 377, Ent. Zeit. Stettin, lv; *T. sikoreæ*, Madagascar, JORDAN, p. 140, *op. cit.* lvi : n. spp.
Tribotropis suffusus, p. 128, Upp. Amazons, *compressicornis*, Columbia, p. 129, JORDAN, Ent. Zeit. Stettin, lvi, n. spp.
Xylinaodes simillimus, n. var. *montanus*; KOLBE, p. 388, Ent. Zeit. Stettin, lv.
X. alternans (Imhof), W. Africa, KOLBE, p. 389, Ent. Zeit. Stettin, lv;
X. granulatus, Penang, &c., p. 252, *impressus*, Assam, p. 253, *moluccensis*, Buru, p. 254, *philippinensis*, Luzon, *andamanensis*, Andamans, *annulipes*, p. 255, *plagiatus*, *foveatus*, p. 257, Assam, *aspericollis*, p. 258, Borneo, *rugiceps*, Siam, *aruensis*, N. Guinea, p. 259, *striatifrons*, Assam, p. 260, *armatus*, p. 261, *compar*, p. 262, Java, *sulcifrons*, p. 263, Assam, JORDAN, *op. cit.* lvi : n. spp.
Xenotropis, n. g., p. cclxxxii, near *Diastatropis* for *X. rugicollis*, n. sp., Seychelles, p. cclxxxiii; FAIRMAIRE, Bull. Soc. ent. France, 1895.
Xenocerus arciferus, synonymy, p. 182, *puncticollis*, *latifasciatus*, noticed, p. 183, *scalaris*, habitat, p. 184; JORDAN, Ent. Zeit. Stettin, lvi.
X. khasianus, Assam, p. 184, *molitor*, Luzon, p. 185, *perplexus*, Aru Is., p. 186, *sambawanus*, Sambawa, *decemguttatus*, Sumatra, p. 187, JORDAN, Ent. Zeit. Stettin, lvi; *X. aluensis*, Solomon Is., p. 251, *australicus*, Somerset, p. 252, JORDAN *t. c.* : n. spp.

BRUCHIDÆ.

[Cf. ALLARD (17, 19), REITTER (932).]

- Bruchus alboscutellatus*, habits; TOWNSEND, p. 277, Canad. Ent. xxvii.
B. rufimanus, &c., ravages; ORMEROD, Rep. xix, pp. 4-14.
B. nigripennis, Himalaya, p. 226, *rufiventris*, Belgaum, p. 227, ALLARD, Ann. Soc. ent. Belgique, 1895, n. spp.
Caryoborus alluaudi, Madagascar, ALLARD, p. cliv, Bull. Soc. ent. France, 1895, n. sp.
Mylabris pallidula, Turkestan, REITTER, p. 159, Wien. ent. Zeit. 1895, n. sp.
Spermophagus gleditschiæ, larvæ; PATTON, p. 290, Canad. Ent. xxvii.
S. robiniaæ, larva, WICKHAM, p. 34, pl. i, fig. 3, Bull. Lab. Iowa, iii, No. 3.

CERAMBYCIDÆ.

- [*Cf.* ABEILLE (6), BLACKBURN (114, 115), BROUN (149), FAIRMAIRE (348, 352, 353, 354, 355), GAHAN (412, 413), GESTRO (425), HORN (512), JAKOWLEFF (553), JORDAN (565, 567), NONFRIED (808), PIC (872, 874, 875, 884), REITTER (928, 931, 932, 935), RITSEMA (971), SEMENOW (1045).
- Agelasta nigromaculata*, p. 52, *mixta*, p. 53, Burma, GAHAN, Ann. Mus. Genova, xxxiv, n. spp.
- Albana fusciolata*, Tonkin, FAIRMAIRE, p. 186, Ann. Soc. ent. Belgique, 1895, n. sp.
- Alcidion socium*, Grenada and Caraccas, GAHAN, p. 131, Tr. ent. Soc. London, 1895, n. sp.
- Anaglyptus banghaasi*, Kulab, REITTER, p. 159, Wien. ent. Zeit. 1895, n. sp.
- Ancylonotus hieroglyphicus*, Madagascar, FAIRMAIRE, p. 38, Ann. Soc. ent. Belgique, 1895, n. sp.
- Anubis immaculatus*, Gallaland, GESTRO, p. 418, Ann. Mus. Genova, xxxv, n. sp.
- Apatophysis toxotoides* and *tomentosus* distinguished; ABEILLE, p. cclxxiv, Bull. Soc. ent. France, 1895.
- Aphanasium australe*, larva; FROGGATT, pp. 325, P. Linn. Soc. N. S. Wales, x.
- Apomecyna niveosparsa*, Tonkin, FAIRMAIRE, p. 185, Ann. Soc. ent. Belgique, 1895, n. sp.
- Apriona basicornis*, Tonkin, FAIRMAIRE, p. 185, Ann. Soc. ent. Belgique, 1895, n. sp.
- Aristobia voeti* = (*angustifrons*, Gah.); GAHAN, p. 40, Ann. Mus. Genova, xxxiv.
- A. birmanica*, Burma, GAHAN, p. 40, Ann. Mus. Genova, xxxiv, n. sp.
- Aromia moschata*, n. var. *melancholica*; REITTER, p. 210, Wien. ent. Zeit. 1895.
- A. bangi*, Korea, REITTER, p. 209, Wein ent. Zeit. 1895, n. sp.
- Astathes janthinipennis*, Tonkin, FAIRMAIRE, p. 187, Ann. Soc. ent. Belgique, 1895, n. sp.
- Atimura apicalis*, Burma, GAHAN, p. 76, Ann. Mus. Genova, xxxiv, n. sp.
- Auxa alluaudii*, Madagascar, FAIRMAIRE, p. 454, Ann. Soc. ent. Belgique, 1895, n. sp.
- Blepephaeus stigmus*, Burma, p. 44, *parvicollis*, p. 102, GAHAN, Ann. Mus. Genova, xxxiv, n. spp.
- Bottegia*, n. g., p. 414, *Psebiides*, for *B. spectabilis*, n. sp., Gallaland, GESTRO, Ann. Mus. Genova, xxxv.
- Butherium scabricolle*, Amazons, NONFRIED, p. 307, Berlin. ent. Zeitschr. xl, n. sp.

- Cacia ornata*, Burma, GAHAN, p. 50, Ann. Mus. Genova, xxxiv, n. sp.
Cairnsia, n. g., p. 224, *Niphonidarum*, *cowleyi*, p. 225, n. sp., Queensland ;
 BLACKBURN, Tr. R. Soc. S. Austral. xix.
Callichroma rufescens, St. Lucia and Mexico, GAHAN, p. 113, Tr. ent. Soc.
 London, 1895, n. sp.
Caloclytus ludens, Tenasserim, GAHAN, p. 25, pl. i, fig. 5, Ann. Mus.
 Genova, xxxiv, n. sp.
Calothyrsa bottegi, Gallaland, GESTRO, p. 423, Ann. Mus. Genova, xxxv,
 n. sp.
Cartallum lævicolle, Mesopotamia [in note said to be *thoracium*, Shp.],
 PIC, p. 76, Echange, xi, n. sp.
Catypnes planicollis, Victoria, BLACKBURN, p. 58, Tr. R. Soc. S. Austral.
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Cerambyx velutinus, larva ; XAMBEU, p. 59, Mœurs, vi.
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- Polyoptilus irregularis*, N. S. W., LEA, p. 632, P. Linn. Soc. N. S. Wales, ix, n. sp.
- Pseudocolaspis albopilosa*, p. 443, *fulvohirta*, p. 444, *leucogramma*, p. 445, *tridentifera*, p. 446, *auroscutata*, p. 447, *cribripes*, p. 448, E. Africa, GESTRO, Ann. Mus. Genova, xxxv; *P. cupreomarginatus*, p. 176, *parvula*, p. 177, W. Africa, JACOBY, Deutsche ent. Zeitschr. 1895; *P. orientalis*, Bombay, JACOBY, p. 280, Ann. Soc. ent. Belgique, 1895: n. spp.
- Pseudocrania nigricornis*, Gaboon, WEISE, p. 345, Deutsche ent. Zeitschr. 1895; but stated on p. 352, t. c., to be same as *Monolepta africana*, Jac.: n. sp.
- Pseudomela angolensis*, W. Africa, WEISE, p. 348, Deutsche ent. Zeitschr. 1895, n. sp.
- Psylliodes hyoseyami*, n. var. *erythroceros*, ABEILLE, p. cdiii, Bull. Soc. ent. France, 1895, n. sp.

- Rhyparida limbatipennis*, Cape York, p. 56, *coriacea*, New Guinea, *depressa*, Java, p. 57, *iridipennis*, Borneo, p. 58, JACOBY, Ent. Zeit. Stettin, lvi, n. spp.
- Sagra derchii*, Gallaland, GESTRO, p. 431, Ann. Mus. Genova, xxxv; *S. abdominalis*, Para, JACOBY, p. 52, Ent. Zeit. Stettin, lvi: n. spp.
- Sardoidea*, n. g., p. 332, *Mimastrinae*, for *S. viridicollis*, n. sp., Natal, p. 333; JACOBY, Tr. ent. Soc. London, 1895.
- Srelolyperus cyanellus*, Lower California, HORN, p. 251, P. Calif. Ac. v. n. sp.
- Sebæthe natalensis*, p. 320, *tibiulis*, p. 321, S. Africa, JACOBY, Tr. ent. Soc. London, 1895, n. spp.
- Sermyla maculata*, p. 333, S. Africa, JACOBY, Tr. ent. Soc. London, 1895, n. sp.
- Sermylodes philippinensis*, Philippines, JACOBY, p. 75, Ent. Zeit. Stettin, lvi, n. sp.
- Simaetha dimidiata*, Java, JACOBY, p. 70, Ent. Zeit. Stettin, lvi, n. sp.
- Sphaeroderma parvulum*, Addah, WEISE, p. 337, Deutsche ent. Zeitschr. 1895; *S. discoidalis*, Natal, JACOBY, p. 319, Tr. ent. Soc. London, 1895; *S. decemmaculata*, Madura, ALLARD, p. 26, Naturaliste, 1895: n. spp.
- Sphenoraia quadripunctata*, Timor, JACOBY, p. 109, Entomologist, 1895, Supp., n. sp.
- Spilocephalus elegans*, Gallaland, GESTRO, p. 463, Ann. Mus. Genova, xxxv, n. sp.
- Spilodes bogotaensis*, Bogota, JACOBY, p. 192, Entomologist, 1895, n. sp.
- Stethomela balyi*, *viridissima*, p. 68, *olivacea*, p. 69, Queensland, JACOBY, Ent. Zeit. Stettin, lvi, n. spp.
- Stratioderus*, n. g., p. 331, near *Nerissus*, for *S. fortis*, n. sp., Ashanti, p. 332, WEISE, Deutsche ent. Zeitschr. 1895.
- Suffrianius*, n. g. for *Cryptocephalus pumilio*; WEISE, p. 58, Deutsche ent. Zeitschr. 1895.
- Syagrus minutus*, W. Africa, JACOBY, p. 175, Deutsche ent. Zeitschr. 1895, n. sp.
- Temnaspis oberthuri*, Burma, JACOBY, p. 253, Ann. Soc. ent. Belgique, 1895, n. sp.
- Thymus*, n. g., p. 338, near *Apthona*, for *T. nucleus*, *custos*, p. 339, *bifoveolatus*, p. 340, n. spp., Ashanti; WEISE, Deutsche ent. Zeitschr. 1895.
- T. violaceus*, Sierra Leone, WEISE, p. 352, Deutsche ent. Zeitschr. 1895, n. sp.
- Titubea octopunctata*, n. var. *mecheriensis*, Algeria; PIC, p. 13, Rev. Sci. Bourbonnais, viii.
- T. (Barybena ?) imitans*, Togo, JACOBY, p. 172, Deutsche ent. Zeitschr. 1895; *T. rugosa*, p. 166, *thoracica*, p. 167, S. Africa, JACOBY, Tr. ent. Soc. London, 1895; *T. andrewesi*, p. 258, *cornuta*, p. 259, Bombay, JACOBY, Ann. Soc. ent. Belgique, 1895: n. spp.
- Tricliona bicolor*, p. 283, *picea*, *bifasciata*, p. 284, *apicata*, p. 285, *variabilis*, p. 286, Bombay, JACOBY, Ann. Soc. ent. Belgique, 1895, n. spp.
- Yulenia bicolor*, Perak, JACOBY, p. 79, Ent. Zeit. Stettin, lvi, n. sp.
- Xenomela*: revision; JACOBSON, p. 271, Horæ Soc. ent. Ross. xxix.

EROTYLIDÆ, incl. LANGURIIDÆ.

[Cf. ALLARD (16), BLACKBURN (115), GESTRO (425), GORHAM (443), KRAATZ (623, 640, 641), RITSEMA (972), VERHOEFF (1165).]

Morphology of abdomen and sexual organs; relations of the family; VERHOEFF (1165).

Amblyopus hemorrhous, triplacoides, India, GORHAM, p. 326, Ann. Soc. ent. Belgique, 1895, n. spp.

Amblyscelis gorhami, Gallaland, GESTRO, p. 473, Ann. Mus. Genovâ, xxxv, n. sp.

Anulacochilus chevrolati, metamorphoses; POUJADE, p. 96, Naturaliste, 1895.

A. indicus, India, GORHAM, p. 328, Ann. Soc. ent. Belgique, 1895, n. sp.

Coptengis nigrolineatus, Madura, ALLARD, p. 26, Naturaliste, 1895, n. sp.

Dacne ? cribricollis, India, GORHAM, p. 324, Ann. Soc. ent. Belgique, 1895, n. sp.

Doubledaya lewisii, Siam, KRAATZ, p. 208, Deutsche ent. Zeitschr. 1895, n. sp.

Episcaphula scabra, E. India, GORHAM, p. 327, Ann. Soc. ent. Belgique, 1895; *E. nigrofasciata*, p. 226, *brevicornis, foveicollis*, p. 227, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xix : n. spp.

Euxestus, Woll. = (*Neoptotera*, Bel.), *Pleosoma* and *Euxestus*, characters and systematic position; FAUVEL, p. 105, Rev. Ent. franc. xiv.

Helota thoravica, Thibet, RITSEMA, p. 49, Notes Leyden Mus. xvii, n. sp.

Languria elateroides, p. 202, *ruficollis, brunnea*, p. 203, *rufo-brunnea, nigricollis, semirufa*, p. 204, *suturalis*, p. 205, W. Africa, KRAATZ, Deutsche ent. Zeitschr. 1895; *L. soror*, p. 195, *cognata*, p. 196, Borneo, KRAATZ, Ent. Nachr. xxi : n. spp.

Stenolanguria caudata, p. 206, *concolor*, p. 207, W. Africa, KRAATZ, Deutsche ent. Zeitschr. 1895, n. spp.

Thallis macleayi, perplexa, p. 228, *subvimita*, *T. ? venustula*, p. 229, *dentipes*, p. 231, Australia, *femoralis*, Tasmania, p. 230, BLACKBURN, Tr. R. Soc. S. Austral. xix; *T. ? nigra*, p. 324, *transversus*, p. 325; India, GORHAM, Ann. Soc. ent. Belgique, 1895 : n. spp.

Triplatomya lineata, India, GORHAM, p. 325, *t. c.* n. sp.

Triplax subcylindricus, Akbès, REITTER, p. 81, Wien. ent. Zeit. 1895, n. sp.

ENDOMYCHIDÆ.

[Cf. BLACKBURN (115), GESTRO (425), GORHAM (443), VERHOEFF (1165).]

Morphology of abdomen and sexual organs; affinities of the family; VERHOEFF (1165).

Amphisternus unceps, India, GORHAM, p. 328, Ann. Soc. ent. Belgique, 1895, n. sp.

Crateromorplus, n. g. for *Mycella clavicornis*, Blk.; BLACKBURN, p. 232, Tr. R. Soc. S. Austral. xix.

Danae pulchella, p. 474, *venustula*, p. 475, E. Africa, GESTRO, Ann. Mus. Genova, xxxv, n. spp.

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- Dyscerasphorus*, n. g., p. 236, for *D. laticeps*, n. sp., p. 237, Queensland ; BLACKBURN, Tr. R. Soc. S. Austral. xix.
- Eleotheptus*, n. g., p. 235, for *E. punctulatus*, n. sp., p. 236, S. Australia ; BLACKBURN, Tr. R. Soc. S. Austral. xix.
- Idiophyes*, n. g., p. 234, near *Lycoperdina*, for *I. brevis*, n. sp., Victoria, p. 235 ; BLACKBURN, Tr. R. Soc. S. Austral. xix.
- Periptyctus*, n. g. for *P. russulus*, n. sp., Victoria ; BLACKBURN, p. 234, Tr. R. Soc. S. Austral. xix.
- Philocryptus*, n. n. for *Cryptophilus cremastogastris*, Was. ; WASMANN, p. 44, Wien. ent. Zeit. 1895.
- Stenotarsus arithmeticus, commodus*, Australia, BLACKBURN, p. 233, Tr. R. Soc. S. Austral. xix, n. spp.

COCCINELLIDÆ.

[Cf. BLACKBURN (115), GESTRO (425), GORHAM (441, 444), HORN (513), LUTZ (711), OLLIFF (819), REUTER (955), RYE (997), SEMENOW (1045), VERHOEFF (1164), WEISE (1215, 1217, 1221, 1225, 1226, 1227).]

Morphology of abdomen, sexual organs, muscles of abdomen ; with classification into following groups : 1, *Hippodamiini* ; 2, *Epilachnini* ; 3, *Lithophilini* ; 4, *Coccinellini* ; 5, *Coccidulini* ; the whole family to be an order called *Coleoptera-Siphonophora* ; VERHOEFF, Arch. Naturg. lxi, 1, pp. 1-80.

The defensive liquid emitted ; PORTER (896).

Nature of fluid emitted and mode of its emission ; LUTZ (711).

Gregarious *Coccinellidæ* ; REUTER (955).

Varieties of British *Coccinellidæ* ; RYE, Tr. Leicester Soc. iii, pp. 477-482, pl. i.

Scymnites : classification of the group ; HORN, Tr. Am. ent. Soc. xxii, pp. 81 & 82.

Adalia angulifera, varieties ; WEISE, p. 125, Ann. Soc. ent. Belgique, 1895. *A. tetraspilota*, characters, var. *severini* ; WEISE, p. 154, t. c.

Adoxellus, n. g., p. 142, for some New Zealand *Scymni*, *flavohirtus*, Broun, e.g., and with *A. concinnus*, n. sp., Adelaide, p. 143 ; WEISE, Ann. Soc. ent. Belgique, 1895.

Alesia oberthuri, Madagascar, WEISE, p. 325, Deutsche ent. Zeitschr. 1895, n. sp.

Anisosticta 19-punctata var. = (*multiguttata*, Rand. = *irregularis*, Weise) ; WEISE, p. 126, Ann. Soc. ent. Belgique, 1895.

Aspidimerus orbiculus, var. *nigripennis* ; WEISE, p. 137, Ann. Soc. ent. Belgique, 1895.

A. ruficrus, trioblitus, Burma, GORHAM, p. 690, Ann. Mus. Genova, xxxiv, n. spp.

Azya luteipes, figure ; GORHAM, pl. xi, fig. 24, Biol. Centr.-Amer. Col. vii.

Ballia eucharis, characters ; WEISE, p. 132, Ann. Soc. ent. Belgique, 1895.

- Brumnus frater*, Madagascar, WEISE, p. 325, Deutsche ent. Zeitschr. 1895, n. sp.
- Bucolus frater*, p. 255, *posticalis*, p. 256, Queensland, BLACKBURN, Tr. R. Soc. S. Austral. xix, n. spp.
- Callineda principalis*, Key Is., WEISE, p. 134, Ann. Soc. ent. Belgique, 1895, n. sp.
- Cassiculus*, n. g. for *Cranophorus venustus*, Pascoe; WEISE, p. 144, Ann. Soc. ent. Belgique, 1895.
- Cephaloscymnus occidentalis*, p. 111, *ornatus*, p. 112, California, HORN, Tr. Amer. ent. Soc. xxii, n. spp.
- Chilocorus hauseri*, Sikkim, WEISE, p. 135, Ann. Soc. ent. Belgique, 1895; *C. braeti*, E. India, WEISE, p. 154, *t. c.* : n. spp.
- Chnoodes cinctipennis*, *bipunctatus*, *decipiens*, Central America, GORHAM, p. 216, Biol. Centr.-Amer. Col. vii; *C. nigra*, Paraguay, WEISE, p. 131, Ann. Soc. ent. Belgique, 1895 : n. spp.
- Cissella*, n. n. for *Cisseis*, Muls., *nec* Lap.; WEISE, p. 153, Ann. Soc. ent. Belgique, 1895.
- Clanis soror* and *pubescens*, note; WEISE, p. 155, Ann. Soc. ent. Belgique, 1895.
- Cleothera cordifera*, Paraguay, WEISE, p. 128, Ann. Soc. ent. Belgique, 1895, n. sp.
- Coccidula lepida*, note; WEISE, p. 132, Ann. Soc. ent. Belgique, 1895.
- C. occidentalis*, N. America, HORN, p. 114, Tr. Amer. ent. Soc. xxii, n. sp.
- Coccinella billieti*, synonymy, characters; WEISE, p. 133, Ann. Soc. ent. Belgique, 1895. *C. picta*, Rand., *emarginata*, *v-nigrum*, Muls., varietal note; WEISE, p. 125, *t. c.*
- Cælophora birmanica*, Shwegoo, GORHAM, p. 685, Ann. Mus. Genova, xxxiv; *C. nigro-vittata*, Queensland, BLACKBURN, p. 237, Tr. R. Soc. S. Austral. xix : n. spp.
- Cranophorus varius*, Cape, WEISE, p. 56, Deutsche ent. Zeitschr. 1895, n. sp.
- Cryptognatha catalinæ*, California, HORN, p. 83, Tr. Amer. ent. Soc. xxii, n. sp.
- Cryptogonus birmanicus*, Carin Chebà, GORHAM, p. 691, Ann. Mus. Genova, xxxiv, n. sp.
- Cycloneda barronensis*, Queensland, BLACKBURN, p. 238, Tr. R. Soc. S. Austral. xix, n. sp.
- Cycloscymnus concolor*, Queensland, BLACKBURN, p. 254, *t. c.*, n. sp.
- Dapolia* merged in *Chnoodes*; GORHAM, p. 215, Biol. Centr.-Amer. Col. vii.
- Diomus*, a distinct genus; WEISE, p. 144, Ann. Soc. ent. Belgique, 1895.
- D. rusticus*, *hamatus*, p. 145, *ferrugineus*, *major*, p. 146, WEISE, Ann. Soc. ent. Belgique, 1895, n. spp.
- Epilachna 28-punctata*, note; WEISE, p. 132, Ann. Soc. ent. Belgique, 1885. *E. terræ-reginæ* (? *E. guttato-pustulata*, n. var.); BLACKBURN, p. 237, Tr. R. Soc. S. Austral. xix. *E. ocellata*, characters; WEISE, p. 151, Ann. Soc. ent. Belgique, 1895. *E. 26-punctata*, larva, habits; FROGGATT, P. Linn. Soc. N. S. Wales, x.

- E. deltoides*, Congo, WEISE, p. 139, Ann. Soc. ent. Belgique, 1895 ; *E. cornosana*, E. Africa, GESTRO, p. 477, 478 cut, Ann. Mus. Genova, xxxv ; *E. pava*, p. 49, *annexa*, Madagascar, *quroguttata*, E. Africa, p. 50, *bissexguttata*, p. 51, *fulvohirta*, *simplex*, *subsignata*, p. 52, W. Africa, WEISE, Deutsche ent. Zeitschr. 1895 ; *E. bifibulata*, p. 321, *excisa*, *oberthuri*, p. 322, *perroti*, p. 323, *18-signata*, p. 324, Madagascar, WEISE, t. c. ; *E. congener*, Burma, GORHAM, p. 693, Ann. Mus. Genova, xxxiv ; *E. bang-haasi*, p. 120, *lorata*, p. 121, *pilifera*, p. 122, *sellata*, *boliviana*, p. 123, Bolivia, *nigripes*, p. 124, Ecuador, WEISE, Ann. Soc. ent. Belgique, 1895 : n. spp.
- Eupalea picta*, figure, pl. xi, fig. 22, Biol. Centr.-Amer. Col. vii.
- E. boliviana*, Bolivia, WEISE, p. 130, Ann. Soc. ent. Belgique, 1895, n. sp.
- Eurodolia*, n. g., p. 149, for *E. severini*, n. sp., Tasmania, p. 150, and ? *Vedalia cardinalis*, Muls. ; WEISE, Ann. Soc. ent. Belgique, 1895.
- Ecochomus quadripustulatus*, larva ; KOLBE, p. 8, Zeitschr. ent. Breslau, xx.
- E. bistillatus*, Columbia, *personatus*, Bolivia, WEISE, p. 126, Ann. Soc. ent. Belgique, 1895, n. spp.
- Ecoplectra subnescens*, Mexico, pl. xi, fig. 26, p. 214, *cruentipes*, Guatemala, p. 215, pl. xi, fig. 27, GORHAM, Biol. Centr.-Amer. Col. vii ; *E. drakei*, p. 130, *funebri*, Paraguay, *angustifrons*, Amazon, p. 131, WEISE, Ann. Soc. ent. Belgique, 1895 : n. spp.
- Gymnoscymnus explanatus*, Queensland, BLACKBURN, p. 240, Tr. R. Soc. S. Austral, xix, n. sp.
- Habrolotis*, n. g., p. 56, near *Sticholotis*, for *H. picta*, n. sp., Madagascar ; WEISE, Deutsche ent. Zeitschr. 1895.
- Halysia straminea*, variation ; WEISE, p. 133, Ann. Soc. ent. Belgique, 1895.
- H. tschitscherini*, Turkestan, SEMENOW, p. 142, Horæ Soc. ent. Ross. xxix ; *H. (Calvia) thoracica*, E. India, WEISE, p. 152, Ann. Soc. ent. Belgique, 1895 ; *H. fea*, Burma, GORHAM, p. 684, Ann. Mus. Genova, xxxiv : n. spp.
- Hippodamia convergens*, var. = (*praticola*, Muls., *ambigua*, and *punctulata*, Lec.) ; WEISE, p. 125, Ann. Soc. ent. Belgique, 1895.
- Hynda 15-maculata*, Columbia, WEISE, p. 127, Ann. Soc. ent. Belgique, 1895, n. sp.
- Hyperaspis elegans*, n. var. *guttifera* ; WEISE, p. 128, Ann. Soc. ent. Belgique, 1895.
- Ladoria delphinæ*, Mexico ; GORHAM, p. 213, pl. xi, fig. 25, Biol. Centr.-Amer. Col. vii, n. sp.
- Lipernes gibbosus*, *creber*, Queensland, BLACKBURN, p. 240, Tr. R. Soc. S. Austral xix, n. spp.
- Lotis* and *Pentilia* : characters ; WEISE, p. 54, Deutsche ent. Zeitschr. 1895.
- L. bicolor*, E. Africa, WEISE, p. 54, Deutsche ent. Zeitschr. 1895, n. sp.
- Micraspis pentas*, generic position, WEISE, p. 135, Ann. Soc. ent. Belgique, 1895, n. sp.
- Nedu bicolor*, var. ; BLACKBURN, p. 239, Tr. R. Soc. S. Austral. xix.

- Norius simplicipennis, discoidalis*, p. 253, *tripustulatus, limbatus*, p. 254, Queensland, BLACKBURN, Tr. R. Soc. S. Austral. xix, n. spp.
- Orcus ferrugineus*, Gorh., referred to *Sticholotis*; WEISE, p. 157, Ann. Soc. ent. Belgique, 1895.
- O. mollipes*, W. Australia, OLLIFF, Agric. Gaz. N.S.W. vi; *O. lecanii*, Queensland, BLACKBURN, p. 240, Tr. R. Soc. S. Austral. xix; *O. ? discoideus, O. carinicus*, p. 688, *bipunctatus, quadriguttatus*, p. 689, Burma, GORHAM, Ann. Mus. Genova, xxxiv: n. spp.
- Oridia*, n. g. of doubtful position for *O. pubescens*, n. sp., Burma; GORHAM, p. 694, Ann. Mus. Genova, xxxiv.
- Ortalia kraatzi*, Togo, WEISE, p. 210, Deutsche ent. Zeitschr. 1895; *O. 4-maculata*, Madagascar, WEISE, p. 140, Ann. Soc. ent. Belgique, 1895; *O. pusilla*, Malacca, &c., WEISE, p. 136, t. c.: n. spp.
- Oryssomus subterminatus*, figure; pl. xi, fig. 23, Biol. Centr.-Amer. Col. vii.
- Phaenochilus*, n. g. near *Chilocorus*, p. 135, for *P. punctifrons*, n. sp., Banguy I, p. 136, and *C. ruficollis*, Weise; WEISE, Ann. Soc. ent. Belgique, 1895.
- Platynaspis ferruginea*, Togo, WEISE, p. 210, Deutsche ent. Zeitschr. 1895; *P. vittigera*, Africa, WEISE, p. 142, Ann. Soc. ent. Belgique, 1895: n. spp.
- Platyomus* = (*Scymnodes*); BLACKBURN, p. 241, Tr. R. Soc. S. Austral. xix.
- P. cribratus, baccaformis*, p. 242, *consimilis, obscuricollis*, p. 244, *terminalis*, p. 245, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xix, n. spp.
- Poria sanguinolenta, detrita*, p. 209, pl. xi, fig. 21, Panama, GORHAM, Biol. Centr.-Amer. Col. vii; *P. picipes*, Amazon, p. 129, *collaris*, Columbia, p. 130, WEISE, Ann. Soc. ent. Belgique, 1895: n. spp.
- Rhizobius brevicornis*, Borneo, WEISE, p. 138, Ann. Soc. ent. Belgique, 1895; *R. crotchii*, p. 256, *gosfordensis, discipennis, emineus*, p. 257, *subaustralis*, p. 258, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xix: n. spp.
- Rodatus depressus*, Melbourne, WEISE, p. 144, Ann. Soc. ent. Belgique, 1895, n. sp.
- Rodolia* = (*Macronovius*, W.); WEISE, p. 149, Ann. Soc. ent. Belgique, 1895.
- R. insularis*, Madagascar, WEISE, p. 55, Deutsche ent. Zeitschr. 1895, n. sp.
- Scymnillus*, n. g. for *S. aterrimus*, n. sp., California; HORN, p. 110, Tr. Amer. ent. Soc. xxii.
- Scymnus albopilis*, Motsch., note on; WEISE, p. 137, Ann. Soc. ent. Belgique, 1895.
- S. africanus, pruinosis*, Banana-Boma, WEISE, p. 141, Ann. Soc. ent. Belgique, 1895; *S. (Pullus) gnavus*, p. 210, *S. plebeius*, p. 211, Togo, WEISE, Deutsche ent. Zeitschr. 1895; *S. (Stethorus) pauperculus*, p. 155, *S. seriatus*, p. 156, E. India, WEISE, Ann. Soc. ent. Belgique, 1895; *S. asciniatus, tristigmaticus*, p. 692, *birmanicus*, p. 693, Burma, GORHAM, Ann. Mus. Genova, xxxiv; *S. operosus, brisbanensis*, p. 246, *impictus, obumbratus, terræreginæ*, p. 247, *ementitor, cowleyi*, p. 248,

- kamerungensis, mareebensis, styx*, p. 249, *subclarus, subevanidus*, p. 250, *planulatus, mitior*, p. 251, *ambulans*, p. 252, *yarrensis*, p. 253, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xix; *S. bigemmus*, p. 88, pl. i, figg. 3 & 4, *liebecki*, p. 89, fig. 6, *intrusus, bivulnerus*, fig. 10, *bisignatus*, fig. 11, p. 92, *sordidus*, p. 93, fig. 16, *coloradensis*, p. 94, fig. 2, *circumspectus*, pl. ii, fig. 4, *opaculus*, p. 96, *caurinus*, p. 97, *strabus*, pl. ii, fig. 6, *flebilis*, p. 100, *semiruber*, p. 102, *ardelio*, p. 105, *utilis*, p. 107, N. America, HORN, Tr. Amer. ent. Soc. xxii : n. spp.
- Semiadalia heydeni*, referred to *Hippodamia*; WEISE, p. 132, Ann. Soc. ent. Belgique, 1895.
- Serangium bicolor*, N. S. Wales, BLACKBURN, p. 255, Tr. R. Soc. S. Austral. xix, n. sp.
- Stenococcus*, n. g. for *Rhizobius aucklandia*, Kirsch; WEISE, p. 143, Ann. Soc. ent. Belgique, 1895.
- Sticholotis quadrimaculata*, E. India, *quadrisignata*, Hué, WEISE, p. 139, Ann. Soc. ent. Belgique, 1895, n. spp.
- Sumnius renardi*, characters; WEISE, p. 157, Ann. Soc. ent. Belgique, 1895.
- Thea pura*, Togo, WEISE, p. 209, Deutsche ent. Zeitschr. 1895; *T. 8-punctata*, Madagascar, WEISE, p. 53, t. c. : n. spp.
- Verania cardoni*, generic position; WEISE, p. 153, Ann. Soc. ent. Belgique, 1895.
- V. longula*, Madagascar, WEISE, p. 53, Deutsche ent. Zeitschr. 1895; *V. vineta*, Burma, GORHAM, p. 686, Ann. Mus. Genova, xxxiv : n. spp.

CORYLOPHIDÆ.

[*Cf. ABEILLE (7), LEA (684).*]

- Arthrolips sancte-balmæ*, France, ABEILLE, p. ccalvi, Bull. Soc. ent. Franco, 1895, n. sp.
- Clypeaster collaris*, p. 314, *pulchella, andersoni*, p. 315, *dorsalis*, p. 316, *blackmorei, nitida*, p. 317, *olliffi, squalida*, p. 318, *elliptica*, p. 319, Australia, LEA, P. Linn. Soc. N. S. Wales, x, n. spp.
- Sacium nanum* = (*brunneum*); ABEILLE, p. cexlvii, Bull. Soc. ent. France, 1895.
- Sericoderus lateralis*, larva; KOLBE, p. 2, Zeitschr. ent. Breslau, xx.
- S. minutus, compactus*, p. 309, *coatesi, obesus*, p. 310, *inconspicuus, piceus*, p. 311, *hardcastlei, basipennis*, p. 312, *apicalis, concolor*, p. 313, *politus*, p. 314, Australia, LEA, P. Linn. Soc. N. S. Wales, x, n. spp.

(B.) *HYMENOPTERA.**ACULEATA.*

[Cf. ANDRÉ (26, 28, 29, 30), BAKER (62), BINGHAM (113), BORDAS (127, 128, 132, 133), BUDBERG (158), CAMERON (441), CHRÉTIEN (207), COCKERELL (234-242), COCKERELL & CASAD (243), DALLA TORRE (270), DALLA TORRE & FRIESE (271), FERTON (369, 370), FOREL (388), FOX (390-394), FRIESE (396-399), GRIBODO (448), GROBBEN (460), HANDLIRSCH (486, 487), JANET (556-559, 561), KLÜGE (608), KOHL (613), LABOULBÈNE (666), LANGHOFFER (671), LUCAS (705), MAGRETTI (719), MARCHAL (720), MORAWITZ (785, 786), PÉREZ (849-855), PERKINS (858), PROVANCHER (905), ROBERTSON (977), SCHLETTERER (1009), SLADEN (1064), SLAVICEK (1065), SNEZEK (1084, 1085), STADELMANN (1097), TOURNIER (881, 1133, 1134), VACHAL (1158, 1159, 1160) : also FORMICIDÆ, p. 243.]

Peculiarities of the order ; SHARP (1055), chap. xxii.

Notes on trophi of bees ; LANGHOFFER (671).

Use of the (strigil) étrille ; PÉREZ, pp. 241-245, Act. Soc. Bordeaux, xlvii.

Structure of ovipositor ; MARLATT (725).

Anatomy of salivary glands, alimentary canal, malpighian tubes, poison-glands ; BORDAS (127) : of male sexual glands ; BORDAS (133).

The malpighian tubes in different stages ; BORDAS (132).

Structure of muscles ; JANET (561).

The salivary glands of bees ; BORDAS (128).

Structure of lora and base of proboscis ; WATERHOUSE (1196).

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Catalogue of Apidæ of the world ; DALLA TORRE (270).

Monograph of the European parasitic bees ; FRIESE (399).

Catalogue of European collecting-bees, with synonymy ; DALLA TORRE & FRIESE (271).

Effects of a dry season on bees, PÉREZ, p. 304, Act. Soc. Bordeaux, xlvii.

Notes on honey-bee : toads as bee-eaters, p. 327, hibernation of *Galleria*, p. 328, ventilation of the hive, p. 329 ; PÉREZ, Act. Soc. Bordeaux, xlvii.

Bees of Nassau with dates of appearance and habits ; BUDBERG (158).

Allodape cupulifera, Burma ; VACHAL, p. 447, Ann. Mus. Genova, xxxiv, n. sp.

- Ammobates handlirschii*, Oran, p. 120, *similis*, Hungary, p. 126, *biastoides*, Algeria, p. 131, FRIESE, *Bien. Eur.* i; *A. asiaticus*, p. 45, *roseus*, p. 46, W. Asia, MORAWITZ, *Horæ Soc. ent. Ross.* xxix : n. spp.
- Ancyla oraniensis*, systematic position; PÉREZ, p. clxxii, *Bull. Soc. ent. France*, 1895.
- Andrena thoracica*, variation; FREY-GESSNER, p. 230, *Mt. Schweiz. ent. Ges.* ix.
- A. ambigua*, England, PERKINS, p. 39, *Ent. Mag.* 1895; *A. vachali*, *jucunda*, *asperrima*, *atricapilla*, *antilope*, p. 33, *leucocyanea*, *flavocyanea*, *buyssoni*, p. 34, *rutila* (p. 65, changed to *pyrrhula*), *hirticornis*, *cyanomicaus*, *villipes*, p. 35, *leptopyga*, *macilentata* (p. 65 changed to *ferulae*), *brunnipes*, *mutabilis*, p. 36 (p. 65 changed to *varia*), *aspericollis*, *antigana*, *filipalpis*, *rubea*, p. 37, *microthorax*, *viridata*, *derivata*, *pellucens*, *pici*, p. 38, *livens*, *fastidita*, *elliptica*, *fuscoprasina*, *senecionis*, p. 39, *imminuta*, *rufescens*, *rufilabris* (but p. 65 changed to *oralis*), *medeniniensis*, p. 40, *sefrensis*, *fuliginata*, *stefanii*, *connexa*, *ardens*, p. 41, *biskrensis*, *cilissæformis*, *breviscoba*, *blanda*, *euzona*, p. 42, *fumida*, *djelfensis*, *abstersa*, *spretata*, p. 43, *tenuistriata*, *longipilis*, *purpurascens*, *obsoleta*, *impunctata*, p. 44, *uljecta*, *longibarbis*, *trizona*, *verticulis*, *varicornis*, *contusa*, p. 45, *niliidilabris*, *creberrima*, *globulilabris*, *nigellata*, *sitifensis*, *caroli*, *mayeti*, *oviventris*, *farinosa*, *vaulogeri*, p. 47, *rotundata*, *tingitana*, *mediorittata*, *anceyi*, p. 48, *pandellei*, *fertoni*, *marcescens*, *leucolippa*, *microcardia*, p. 49, *rhyssonota*, *carinula*, *sinuata*, *bispinosa*, p. 50, *tuberculifera*, *bellidis*, p. 51, PÉREZ, *Esp. nouv.*; *A. occipitalis*, p. 174, *melaleuca*, p. 175, *stygia*, p. 176, Algeria, PÉREZ, *Rev. Sci. Bourbonnais*, viii; *A. glasunowi*, p. 60, *stigmatica*, p. 61, *induta*, p. 62, *splendidicollis*, p. 63, *quadriceps*, p. 64, *longiceps*, *virago*, p. 65, W. Asia, MORAWITZ, *Horæ Soc. ent. Ross.* xxix; *A. nigra*, *nigripes*, Los Angeles, PROVANCHER, p. 173, *Natural. Canad.* xxii; *A. platyparia*, p. 119, *nasonii*, *spiræana*, *hippates*, p. 120, Illinois, ROBERTSON, *Tr. Amer. ent. Soc.* xxii; *A. salicinella*, New Mexico, COCKERELL, p. 4, *Psyche*, vii, *Supp.* i : n. spp.
- Anthidium emarginatum*, habits described; DAVIDSON, p. 252, *Ent. News Philad.* vi.
- A. mayeti*, *luctuosum*, *dilobum*, p. 21, *octodentatum*, *fraternum*, p. 22, Barbary, PÉREZ, *Esp. nouv.*; *A. flavipes*, p. 26, *pusillum*, p. 28, *politum*, p. 29, *incertum*, p. 30, W. Asia, MORAWITZ, *Horæ Soc. ent. Ross.* xxix; *A. spinolæ*, p. 204, *hypodyneroide*, p. 205, Chili, GRIBODO, *Act. Soc. Chili*, iv : n. spp.
- Anthophora blanda*, *planca*, p. 1, *tularis*, *marqueti*, *ambigua*, *rivolleti*, p. 2, *nigrociliata*, *bisulca*, *atriceps*, p. 3, *caroli*, *holoxantha*, *albicilla*, p. 4, Barbary, PÉREZ, *Esp. nouv.*; *A. alluaudi*, Tenerife, PÉREZ, p. 192, *Ann. Soc. ent. France*, 1895; *A. pallascens*, p. 3, *perezi*, p. 5, Turcomenia, MORAWITZ, *Horæ Soc. ent. Ross.* xxix; *A. 5-fasciata*, *nigrocincta*, p. 172, *curta*, p. 173, Los Angeles, PROVANCHER, *Natural. Canad.* xxii : n. spp.

- Apis mellifica*, double mating of queen ; BENTON, P. ent. Soc. Washington, iii, p. 169. *A. florea*, cells noticed ; BENTON, p. 292, t.c.
- Bombomelecta alfredi*, New Mexico, COCKERELL, p. 11, Psyche vii, Suppl. i, n. sp.
- Bombus lapponicus*, p. 100, *jonellus*, p. 101, *coognatus*, p. 103, nests, habits ; FRIESE, Ent. Nachr. xxi. *B. cullumanus*, a valid species, characters, p. 35, *B. nivalis* is var. of *scrimshiramus*, p. 36 ; SAUNDERS, Ent. Mag. 1895. *B. terrestris*, n. var. *cavriensis* ; PÉREZ, p. 191, Ann. Soc. ent. France, 1895. *Bombi* of Poland with accounts of habits ; SNIEZEK (1084, 1085). *Bombi* successfully introduced into New South Wales ; OLLIFF, Ent. Mag. 1895, p. 67.
- Calliopsis rugosus*, *asteris*, p. 121, *rudbeckia*, *labrosus*, p. 122, Illinois, ROBERTSON, Tr. Amer. ent. Soc. xxii, n. spp.
- Ceratina larvifrons*, p. 18, *tibialis*, p. 19, Turcomenia, MORAWITZ, Horæ Soc. ent. Ross. xxix ; *C. acantha*, Los Angeles, PROVANCHER, p. 190, Natural. Canad. xxii : n. spp.
- Chalicodoma*, habits ; PÉREZ, p. 289, Act. Soc. Bordeaux, xlvii.
- C. setulosa*, *aterrima*, but, p. 65, this is changed for *nigerrima*, Barbary, PÉREZ, p. 22, Esp. nouv., n. spp.
- Chelostoma carinula*, p. 19, *nasutum*, *edentulum*, *mystax*, p. 20, Barbary, PÉREZ, Esp. nouv., n. spp.
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- Colletes* : synonymical remarks on N. American ; ROBERTSON, pp. 115 & 116, Tr. Amer. ent. Soc. xxii.
- C. coriandri*, *formosus*, *lucasi*, p. 62, *bracatus*, p. 63, Barbary, PÉREZ, Esp. nouv. ; *C. californica*, Los Angeles, PROVANCHER, p. 189, Natural. Canad. xxii : n. spp.
- Crocisa elegans*, ♂ ; MORAWITZ, p. 44, Horæ Soc. ent. Ross. xxix.
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- Dasyopoda succincta*, synonymy ; DALLA TORRE, pp. 111–114, Wien. ent. Zeit. 1895. *D. eatoni*, its characters and validity ; SAUNDERS, p. 160, Ent. Mag. 1895.
- D. maura*, p. 60, *oraniensis*, *carinata*, *sinuata*, *brevicornis*, *brunnescens*, p. 61, Barbary, PÉREZ, Esp. nouv., n. spp.
- Epeolus fasciatus*, Hungary, FRIESE, p. 208, Bien. Eur. i ; *E. speculifer*, Barbary, PÉREZ, p. 27, Esp. nouv. ; *E. superbus*, Los Angeles, PROVANCHER, p. 190, Natural. Canad. xxii : n. spp.

- Epimethea scutellaris*, p. 59, *lampronota*, *similis*, p. 60, Barbary, PÉREZ, Esp. nouv., n. spp.
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- E. hispana*, *rutila*, *punctatissima*, *vaulogeri*, *atrata* (but p. 65 changed to *obscurata*), p. 5, *terminata* (but p. 65 changed to *xanthura*), *barbata* (but p. 65 changed to *barbigera*), *labiata*, *conspersa*, p. 6, *impressiventris*, *confinis*, *obliterata*, p. 7, *spatulata*, *vachali*, *polita*, p. 8, Barbary, PÉREZ, Esp. nouv.; *E. gracilipes*, Tenerife, PÉREZ, p. 192, Ann. Soc. ent. France, 1895, n. spp.
- Halictus*: habits, reputed parthenogenesis; PÉREZ, Act. Soc. Bordeaux, xlviii, pp. 145–157.
- H. angusticeps*, England, Perkins, p. 39, Ent. Mag. 1895; *H. cirrhozonius*, *strictifrons*, p. 147, *immunitus*, *labrosus*, *medinai*, p. 148, Spain, *fertoni*, p. 149, France, *smaragdulus*, Seville, *alcedo*, Canaries, p. 150, VACHAL, Ann. Soc. Espan. xxiv; *H. varentzowi*, p. 67, *flavocollosus*, p. 68, W. Asia, MORAWITZ, Horæ Soc. ent. Ross. xxix; *H. microcardia*, Canaries, PÉREZ, p. 193, Ann. Soc. ent. France, 1895; *H. intumescens*, *albarius*, *vaulogeri*, p. 51, *consobrinus*, *rugosulus* (p. 65 changed to *asperulus*), *aneobrunneus*, *dives*, *simulans*, *albovirens*, p. 52, *velatus*, *pici*, *aglyphus*, *cirtanus*, *chalconotus*, p. 53, *subaenescens*, *cristula*, *opacus*, *callizonius*, *scariosus*, *articularis*, *decolor*, p. 54, *masculus*, *mozubensis*, *asellus*, *lucidicollis*, *rubescens*, p. 55, Barbary, PÉREZ, Esp. nouv.; *H. fimbriatellus*, p. 429, *vicinus*, p. 431, *spodiozonius*, *splendidulus*, p. 432, *intricatus*, p. 433, *reticulatus*, p. 434, *dasygaster*, *liodomus*, p. 435, *xystonotus*, p. 436, *cattulus*, *cuniculus*, p. 437, *tristis*, *proteus*, p. 438, *gutturatus*, p. 439, *feai*, p. 440, *lucidiusculus*, p. 441, *amitinus*, *rufozonatus*, p. 442, *buccinus*, *semicærinus*, p. 443, VACHAL, Ann. Mus. Genova, xxxiv; *H. platypurius*, Illinois, ROBERTSON, p. 117, Tr. Amer. ent. Soc. xxii; *H. tripartitus*, *sisymbrii*, p. 63, *pectoraloides*, p. 64, *subobscurus*, p. 65, *semicæruleus*, p. 66, *meliloti*, *semibrunneus*, p. 67, *perdifficilis*, p. 68, New Mexico, COCKERELL, Ann. Nat. Hist. xvi: n. spp.
- Heriades labiatus*, Barbary, PÉREZ, p. 21, Esp. nouv.; *H. albicinctum*, Los Angeles, PROVANCHER, p. 190, Natural. Canad. xxii: n. spp.
- Megachile melanota*, *flabellipes*, *fertoni*, *mucida*, p. 23 (but p. 65 changed to *albipila*), *compacta* (but p. 65 changed to *crassula*), *arcigera*, *variscopea*, *sedilloti*, p. 24, *xanthopyga*, p. 25, Barbary, PÉREZ, Esp. nouv.; *M. orientalis*, p. 24, *metatarsalis*, p. 25, W. Asia, MORAWITZ, Horæ Soc. ent. Ross. xxix; *M. præfica*, Chili, GRIBODO, p. 204, Act. Soc. Chili, iv: n. spp.
- Megacilissa thoracica*, Lower California, FOX, p. 270, P. Calif. Ac. v, n. sp.
- Melecta transitoria*, Barbary, PÉREZ, p. 26, Esp. nouv.; *M. transcaspica*, p. 39, *atripes*, p. 40, *glasunowi*, p. 41, W. Asia, MORAWITZ, Horæ Soc. ent. Ross. xxix: n. spp.
- Melipona togoensis*, W. Africa, p. 620, *africana*, *schmidti*, Zanzibar, p. 622, STADELMANN, SB. Ak. Berlin, 1895, n. spp.

- Melissodes illinoensis*, p. 126, *pallida*, *nivea*, p. 127, Illinois, ROBERTSON, Tr. Amer. ent. Soc. xxii, n. spp.
- Melitturga albescens*, Barbary, PÉREZ, p. 9, Esp. nouv., n. sp.
- Nomada bifida*, habits; SAUNDERS, p. 98, Ent. Mag. 1895.
- N. keroanensis*, *pruinosa*, p. 27, *nigrovaria*, *coronata*, *cirtana*, *accentifera*, *pæcionota*, p. 28, *barbilabris*, *mamillaris*, *nigrita*, *astarte*, p. 29, *maroccana*, *macrocardia*, *basulis* (but p. 65 changed to *dispar*), *cristata*, *clara*, p. 30, *polyacantha*, *antigana*, *dido*, *inermis*, p. 31, *hirticeps*, p. 32, Barbary, PÉREZ, Esp. nouv.; *N. gracilicornis*, p. 48, *copetica*, p. 49, *caspia*, p. 51, *semenowi*, p. 52, *rufohirta*, p. 53, *scutellaris*, p. 54, W. Asia, MORAWITZ, Horæ Soc. ent. Ross. xxix : n. spp.
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- Osmia emarginata*, *villosa*, notes on nests, &c.; FRIESE, pp. 134 & 135, Ent. Nachr. xxi. *O. lanosa*, p. 203, *rufo-hirta*, p. 208, *andrenoides*, p. 211, habits; FERTON, Act. Soc. Bordeaux, xlvi.
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- P. punctosignata*, New Mexico, COCKERELL, p. 6, Psyche, Suppl. i; *P. numerata*, New Mexico, COCKERELL, p. 296, Tr. Amer. ent. Soc. xxii; *P. phymate*, *sexmaculata*, p. 12, *semicrocea*, *austini*, p. 13,

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- Sphecodes rubicandus*, evidences of parasitism; SLADEN, Ent. Mag. 1895, pp. 256-258.
- Stelis vachali*, Barbary, PÉREZ, p. 22, Esp. nouv., n. sp.
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- Trigona*: production of sexes; PÉREZ (849).
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- Sphæcius intermedius*, Algeria, p. 956, *malayanus*, Timor, p. 960, HANDLIRSCH, SB. Ak. Wien, civ, Abth. i ; *S. malayanus*, Timor, HANDLIRSCH, p. 109, Notes Leyden Mus. xvii : n. spp.
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- S. rufinervis*, Seychelles, PÉREZ, p. 209, Ann. Soc. ent. France, 1895 ; *S. (Isodontia) dolosus*, Guyana, p. 49, *abditus*, Sikkim, p. 51, *S. deplanatus*, Ceylon, p. 53, *alacer*, N. Guinea, p. 54, *lanciger*, New Orleans ?, p. 55, *bilobatus*, p. 59, *bannitus*, p. 61, Australia, *decipiens*, S. Africa, p. 65, *nigrohirtus*, E. Africa, p. 66, *stadelmanni*, Delagoa Bay, p. 67, KOHL, Ann. Hofmus. Wien, x : n. spp.
- Stigmus inordinatus*, habits ; DAVIDSON, p. 271, *Psyche*, vii.
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- Trypoxylon rubrocinctum* and *albopilosum*, habits ; PECKHAM, pp. 303-306, *Psyche*, vii.
- T. centrale*, Lower California, FOX, p. 267, P. Calif. Ac. v : n. sp.

FORMICIDÆ.

[Cf. ADLERZ (11, 12), ANDRÉ (27, 31), BICKFORD (110), EMERY (328-340), FOREL (381-387), JANET (560), MAYR (750), PAX (848), PROVANCHER (905), ROTHNEY (982), URICH (1154, 1155), WASMANN (1188, 1189, 1190, 1195).]

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Acantholepis erinita, Port Natal, MAYR, p. 149, Ann. Hofmus. Wien, x; *A. fergusoni*, Travancore, FOREL, p. 459, J. Bombay Soc. ix: n. spp.

Acanthoponera imbellis, Queensland, EMERY, p. 346, Ann. Soc. ent. Belgique, 1895, n. sp.

Ænictus möbii, W. Africa, EMERY, p. 747, Zool. Jahrb. Syst. viii; *Æ. eugenii*, p. 17, pl. ii, figg. 1-4, *marica*, p. 18, figg. 5-7, Makapan, EMERY, Ann. Soc. ent. France, 1895; *Æ. peguensis*, Palon, EMERY, p. 452, Ann. Mus. Genova, xxxiv; *Æ. gracilis*, Sarawak, EMERY, p. 187, pl. viii, fig. 1, Rev. Suisse Zool. i: n. spp.

Aneuretus referred to *Dolichoderineæ*; FOREL, p. 461, J. Bombay Soc. ix.

- Anochetus levaillanti*, S. Africa, EMERY, p. 21, Ann. Soc. ent. France, 1895; *A. myops*, Perak, p. 201, pl. viii, figg. 11 & 12, EMERY, Rev. Suisse Zool. i; n. spp.
- Aphænogaster* is only subg. of *Stenammas*; EMERY, p. 298, Zool. Jahrb. Syst. viii. *A. striola*, r. *striativentris*, n. st., FOREL, p. 228, Mt. Schweiz. ent. Ges. ix.
- A. belli*, Madagascar, FOREL, p. 248, Ann. Soc. ent. Belgique, 1895, n. sp.
- Apterostigma urichii*, *mayri*, habits; URICH, p. 180, J. Trinidad Club. ii.
- Atopomyrmex deplanatus*, N'Gami, MAYR, p. 133, Ann. Hofmus. Wien, x; *A. steinheili*, Madagascar, FOREL, p. 485, Ann. Soc. ent. Belgique, 1895; *A. alluaudi*, Madagascar, EMERY, p. 341, cut, t. c. : n. spp.
- Atta*: notes on fungus-growing species in Trinidad; URICH, pp. 175-179.
- Bothriomyrmex wroughtonii*, p. 470, *myops*, *walshi*, p. 471, E. India, FOREL, J. Bombay Soc. ix, n. spp.
- Bothroponera subleviis*, n. var. *rubicunda*; EMERY, p. 201, Rev. Suisse Zool. i.
- B. strigulosa*, p. 19, *cariosa*, p. 20, S. Africa, EMERY, Ann. Soc. ent. France, 1895; *B. excavata* (= *mayri* var. *olim*), Australia; EMERY, p. 201, Rev. Suisse Zool. i : n. spp.
- Brachymyrmex heeri*, n. var. *termitophilus*; FOREL, p. 179, Verh. Ges. Wien, 1895. *B. patagonicus*, n. var. *cordemoyi*; FOREL, p. 49, Ann. Soc. ent. Belgique, 1895.
- B. giardi*, p. 215, *leviis*, p. 216, Chili, EMERY, Act. Soc. Chili, iv, n. spp.
- Camponotus vitreus*, Sm., note, p. 225, pl. viii, fig. 4; EMERY, Rev. Suisse Zool. i. *C. dufouri* ♀, *hagensii* ♀; FOREL, p. 244, Ann. Soc. ent. Belgique, 1895. *C. dufouri* ♂; FOREL, p. 488, t. c. *C. rectithorax*, n. n. for *nitidus*, Norton, = n. st. of *montivagus*, Forel; FOREL, p. 44, t. c. *C. quadrimaculatus* n. subsp. *sellaris*, *C. christi* n. var. *maculiventris*; EMERY, p. 344, t. c. *C. foraminosus* n. subsp. *chrysogaster*, EMERY, p. 182, Ann. Mus. Genova, xxxv. *C. maculatus* n. subsp. *tortuganus*; EMERY, p. 336, Zool. Jahrb. Syst. viii. *C. maculatus* n. subsp. *fornasinii*, p. 46, *rufoglaucus* forms tabulated, p. 48, *natalensis* n. var. *fulvipes*, p. 51, *fulvopilosus* n. var. *flavopilosus*, *foraminosus* n. var. *tenuipilis* n. subsp. *mendax*, p. 54; EMERY, Ann. Soc. ent. France, 1895. *C. herculeanus* n. var. *punctatissimus*, p. 477, *pennsylvanicus* n. var. *aterrimus*, p. 478, *nicobarensis* n. var. *monticola*, *sericeus* n. subsp. *peguensis*, p. 479; EMERY, Ann. Mus. Genova, xxxiv. *C. angusticollis* n. var. *sanguinolentus*, *C. sericeus* n. var. *mendax* and *integer*; FOREL, p. 454, J. Bombay Soc. ix.
- Camponotus bottegoi*, Gallaland, EMERY, p. 181, Ann. Mus. Genova, xxxv; *C. caffer*, p. 47, pl. ii, figg. 25 & 26, *petersii*, fig. 28, p. 50, *bertolonii*, p. 51, *bianconii*, p. 52, *nasutus*, fig. 27, p. 53, S. Africa, EMERY, Ann. Soc. ent. France, 1895; *C. braunsi*, Delagoa Bay, p. 151, *aberrans*, Gold Coast, p. 152, MAYR, Ann. Hofmus. Wien, x; *C. leveillei*, Nossi-Bé, EMERY, p. 344, Ann. Soc. ent. Belgique, 1895; *C. heteroclitus*, *batesii*, Madagascar, FOREL, p. 243, t. c.; *C. wasmanni*, Burma, p. 224, *pæcilus*, Buru, p. 225, pl. viii, fig. 3, EMERY, Rev. Suisse Zool. i;

- C. bedoti*, Malay Arch., EMERY, p. 196, pl. viii, fig. 2, t. c. ; *C. lownei*, Queensland, FOREL, p. 43, Ann. Soc. ent. Belgique, 1895 ; *C. carazzii*, p. 354, *podenzanai*, p. 355, Queensland, EMERY, t. c. ; *C. janeli*, Queensland, FOREL, p. 417, t. c. : n. spp.
- Cardiococondyla nuda*, var. *shuckardoides*, worker ; FOREL, p. 250, Ann. Soc. ent. Belgique, 1895.
- Cataulacus huberi*, ♀ ; ANDRÉ, p. 4, Rev. Ent. franc. xiv. *C. intrudens*, var. *rugosus*, For., is a distinct species, ♀ described ; MAYR, p. 129, Ann. Hofmus. Wien, x.
- C. lobatus*, Cameroons, p. 126, *kohli*, Lake N'Gami, p. 127, MAYR, Ann. Hofmus. Wien, x ; *C. johannæ*, Madagascar, FOREL, p. 250, Ann. Soc. ent. Belgique, 1895 ; *C. latissimus*, Perak, p. 215, pl. viii, fig. 10, EMERY, Rev. Suisse Zool. i : n. spp.
- Cerapachys kraepelini*, Madagascar, FOREL, p. 246, Ann. Soc. ent. Belgique, 1895 ; *C. fossulatus*, Ceylon, FOREL, p. 48, t. c. : n. spp.
- Colobopsis rufifrons*, r. *semicarinata*, n. sp. ; FOREL, p. 418, Ann. Soc. ent. Belgique, 1895. *C. vitrea*, Sm. = (*Camp. siggii*, For.) ; FOREL, p. 455, J. Bombay Soc. ix.
- Cremastogaster* : characters of African species with synonymy and new varieties ; MAYR, pp. 135-144, Ann. Hofmus. Wien, x. *C. rogenhoferi*, n. var. *lutea* ; EMERY, p. 193, Rev. Suisse Zool. i. *C. rogenhoferi*, n. var. *costulata* ; EMERY, p. 467, Ann. Mus. Genova, xxxiv. *C. lineolata*, n. var. *lutescens*, *subopaca*, pp. 282 & 283, *mormonum*, p. 284, *californica*, *pilosa*, p. 285, *C. victima*, n. var. *missouriensis*, *obscurata*, p. 287, *nitidiceps*, p. 288 ; EMERY, Zool. Jahrb. Syst. viii. *C. sordidula*, n. var. *flachii* ; FOREL, p. 229, Mt. Schweiz. ent. Ges. ix. *C. sordidula*, n. var. *madecassa*, *C. sevellei*, n. var. *lobata* ; EMERY, p. 342, Ann. Soc. ent. Belgique, 1895. *C. tricolor*, n. subsp. *rufonigra*, p. 27, *arborea*, n. subsp. *melanogaster*, p. 29 ; EMERY, Bull. Soc. ent. France, 1895.
- C. rugosa*, Congo, ANDRÉ, p. 3, Rev. Ent. franc. xiv ; *C. excisa*, p. 139, *stadelmanni*, p. 140, with var. *angustata*, p. 142, *africana*, p. 142, W. Africa, MAYR, Ann. Hofmus. Wien, x ; *C. peringueyi*, p. 27, pl. ii, figg. 16 & 17, *weitzeckeri*, p. 28, fig. 14, *constructor*, p. 29, figg. 12 & 13, S. Africa, *margaritæ*, Congo, *augusti*, Sumatra, p. 31, EMERY, Ann. Soc. ent. France, 1895 ; *C. vermiculata*, p. 286, *punctulata*, p. 287, N. America, EMERY, Zool. Jahrb. Syst. viii : n. spp.
- Cryptocerides* and *Attini*, classification discussed ; EMERY, pp. 217 & 218, Rev. Suisse Zool. i.
- Cyphomyrmex bicornis*, Thoresopolis, FOREL, p. 179, Verh. Ges. Wien, 1895, n. sp.
- Dacryon*, n. g. near *Tetramorium*, for *D. omniparens*, n. sp., Queensland ; FOREL, p. 421, Ann. Soc. ent. Belgique, 1895.
- Dichothorax*, n. subg. of *Leptothorax*, q.v.
- Discothyrea antarctica*, New Zealand, EMERY, p. 266, Zool. Jahrb. Syst. viii ; *D. antarctica*, New Zealand, EMERY, p. 636, Tr. N. Zealand Inst. xxvii : n. spp.

- Dolichoderus carbonarius*, Perak, EMERY, p. 474, Ann. Mus. Genova, xxxiv; *D. siggii*, Bangkok, FOREL, p. 465, J. Bombay Soc. ix : n. spp.
- Dorylus*: revision of the genus; EMERY, pp. 697-752. *D. levigatus* = (*breviceps*, Em.), variability of number of antennal joints; EMERY, p. 453, Ann. Mus. Genova, xxxiv.
- D. (Anomma) gerstückeri*, Accra, p. 713, *D. braunsi*, Liberia, p. 718, *staudingeri*, Congo, *brevipennis*, Tabora, p. 721, *stadelmanni*, Congo, p. 722, *D. (Alaopone) conradti*, Togo, p. 734, *D. (Rhogmus) savagei*, W. Africa, p. 738, EMERY, Zool. Jahrb. Syst. viii : n. spp.
- Dorymyrmex pyramicus*, the habitat is Texas, not Montezuma; COCKERELL, p. 207, Ann. Nat. Hist. xv.
- D. minutus*, Chili, EMERY, p. 15, Act. Soc. Chili, v, n. sp.
- Eciton melanocephalum*, Mexico, EMERY, p. 260, Zool. Jahrb. Syst. viii, n. sp.
- Ectatomma (R.) metallicum*, n. var. *modestum*, *E. convexum*, n. var. *nodiferum*; EMERY, p. 348, Ann. Soc. ent. Belgique, 1895. *E. imbellis*, n. var. *hilare*; FOREL, p. 421, Ann. Soc. ent. Belgique, 1895.
- E. (Rhytidoponera) cornutum*, *scaberrimum*, p. 347, *spoliatum*, p. 348, Queensland, EMERY, Ann. Soc. ent. Belgique, 1895, n. spp.
- Epoecus pergandei*, N. America, EMERY, p. 273, pl. viii, figg. 11 & 12, Zool. Jahrb. Syst. viii, n. sp.
- Epopostruma*, n. subg. of *Strumigenys*, q.v.
- Formica obscuripes*, habits; KING, p. 281, Psyche, vii. *F. advena*, Sm., referred to *Melophorus*; EMERY, p. 16, Act. Soc. Chili, v. *F. sanguinea*, n. varr. *fusciceps*, *subnuda*, *picea*; EMERY, p. 335, Zool. Jahrb. Syst. viii.
- F. kraussii*, Sahara, FOREL, p. 231, Mt. Schweiz. ent. Ges. viii, n. sp.
- Goniomma*, n. subg. of *Stenamma*, for *blanci* and *hispanica*, André; EMERY, p. 298, Zool. Jahrb. Syst. viii.
- Huberia brownii*, N. Zealand, FOREL, p. 41, Ann. Soc. ent. Belgique, 1895 n. sp.
- Iridomyrmex rufoniger*, n. var. *metallescens*; EMERY, p. 194, Rev. Suisse Zool. i.
- I. levigatus*, Burma, EMERY, p. 475, Ann. Mus. Genova, xxxiv, n. sp.
- Lasiophanes*, n. subg. of *Melophorus*, for *Lasius picinus* and *nigriventris* EMERY, p. 16, Act. Soc. Chili, ii.
- Leptogenys incisa*, n. subsp. *suarensis*; EMERY, p. 338, Ann. Soc. ent. Belgique, 1895.
- L. cribrata*, Bechuanaland, EMERY, p. 20, Ann. Soc. ent. France, 1895; *L. alluaudi*, p. 338, *cærulescens*, p. 339, Madagascar, EMERY, Ann. Soc. ent. Belgique, 1895; *L. striatula*, p. 461, *lucidula*, *crassicornis*, p. 462, Burma, EMERY, Ann. Mus. Genova, xxxiv : n. spp.
- Leptomyrmea nigriventris*, n. var. *tibialis*, p. 351; EMERY, Ann. Soc. ent. Belgique, 1895.
- L. varians*, with varr. *rufipes*, *ruficeps*, *L. unicolor*, Queensland, EMERY, p. 352, Ann. Soc. ent. Belgique, 1895, n. spp.
- Leptothorax canadensis*, n. var. *yankee*, p. 319, *L. curvispinosus*, n. subsp. *ambiguus*, p. 320; EMERY, Zool. Jahrb. Syst. viii.

- L. latinodis*, Delagoa Bay, MAYR, p. 130, Ann. Hofmus. Wien, x; *L. hirticornis*, p. 319, *provancheri*, p. 320, *rugatulus*, *tricarinatus*, p. 321, pl. viii, fig. 14, *andrei*, fig. 15, *nitens*, fig. 16, p. 322, *L. (Dicothorax*, n. subg.) *pergandei*, fig. 13, p. 323, *floridanus*, p. 324, N. America, EMERY, Zool. Jahrb. Syst. viii : n. spp.
- Liometopum microcephalum*, n. var. *occidentale*; EMERY, p. 330, Zool. Jahrb. Syst. viii.
- Liomyrmex* (n. subg. *Machomyrma*) *dispar*, Queensland, FOREL, p. 425, Ann. Soc. ent. Belgique, 1895, n. sp.
- Liponera longitarsus*, n. var. *australis*; FOREL, p. 422, Ann. Soc. ent. Belgique, 1895.
- Lobopelta chinensis*, habits; ROTHNEY, p. 199, Tr. ent. Soc. London, 1895.
- Lophomyrmex bedoti*, Sumatra, p. 192, pl. viii, fig. 17, EMERY, Rev. Suisse Zool. i, n. sp.
- Machomyrma*, n. subg. of *Liomyrmex*, q.v.
- Merauoplus læviventris*, n. var. *punctulatus*; EMERY, p. 472, Ann. Mus. Genova, xxxiv.
- M. simoni*, pl. ii, fig. 23, *inermis*, fig. 24, S. Africa, EMERY, p. 41, Ann. Soc. ent. France, 1895, n. spp.
- Melophorus (Lasiophanes) picinus*, n. var. *bidens*; EMERY, p. 17, Act. Soc. Chili, v.
- Monomorium minutum*, n. subsp. *hottentota*; EMERY, p. 26, Ann. Soc. ent. France, 1895.
- M. emeryi*, Mozambique, MAYR, p. 132, Ann. Hofmus. Wien, x; *M. albopilosum*, *dispar*, p. 24, *rhopalocerum*, p. 25, pl. ii, fig. 29, S. Africa, EMERY, Ann. Soc. ent. France, 1895; *M. shuckardi*, Madagascar, FOREL, p. 251, Ann. Soc. ent. Belgique, 1895; *M. fossulatum*, Burma, EMERY, p. 465, Ann. Mus. Genova, xxxiv; *M. brevicorne*, Sumatra, EMERY, p. 203, Rev. Suisse Zool. i; *M. latastei*, Chili, EMERY, p. 10, Act. Soc. Chili, v : n. spp.
- Myrmecia petiolata*, Queensland, EMERY, p. 345, Ann. Soc. ent. Belgique, 1895, n. sp.
- Myrmecina latreillei*, n. subsp. *americana*; EMERY, p. 271, Zool. Jahrb. Syst. viii.
- Myrmecocystus œneovirens* (and other Australian *Myrmecocysti*) referred to *Melophorus*; FOREL, p. 231, Mt. Schweiz. ent. Ges. ix. *M. viaticus*, n. var. *orientalis*; FOREL, p. 228, t. c. *M. bombycinus*, habits; KRAUSS, p. 234, t. c.
- Myrmica rubra*, n. subsp. *brevinodis*, p. 312, n. var. *sulcinodoides*, *fracticornis*, p. 313, *schenkii*, p. 315, *detritinodis*, p. 316; EMERY, Zool. Jahrb. Syst. viii.
- M. mutica*, Colorado, EMERY, p. 311, Zool. Jahrb. Syst. viii, n. sp.
- Myrmicaria fodiens*, habits; ROTHNEY, p. 201, Tr. ent. Soc. London, 1895.
- M. fodiens*, races discussed; EMERY, pp. 219-221, Rev. Suisse Zool. i.
- M. opaciventris*, Benguela, EMERY, p. 221, Rev. Suisse Zool. i, n. sp.
- Mystrium stadelmanni*, Madagascar, FOREL, p. 251, Ann. Soc. ent. Belgique, 1895, n. sp.

- Notoncus*, n. g. for *Cumponotus ectatommoides*; EMERY, p. 352, Ann. Soc. ent. Belgique, 1895.
- N. gilberti*, Queensland, FOREL, p. 418, Ann. Soc. ent. Belgique, 1895, n. sp.
- Odontomachus hæmatodes*, n. st. *theresie*; FOREL, p. 41, Ann. Soc. ent. Belgique, 1895. *O. papuanus*, n. st. *philippinus*, *O. latidens*, n. st. *procerus*; EMERY, p. 203, Rev. Suisse Zool. i.
- O. sericeus*, Trinidad, PROVANCHER, p. 97, Natural. Canad. xxii, n. sp.
- Æcophylla smaragdina*, varr.; EMERY, p. 195, Rev. Suisse Zool. i.
- Oligomyrmex grandidieri*, ♂; FOREL, p. 249, Ann. Soc. ent. Belgique, 1895.
- Onychomyrmex*, n. g., p. 349, allied to *Amblyopone* and *Ponera*, for *O. hedleyi*, n. sp., Queensland, p. 350; EMERY, Ann. Soc. ent. Belgique, 1895.
- Opisthopsis haddoni*, Murray Is., EMERY, p. 226, Rev. Suisse Zool. i; *O. rufithorax*, *pictus*, Queensland, EMERY, p. 354, Ann. Soc. ent. Belgique, 1895: n. spp.
- Ophthalmopone lanceolata*, Cape Good Hope, MAYR, p. 125, Ann. Hofmus. Wien, x, n. sp.
- Pachycondyla fauveli*, Bolivia, EMERY, p. 175, Verh. Ges. Wien, 1895, n. sp.
- Parasyscia peringueyi*, n. var. *latiuscula*; EMERY, p. 19, Ann. Soc. ent. France, 1895.
- Pheidole longispina*, r. *scabrata*, n. st.; FOREL, p. 249, Ann. Soc. ent. Belgique, 1895. *P. nemoralis* n. var. *petax*; FOREL, p. 488, t. c. *P. latinoda* n. subsp. *peguensis*, p. 468, *capellini* n. var. *asperata*, p. 469; EMERY, Ann. Mus. Genova, xxxiv. *P. megacephala* n. subsp. *dregei*; EMERY, p. 34, Ann. Soc. ent. France, 1895. *P. pilifera* n. var. *coloradensis*, p. 290, *P. vinelandica* n. var. *longula*, n. subsp. *læviuscula*, p. 292, *P. flavens* n. subsp. *floridana*, p. 293; EMERY, Zool. Jahrb. Syst. viii.
- P. lucida*, Madagascar, FOREL, p. 248, Ann. Soc. ent. Belgique, 1895; *P. crassinoda*, p. 32, *caffra*, p. 33, S. Africa, EMERY, Ann. Soc. ent. France, 1895; *P. fecæ*, Burma, EMERY, p. 469, Ann. Mus. Genova, xxxiv; *P. oregonica*, p. 291, *metallescens*, p. 294, *hyatti*, p. 295, *crassicornis*, p. 296, N. America, EMERY, Zool. Jahrb. Syst. viii; *P. goeldii*, Theresopolis, FOREL, p. 178, Verh. Ges. Wien, 1895: n. spp.
- Pheidologeton diversus*, *affinis*, forms and variation discussed; EMERY, pp. 206–214, Rev. Suisse Zool. i.
- P. perpusillum*, S. Africa, EMERY, p. 26, pl. ii, figg. 8–11, Ann. Soc. ent. France, 1895, n. sp.
- Plagiolepis madecassa*, ♀; FOREL, p. 245, Ann. Soc. ent. Belgique, 1895.
- P. pygmæa*, n. var. *intermedia*; EMERY, p. 45, Ann. Soc. ent. France, 1895. *P. pygmæa*, n. var. *schmitzii*; FOREL, p. 231, Mt. Schweiz. ent. Ges. ix.
- P. trimenii*, Natal, FOREL, p. 430, Ann. Soc. ent. Belgique, 1895; *P. brunni*, Delagoa Bay, MAYR, p. 148, Ann. Hofmus. Wien, x; *P. decolor*, p. 44, *fuscata*, p. 45, S. Africa, EMERY, Ann. Soc. ent. France, 1895: n. spp.
- Platythyrea occidentalis*, ♂; ANDRÉ, p. 3, Rev. Ent. franc. xiv.

- P. pusilla*, Amboyna, p. 188, *coxalis*, Perak, p. 189, EMERY, Rev. Suisse Zool. i ; *P. turneri*, Queensland, FOREL, p. 420, Ann. Soc. ent. Belgique, 1895 : n. spp.
- Podomyrma convergens*, p. 427, *elongata*, p. 428, Queensland, FOREL, Ann. Soc. ent. Belgique, 1895, n. spp.
- Pogonomyrma barbatus*, n. var. *fuscatus*, n. subsp. *rugosus*, p. 309, *P. subdentatus*, n. var. *subnitidus*, p. 310, *P. californicus*, n. subsp. *longinodis*, p. 311 ; EMERY, Zool. Jahrb. Syst.
- Polyrhacis scutulata*, note ; EMERY, p. 226, pl. viii, figg. 7 & 8, Rev. Suisse Zool. i. *P. punctillata*, n. var. *smythiesii* ; FOREL, p. 456, J. Bombay Soc. ix. *P. inconspicua*, n. var. *subnitens*, *P. guerini*, n. subsp. *lata* ; EMERY, p. 357, Ann. Soc. ent. Belgique, 1895. *P. hookeri*, n. stt. *obscura*, *lownei* ; FOREL, p. 44, t. c. *P. simplex*, n. var. *griseescens* ; EMERY, p. 483, Ann. Mus. Genova, xxxiv.
- P. sulcata*, Congo, ANDRÉ, p. 1, Rev. Ent. franc. xiv ; *P. nigrita*, Gold Coast, MAYR, p. 153, Ann. Hofmus. Wien, x ; *P. subpilosa*, p. 480, *caligata*, p. 482, Burma, EMERY, Ann. Mus. Genova, xxxiv ; *P. murina*, Malay Arch., p. 198, *cephalotes*, Sumatra, p. 199, pl. viii, fig. 6, EMERY, Rev. Suisse Zool. i ; *P. appendiculata*, Murray Is., p. 227, pl. viii, fig. 9, *fortis*, Burma, p. 228, fig. 5, EMERY, t. c. ; *P. queenslandica*, p. 356, *hermione*, p. 357, Queensland, EMERY, Ann. Soc. ent. Belgique, 1895 ; *P. turneri*, p. 45, *penelope*, p. 46, *heinlethii*, p. 47, Queensland, FOREL, t. c. : n. spp.
- Ponera punctatissima*, r. *jugata*, n. var. *glabrata*, r. *indifferens*, n. st. ; FOREL, p. 245, Ann. Soc. ent. Belgique, 1895. *P. indigens*, n. var. *bellicosa* ; FOREL, p. 487, t. c.
- P. indigens*, Madagascar, FOREL, p. 246, Ann. Soc. ent. Belgique, 1895 ; *P. nigrita*, Burma, EMERY, p. 459, Ann. Mus. Genova, xxxiv ; *P. antipodum*, N. Zealand, FOREL, p. 43, Ann. Soc. ent. Belgique, 1895 : n. spp.
- Prenolepis vividula* in Britain ; BIGNELL, p. 132, Ent. Mag. 1895.
- P. jerdoni*, Perak, EMERY, p. 222, Rev. Suisse Zool. i ; *P. melanogaster*, Burma, EMERY, p. 476, Ann. Mus. Genova, xxxiv : n. spp.
- Prionogenys*, n. g., near *Leptogenys*, p. 348, for *P. podenzanai*, n. sp., Queensland, p. 349 ; EMERY, Ann. Soc. ent. Belgique, 1895.
- Pristomyrma brevispinosus*, n. subsp. *sulcatus*, EMERY, p. 464, Ann. Mus. Genova, xxxiv.
- P. picteti*, Sumatra, EMERY, p. 190, Rev. Suisse Zool. i, n. sp.
- Proceratum crassicorne*, p. 265, pl. viii, fig. 9, with var. *vestitum*, p. 253, N. America, EMERY, Zool. Jahrb. Syst. viii, n. sp.
- Sericomyrma opacus*, fungus-growing habit ; URICH, Tr. ent. Soc. London, 1895, p. 77, and p. 179, J. Trinidad Club, ii.
- Shuckardia*, n. subg. of *Dorylus* for *Alaopone abeillei*, André ; EMERY, p. 740, Zool. Jahrb. Syst. viii.
- Sima natalensis*, n. var. *obscurata* ; EMERY, p. 22, Ann. Soc. ent. France, 1895. *S. grandidieri*, n. var. *variegata*, *S. hysterica*, n. var. *dimidiata* ; FOREL, p. 487, Ann. Soc. ent. Belgique, 1895. *S. sahlbergi*, n. var. *longula* ; EMERY, p. 340, t. c.

- S. mandibularis*, Madagascar, EMERY, p. 340, Ann. Soc. ent. Belgique, 1895; *S. ambigua*, S. Africa, EMERY, p. 23, Ann. Soc. ent. France, 1895; *S. andrei*, p. 144, *bifoveolata*, p. 146, Delagoa Bay, MAYR, Ann. Hofmus. Wien, x : n. spp.
- Solenopsis molesta*, n. var. *validiuscula*, *S. pollux*, n. var. *texana*; EMERY, p. 278, Zool. Jahrb. Syst. viii.
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- [Cf. ASHMEAD (37-50), BAKER (64), BERTHOUMIEU (103, 104), BEYERINCK (107), BIGNELL (111), BILLUPS (112), BINGHAM (113), BRAUNS (140), BUYSSON (173, 174), DAVIS (274-276), FRIESE (397), GIARD (430), HOWARD (524, 525, 529, 532), KESSLER (591), KOKOUYEV (614), KRIECHBAUMER (656, 658), KULAGHIN (661), MAGRETTI (719), MARSHALL (729-731), MOCSÁRY (774), PÉREZ (851, 854), PROVANCHER (905), RILEY (964, 965), RÜBSAAMEN (992), SHARP (1055), STADELMANN (1098), SZÉPLIGETI (1119), THOMSON (1131), UFFELN (1152), WEBSTER (1205, 1210).]

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- Chrysis thoracica*, Algeria, p. 406, *prodita*, Tunis, p. 433, *octavii*, p. 476, *abbreviaticornis*, p. 479, *nomima*, p. 488, Egypt, *interjecta*, Provence, p. 541, *polytima*, Spain, p. 557, *vaulogeri*, Algeria, p. 572, *fertoni*, Mediterranean region, p. 599, BUYSSON in ANDRÉ, Spec. Hym. vi; *C. magnidens*, Canaries, PÉREZ, p. 198, Ann. Soc. ent. France, 1895; *C. novella*, Gallaland, MAGRETTI, p. 170, Ann. Mus. Genova, xxxv : n. spp.

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- Arrangements of the subfamilies and tribes; ASHMEAD, pp. 277 & 278, P. ent. Soc. Washington, iii.
- Sketch of the divisions of parasitic Hymenoptera; SHARP (1055), Chap. xxiii.

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 The Malpighian tubes of *Ichneumonidæ*; BORDAS (132).
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 Habits of some N. American parasitic *Hymenoptera*; WEBSTER, pp. 67 & 68, Canad. Ent. xxvii.
 List of species reared in Ohio and Indiana, with names of hosts; WEBSTER (1205).
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- Meniscus 4-cinctus*, Ohio, ASHMEAD, p. 50, J. Cincinnati Soc. xvii, n. sp.
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- Cardiochiles fallax*, Transcaucasus, p. 367, *kutkowi*, Sarepta, p. 370, *semenowi*, W. China, p. 372, *crassicornis*, Transcaucasus, p. 374, KOKOUYEW, Horæ Soc. ent. Ross. xxix, n. spp.
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- Clinocentrus tarsalis*, Ohio, ASHMEAD, p. 47, J. Cincinnati Soc. xvii; *C. niger*, Illinois, ASHMEAD, p. 276, fig. 14, Bull. Illinois Lab. iv : n. spp
- Cœlinius parvipennis*, Sweden, *stenostigma*, N. Germany, THOMSON, p. 2330, Opusc. ent., n. spp.
- Colastes grenadensis*, Grenada, ASHMEAD, p. 782, P. Zool. Soc. London, 1895, n. sp.
- Dacnusa dentifera*, p. 2312, *aterrima*, *aridula*, p. 2313, *interstitialis*, *heterocera*, p. 2315, *gracilipes*, *obliqua*, p. 2317, *tomentosa*, p. 2318, *brevicornis*, *stenocera*, *stenocentra*, *crenulata*, p. 2319, *parvungula*, p. 2320, *maculipes*, *lævipictus*, p. 2321, *facialis*, *albilabris*, p. 2322, *incidens*, p. 2323, *longicauda*, *liopleuris*, p. 2324, *4-dentata*, *albicoxa*, *castaneiventris*, p. 2325, *glabricula*, *melanocera*, p. 2326, *tarsalis*, *rotundiventris*, *coxator*, *flavicoxa*, p. 2327, North or Central Europe, THOMSON, Opusc. ent., n. spp.
- Earinus bicingulatus*, Sweden, THOMSON, p. 2234, Opusc. ent., n. sp.
- Elasmosoma aucta*, Sweden, THOMSON, p. 2276, Opusc. ent.; *E. bakeri*, Colorado, p. 282, *schwarzi*, *pergandei*, Washington, p. 283, ASHMEAD, P. ent. Soc. Washington, iii : n. spp.
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- Hedysomus quadriceps*, Lower California, ASHMEAD, p. 554, P. Calif. Ac. v, n. sp.
- Hormius albipes*, Lower California, ASHMEAD, p. 544, P. Calif. Ac. v; *H. rugosicollis*, Grenada, ASHMEAD, p. 783, P. Zool. Soc. London, 1895 : n. spp.
- Ichneutes lapponicus*, *microstigma*, *facialis*, Sweden, THOMSON, p. 2215, Opusc. ent., n. spp.
- Isomecus*, n. g., *Rogadidæ*, for *I. schlettereri*, n. sp., Istria; KRIECHBAUMER in SCHLETTERER (1009).
- Leiophron subsulcatus*, p. 2221, *collaris*, p. 2222, Sweden, THOMSON, Opusc. ent., n. spp.
- Macrocentrus punctifrons*, p. 2211, *sublævis*, p. 2212, Sweden, THOMSON, Opusc. ent., n. spp.
- Meteorus formosus*, host; LABOULBÈNE, p. cccxiv, Bull. Soc. ent. France, 1895.
- M. rufulus*, p. 2149, *nigricollis*, p. 2150, *stenostigma*, p. 2153, *crassicus*, p. 2154, *abscissus*, *parvulus*, p. 2156, *striatus*, p. 2157, *heteroneurus*, p. 2158, *lionotus*, p. 2160, *annulicrus*, p. 2161, *tenuicornis*, p. 2164, *brevicauda*, p. 2165, *punctifrons*, p. 2166, Sweden, THOMSON, Opusc. ent., n. spp.
- Microdus tegularis*, Sweden, THOMSON, p. 2231, Opusc. ent., n. sp.
- Microgaster*: embryology; KULAGHIN (661). *M.*: mode of making cocoons; PÉREZ, p. 275, Act. Soc. Bordeaux, xlvii.

- M. leviscuta*, p. 2239, *areolaris*, *fulvicrus*, p. 2240, Sweden, *australis*, N. Italy, *parvistriga*, p. 2241, *grandis*, *curvicrus*, p. 2242, *uliginosus*, p. 2243, Sweden, THOMSON, Opusc. ent., n. spp.
- Microplitis tenuipes*, p. 2246, *calcarata*, *coracina*, *trochanterata*, p. 2249, *mandibularis*, p. 2251, *brachycera*, p. 2252, Sweden, THOMSON, Opusc. ent., n. spp.
- Opius carinatus*, p. 2177, *cyclogaster*, *rugiventris*, p. 2178, *geniculatus*, *fasciatus*, p. 2179, *fulvicollis*, p. 2181, *rotundiventris*, p. 2182, *parvungula*, p. 2183, *trisulcus*, *exsertus*, p. 2184, *coracinus*, *ochropus*, p. 2185, *macrocerus*, p. 2186, *annulicornis*, *tenuicornis*, p. 2188, *aciculatus*, *punctiventris*, p. 2189, *convivens*, *integer*, p. 2190, *brevipulpis*, p. 2191, *dentifer*, *stramineipes*, p. 2192, *tarsator*, *crassicrus*, p. 2193, *abscissus*, *flicornis*, p. 2196, *breviscapus*, *longicornis*, *liopleuris*, p. 2197, *piceus*, p. 2198, *areolaris*, p. 2199, *spinacice*, p. 2200, *castaneiventris*, p. 2201, *clypealis*, p. 2202, *brevisulcus*, p. 2203, *longicauda*, *caudatulus*, *punctiscuta*, p. 2204, North or Central Europe, THOMSON, Opusc. ent., n. spp.
- Orgilus parvipennis*, p. 2236, *anurus*, p. 2237, Sweden, THOMSON, Opusc. ent., n. spp.
- Perilitus sicheli*, France, GIARD, p. lxxvi, Bull. Soc. ent. France, 1895, n. sp.
- Phanocarpa fungicola*, Ohio, ASHMEAD, p. 49, J. Cincinnati Soc. xvii ; *P. mexicana*, Lower California, ASHMEAD, p. 546, P. Calif. Ac. v : n. spp.
- Phanerotoma planifrons* and *dentata*, characters ; KOKOUYEW, p. 92, Horæ Soc. ent. Ross. xxix.
- P. potauini*, N. China, KOKOUYEW, p. 94, Horæ Soc. ent. Ross. xxix, n. sp.
- Pygostolus americanus*, Indiana, ASHMEAD, p. 47, J. Cincinnati Soc. xvii, n. sp.
- Rhogas bifasciatus*, Grenada, ASHMEAD, p. 784, P. Zool. Soc. London, 1895, n. sp.
- Spathius flavotestaceus*, Grenada, ASHMEAD, p. 783, t. c. n. sp.
- Syncrasis flavifrons*, Grenada, ASHMEAD, p. 786, t. c. n. sp.
- Taphæus dilatatus*, Sweden, p. 2170, *rugosus*, Germany, p. 2171, THOMSON, Opusc. ent., n. spp.

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- Gasteruption hungaricum*, Hungary, SZÉPLIGETI, p. 81, Termes. Fuzetek, xviii ; *G. æthiopicum*, Africa, STADELMANN, Ent. Nachr. xxi, p. 81 : n. spp.
- Stephanus togoensis*, Africa, STADELMANN, Ent. Nachr. xxi, p. 80, n. sp.

CHALCIDIDÆ.

- List of some Hungarian and their hosts ; MOCSÁRY, pp. 71 & 72, Termes. Fuzetek, xviii.
- Revision of N. American *Aphelininae*, with list of hosts ; HOWARD (525). *Ætroxys analis*, California, ASHMEAD, p. 316, Psyche, vii, n. sp.

- Aneristus*, n. g., *Aphelininæ*, for *A. ceroplastæ*, n. sp., Jamaica ; HOWARD, p. 351, Canad. Ent. xxvii.
- Aphelinus flaviceps*, California, HOWARD, p. 25, Bull. U. S. Agric. ent. Tech. i, n. sp.
- Arthrolytus apatelæ*, Ohio, ASHMEAD, p. 162, Bull. Ohio Exp. Stat. i, n. sp.
- Bothriothoracini*, new tribe, for a division of *Encyrtinæ* ; HOWARD, p. 605, P. U. S. Mus. xvii.
- Bothriothorax noveboracensis*, *californicus*, p. 609, *nigripes*, *rotundiformis*, p. 610, *planiformis*, p. 611, N. America, HOWARD, P. U. S. Mus. xvii : n. spp.
- Brachysticha fidie*, Ohio, ASHMEAD, p. 171, J. Cincinnati Soc. xvii, n. sp.
- Callimome femoralis*, Tenerife, PÉREZ, p. 199, Ann. Soc. ent. France, 1895, n. sp.
- Catolaccus tylodermæ*, N. America, ASHMEAD, p. 161, Bull. Ohio Exp. Stat. i ; *C. tepicensis*, Mexico, ASHMEAD, p. 554, P. Calif. Ac. v : n. spp.
- Ceratoneura mexicana*, Tepic, ASHMEAD, p. 554, P. Calif. Ac. v, n. sp.
- Chalcaspis*, n. g., *Bothriothoracini*, for *C. pergandei*, n. sp., N. America ; HOWARD, p. 606, P. U. S. Mus. xvii.
- Chrysocharis compressicornis*, Ohio, ASHMEAD, p. 53, J. Cincinnati Soc. xvii, n. sp.
- Coccophagus scutatus*, *ochraceus*, California, HOWARD, p. 38, Bull. U. S. Agric. ent. Tech. i, n. spp.
- Encyrtus clisiocampæ*, *pleuralis*, Ohio, ASHMEAD, p. 163, Bull. Ohio Exp. Stat. i, n. spp.
- Eurytoma* sp. in gall on Cat's-claw thorn ; TOWNSEND, p. 202, Psyche, vii.
- Eretmocerus californicus*, Los Angeles, HOWARD, p. 16, ent. Bull. U. S. Agric. ent. Tech. i, n. sp.
- Erycdnus maculipennis*, Ohio, ASHMEAD, p. 162, Bull. Ohio Exp. Stat. i, n. sp.
- Eurytoma stigmii*, California, ASHMEAD, p. 271, Psyche, vii ; *E. tepicensis*, Mexico, ASHMEAD, p. 551, P. Calif. Ac. v : n. spp.
- Evoxysona decatomooides*, Mexico, ASHMEAD, p. 552, P. Calif. Ac. v, n. sp.
- Liopteron* : characters, type a subfamily *Liopterinæ* ; ASHMEAD, p. 174, P. ent. Soc. Washington, iii.
- L. fenestratum*, *tarsale*, Santarem, p. 177, *rufum*, Chapada, p. 178, ASHMEAD, P. ent. Soc. Washington, iii, n. spp.
- Megorismus lasiopteræ*, Ohio, ASHMEAD, p. 160, Bull. Ohio Exp. Stat. i, n. sp.
- Meraporus bruchivorus*, Iowa, ASHMEAD, p. 161, t. c. n. sp.
- Metapon mexicanum*, Tepic, ASHMEAD, p. 553, P. Calif. Ac. v, n. sp.
- Orasema viridis*, Mexico, ASHMEAD, p. 553, P. Calif. Ac. v, n. sp.
- Pelecinnella*, characters and systematic position ; ASHMEAD, p. 230, P. ent. Soc. Washington, iii.
- P. howardi*, *westwoodi*, Brazil, ASHMEAD, p. 233, P. ent. Soc. Washington, iii, n. spp.

- Pentelicus*, n. g., p. 611, for *P. aldrichi*, n. sp., Dakota, p. 612 ; HOWARD, P. U. S. Mus. xvii.
- Perissopterus*, n. g., type *Aphelinus pulchellus*, and including *P. mexicanus*, n. sp., Guadaluajara ; HOWARD, p. 20-23, Bull. U. S. Agric. ent. Tech. i.
- Physcus*, n. g., type *Coccophagus varicornis*, HOWARD, p. 43, Bull. U. S. Agric. ent. Tech. i, n. sp.
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- Polyscelis websteri*, Indiana, ASHMEAD, p. 52, J. Cincinnati Soc. xvii, n. sp.
- Pteromalus* : oviposition ; UFFELN, p. 115, Deutsche ent. Zeitschr. Lep. viii. External parasitism of larvæ of ; MARSHALL, Ent. Mag. 1895, pp. 253 & 254.
- Syntomopus americanus*, Ohio, ASHMEAD, p. 51, J. Cincinnati Soc. xvii, n. sp.
- Tetrastichoides lasiopterae*, Ohio, ASHMEAD, p. 54, t. c. n. sp.
- Tetrastichus orbitalis*, Lower California, ASHMEAD, p. 555, P. Calif. Ac. v, n. sp.
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- Amblyaspis xanthochroa*, *grenadensis*, p. 800, *ruficornis*, *brunneus*, p. 801, Grenada, ASHMEAD, P. Zool. Soc. London, 1895, n. spp.
- Anteris striatifrons*, Grenada, ASHMEAD, p. 798, t. c. n. sp.
- Aphanogmus grenadensis*, *insularis*, Grenada, ASHMEAD, p. 789, t. c. n. spp.
- Caloteleia dorsalis*, *striatifrons*, p. 797, *grenadensis*, p. 798, Grenada, ASHMEAD, P. Zool. Soc. London, 1895, n. spp.
- Ceraphron grenadensis*, *subopacus*, *rugifrons*, p. 788, *politifrons*, p. 789, Grenada, ASHMEAD, P. Zool. Soc. London, 1895, n. spp.
- Ceratopria grenadensis*, *flavipes*, Grenada, ASHMEAD, p. 807, P. Zool. Soc. London, 1895, n. spp.
- Cremastus* (? in error for *Cremastobæus*) *annulipes*, Grenada, ASHMEAD, p. 798, P. Zool. Soc. London, 1895, n. sp.
- Diapria smithi*, *grenadensis*, p. 805, *peraffinis*, *melanopleura*, *unicolor*, p. 806, Grenada, ASHMEAD, P. Zool. Soc. London, 1895, n. spp.
- Epyris pygmaeus*, Grenada, ASHMEAD, p. 787, P. Zool. Soc. London, 1895, n. sp.
- Fidiobia*, n. g., p. 170, *Platygasterinæ*, for *F. flavipes*, n. sp., Ohio, p. 171 ; ASHMEAD, J. Cincinnati Soc. xvii.
- Goniozus mexicanus*, *tepicensis*, Mexico, ASHMEAD, p. 540, P. Calif. Ac. v, n. spp.
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- Hadronotus bolivari*, Spain, GIARD, p. lxxviii, Bull. Soc. ent. France, 1895; *H. rugosithorax*, *agilis*, *atrocoxalis*, p. 799, *grenadensis*, p. 800, Grenada, ASHMEAD, P. Zool. Soc. London, 1895, n. spp.
- Hoplogryon pallipes*, Grenada, ASHMEAD, p. 797, t. c. n. sp.
- Loxotropa pleuralis*, *grenadensis*, Grenada, ASHMEAD, p. 803, P. Zool. Soc. London, 1895, n. spp.
- Mesitius nigripilosus*, Lower California, ASHMEAD, p. 539, P. Calif. Ac. v, n. sp.
- Phænopria nigricornis*, *angulifera*, ♂ ♀, p. 810, *nigriclavata*, *balthazari*, p. 811, *magniclavata*, p. 812, Grenada, ASHMEAD, P. Zool. Soc. London, 1895, n. spp.
- Phanurus tabanivorus*, Illinois, ASHMEAD, Bull. Illinois Lab. iv, p. 274, figg. 55 & 56, n. sp.
- Platygaster*: embryology; KULAGHIN (661).
- Polymecus macrurus*, p. 801, *grenadensis*, p. 802, Grenada, ASHMEAD, P. Zool. Soc. London, 1895, n. spp.
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- Synopias flavipes*, Grenada, ASHMEAD, p. 802, P. Zool. Soc. London, 1895, n. sp.
- Telenomus acrobates*, Provence, GIARD, p. lxxvii, Bull. Soc. ent. France, 1895; *T. grenadensis*, p. 791, *longiclavatus*, *connectans*, p. 792, *luteipes*, *atifrons*, p. 793, *nigriclavatus*, *fuscicornis*, p. 794, *albitarsis*, *flaviventris*, *convergens*, p. 795, *consimilis*, p. 796, Grenada, ASHMEAD, P. Zool. Soc. London, 1895; *T. minutissimus*, Trinidad, ASHMEAD, p. 220, J. Trinidad Club, ii: n. spp.
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- Cynipid galls in Russia; RÜBSAAMEN, pp. 469-477, Bull. Soc. Moscou, 1895.
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- Aulax schlechtendali*, Tiflis, p. 469, *fedtschenkoi*, Crimea, p. 472, RÜBSAAMEN, Bull. Soc. Moscou, 1895, n. spp.
- Callirhytis* sp., gall of, on scrub-oak in New Mexico; TOWNSEND, p. 263, Psyche, vii.
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- Cynips calicis*, natural history, development; KESSLER, pp. 15-40, plate, Abh. Ver. Kassell, xxx. *C. calicis* and galls, note on; BEYERINCK,

- p. 61, Versl. Ak. Amsterdam, 1895. *C. kollari*, list of 122 species reared from its galls; BILLUPS (112). *C. quercus-tojæ*, galls; PÉREZ, p. 261, Act. Soc. Bordeaux, xlvii.
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- Gronotoma insularis*, Grenada, ASHMEAD, p. 743, P. Zool. Soc. London, 1895, n. sp.
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- Ibalia cultellator*, habits, &c.; MARSHALL, p. 27, Ent. Mag. 1895.
- Kleidotoma atrocœnalis*, p. 746, *smithii*, *marginalis*, p. 747, *nana*, *pygidialis*, *bipunctata*, p. 748, Grenada, ASHMEAD, P. Zool. Soc. London, 1895 : n. spp.
- Neuroterus aprilinus*, galls and circumstances influencing them; CHAPMAN pp. 245-248, Ent. Rec. vi.
- Paramiomœa*, n. g., *Eucelinae*, for *P. heptatoma*, n. sp., Grenada; ASHMEAD, p. 751, P. Zool. Soc. London, 1895.
- Pentacritu coœnalis*, p. 749, *proxima*, p. 750, Grenada, P. Zool. Soc. London, 1895, n. spp.
- Pentamerocera*, n. g., p. 774, near *Eucela*, for *P. angularis*, p. 775, *distinguenda*, *erythropleura*, 6-punctata, p. 776, *lateralis*, *connectans*, *nanella*, p. 777, n. spp., Grenada; ASHMEAD, P. Zool. Soc. London, 1895.
- Rhodites tumidus*, gall; TOWNSEND, Psyche, vii, p. 272; at p. 307, *t. c.*, said to be *R. bicolor* not *tumidus*.
- Rhoptomeres atriclavata*, Grenada, ASHMEAD, p. 754, P. Zool. Soc. London, 1895, n. sp.

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London, 1895, n. sp.

SESSILIVENTRES.

[Cf. ASHMEAD (39), CHOLODKOVSKY (206), DYAR (316, 317, 318), KONOW
(619, 620), MACGILLIVRAY (714, 715, 716), MARLATT (726, 728),
PROVANCHER (905), SLAVICEK (1065), STROBL (1111).]

Many localities for Palearctic species ; STROBL (1111).

Sketch of the group ; SHARP (1055) Chap. xxii.

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Cephus (Phyllocus) lunulatus, Europe, STROBL, p. 265, Wien. ent. Zeit.
1895, n. sp.

Phyllocus flaviventris, life-history ; MARLATT, pp. 387-390, Insect Life,
vii.

Sirex carinthiacus, ♂ ; KONOW, p. 50, Termes. Fuzetek, xviii.

TENTHREDINIDÆ.

Relation of gall-making and inquilinous larvæ as influenced by hiberna-
tion ; MARLATT, P. ent. Soc. Washington, iii, pp. 263-268.

Table of characters of larvæ of *N. American* ; DYAR, pp. 337-344,
Canad. Ent. xxvii.

Note on the Malpighian tubes ; BORDAS (132).

Structure of spinning-glands, of œsophageal sacs, and of fat-body of
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Notes on *Tenthredinidæ* from Friesland Is. ; VERHOEFF, pp. 236-238,
Abh. Ver. Bremen, xiii.

Abia gribodoi, Algeria, KONOW, p. 71, Wien. ent. Zeit. 1895, n. sp.

Allantus kohli, "As. Ircut," p. 76, *antigæ*, Catalonia, p. 77, *obscuratus*,
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Arge pyrenaica, n. var. *nigripes* ; KONOW, p. 71, Wien. ent. Zeit. 1895.
A. rufescens, ♂ ; KONOW, p. 50, Termes. Fuzetek, xviii.

Blennocampa subcana, n. var. *angularis* ; KONOW, p. 74, Wien. ent. Zeit.
1895. *B. bipartita*, Cress., referred to *Mogeris* ; MACGILLIVRAY,
p. 281, Canad. Ent. xxvii.

B. spirææ, N. America, DYAR, p. 194, Canad. Ent. xxvii, n. sp.

Cladius (Trichocampus) gregarius, p. 191, *C. solitaris*, p. 192, N. America,
DYAR, Canad. Ent. xxvii, n. spp.

Dolerus lateralis, N. Mongolia, p. 75, *murcius*, Spain, p. 76, KONOW, Wien.
ent. Zeit. 1895 ; *D. mocsaryi*, Hungary, KONOW, p. 52, Termes.
Fuzetek, xviii : n. spp.

Holcocneme : table of species ; KONOW, pp. 53-55, Termes. Fuzetek, xviii.

- H. yokohamensis*, Japan, KONOW, p. 56, Termes. Fuzetek, xviii, n. sp.
Hylotoma macleayi, *pectoralis*, larvæ ; DYAR, pp. 208, 210, Canad. Ent. xxvii. *H. macleayi*, larva ; DYAR, p. 309, Tr. Amer. ent. Soc. xxii.
- H. pœciloides*, Lower California, ASHMEAD, p. 542, P. Calif. Ac. v, n. sp.
Lophyrus lecontei, larva ; DYAR, p. 211, Canad. Ent. xxvii.
- Lyda ochreatea*, larva described ; DYAR, p. 200, Ent. News Philad. vi. *L. hypotrophica*, ravages, &c. ; LANG, pp. 24-30, Forstl. Zeitschr. Munchen, iv ; DOLLES, t. c. p. 264.
- Lygaonematus robustus*, Bohemia, KONOW, p. 53, Termes. Fuzetek, xviii, n. sp.
- Macrophya pulchella*, n. var. *alba* ; MACGILLIVRAY, p. 285, Canad. Ent. xxvii.
- M. mixta*, *nidonea*, p. 77, *slossonia*, p. 78, New Hampshire, MACGILLIVRAY, Canad. Ent. xxvii ; *M. punctata*, p. 285, *minuta*, p. 286, N. America, MACGILLIVRAY, t. c. : *M. albipes*, California, PROVANCHER, p. 95, Natural. Canad. xxii : n. spp.
- Mogerus*, n. n. for *Periclista* (preocc.) ; MACGILLIVRAY, p. 281, Canad. Ent. xxvii.
- M. emarginatus*, Boston, MACGILLIVRAY, p. 281, Canad. Ent. xxvii, n. sp.
- Monophadus burda*, larva, DYAR, p. 308, Tr. Amer. ent. Soc. xxii. *M. rubi*, larva described ; DYAR, p. 200, Ent. News Philad. vi.
- M. pallipes*, California, PROVANCHER, p. 80, Natural. Canad. xxii, n. sp.
- Monostegia rosæ* and allies, larvæ ; DYAR, pp. 194-196, Canad. Ent. xxvii.
- Nematus similaris*, p. 301, *mendicus*, p. 302, *dorsivittatus*, p. 303, *luteo-tergum*, *latifuscatus*, *ventralis*, p. 304, *corylus*, p. 306, *lateralis*, *thoracicus*, p. 307, *unicolor*, p. 308, larvæ described ; DYAR, Tr. Amer. ent. Soc. xxii.
- N. pinguidorsum*, New York, p. 303, *marlattii*, p. 305, *hudsonii-magnus*, p. 306, N. America, DYAR, Tr. Amer. ent. Soc. xxii ; *N. tetraopsis*, California, PROVANCHER, p. 79, Natural. Canad. xxii : n. spp.
- Pælineura kincaidia*, Washington, MACGILLIVRAY, p. 8, Canad. Ent. xxvii, n. sp.
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- Schizocera staudingeri*, Murcia, p. 71, *parvula*, N. Spain, *alfkeni*, Germany, p. 72, *friesei*, Tyrol, p. 73, KONOW, Wien. ent. Zeit. 1895, n. spp.
- Scolioneura canadensis*, *populi*, N. America, MARLATT, p. 235, P. ent. Soc. Washington, iii, n. spp.
- Selandria floridana*, Ormond, MACGILLIVRAY, p. 281, Canad. Ent. xxvii, n. sp.
- Senoclia albocerulea*, Philippines, BINGHAM, p. 446, Ann. Nat. Hist. xvi, n. sp.

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Taxonus multicolor, larva; DYAR, p. 309, Tr. Amer. ent. Soc. xxii.

T. borealis, N. America, MACGILLIVRAY, p. 78, Canad. Ent. xxvii, n. sp.

Tenthredo cressoni, larva; DYAR, p. 313, Tr. Amer. ent. Soc. xxii.

T. redimacula, p. 78, *frigida, pallicola*, p. 80, *remota*, p. 81, N. America, MACGILLIVRAY, Canad. Ent. xxvii; *T. bilineatus, pallipunctus*, p. 282, *rufostigmus, atravenus, terminatus*, p. 283, *æqualis, ventricus*, p. 284, N. America, *id. t. c.*, n. spp.

Tenthredopsis microcephala, life-history; CHAWNER, p. 168, Entomologist, 1895.

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vi.

(c.) *LEPIDOPTERA.*

- The comparative anatomy of mesothorax and metathorax; KELLOGG (582).
 Structure of mouth; KELLOGG (583).
 Minute structures of scales and other processes on wings of *Lepidoptera*; SPULER (1096).
 New classification of the order expounded in the arrangement of British *Lepidoptera*; MEYRICK (764).
 List of the families according to recent views, with new names for several, viz., *Agapetidæ*, *Satyridæ*, *Riodinidæ* for *Erycinidæ*, *Lachneidæ* for *Lasiocampidæ*, &c., &c.; GROTE, Mt. Mus. Hildesheim, No. 1.
 Classification of *Lepidoptera*, based on imaginal and pupal characters, adopting two suborders, *Laciniata* and *Haustellata*, and of the latter two series *Neolepidoptera* and *Palæolepidoptera*; and phylogenetic study; PACKARD (832, 833).
 Studies on the classification of larvæ, with particulars as to the distinctions of the families; DYAR (307, 308).
 Combination of classification based on larval structure with that based on wing-venation, with larval characters of many families; DYAR (311).
 Superfamilies of *Lepidoptera* according to larvæ; DYAR, pp. 38 & 100, Ent. News Philad. vi.
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 Eversible glands of larvæ; PACKARD, J. N. York Ent. Soc. iii, pp. 116-127.
 Terminations of tracheæ in silk-glands of larvæ; HOLMGREN (506).
 Spermatogenesis; VERNON (1169).

RHOPALOCERA.

- [*Cf.* ALPHÉRAKY (23), AURIVILLIUS (51-54), AUSTAUT (55, 56), BARKER (71), BERG (93), BETHUNE (105), BUTLER (162-169), CHAPMAN (198), CHRIST (208, 209), CROMPTON (264), CROWLEY (265), DOGNIN (294), DRUCE (297), H. H. DRUCE (299), DUDGEON (301), DUGÈS (302), EDWARDS (323, 324), EIMER (326, 327), FISCHER (372), FRUINSTORFER

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Classification of butterfly pupæ ; CHAPMAN (198).

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Comparison of N. American *Papilionidæ*, and other *Rhopalocera*, with those of the Old World ; CHRIST (208, 209).

Butterflies of E. Canada ; BETHUNE (105).

Notes on the butterflies of Tenerife ; CROMPTON (264).

Selections from Scudder's butterflies of N. America ; SCUDDER (1039).

PAPILIONIDÆ.

Revision of *Ornithoptera* (cf. *Troides*) and *Papilio* of the Eastern hemisphere except Africa ; ROTHSCHILD, Nov. Zool. ii, pp. 167-463. In this work a very large number of varietal names are given, and also a very extensive synonymy ; for these reference must be made to the work itself.

Ornithoptera : RIPPON has continued his figures and descriptions (968), but as neither pages nor plates are numbered, we shall only refer to the new nomenclature of his parts 6-9. Notes on *Ornithoptera*, with woodcuts ; KIRBY, pp. 254-258, Nature, li ; RIPPON, t. c. p. 343. *O. helena*, var. *thestius* ; STAUDINGER, p. 283, Deutsche ent. Zeitschr. Lep. viii. *O. richmondii*, life-history ; SCHNEIDER, Entomologist, 1895, p. 93, cut. *O. paradisæa*, metamorphoses ; KUBARY, p. 103, pl. i, figg. 1 & 2, Deutsche ent. Zeitschr. Lep. 1895. *O. urvilliana*, metamorphoses ; RIBBE, pp. 105-107, pl. i, figg. 3-6.

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Papilio : revision of species of the Eastern hemisphere with extensive synonymy, and a great number of new varietal names ; ROTHSCHILD, Nov. Zool. ii, pp. 233-463. Male characters of certain species

- figured in part; pl. vi, *t. c.* Additional notes; *t. c.* pp. 503 & 504. *P.*: in India seasonal dimorphism occurs in this genus; JORDAN, p. 504, *Nov. Zool.* ii. The variation, races, phylogeny of *Papilio turnus*, *machaon*, *asterias*; EIMER (326, 327). *P. vandepolli*, note, p. 29, *auriger* and allies, suggested synonymy, p. 30; SNELLEN, *Tijdschr. Ent.* xxxviii. *P. (Euplæopsis) danisepa*, ♀ fig., &c., pl. q, fig. 48, p. 366; NICÉVILLE, *J. Bombay Soc.* ix. *P. adamastor* and allies, characters; KARSCH, pp. 282-285, *Ent. Nachr.* xxi. *P. pelaus*, ♀; EHRMANN, p. 303, *Ent. News Philad.* vi. *P. websteri*, ♂ ♀ figures; SMITH & KIRBY, *Rhop. ex. Papilio*, xv. *P. polydæmon*, p. 110, pl. ii, figg. 10 & 11, *euchenor*, figg. 4 & 5, *bridgei*, figg. 1-3, *ulysses*, var., figg. 6 & 7, *codrus*, var., figg. 8 & 9, p. 111, *ambracia*, fig. 13, *ormenus*, fig. 12, p. 112, metamorphoses; RIBBE, *Deutsche ent. Zeitschr. Lep.* 1895. *P. andronicus*, ♀ figure, pl. iii, fig. 4, *zoroastres* = (*preussius*, Karsch), p. 265, *demodocus* is the name to be used for African *demoleus*, p. 267; AURIVILLIUS, *Ent. Tidskr.* xvi. *P. ercechtheus* and others, notes on, in N. S. Wales; FRASER, *Ent. Mag.* 1895, p. 13. *P. nivinox*, figure; BUTLER, pl. xvi, fig. 4, p. 263, *P. Zool. Soc. London*, 1895. *P. hageni*, figure ♂, pl. iv, fig. 6; NICÉVILLE, p. 45, *J. Asiat. Soc. Bengal*, lxiii. *P. oregonia* and *bairdii*, their relations, *P. brucei*, new form, p. 239; EDWARDS, *Canad. Ent.* xxvii, pp. 229-242. *P. doubledayi*, n. var. *delianus*; FRUHSTORFER, p. 196, *Ent. Nachr.* xxi. *P. lysithous*, n. var. *brevifasciatus*, p. 312, *hectorides*, var. *melania*, note, p. 315; WEYMER, *Ent. Zeit. Stettin*, lv. *P. cloanthus*, larva, *P. glycerion*, life-history; ROBSON, p. 497, *J. Bombay Soc.* ix.
- P. neumanni*, *Trop. Africa*, KARSCH, p. 225, *Ent. Nachr.* xxi; *P. pelodurus*, *Centr. Africa*, BUTLER, p. 720, *P. Zool. Soc. London*, 1895; *P. phrynon*, *Upper Congo*, DRUCE, p. 332, *Ann. Nat. Hist.* xv; *P. carchedonius*, *Trop. Africa*, KARSCH, p. 286, *Ent. Nachr.* xxi; *P. dilutus*, *Java*, FRUHSTORFER, p. 169, *t. c.*; *P. ornatus*, *Halmahera*, p. 414, *leechi*, *China*, p. 437, ROTHSCHILD, *Nov. Zool.* ii; *P. daemonius*, *Batang*, ALPHÉRAKY, p. 180, *Deutsche ent. Zeitschr. Lep.* viii; *P. vordermani*, *Talaut Is.*, SNELLEN, *Tijdschr. Ent.* xxxvii, p. 191; *P. penomimus*, *Sumatra*, MARTIN (734), p. 2; *P. (Menamopsis) perses*, p. 46, pl. iv, fig. 7, *petra*, fig. 5, p. 47, *Sumatra*, NICÉVILLE, *J. Asiat. Soc. Bengal*, lxiii; *P. extendatus*, *Rio Grande do Sul*, WEYMER, p. 313, *Ent. Zeit. Stettin*, lv : n. spp.
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- P. tartarus*, *W. Tibet*, AUSTAUT, p. 39, *Naturaliste*, 1895, n. sp.
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- Source of the pigments : physiological importance of colour ; HOPKINS (508-510).
- Appias eurosundana*, Timor, p. 75, *ambigua*, Halmaheira, &c., p. 76, SMITH, Nov. Zool. ii ; *A. gisco*, Solomon Is., SMITH, p. 229, Ann. Nat. Hist. xv : n. spp.
- Catophaga galena*, migration in Ceylon ; MANN, p. 39, P. Linn. Soc. London, 1894-95.
- Colias* : classification ; WATSON, p. 166, Entomologist, 1895. *C. hecla*, characters compared with *C. meadii* and *elis* ; BEAN, pp. 219-229, Psyche, vii. *C. hecla*, note on Bean's views ; SKINNER, t. c. p. 244. *C. nastes*, n. var. *streckeri* ; GRUM-GRSHIMAILO, p. 290, Horæ Soc. ent. Ross. xxix. *C. philodice*, melanism of autumnal examples ; BÉGIN, Canad. Natural. xxii, p. 28.
- Delias fasciata*, fig. 1, *sambawana*, figg. 2 & 3, *splendida*, figg. 4-6, *dohertyi*, figg. 7 & 8, figured ; SMITH & KIRBY, Rhop. ex. Pierinæ, *Delias*, iv. *D. geraldina*, figg. 1-3, *ladas*, figg. 4-6, *cathara*, figg. 7 & 8, figured ; SMITH & KIRBY, Rhop. ex. *Delias*, v. *D. bromo*, note on ; SNELLEN, p. 27, Tijdschr. Ent. xxxviii.
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- Eronia argia*, sexes and variation ; AURIVILLIUS, p. 262, Ent. Tidskr. xvi.
- Luceronia*, n. g., type *Eronia buqueti*, Boisd. ; AURIVILLIUS, p. 256, Ent. Tidskr. xvi.
- Mylothris spica*, sexes, pupa, pl. ii, figg. 2 & 2A (as *M. jaopura*), AURIVILLIUS, p. 258, Ent. Tidskr. xvi.
- Mylothris croceus*, Central Africa, BUTLER, p. 734, pl. xliii, fig. 1, P. Zool. Soc. London, 1895 ; *M. sulphurea*, pl. iii, fig. 3, *ochracea*, fig. 1, p. 259, *sjöstedti*, fig. 2, p. 260, Cameroons, AURIVILLIUS, t. c. : n. spp.
- Nychitona medusa*, n. var. *immaculata*, AURIVILLIUS, p. 257, Ent. Tidskr. xvi.
- Pereute antodyca*, *swainsonii*, characters of sexes ; WEYMER, p. 316, Ent. Zeit. Stettin, lv.
- Pieris panda*, var. described and figured, p. 24, pl. i, fig. 3, *P. oberthuri*, synonymy, p. 25 ; SNELLEN, Tijdschr. Ent. xxxviii. *P. theuszi*, n. var. *semialba* ; AURIVILLIUS, p. 261, Ent. Tidskr. xvi. *P. napi*, n. var. *sifanica* ; GRUM-GRSHIMAILO, p. 290, Horæ Soc. ent. Ross. xxix. *P. napi* and var. *bryonia*, experiments in variation ; WEISMANN, Zool. Jahrb. Syst. viii, pp. 628-635. *P. protodice*, disappearance discussed ; MOFFAT, pp. 61 & 62, Rep. ent. Soc. Ontario, xxv.

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- Amauris damocles*, n. var. *damoclidus*; STAUDINGER, pl. vii, fig. 3, p. 367, Deutsch. ent. Zeitschr. Lep. viii.
- A. ellioti*, Central Africa, BUTLER, p. 122, Ann. Nat. Hist. xvi, fig., and P. Zool. Soc. London, 1895, pl. xlii, fig. 1; *A. ochleides*, Abyssinia, STAUDINGER, p. 366, pl. vii, fig. 2, Deutsche ent. Zeitschr. Lep. viii; *A. bumilleri*, E. Africa, LANZ, p. 380, t. c. : n. spp.
- Danaïs (Salatura) genutia*, variation; FÜRBRINGER, p. 230, Semon's Forschungsreise, v. *D. (Bahora) kheili*, figg., &c.; NICÉVILLE, p. 13, pl. R, figg. 1 & 2, J. Bombay Soc. x.
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- E. eucala*, Sambawa, STAUDINGER, p. 373, pl. vii, fig. 4, Deutsche ent. Zeitschr. Lep. viii, n. sp.
- Gamatoba dromius*, Halmaheira, SMITH, p. 78, Nov. Zool. ii, n. sp.
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- Tithorea flavescens*, life-history; GUPPY, p. 170, J. Trinidad Club, ii.

ACREIDÆ and HELICONIDÆ.

- Acrea*; seasonal dimorphism, names of dry and wet season forms; BUTLER, p. 521, Tr. ent. Soc. London, 1895. *A. oberthüri*, n. n. for *A. cythius* of collections; BUTLER, p. 271, Ann. Nat. Hist. xvi.

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- A. semivitreata*, Congo, AURIVILLIUS, p. 111, Ent. Tidskr. xvi; *A. induna*, Mashunaland, TRIMEN, p. 184, pl. v, fig. 3, Tr. ent. Soc. London, 1895: n. spp.
- Alena aurantiaca*, Central Africa, BUTLER, p. 262, pl. xv, fig. 4, P. Zool. Soc. London, 1895, n. sp.
- Heliconia metalilis*, orthography; SNELLEN, p. 12, Tijdschr. Ent. xxxviii.
- Planema albicolor*, Karsch, is albino of *consanguinea*; BUTLER, Ann. Nat. Hist. xvi, p. 417.
- P. albicolor*, Uganda, KARSCH, p. 280, Ent. Nachr. xxi; *P. leopoldina*, W. Africa, AURIVILLIUS, p. 112, Ent. Tidskr. xvi; *P. salvini*, *godmani*, p. 415, *indentata*, p. 416, W. Africa, BUTLER, Ann. Nat. Hist. xvi: n. spp.

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- Adolias*: members discussed, p. 19, *agnis*, ♂, p. 20, SNELLEN, Tijdschr. Ept. xxxviii.
- Ageronia feronia*, notes on; GUPPY, p. 173, J. Trinidad Club, ii.
- Agrias sardanapalus*, var. discussed; STAUDINGER, pp. 374–376, *beatifica*, var. *olivencia*, pp. 376–379, Deutsche ent. Zeitschr. Lep. viii. *A. sardanapalus* and *claudia* are ♂ and ♀ of one species; FRUHSTORFER, p. 152, Ent. Nachr. xxi. Remarks on various, with reference to Fruhstorfer's descriptions: *sardanapalus* and *claudia* are not one species; STAUDINGER, pp. 383–385, Ent. Nachr. xxi. *A. sardanapalus*, ♀, *annetta*, ♂, *claudianus*, ♀, characters; RIFFARTH, pp. 204–206, Ent. Zeit. Stettin, lvi. *A. annetta*, n. var. *godmani*, *A. ædon*, n. var. *salvini*, p. 217, *A. amydon*, n. var. *frontina*, *eleonora*, *A. zenodorus*, n. var. *boliviensis*, p. 218; FRUHSTORFER, Ent. Nachr. xxi.
- A. ferdinandi*, Bahia; FRUHSTORFER, p. 151, Ent. Nachr. xxi, n. sp.
- Amnosia*: systematic position is in *Satyridæ*, *A. eudamia*, characters; MARTIN, pp. 238 & 239, Deutsche ent. Zeitschr. Lep. viii. *Amnosia* referred to *Morphinæ*; FÜRBRINGER, p. 239, Semon's Forschungsreise, v.
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- Cyaniris musina*? fig.; NICÉVILLE, pl. o, fig. 19, p. 275, J. Bombay Soc. ix.
- C. crissa*, S. India, NICÉVILLE, p. 31, pl. ii, fig. 12, J. Asiat. Soc. Bengal, lxiii; *C. cosæa*, p. 271, pl. o, figg. 14 & 15, *corythus*, p. 273, figg. 16 & 17, *carna*, fig. 18, p. 274, Sumatra, *catreus*, figg. 20 & 21, p. 276, Java, *camene*, fig. 22, p. 278, Perak, Sumatra, NICÉVILLE, J. Bombay Soc. ix; *C. dilectissima*, p. 571, pl. xxxii, figg. 2 & 3, *placidula*, p. 572, figg. 6 & 7, *lugra*, fig. 5, *selma*, fig. 10, *strophis*,

- fig. 4, Borneo, *phuste*, fig. 17, Dili, p. 573, *plauta*, figg. 8 & 9, *ripte*, fig. 11, Borneo, p. 574, H. H. DRUCE, P. Zool. Soc. London, 1895; *C. lyce*, Celebes, *cinctula*, p. 506, *lyseas*, p. 507, Batchian, SMITH, Nov. Zool. ii : n. spp.
- Dapidoligma*, n. g., *Horaga* group, type *Sithon hymen*; KARSCH, p. 310, Ent. Nachr. xxi.
- Deudoria staudingeri*, Borneo, H. H. DRUCE, p. 621, pl. xxxiv, fig. 10, P. Zool. Soc. London, 1895, n. sp.
- Diopetes*, n. g., p. 317, for *Deudoria veritas*, and *D. catalla*, *aucta*, n. spp., Tropical Africa, p. 318; KARSCH, Ent. Nachr. xxi.
- Epamera diametra*, Usambara, KARSCH, p. 306, Ent. Nachr. xxi, n. sp.
- Epitola*: synonymical and varietal notes on various African species; AURIVILLIUS, pp. 204–207, Ent. Tidskr. xvi.
- E. ernesti*, Tropical Africa, KARSCH, p. 290, Ent. Nachr. xxi; *E. (Phytala?) hyltoides*, Cameroons, AURIVILLIUS, p. 206, Ent. Tidskr. xvi : n. spp.
- Euliphyra? sjostedti*, Cameroons, AURIVILLIUS, p. 204, Ent. Tidskr. xvi, n. sp.
- Gerydus*, list of species; NICÉVILLE, p. 26, J. Asiat. Soc. Bengal, lxiii.
- G. gigas*, p. 559, pl. xxxi, fig. 3, *innocens*, p. 560, fig. 4, *vincula*, p. 561, figg. 9 & 10, Borneo, H. H. DRUCE, P. Zool. Soc. London, 1895; *G. gessa*, Sumatra, NICÉVILLE, p. 26, pl. s, fig. 16, J. Bombay Soc. x; *G. gigantes*, pl. v, figg. 1, 13, p. 23, *gatulus*, fig. 12, p. 24, *gallus*, fig. 11, p. 25, Sumatra, NICÉVILLE, J. Asiat. Soc. Bengal, lxiii : n. spp.
- Hewitsonia kirbyi*, larva and pupa; AURIVILLIUS, p. 207, pl. ii, figg. 1–16, Ent. Tidskr. xvi.
- Holochila zita*, Tenimber, SMITH, p. 511, Nov. Zool. ii, n. sp.
- Horaga corniculum*, pl. xxxiv, fig. 8, *affinis*, fig. 9, Borneo, H. H. DRUCE, p. 611, P. Zool. Soc. London, 1895; *H. samoena*, Batchian, *selina*, Celebes, SMITH, p. 513, Nov. Zool. ii : n. spp.
- Hypochrysops pretiosus*, figg. 1 & 2, *theonides*, figg. 3 & 4, *theophanes*, figg. 5 & 6, *hermogenes*, figg. 7 & 8, *heros*, figg. 9 & 10, *siren*, figg. 11 & 12, figured, SMITH & KIRBY, Rhop. ex. Oriental Lycænidæ, ii. *H. dicomas*, figg. 6 & 7, *epicurus*, figg. 8 & 9, figured, *id. t.c.* iv.
- H. dryope*, p. 15, figg. 1, 2, & 3, *chrysargyra*, p. 16, figg. 4 & 5, New Guinea, *regina*, p. 21, figg. 10 & 11, Moluccas, SMITH & KIRBY, Rhop. ex. Oriental Lycænidæ, iii, n. spp.
- Hypolycaena faunus*, n. var. *albata*; AURIVILLIUS, p. 382, Ent. Nachr. xxi. *H. lebona*, n. var. *coerulea*; AURIVILLIUS, p. 210, Ent. Tidskr. xvi.
- H. dubia*, Cameroons, AURIVILLIUS, p. 211, Ent. Tidskr. xvi; *H. skapanæ*, pl. xxxiii, figg. 16 & 17, *phemis*, fig. 18, Borneo, H. H. DRUCE, p. 604, P. Zool. Soc. London, 1895 : n. spp.
- Hypomyrina*, characters; KARSCH, p. 312, Ent. Nachr. xxi.
- H. perigrapha*, Central Africa, KARSCH, p. 313, Ent. Nachr. xxi, n. sp.
- Hysudra? hades*, Birma, NICÉVILLE, p. 318, pl. r, fig. 46, J. Bombay Soc. ix, n. sp.
- Iolaus (Epamera) bellina*, characters at length? = (*iaspis*, Dr.); AURIVILLIUS, p. 212, Ent. Tidskr. xvi.

- I. (Epamera) pullux*, *I. (Argiolaus) cesareus*, Cameroons, AURIVILLIUS, Ent. Tidskr. xvi, p. 213; *I. æmulus*, Natal, TRIMEN, p. 192, pl. v, fig. 6, Tr. ent. Soc. London, 1895 : n. spp.
- Iraota nila*, figure, pl. xxxiii, fig. 1, p. 588; H. H. DRUCE, P. Zool. Soc. London, 1895.
- Jacoona jusana*, pl. xxxiv, fig. 3, *metasuja*, fig. 4, Borneo, H. H. DRUCE, p. 609, P. Zool. Soc. London, 1895, n. spp.
- Jamides seminiger*, Batchian, p. 509, *pulchrrior*, Halmahera, *grata*, Tenimber, *timon*, New Britain, p. 510, SMITH, Nov. Zool. ii, n. spp.
- Lachnocnema magna*, Cameroons, AURIVILLIUS, Ent. Tidskr. xvi, p. 209, n. sp.
- Lampides cærulea*, figure; H. H. DRUCE, pl. xxxii, fig. 19, p. 582, P. Zool. Soc. London, 1895. *L. talinga*, Kheil, description, p. 39, figure, pl. s, figg. 27 & 28; NICÉVILLE, J. Bombay Soc. x.
- L. pelotus*, Kilimandjaro, KARSCH, p. 300, Ent. Nachr. xxi; *L. lacteata*, Ceylon, NICÉVILLE, p. 36, J. Bombay Soc. x; *L. lucide*, Sumatra, NICÉVILLE, p. 33, pl. v, fig. 3, J. Asiat. Soc. Bengal, lxiii; *L. limes*, pl. xxxii, fig. 16, *virgulatus*, fig. 17, p. 581, Borneo, *emetallicus*, Batchian, p. 582, *zebra*, fig. 18, p. 583, *lividus*, fig. 20, p. 584, Borneo, H. H. DRUCE, P. Zool. Soc. London, 1895; *L. margarita*, Sumatra, MARTIN (735), p. 9 : n. spp.
- Liptena* : its composition; AURIVILLIUS, Ent. Tidskr. xvi, pp. 200–202.
- L. ilma*, n. var. *simplex*, p. 201; AURIVILLIUS, *t. c.*
- Listeria*, n. g., p. 35, ? allied to *Thecla*, for *L. dudgeonii*, n. sp., Bhutan, p. 36; NICÉVILLE, J. Asiat. Soc. Bengal, lxiii.
- Logania luca*, Perak, &c., NICÉVILLE, p. 28, pl. ii, fig. 13, J. Asiat. Soc. Bengal, lxiii; *L. staudingeri*, Borneo, H. H. DRUCE, P. Zool. Soc. London, 1895, p. 565, pl. xxxi, figg. 13 & 14 : n. spp.
- Luthrodes*, n. g. near *Talicauda*, type *Pol. cleotas*, Guér.; H. H. DRUCE, p. 576, P. Zool. Soc. London, 1895.
- Lycæna ægon*, variation in Westmoreland; TUTT, p. xxvi, P. ent. Soc. London, 1895. *L. orbitulus*, n. var. *tartarus*, *chiron*, n. var. *privata*; STAUDINGER, p. 300, Deutsche ent. Zeitschr. Lep. viii. *L. eleusis* = (*podorina*, Mab.); DEMAISON, p. lx, Bull. Soc. ent. France, 1895. *L. moorei*, referred to *Everes*, p. 32, figure, pl. ii, fig. 11; NICÉVILLE, J. Asiat. Soc. Bengal, lxiii.
- L. nubifer*, S. Africa, TRIMEN, p. 187, pl. v, fig. 4, Tr. ent. Soc. London, 1895, n. sp.
- Lycænesthes (Triclema) cærulea*, p. 217, *fasciatus*, p. 218, Cameroons, AURIVILLIUS, Ent. Tidskr. xvi; *L. pyroptera*, Congo, AURIVILLIUS, p. 382, Ent. Nachr. xxi; *L. zenkeri*, p. 293, *luhokescha*, p. 295, Trop. Africa, KARSCH, *t. c.* : n. spp.
- Mahathala gone*, Mongolia, H. H. DRUCE, p. 593, P. Zool. Soc. London, 1895, n. sp.
- Manto*, n. g., p. 312, type *Myrina hypoleuca*, Hew., *martina*, Hew., figure, pl. p, fig. 44; NICÉVILLE, J. Bombay Soc. ix.

- Marmessus surindra*, pl. xxxiv, fig. 7, with var. *albula*, Borneo, H. H. DRUCE, p. 617, P. Zool. Soc. London, 1895, n. sp.
- Micropentila*, n. g., type *Liptena adelgitha*, Hew., and including *M. triangularis*, n. sp., Cameroons; AURIVILLIUS, p. 203, Ent. Tidskr. xvi.
- Mimacræa neurata*, Liberia, HOLLAND, p. 166, Ent. News Philad. vi; *M. fulvaria*, Congo, AURIVILLIUS, p. 381, Ent. Nachr. xxi: n. spp.
- Nacaduba aluta*, figure, pl. xxxii, figg. 13 & 14, *ancyra*, complex synonymy; H. H. DRUCE, p. 578, P. Zool. Soc. London, 1895.
- N. lutea*, Sumatra, MARTIN (734), p. 1; *N. nelides*, Sumatra, Java, NICÉVILLE, p. 280, pl. o, fig. 24, J. Bombay Soc. ix; *N. nanda*, Sumatra, NICÉVILLE, p. 34, op. cit. x; *N. pamela*, Celebes, *valentina*, Amboina, *rita*, Wetter, &c., p. 508, *elsa*, Amboina, p. 509, SMITH, Nov. Zool. ii; *N. lugine*, Labuan, H. H. DRUCE, p. 577, pl. xxxii, fig. 15, P. Zool. Soc. London, 1895: n. spp.
- Neocheritra nisibis*, Sumatra, &c., NICÉVILLE, pl. p, fig. 45, p. 316, J. Bombay Soc. ix; *N. namoa*, Sumatra, NICÉVILLE, p. 41, pl. v, fig. 9, J. Asiat. Soc. Bengal, lxiii: n. spp.
- Neopithecops umbretta*, Halmahera; SMITH, p. 505, Nov. Zool. ii.
- Niphanda reter*, Borneo, H. H. DRUCE, p. 576, pl. xxxii, fig. 12, P. Zool. Soc. London, 1895, n. sp.
- Oboronia bueronica*, Usambara, KARSCH, p. 304, Ent. Nachr. xxi, n. sp.
- Ops*, n. g., p. 296, for *Tajuria melastigma*, and *O. ogyes*, p. 298, pl. p, figg. 36 & 37, *æta*, fig. 38, p. 299, Birma, n. spp.; NICÉVILLE, J. Bombay Soc. ix.
- Paragerydus caudatus*, figured; H. H. DRUCE, pl. xxxi, figg. 7 & 8, p. 563, P. Zool. Soc. London, 1895.
- P. waterstradti* (with var. *absens*), pl. xxxi, figg. 1 & 2, *moorei*, figg. 5 & 6, H. H. DRUCE, p. 562, P. Zool. Soc. London, 1895; *P. pætus*, Sumatra, NICÉVILLE, p. 269, pl. o, fig. 12, J. Bombay Soc. ix; *P. portunus*, Java, pl. v, fig. 14, *pyxus*, Borneo, fig. 2, p. 27, NICÉVILLE, J. Asiat. Soc. Bengal, lxiii: n. spp.
- Pentila phidia*, Hew., = (*Tingra nunu*, Karsch); KARSCH, p. 293, Ent. Nachr. xxi.
- P. kirbyi* (= *muhata*, Sm. & K.), Africa, AURIVILLIUS, p. 198, Ent. Tidskr. xvi; *P. yaunda*, p. 292, *auga*, p. 293, Cameroons, KARSCH, Ent. Nachr. xxi: n. spp.
- Phylaria*, n. g. for *P. stactalla*, n. sp., Trop. Africa, and *cyara*, Hew.; KARSCH, Ent. Nachr. xxi, p. 302.
- Phytala* and *Epitola*, distinctness queried; AURIVILLIUS, p. 206, Ent. Tidskr. xvi.
- Pithecops mariæ*, Sumatra, NICÉVILLE, J. Asiat. Soc. Bengal, lxiii, p. 30, pl. iv, figg. 2 & 9, n. sp.
- Polyommatus violaceus*, var. of *splendens*, not of *dispar*; STAUDINGER, p. 345, Deutsche ent. Zeitschr. Lep. viii.
- P. quassi*, Trop. Africa, KARSCH, p. 305, Ent. Nachr. xxi, n. sp.
- Poriskina*, n. g. near *Poritia*, for *P. phakos*, n. sp., Mindanao, pl. xxxiv, fig. 15; H. H. DRUCE, P. Zool. Soc. London, 1895.

- Poritia phormedon*, p. 566, pl. xxxi, figg. 16 & 17, *phaluke*, fig. 15, Borneo, *phare*, Mindanao, fig. 14, p. 567, *phama*, p. 568, fig. 18, *philura*, p. 569, pl. xxxii, fig. 1, Borneo, H. H. DRUCE, P. Zool. Soc. London, 1895, n. spp.
- Pratapa lucidus*, pl. xxxiii, fig. 3, *sannio*, fig. 15, p. 596, *devana*, figg. 4 & 5, p. 597, *calculus*, figg. 6 & 7, p. 598, Borneo, H. H. DRUCE, P. Zool. Soc. London, 1895, n. spp.
- Pseudomyrina*, n. g. for *Myrina martina*, Dr. ; H. H. DRUCE, p. 606, P. Zool. Soc. London, 1895.
- Rapala schistacea*, life-history ; ROBSON, p. 337, J. Bombay Soc. ix. *R. barthema*, Dist., figure, pl. xxxiv, fig. 11, p. 623, P. Zool. Soc. London, 1895.
- R. rhæcus*, Sumatra, NICÉVILLE, p. 319, pl. p, fig. 47, J. Bombay Soc. ix ; *R. olivia*, Celebes, pl. xxxiv, fig. 16, p. 622, *laima*, fig. 12, *drasmos*, fig. 13, Borneo, p. 624, H. H. DRUCE, P. Zool. Soc. London, 1895 : n. spp.
- Simiskina phalena*, ♀ figure, pl. o, fig. 13, p. 270 ; NICÉVILLE, J. Bombay Soc. ix.
- S. solyma*, Perak, NICÉVILLE, p. 29, pl. iv, fig. 10, J. Asiat. Soc. Bengal, lxiii ; *S. pavonica*, p. 28, pl. s, fig. 18, *proxima*, p. 29, figg. 19 & 20, *procotes*, p. 32, fig. 21, Sumatra, NICÉVILLE, J. Bombay Soc. x : n. spp.
- Sinthusa malika*, description, p. 43, figures, pl. v, figg. 6 & 18 ; NICÉVILLE, J. Asiat. Soc. Bengal, lxiii.
- S. verena*, Celebes, SMITH, p. 514, Nov. Zool. ii, n. sp.
- Surendra stimula*, Java, pl. o, fig. 23, p. 279, NICÉVILLE, J. Bombay Soc. ix, n. sp.
- Syrmoptera*, n. g., near *Rathinda*, for *S. melanomitra*, n. sp., Cameroons ; KARSCH, p. 308, Ent. Nachr. xxi.
- Tajuria diceus*, life-history (under name of *Camena cleobis*) and peculiar pupation ; ROBSON & NICÉVILLE, pp. 338-342, J. Bombay Soc. ix.
- T. blanka*, Sumatra, NICÉVILLE, p. 39, pl. iv, fig. 4, J. Asiat. Soc. Bengal, lxiii ; *T. tura*, Sumatra, Java, p. 301, pl. p, fig. 39, *tyro*, Birma, fig. 40, p. 302, NICÉVILLE, J. Bombay Soc. ix ; *T. dominus*, pl. xxxiii, fig. 12, *cyrus*, figg. 10 & 11, p. 600, *tussis*, figg. 8 & 9, *cato*, figg. 13 & 14, p. 601, Borneo, H. H. DRUCE, P. Zool. Soc. London, 1895 : n. spp.
- Talicaða clitophon*, Wetter, SMITH, p. 507, Nov. Zool. ii, n. sp.
- Tarucus waterstradti*, Borneo, H. H. DRUCE, p. 585, pl. xxxii, fig. 21, P. Zool. Soc. London, 1895 ; *T. fluvialis*, Celebes, SMITH, p. 511, Nov. Zool. ii : n. spp.
- Telipna*, n. n. for *Liptena*, Sm. & K., nec Hew. ; AURIVILLIUS, p. 198, Ent. Tidskr. xvi.
- Teriomima galenides*, Cameroons, HOLLAND, p. 167, Ent. News Philad. vi, n. sp.
- Thecla sarita*, Texas, SKINNER, p. 112, Ent. News Philad. vi ; *T. faga*, p. 105, *joya*, *amatista*, p. 106, Loja, DOGNIN, Ann. Soc. ent. Belgique, 1895 : n. spp.

- Thermoniphus*, n. g., pp. 298 & 303, for *T. plurilimbata*, n. sp., Central Africa, p. 303; KARSCH, Ent. Nachr. xxi.
- Thysonotis*: correction as to neuration; H. H. DRUCE, p. 585, P. Zool. Soc. London, 1895. *T. hermes*, figg. 5-8, *glaucopsis*, figg. 9-12, figured; SMITH & KIRBY, Rhop. ex. Lycænidae oriental, pl. iv. *T. peri*, figured, t. c. ii, figg. 1-3.
- T. aryanus*, Halmaheira, SMITH, p. 512, Nov. Zool. ii; *T. regalis*, New Guinea, p. 28, figg. 4 & 5, *curissima*, Pura & Wetter, p. 29, figg. 6-8, *vidua*, Waigiou, p. 30, figg. 9 & 10, *drucei*, New Guinea, p. 31, figg. 11-13, SMITH & KIRBY; *T. dispar*, New Britain, SMITH & KIRBY, Rhop. ex. Lycænidae oriental, p. 23, pl. iv, figg. 1-4: n. spp.
- Uranotes melinus*, habits, transformations, cut; Insect Life, vii, p. 354.
- Uranothauma*, n. g. for *U. crawshayi*, n. sp., Lake Nyasa, pl. xxxv, figg. 6 & 7, and including *Hyreus cordatus*, Sharpe; BUTLER, p. 631, P. Zool. Soc. London, 1895.
- Virgarina*, n. g. for *Sithon scopula*, Dr.; H. H. DRUCE, p. 606, P. Zool. Soc. London, 1895.
- Waigeum*, n. g., p. 153, for *W. thauma*, n. sp., New Guinea, p. 154, including *Plebeius ribbei*, Rôb., and *Thysonotis miraculum*, Dr.; STAUDINGER, Deutsche ent. Zeitschr. Lep. viii.
- Zeltus amabilis*, Sumatra, MARTIN (735) p. 11, n. sp.
- Zemeros retiaris*, Sambawa, SMITH, p. 505, Nov. Zool. ii, n. sp.
- Zephyrus absolon*, figures, &c., pl. f, figg. 33 & 34, p. 291; NICÉVILLE, J. Bombay Soc. ix.
- Zizera unigenmata*, Lake Nyasa, BUTLER, p. 630, pl. xxxv, figg. 4 & 5, P. Zool. Soc. London, 1895, n. sp.

HESPERIIDÆ.

- Table of the Asiatic genera of *Hesperiidæ*, and list of the Indian species; WATSON, pp. 411-437, J. Bombay Soc. ix.
- Acerbas*, n. g. for *Hesperia anthea*, Hew.; NICÉVILLE, p. 382, J. Bombay Soc. ix.
- Achlyodes fridericus*, pl. lxxxvi, fig. 8, *oclus*, figg. 20 & 21, figured, described, pp. 394-396; GODMAN & SALVIN, Biol. Centr.-Amer. Rhop. ii.
- A. caliginea*, pl. lxxxvi, figg. 9 & 10, *calavius*, figg. 11 & 12, *bubaris*, figg. 13 & 14, p. 395, *simplex*, figg. 15 & 16, *fasciata*, fig. 17, *colotes*, figg. 18 & 19, p. 396, GODMAN & SALVIN, Biol. Centr.-Amer. Rhop. ii; *A. cyrma*, Chiriqui, *accedens*, Brazil, MABILLE, p. lvi, Bull. Soc. ent. France, 1895: n. spp.
- Amblyscirtes celia*, Texas, SKINNER, p. 113, Ent. News Philad. viii, n. sp.
- Amenis baroni*, N. Peru, GODMAN & SALVIN, p. 372, Ann. Nat. Hist. xv, n. sp.
- Anastrus platypterus*, no locality, *polyenus*, Colombia; MABILLE, p. lv, Bull. Soc. ent. France, 1895, n. spp.
- Ancistrocampta chryso glossa*, figure, pl. xx, fig. 4, description, p. 144; MABILLE & VUILLOT, Nov. Lep.

- Antigonus*, restricted to *A. nearchus*, figured, pl. lxxxvii, fig. 15; GODMAN & SALVIN, p. 409, Biol. Centr.-Amer. Rhop. ii.
- Apaustus leander*, larva and pupa; AURIVILLIUS, pl. ii, figg. 5-5c, Ent. Tidskr. xvi.
- Ate*, n. g., for a part of *Pythonides*, type *P. jovianus*, with *A. proxenus*, pl. lxxxvi, figg. 31-33, *pteras*, figg. 34 & 35, n. spp., Central America, p. 401, *A. amaryllis*, Stdgr., figured, figg. 36 & 37; GODMAN & SALVIN, Biol. Centr.-Amer. Rhop. ii.
- Budamia exclamationis*, transformations; DUDGEON, pp. 144-146, cuts, J. Bombay Soc. x.
- Baoris* (*Parnara*) *philotas*, S. India, NICÉVILLE, p. 402, pl. q, fig. 60, J. Bombay Soc. ix, n. sp.
- Capila moorei*, n. n. for *jayadeva*, ♀, Moore; EDWARDS, Ent. Mag. 1895, p. 91.
- Carrhenes*, n. g., p. 388, for *C. calidius*, p. 389, pl. lxxxv, figg. 22 & 23, *callipetes*, p. 390, figg. 24-26, *meridensis*, figg. 27 & 28, p. 390, n. spp., Central America, and including also *Leucochitonea fuscescens*, figg. 19-21, *canescens*, figg. 29 & 30, *Achlyodes leada*, figg. 31 & 32; GODMAN & SALVIN, Biol. Centr.-Amer. Rhop. ii.
- Ceratruchia punctulata*, Central Africa, BUTLER, p. 265, pl. xv, fig. 7, P. Zool. Soc. London, 1895, n. sp.
- Charmion*, n. g., near *Hantana*, type *ficulnea*, Hew.; NICÉVILLE, p. 48, J. Asiat. Soc. Bengal, lxiii.
- Creteus*, n. g., p. 385, for *Hesperia cyrina*, Hew.; NICÉVILLE, J. Bombay Soc. ix.
- Cyclopides midas*, figure; BUTLER, pl. xv, fig. 6, P. Zool. Soc. London, 1895.
- Daimio dirw*, Java, &c., NICÉVILLE, p. 369, pl. q, fig. 49, J. Bombay Soc. ix, n. sp.
- Diæus*, n. g., p. 413, for *Leucochitonea lacæna*, Hew., figured, pl. lxxxvii, fig. 26; GODMAN & SALVIN, Biol. Centr.-Amer. Rhop. ii.
- Doberes*, n. g., p. 407, for *Helias mexicana*, Feld., figured, pl. lxxxvii, fig. 11; GODMAN & SALVIN, Biol. Centr.-Amer. Rhop. ii.
- Eantis busirus*, pl. lxxxvii, fig. 6, *thraso*, fig. 7, *pallida*, figg. 8-10, figured, Biol. Centr.-Amer. Rhop. ii.
- Ection*, n. g., p. 395, type *Hesperia elia*, Hew.; NICÉVILLE, J. Bombay Soc. ix.
- Ephyriades xantholeuce*, Mab., referred to *Potamanax*, and figured, pl. lxxxvi, fig. 7; GODMAN & SALVIN, p. 393, Biol. Centr.-Amer. Rhop. ii.
- Erionota holocausta*, figured, pl. xx, fig. 3, description, p. 143; MABILLE & VUILLOT, Nov. Lep. *E. acroleuca* and *grandis*, synonymy and characters; EDWARDS, Ent. Mag. 1895, p. 92.
- E. sanguinoculus*, Sumatra, MARTIN (734) p. 5, n. sp.
- Erynnis dimila*, Moore, ♂ figured, pl. i, fig. 7; NICÉVILLE, J. Asiat. Soc. Bengal, lxiii.
- Eudamidas*, n. g. for *Antigonus melander*, pl. lxxxv, fig. 14, *ozema*, figg. 15-17; GODMAN & SALVIN, p. 386, Biol. Centr.-Amer. Rhop. ii.

- Eudamus protillus*, n. var. *rauterbergi*, Texas ; SKINNER, p. 113, Ent. News Philad. vi.
- Eurypterus haber*, pl. xix, fig. 1, *melas*, fig. 2, *cœlides*, fig. 3, *later*, fig. 4, figures, descriptions, pp. 136-138 ; MABILLE & VUILLOT, Nov. Lep. Ge, n. g., p. 373, near *Matapa*, for *G. geta*, n. sp., Penang and Sumatra, p. 374, pl. q, fig. 51, NICÉVILLE, J. Bombay Soc. ix.
- Gehenna græca*, Sumatra, NICÉVILLE, p. 399, pl. q, fig. 59, J. Bombay Soc. ix, n. sp.
- Gindanes*, n. g., p. 415, for *G. panætias*, pl. lxxxvii, figg. 30 & 31, *brontinus*, figg. 32-34, n. spp., Central America ; GODMAN & SALVIN, Biol. Centr.-Amer. Rhop. ii.
- Halpe hieron*, Sumatra, NICÉVILLE, p. 54, pl. iv, fig. 1, J. Asiat. Soc. Bengal, lxiii, n. sp.
- Hasora simplicissima*, Mab., figure, &c., pl. q, figg. 62 & 63, p. 405, *chabrana*, synonymy, p. 407 ; NICÉVILLE, J. Bombay Soc. ix.
- Hesperia vermiculata*, Hew., referred to *Plastingia* and figured, pl. v, fig. 15 ; NICÉVILLE, J. Asiat. Soc. Bengal, lxiii.
- Hidari doesoena*, Sumatra, MARTIN (734), p. 6, n. sp.
- Idmon*, n. g., p. 375, for *Baoris unicolor*, Dist., figured, pl. q, fig. 53 ; NICÉVILLE, J. Bombay Soc. ix.
- Ismene ionis*, Java, &c., NICÉVILLE, p. 403, pl. q, fig. 61, J. Bombay Soc. ix, n. sp.
- Iton*, n. g., p. 399, type *Hesperia semamora*, Moore ; NICÉVILLE, J. Bombay Soc. ix.
- Itys*, n. g., p. 377, for *I. iadera*, n. sp., Malay Pen. and Sumatra, p. 379, pl. q, fig. 52, and *Isoteinon microstictum* ; NICÉVILLE, J. Bombay Soc. ix.
- Kerana fulgur*, Sumatra, NICÉVILLE, p. 55, pl. i, fig. 6, J. Asiat. Soc. Bengal, lxiii, n. sp.
- K. fulgur*, figure, &c. ; NICÉVILLE, p. 383, pl. q, fig. 54, J. Bombay Soc. ix.
- Lotongus avesta*, Hew., figure, &c. ; NICÉVILLE, pl. q, fig. 56, p. 383, J. Bombay Soc. ix.
- Loxolexis*, n. g., p. 320, for *L. perenoptera*, n. sp., Cameroons, p. 322 ; KARSCH, Ent. Nachr. xxi.
- Masices*, n. g., for *Achlyodes anticus*, Plötz, figured, pl. lxxxvii, figg. 12-14, and *M. sobrinus*, n. sp., Central America ; GODMAN & SALVIN, p. 408, Biol. Centr.-Amer. Rhop. ii.
- Milanion*, n. g., for *M. marciana*, pl. lxxxvii, figg. 2 & 3, *marica*, figg. 4 & 5, n. spp., Central America, p. 403, and *Paramimus hemes*, Cr. ; GODMAN & SALVIN, Biol. Centr.-Amer. Rhop. ii.
- Mimas*, n. g., p. 391, type *Ismene miltias*, Kirsch, with *M. melie*, n. sp., New Guinea, p. 394, pl. q, fig. 55 ; NICÉVILLE, J. Bombay Soc. ix.
- Mylon pulcherius*, figures, pl. lxxxv, figg. 11-13, description, p. 385 ; GODMAN & SALVIN, Biol. Centr.-Amer. Rhop. ii.
- Nisionades angulosus*, Santa Catharina, MABILLE, p. lvii, Bull. Soc. ent. France, 1895, n. sp.
- Ochus*, n. g., p. 51, near *Pamphila*, for *Cyclopidos subvittatus*, Moore ; NICÉVILLE, J. Asiat. Soc. Bengal, lxiii.

- Onenses*, n. g., p. 414, for *Leucochitonea hyalophora*, Feld., figured, pl. lxxxvii, figg. 27-29; GODMAN & SALVIN, Biol. Centr.-Amer. Rhop. ii.
- Ortholexis*, n. g., p. 319, near *Tagiades*, for *O. melichroptera*, n. sp., Cameroons, p. 320; KARSCH, Ent. Nach. xxi.
- Orthophaetus*, n. n. for *Pteroxys*; WATSON, p. 419, J. Bombay Soc. ix.
- Paches*, n. g., p. 398, for a part of *Pythonides*, the following figured, *loxus*, pl. lxxxvi, fig. 27, *polla*, figg. 28 & 29, *subballatus*, fig. 30; GODMAN & SALVIN, Biol. Centr.-Amer. Rhop. ii.
- Palraona pavor*, Sumatra, NICÉVILLE, p. 53, pl. iv, fig. 8, J. Asiat. Soc. Bengal, lxiii, n. sp.
- Pamphila manitoba*, life-history; FYLES, p. 346, Canad. Ent. xxvii. *P. peckius*, exceptional double brood; J. F., Ottawa Natural. ix, p. 171.
- Pardalodes interniplaga*, fig. 1, *illustris*, fig. 2, figured, pl. xx, descriptions, p. 142; MABILLE & VUILLOT, Nov. Lep.
- Pisola*: merged in *Capila*; EDWARDS, p. 91, Ent. Mag. 1895.
- Potamanax paralus*, Peru, *pammenes*, pl. lxxxvi, figg. 2 & 3, p. 392, *melicertes*, fig. 4, *caliadne*, figg. 5 & 6, p. 393, Central America, GODMAN & SALVIN, Biol. Centr.-Amer. Rhop. ii, n. spp.
- Proteides xyclus*, pl. xx, fig. 5, *nydia*, fig. 6, *xantho*, fig. 7, figured, descriptions, pp. 144-146; MABILLE & VUILLOT, Nov. Lep.
- P. severus*, p. lvii, *severinus*, Guiana, *antus*, *andricus*, Santa Catharina, p. lviii, *surus*, Borneo, p. lix, MABILLE, Bull. Soc. ent. France, 1895, n. spp.
- Pudicitia*, n. g., p. 379, for *Parnara pholus*, Nic.; NICÉVILLE, J. Bombay Soc. ix.
- Rhopalocampta iphis*, larva and pupa, pl. ii, figg. 3-3b, *forestan*, figg. 4-4b; AURIVILLIUS, Ent. Tidskr. xvi.
- Sapæa trimeni*, Central Africa, BUTLER, p. 264, pl. xv, fig. 5, P. Zool. Soc. London, 1895, n. sp.
- Sepa*, n. g., p. 49, for *S. cronus*, n. sp., Sumatra, p. 50, pl. v, fig. 4; NICÉVILLE, J. Asiat. Soc. Bengal, lxiii.
- Sostrata*, n. g. for *Leucochitonea scintillans*, Mab., pl. lxxxvi, figg. 22-24, p. 397, and the following n. spp., *leucorrhœa*, p. 397, *pusilla*, p. 398, figg. 25 & 26, Central America; GODMAN & SALVIN, Biol. Centr.-Amer. Rhop. ii.
- Suada*, n. g., p. 370, for *Hesperia swerga*, Nic.; NICÉVILLE, J. Bombay Soc. ix.
- Suastus robsonii*, Himalaya, NICÉVILLE, p. 372, pl. q, fig. 50, *t. c.*, n. sp.
- Systasea*: the following figured and described, *erosa*, pl. lxxxvii, fig. 16, *funebria*, figg. 17-19, p. 411, *corrota*, figg. 20 & 21, p. 412, *emorsa*, figg. 22 & 23, *pulperulepta*, figg. 24 & 25, p. 413; GODMAN & SALVIN, Biol. Centr.-Amer. Rhop. ii.
- Tagiades nitra*, Sula, MABILLE, p. lvii, Bull. Soc. ent. France, 1895, n. sp.
- Xenophanes*, n. g., p. 387, for *Pythonides tryzæa*, De., figured, pl. lxxxv, fig. 18, and *X. vulcanicola*, n. sp., Honduras, p. 388; GODMAN & SALVIN, Biol. Centr.-Amer. Rhop. ii.

- Zampa*, n. g., p. 389, near *Zela*, for *Z. zenon*, n. sp., Borneo, p. 391, pl. q; fig. 58; NICÉVILLE, J. Bombay Soc. ix.
Zela, n. g., p. 386, near *Zea*, for *Z. zeus*, n. sp., Borneo, &c., p. 388, pl. q, fig. 57; NICÉVILLE, J. Bombay Soc. ix.

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- Relations of *Lepidoptera* and *Neuroptera*; KELLOGG, Amer. Natural. xxix, pp. 709-719. Comparison of neuration with that of *Trichoptera*, &c., pp. 709-714, t. c.
 Classification from larvæ; DYAR (310).
 Comparative positions of setæ in various larvæ; DYAR (313).
 Aquatic larvæ; MIALL (765).
 Key for determination of aquatic N. American *Lepidoptera* larvæ and pupæ; HART, pp. 165 & 166, Bull. Illinois Lab. iv.

CASTNIIDÆ and NEOCASTNIIDÆ.

- [Cf. HAMPSON (483), SKINNER (1061).]
Neocastnia, n. g., p. 285, n. fam. *Neocastniidæ*, differing from *Castnia* by absence of proboscis, for *N. nicevillei*, n. sp., Tenasserim, p. 286; HAMPSON, Tr. ent. Soc. London, 1895.
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Castnia: pupa described; CHAPMAN, pp. 286-288, Ent. Rec. vi. *C. therapon*, figure, pl. i, fig. 1, mode of life of larva, pp. 9-11; SNELLEN, Tijdschr. Ent. xxxviii.
Tuscina, Westw., referred to *Neocastniidæ*; HAMPSON, p. 284, Tr. ent. Soc. London, 1895.

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- [Cf. BEUTENMÜLLER (106), DOGNIN (294), GROTE (466), HUWE (540), ROTHSCHILD (984, 987, 990), SCHAUS (1006).]
 Variation in number of moults of larvæ of several species; SOULE, Psyche, vii, p. 191.
 Notes on various American *Sphingidæ*; SCHAUS, pp. 141-144, Ent. News Philad. vi.
 Descriptions and figures of *Sphingidæ* of New York; BEUTENMÜLLER, Bull. Amer. Mus. vii, pp. 275-320, pls. ii-vii.
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Ambulyx turbata, n. var. *nubila*; HUWE, p. 366, Berlin, ent. Zeitschr. xl.
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Amphion nesus, larva described; SOULE, p. 212, Psyche, vii.
Callianna denticulata, Jalapa, SCHAUS, p. 141, Ent. News Philad. vi, n. sp.
Cyba parvica, Khasia Hills, ROTHSCHILD, p. 488, Nov. Zool. ii, n. sp.
Daphnia helapa, var. notica; ROTHSCHILD, p. 482, Nov. Zool. ii.
Deliamia inscripta, larva; HYAN, p. 117, Psyche, vii.

- Giganteopalpus*, n. g., near *Calliomma* for *G. capito*, n. sp., Java, pl., fig. 1, and including *Eurypt. mirabilis*, Rothsch.; HUWE, p. 360, Berlin. ent. Zeitschr. xl.
- Macroglossa fruhstorferi*, p. 357, *fuscata*, p. 358, Java, HUWE, Berlin. ent. Zeitschr. 1895, n. spp.
- Phlegethontius cingulata*, metamorphoses; DYAR, Ent. News Philad. vi, p. 95.
- Smerinthulus*, n. g., p. 370, for *S. quadripunctatus*, n. sp., Java, p. 371, pl., fig. 3; HUWE, Berlin. ent. Zeitschr. xl.
- Smerinthus*: the genera included under; GROTE, p. 56, Ent. Rec. vii. The generic arrangement of forms allied to; GROTE, J. N. York Ent. Soc. iii, p. 132.
- Sphinx plebeius*, larval var.; BEUTENMÜLLER, p. 58, J. N. York Ent. Soc. iii.
- Theretra pollux* = (*pseudonessus*, Rothsch.); HUWE, p. 365, Berlin. ent. Zeitschr. xl.
- T. alberti*, D'Entrecasteaux Is., ROTHSCHILD, p. 162, Nov. Zool. ii; *T. rothschildi*, Loja, DOGNIN, p. 107, Ann. Soc. ent. Belgique, 1895: n. spp.

ÆGERIDÆ.

- [Cf. HAMPSON (483), STAUDINGER (1103).]
- Aschistophleps metachryseis*, Upper Burma, HAMPSON, p. 282, Tr. ent. Soc. London, 1895, n. sp.
- Sciapteron xanthozonatum*, Tenasserim, HAMPSON, p. 282, Tr. ent. Soc. London, 1895, n. sp.
- Sesia colpiformis*, characters; BOHATSCH, p. 70, Verh. Ges. Wien, 1895.
- Trochilium maculiferum*, Akbès; STAUDINGER, p. 290, Deutsche ent. Zeitschr. Lep. viii, n. sp.

BOMBYCES

(s.l., including *Agaristidæ*, *Chalcosiidæ*, *Uraniidæ*, &c.).

- [Cf. ALPHÉRAKY (23), AURIVILLIUS (53), BEAN (79), BRANTS (137), BUTLER (163, 166), CALBERLA (175), CARPENTER (185), CASPARI (192, 193), DOGNIN (293, 294), DOHRN (295), DRUCE (296, 298), DYAR (308, 312, 314, 315), DYAR & MORTON (319), EHRMANN (325), GROTE (463, 465), GRUM-GRSHIMAILO (472), HAMPSON (483), HEYLAERTS (501), JORDAN & ROTHSCHILD (569), KARSCH (574), KRULIKOWSKY (659), LATTER (679), METZGER & MÜLLER (760), OLLIFF (818), OTTOLENGUI (829), PACKARD (835, 838, 840), PAGENSTECHEER (841), REBEL (916), ROTHSCHILD (985, 991), SCHAUS (1004, 1005), SKUSE (1062), SNELLEN (1076, 1078), STAUDINGER (1103, 1104), SWINHOE (1118), VERSON (1169), WEYMER (1230).]
- Notes, with suggestions as to synonyms and varieties, on the types in the Neumoegen collection of N. American *Lepidoptera*; OTTOLENGUI (829).
- List of desiderata in the completion of the life-histories of the principal genera of N. American *Bombyces* and *Zyganidæ*; PACKARD, pp. 43-45, Ann. N. York Ac. viii.

Injury to eye by hairs of several species ; LAWFORD, Ent. Mag. 1895, p. 179.

Structure of the so-called aerostatic hairs of the "nun" ; CHOLODKOVSKY, p. 67, Ent. Nachr. xxi.

Chrysopolomida, n. fam. allied to *Cossida*, but with facies of *Lasiocampida* for *Chrysopoloma*, a genus that has been used but not characterised ; AURIVILLIUS, p. 116, Ent. Tidskr. xvi.

Acanthopsyche lutea, larva ; HEYLAERTS, p. lxii, Tijdschr. Ent. xxxviii.

A. (Metisa) cavifrons, Sikhim, HAMPSON, p. 286, Tr. ent. Soc. London, 1895, n. sp.

Actias = (*Tropæa*), synonymic list ; ROTHSCHILD, p. 47, Nov. Zool. ii.

Ægocera darocana, Lindi, DRUCE, p. 42, Ann. Nat. Hist. xv. [See also *Ægocera*] ; n. spp.

Ægoceropsis, n. g., pp. 348 & 352, for part of *Ægocera* and *Æ. norma*, n. sp., Trop. Africa, p. 352, pl. ii, fig. 6 ; KARSCH, Ent. Nachr. xxi.

Æmene amnea, figure ; Tr. ent. Soc. London, 1895, pl. i, fig. 13.

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Agarista pncerosia, Key I., p. 41, *darja*, Lindi, *puoliola*, Philippines, p. 42, DRUCE, Ann. Nat. Hist. xv, n. spp.

Alletis, Butl. : systematic position ; SNELLEN, p. 179, Tijdschr. Ent. xxxviii.

Alippa anomala, Auriv., is a synonym of *Cænodomus hockingii* ; SNELLEN, p. 107, Tijdschr. Ent. xxxviii.

Alpenus aequalis, var. ; BUTLER, p. 268, P. Zool. Soc. London, 1895.

A. maculifascia, ♂ figured ; PAGENSTECHER, pl. xiii, fig. 7, Semon's Forschungsreise, v.

Allypia mariposa, egg and larva ; DYAR, p. 31, Canad. Ent. xxvii. *A. langtoni*, preparatory stages ; DYAR, p. 278, t. c.

Allypioides bimaculata, n. var. *dugesii* ; COCKERELL, p. 201, Ent. News Philad. vi.

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Amyops, n. g., *Notodontida*, for *A. ingens*, Trop. Africa, pl. iii, fig. 4 ; KARSCH, p. 362, Ent. Nachr. xxi.

Anachrostis hypomelas, Sikhim, HAMPSON, p. 295, Tr. ent. Soc. London, 1895, n. sp.

Anaphe infracta, a colony of ; LENZ, Mt. Ges. Lubeck, iii, pp. 65 & 66, pl.

A. sericea, Angola, KARSCH, p. 361, pl. iii, fig. 7, Ent. Nachr. xxi, n. sp.

Andrhippuris, n. g., *Agaristida*, p. 348, for *A. caudaequina*, n. sp., Trop. Africa, p. 353, pl. i, figg. 1 & 2 ; KARSCH, Ent. Nachr. xxi.

Anengya, n. g., *Lymantriida*, for *A. spiritalis*, n. sp., W. Africa, pl. iv, fig. 7 ; KARSCH, p. 374, Ent. Nachr. xxi.

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- Atheræa*: list of species with new synonymy; ROTHSCHILD, pp. 43 & 44, Nov. Zool. ii. *A. emini*, ♂; BUTLER, p. 270, P. Zool. Soc. London, 1895.
- Antheua nigrolineata*, W. Africa, CARPENTER, p. 307, P. Dublin Soc. viii, n. sp.
- Anthomyza swainsoni* (= *tiresia*, Sw., nec. Cr.), Brazil, p. 47, brotes, British Guiana, *proxila*, Colombia, *buckleyi*, Ecuador, p. 48, DRUCE, Ann. Nat. Hist. xv, n. spp.
- Antiloba*, n. g., p. 328, *Lithosiidæ*, for *A. carnea*, n. sp., Rio Grande do Sul, p. 329; WEYMER, Ent. Zeit. Stettin, lv.
- Apatelodes*: systematic position; DYAR, p. 159, Canad. Ent. xxvii. *A. torrefacta*, larval history; DYAR, p. 316, Psyche, vii.
- Arbela phaga*, figure; Tr. ent. Soc. London, 1895, pl. i, fig. 2.
- Arctia anna*, *phyllira*, larval stages; PACKARD, p. 178, J. N. York Ent. Soc. iii.
- A. banghaasi*, Akbès, with var. *berytta*, STAUDINGER, p. 291, pl. v, fig. 10, Deutsche ent. Zeitschr. Lep. viii, n. sp.
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- A. besanti*, E. Africa, REBEL, p. 69, Verh. Ges. Wien, 1895, n. sp.
- Aroa ordinata*, Trop. Africa, KARSCH, p. 372, pl. iv, fig. 6, Ent. Nachr. xxi, n. sp.
- Arotros*: systematic position; SCHAUS, p. 94, Canad. Ent. xxvii.
- Arsenura ponderosa*, East Peru, ROTHSCHILD, p. 48, Nov. Zool. ii.
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- Azygophleps nurella*, figure; Tr. ent. Soc. London, 1895, pl. i, fig. 16.
- Baroa vatala*, figure; Tr. ent. Soc. London, 1895, pl. i, fig. 18.
- Barobata*, n. g., *Lymantriidæ*, for *B. trocta*, n. sp., Trop. Africa, pl. iii, fig. 3, KARSCH, p. 371, Ent. Nachr. xxi.
- Bathmochtha*, n. g., *Arctiidæ*, for *B. albilunulata*, n. sp., Cameroons, pl. iv, fig. 12; KARSCH, p. 368, Ent. Nachr. xxi.
- Belemnina splendens*, Bolivia, DRUCE, p. 44, Ann. Nat. Hist. xv, n. sp.
- Bizarda elegans*, D'Entrecasteaux Is., JORDAN & ROTHSCHILD, Nov. Zool. ii, p. 464, n. sp.
- Bombyx bathseba*, ♂ fig.; STAUDINGER, pl. v, fig. 7, Deutsche ent. Zeitschr. Lep. viii. *B. quercus*, var; HORMUZAKI, p. 252, Verh. Ges. Wien, 1895: persistent odour; HAMM, Ent. Mag. 1895, p. 74. *B. trifolii*, food-plant; JONES, Entomologist, 1895, p. 57.
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- of nervous system ; BENEDICENTI (90) : development of accessory sexual organs of male ; Verson (1171), Verson & Bisson (1172, 1173) : conditions influencing cocoons ; RAULIN (915) : mechanism of ecdysis ; Verson (1170) : spermatogenesis ; Verson (1169).
- B. (Lasiocampa) josua*, Jordan Valley ; STAUDINGER, p. 296, pl. v, fig. 8, Deutsche ent. Zeitschr. Lep. viii, n. sp.
- Brachycodion*, n. g., for *Dryocampa amonda*, Stoll ; DYAR, p. 244, Canad. Ent. xxvii.
- Brahmæa bramarbas*, p. 337, pl. i, fig. 5, *catenigera*, p. 342, *widenmanni*, p. 343, Central Africa, KARSCH, Ent. Nachr. xxi, n. spp.
- Bunæa* : list of species with new synonymy ; ROTHSCHILD, p. 38, Nov. Zool. ii.
- B. tricolor*, Abyssinia, ROTHSCHILD, p. 38, Nov. Zool. ii, n. sp.
- Callarctia ellioti*, Central Africa, BUTLER, p. 739, pl. xliii, fig. 6, P. Zool. Soc. London, 1895, n. sp.
- Callistia* distinguished from *Bordeta*, and referred to *Geometridæ* ; *C. grandis*, Druce, figured, pl. vii, figg. 11 & 12 ; ROTHSCHILD, p. 498, Nov. Zool. ii. *C. grandis* = (*callimorpha*, Oberth.), ♂ ♀ figured, pl. xiii, figg. 4 & 5 ; PAGENSTECHER in Semon's Forschungsreise, v.
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- Carama* : the N. American species queried ; DYAR, p. 14, Canad. Ent. xxvii.
- Ceratonema pallidinota*, Sikhim, HAMPSON, p. 290, Tr. ent. Soc. London, 1895.
- Cercophana* : synonymic list ; ROTHSCHILD, p. 46, Nov. Zool. ii.
- C. mirabilis*, Chili, ROTHSCHILD, p. 45, Nov. Zool. ii, n. sp.
- Charagia* is not the host of *Cordyceps* ; OLLIFF, p. 404, Agric. Gaz. N.S.W. vi.
- C. celsissima*, N. Australia, *walsinghamsi*, Queensland, *corceba*, N. S. Wales, OLLIFF, p. 116, Entomologist, 1895, n. spp.
- Chondrostega vandalicia*, habits, larva ; JOANNIS, p. cccclxxv, Bull. Soc. ent. France, 1895.
- Chrysopoloma*, n. g. (Druce), p. 117, n. fam. *Chrysopolomidæ*, for *Lasiocampa rudis*, Walk., &c., &c., and including the following n. spp. : *venata*, W. Africa, *conspurcata*, *isabellina*, E. Africa, *similis*, Natal, p. 119 ; AURIVILLIUS, Ent. Tidskr. xvi.
- Cirina forda* = (*cana*, Feld.) ; ROTHSCHILD, p. 46, Nov. Zool. ii.
- Clelea bipuncta*, Coimbatore, HAMPSON, p. 283, Tr. ent. Soc. London, 1895, n. sp.
- Clemensia albata*, young larva ; PACKARD, p. 176, J. N. York Ent. Soc. iii.
- Clisiocampa fragilis*, varieties, life-history ; DYAR, Psyche, vii, p. 189. *C. pluvialis*, life-history ; DYAR, p. 259, t. c.
- Colussa rubescens*, ♂ figured ; FÜRBRINGER, pl. xiii, fig. 16, Semon's Forschungsreise, v.

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- C. syntheratoides*, Costa Rica, *cineracea*, hab. ?, *trimacula*, Central America, ROTHSCHILD, t. c. p. 40, n. spp.
- Copiopteryx semiramis*, ♀ = (*phœnix*, Deyr.); ROTHSCHILD, p. 48, Nov. Zool. ii.
- Coscinocera hercules* = (*omphale*, Butl.), n. var. *bulleri*; ROTHSCHILD, p. 35, Nov. Zool. ii.
- Cosmosoma demantria*, Dominica, DRUCE, p. 44, Ann. Nat. Hist. xv, n. sp.
- Cossus fereidun*, N. Persia, GRUM-GRSHIMAILO, p. 291, Horæ Soc. ent. Ross. xxix; *C. fuscibasis*, Burma, HAMPSON, p. 287, Tr. ent. Soc. London, 1895: n. spp.
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- Cricula trifenestrata*, varr. = (*drepanoides*, *zuleika*); ROTHSCHILD, p. 39, Nov. Zool. ii.
- Crocota rubricosta*, *belmaria*, Pennsylvania; EHRMANN, Canad. Ent. xxvii, p. 345, n. spp.
- Ctenucha virginica*, life-history, pp. 83-88, *cressonana*, larva, p. 89; PACKARD, Ann. N. York Ac. viii.
- Cyana dudgeoni*, Sikhim, HAMPSON, p. 293, Tr. ent. Soc. London, 1895, n. sp.
- Cyphotopsyche*, n. g., *Nolinae*, for *C. ustipennis*, n. sp., E. India, HAMPSON, Tr. ent. Soc. London, 1895, p. 297; larva described, DUDGEON, t. c. p. 298.
- Dactylorhyncha luteifascia*, Burma, HAMPSON, p. 292, Tr. ent. Soc. London, 1895, n. sp.
- Dalailama*, n. g., *Lasiocampidæ* ??, for *D. bifurca*, n. sp., Tibet, pl. v, fig. 9; STAUDINGER, p. 303, Deutsche ent. Zeitschr. Lep. viii.
- Dasychira pudibunda*, invasion of, in Belgium; DEPPEZ, p. 333, Ann. Soc. ent. Belgique, 1895.
- D. angulata*, Sikhim, HAMPSON, p. 292, Tr. ent. Soc. London, 1895; *D. postfusca*, Cherra Punji, SWINHOE, p. 9, pl. i, fig. 12, t. c.: n. spp.
- Datana chiriquensis*, Chiriqui, DYAR, p. 167, J. N. York Ent. Soc. iii, n. sp.
- Desmeocrera adversa*, Cameroons, KARSCH, p. 362, pl. iv, fig. 11, Ent. Nachr. xxi, n. sp.
- Dicranura vinula*, particulars as to escape from cocoon, secretion of potassium hydroxide, &c.; LATTER, Tr. ent. Soc. London, 1895, pp. 399-409, pls. viii & ix.
- Drapetodes croceago*, Tenasserim, HAMPSON, p. 290, Tr. ent. Soc. London, 1895, n. sp.
- Drepana leucosticta*, Sikhim, HAMPSON, p. 287, Tr. ent. Soc. London, 1895, and SWINHOE, p. 3, t. c.: n. sp.
- Drepanoptera*, n. g., for part *Philosamia*, auct.; ROTHSCHILD, p. 37, Nov. Zool. ii.
- Dryopteris rosea*, early stages; PACKARD, p. 45, Ann. N. York Ac. viii.
- Dysdæmonia boreas* = (*aristor*, Feld.); ROTHSCHILD, p. 48, Nov. Zool. ii.

- Epantheria scribonia, permaculata*, larvæ; PACKARD, p. 81, Ann. N. York Ac. viii.
- Emprelia stimulea*, larval hairs; SMITH, p. 476, cuts, Rep. N. Jersey exp. Stat. 1895.
- Epicopeia battaka*, Sumatra, DOHRN, p. 207, Ent. Zeit. Stettin, lvi, n. sp.
- Eressa ginorea*, figure, Tr. ent. Soc. London, 1895, pl. i, fig. 8.
- Eucereon darantasia*, p. 45, *rububa*, p. 46, Costa Rica, DRUCE, Ann. Nat. Hist. xv, n. spp.
- Euchætes collaris*, egg and mature larva; PACKARD, p. 73, Ann. N. York Ac. viii.
- Eucleidæ*: study of larvæ of New York; DYAR & MORTON, J. N. York Ent. Soc. iii, pp. 145-157, pl. vi.
- Eucyclopera*, n. g., *Lithosiidæ*, near *Narasodes*, for *E. plagidisca*, n. sp., Bhután; HAMPSON, p. 294, Tr. ent. Soc. London, 1895.
- Eucyane rhatia*, p. 46, *ruscia*, Bolivia, *dejanira*, S. Brazil, p. 47, DRUCE, Ann. Nat. Hist. xv, n. spp.
- Eudryas*: note on the species; GROTE, p. 249, Ent. Rec. vi.
- Eunomia daltha*, Para, DRUCE, p. 44, Ann. Nat. Hist. xv, n. sp.
- Eupoeya*: systematic position; DYAR, p. 15, Canad. Ent. xxvii.
- Euproctis renifera*, Cherra Punji, SWINHOE, p. 12, Tr. ent. Soc. London, 1895, n. sp.
- Eupyra sages*, Bolivia, DRUCE, p. 43, Ann. Nat. Hist. xv, n. sp.
- Eutheca*, Grt., cf. *Pseudanaphora*, sub *Tineidæ*.
- Eutornopera*, n. g., *Notodontidæ*, near *Niganda*, for *E. argentifascia*, n. sp., Bhután; HAMPSON, p. 280, Tr. ent. Soc. London, 1895.
- Falcaria bilineata*, larva; DYAR, p. 402, P. Boston Soc. xxvi.
- Fentonia biliturata*, Trop. Africa, KARSCH, p. 361, pl. iv, fig. 9, Ent. Nachr. xxi, n. sp.
- Fumea betulina*, note on; BARRETT, Ent. Mag. 1895, p. 275.
- Galona*, n. g., *Notodontidæ*, for *G. serena*, p. 363, pl. iii, fig. 1, *pyrrhotricha*, p. 364, fig. 2, n. spp., Angola; KARSCH, Ent. Nachr. xxi.
- Gargetta lithosidia*, Sikhim, HAMPSON, p. 280, Tr. ent. Soc. London, 1895, n. sp.
- Glaucopsis iridea*, figured, pl. xxii, fig. 4, p. 159; MABILLE & VUILLOT, Nov. Lep.
- Gnophria ?furcifasciata*, Central Africa, BUTLER, p. 268, P. Zool. Soc. London, 1895, n. sp.
- Gonimbrasia rhodophila* = (*intermiscens*); ROTHSCHILD, p. 39, Nov. Zool. ii.
- Gynanisa westwoodi*, E. Africa, ROTHSCHILD, p. 45, Nov. Zool. ii, n. sp.
- Halesidota caryæ*, transformations, pp. 65-67, *maculata*, p. 67, *tessellata*, pp. 69-72, life-histories, *harrisii*, larva, p. 72; PACKARD, Ann. N. York Ac. viii.
- Hampsonia pulcherrima*, figure, Tr. ent. Soc. London, 1895, pl. i, fig. 9.
- Harrisina coracina*, larva described; DYAR, p. 306, Psyche, vii.
- Hemileuca californica*, larva; DYAR, p. 325, Canad. Ent. xxvii.
- Heniocha*: list of species; ROTHSCHILD, p. 49, Nov. Zool. ii.
- Henucha hansali*, referred to *Ludia*; ROTHSCHILD, p. 50, Nov. Zool. ii.

- Hepialus mustelinus*, eggs, larva, pupa, pp. 70-72, *humuli*, *hectus*, larva and pupæ, pls. iii & iv; PACKARD, J. N. York Ent. Soc. iii. *H. lupulinus*, habits of larva; THEOBALD (1125) p. 9. *H. humuli*, in Orkney; MCARTHUR, p. 204, Entomologist, 1895.
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- Heteranaphe*, noticed and referred to *Striphnopterygidae*; KARSCH, p. 343, Ent. Nachr. xxi.
- Heterocampa obliqua*, life-history; PACKARD, pp. 27-29, pl. i, J. N. York Ent. Soc. iii.
- H. argentata*, Costa Rica, DRUCE, p. 49, Ann. Nat. Hist. xv, n. sp.
- Holocera*? *mirabilis*, Cameroons, AURIVILLIUS, p. 120, Ent. Tidskr. xvi, n. sp.
- Hydrusa mochlotis*, ♂ figured, pl. xiii, fig. 3; PAGENSTECHEER, Semon's Forschungsreise, v.
- Hyperchiria io*, var. *lilith*, larva; BEUTENMÜLLER, p. 138, J. N. York Ent. Soc. iii.
- Hypercompa fucosa*, young larva; PACKARD, p. 176, J. N. York Ent. Soc. iii.
- Hyphantria cunea*, life-history and variation; SMITH, Rep. N. Jersey exp. Stat. 1895, pp. 458-460.
- Hypopta sibirica*, E. Siberia, ALPHÉRAKY, p. 185, Deutsche ent. Zeitschr. Lep. viii, n. sp.
- Hypsa monacha*, great variation; PAGENSTECHEER, p. 114, Semon's Forschungsreise, v.
- Icthyura angularis*, Sumatra, SNELLEN, p. 128, Deutsche ent. Zeitschr. Lep. viii, n. sp.
- Imbrasia*: the valid species reduced to two; ROTHSCHILD, p. 39, Nov. Zool. ii.
- Ino*: notes on Hungarian; AIGNER, pp. 59-61, Termes. Fuzetek, xviii.
- Isbarta cyanescens*, Tenasserim, HAMPSON, p. 284, Tr. ent. Soc. London, 1895, n. sp.
- Ischnognatha striata*, Costa Rica, DRUCE, p. 45, Ann. Nat. Hist. xv, n. sp.
- Lacosoma chiridota*, larva; PACKARD, pp. 47-50, Ann. N. York Ac. viii.
- Lalia solida*, pl. iv, fig. 2, p. 372, *curvivingata*, fig. 3, p. 373, Tropical Africa, KARSCH, Ent. Nachr. xxi, n. spp.
- Lasiocampa (Epicnaptera) glasunowi*, N. Persia, GRUM-GRSHIMAILO, p. 293, Horæ Soc. ent. Ross. xxix, n. sp.
- Lebeda venosa*, Central Africa, BUTLER, p. 269, pl. xvi, fig. 6, P. Zool. Soc. London, 1895, n. sp.
- Lenodora*? *nigrolineata*, E. Africa, AURIVILLIUS, p. 115, Ent. Tidskr. xvi, n. sp.
- Leto stacyi* protected by resembling lizard's head; SKUSE, p. 91, pl. xxii, Rec. Austral. Mus. ii.
- L. viljensis*, Fiji Is., ROTHSCHILD, p. 482, Nov. Zool. ii, n. sp.
- Leucarctia acraea*, larval stages; PACKARD, pp. 74-76, Ann. N. York Ac. viii.

- Leucoma saturnioides* = (*fenestrata*, Hamps.) ; SNELLEN, p. 139, Deutsche ent. Zeitschr. Lep. viii.
- L. riguada, pulverulenta*, Sumatra, SNELLEN, p. 138, Deutsche ent. Zeitschr. Lep. viii, n. spp.
- Lithosia chrysophleps*, Bhután, HAMPSON, p. 294, Tr. ent. Soc. London, 1895 ; *L. micans*, Tjibodas, PAGENSTECHEER, p. 213, Semon's Forschungsreise, v : n. spp.
- Lobocraspis*, n. g., *Lithosiida*, near *Gnophria*, for *L. griseifusa*, n. sp., Tenasserim ; HAMPSON, p. 293, Tr. ent. Soc. London, 1895.
- Lophodonta ferruginea*, egg and larva ; DYAR, p. 394, P. Boston Soc. xxvi.
- Lymantria plumbalis*, Burma, HAMPSON, p. 292, Tr. ent. Soc. London, 1895, n. sp.
- Macrobrotis metaxantha*, Bhután, HAMPSON, p. 292, t. c. n. sp.
- Mahāsena graminivora*, Calcutta, HAMPSON, p. 286, t. c. n. sp.
- Malachitis*, n. g., *Lymantriidae*, for *M. melanochlora*, n. sp., Bhután ; HAMPSON, p. 291, t. c.
- Malacosoma ? thoracica*, Central Africa, BUTLER, p. 740, pl. xliii, fig. 4, P. Zool. Soc. London, 1895, n. sp.
- Megalopyge*, admissability of the name ; GROTE, p. 135, Canad. Ent. xxvii.
- Metagarista triphanoides*, fig., pl. ii, fig. 8, Ent. Nachr. xxi, p. 352.
- Metanastria fuscomarginata*, Cherra Punji, SWINHÖE, p. 27, pl. i, fig. 7, Tr. ent. Soc. London, 1895, n. sp.
- Micrattacus bulcea* referred to *Automeris* ; ROTHSCHILD, p. 50, Nov. Zool. ii.
- Milionia* : the species, races, and varieties tabulated, and the following figured on pl. vii, *elegans*, *ravakensis*, *meeki*, *queenslandica*, *brevipennis*, *celebensis*, *callimorpha*, and var. *euroa* ; ROTHSCHILD, Nov. Zool. ii, pp. 493-498.
- M. meeki*, D'Entrecasteaux Is., *queenslandica*, Cedar Bay, *brevipennis*, New Guinea, p. 464, *celebensis*, S.E. Celebes, p. 465, JORDAN & ROTHSCHILD, Nov. Zool. ii, n. spp.
- Miltochrista hololeuca*, Bhután, HAMPSON, p. 296, Tr. ent. Soc. London, 1895, n. sp.
- Mimeugoa*, n. g., *Lithosiida*, near *Eugoa*, for *M. edentifascia*, n. sp., Sikkim ; HAMPSON, p. 294, Tr. ent. Soc. London, 1895.
- Misa*, n. g., p. 349, for *M. memnonia*, n. sp., Tropical Africa, p. 356, pl. ii, fig. 9 ; KARSCH, Ent. Nachr. xxi.
- Mitrophrys*, n. g., p. 349, type *Noctua menetè*, Cram., and including *M. halans*, p. 354, pl. ii, fig. 7, *agoma*, *fabricata*, p. 355, pl. ii, fig. 4, n. spp., Tropical Africa ; KARSCH, Ent. Nachr. xxi.
- Monema coralina*, Bhután, HAMPSON, p. 290, Tr. ent. Soc. London, 1895, n. sp.
- Nacilia erythrogaster*, pl. xxi, fig. 1, *tristigma*, fig. 2, *msila*, fig. 3, *aïtcha*, fig. 4, figures, descriptions, pp. 148-150 ; MABILLE & VUILLOT Nov. Lep.
- N. modesta*, Astrakhan, KRULIKOWSKY, p. 161, Soc. ent. ix, n. sp.

- Nurosa uniformis*, Cherra Punji, SWINHÖE, p. 7, Tr. ent. Soc. London, 1895; *N. argentipuncta*, Ceylon, p. 290, *erminea*, Burma, p. 291, HAMPSON, t. c. 1895: n. spp.
- Nemeophila plantaginis, russula*, variation in Bukowina; HORMUZAKI, pp. 249-251, Verh. Ges. Wien, 1895. *N. petrosu*, variation; BEAN, pp. 87-93, pl. ii, Canad. Ent. xxvii.
- Neochera tortuosa*, note on; SNELLEN, p. 180, Tijdschr. Ent. xxxviii.
- Neraxa inexpectata*, Akbès, STAUDINGER, p. 293, Deutsche ent. Zeitschr. Lep. viii, n. sp.
- Nisaga rufescens*, Mysore, HAMPSON, p. 278, Tr. ent. Soc. London, 1895, n. sp.
- Nola marginata*, Bhután, HAMPSON, p. 296, t. c. n. sp.
- Notodonta ziczac*, glands in larva; BRANTS (137).
- Nudaurelia*, n. g. for part of *Antheraxa*, p. 41, with *N. aurantiaca*, Lake Nyassa, *felderi*, Abyssinia, n. spp., p. 42; ROTHSCCHILD, Nov. Zool. ii.
- Nunua*, n. g., *Notodontidae*, for *N. gallans*, n. sp., Trop. Africa, pl. iv, fig. 8; KARSCH, p. 365, Ent. Nachr. xxi.
- Nyctalemon*: only one species; PAGENSTECHEK, p. 210, Semon's Forschungsreise, v.
- Nymphyxis*, n. n. for *Leucoma salicis*; GROTE, Mt. Mus. Hildesheim, No. 1.
- Nystalea sambana, demea*, Costa Rica, DRUCE, p. 50, Ann. Nat. Hist. xv, n. spp.
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- Odontocraspis hasora*, figure; Tr. ent. Soc. London, 1895, pl. i, fig. 11.
- Oedemasia mocosa*, Loja, DOGNIN, p. 107, Ann. Soc. ent. Belgique, 1895, n. sp.
- Egocera (sic) obliqua*, pl. xxii, fig. 1, p. 156, *elegantula*, fig. 2, p. 157, *triangularis*, fig. 3, p. 158, figured and described; MABILLE & VUILLOT, Nov. Lep.
- Oiketicus townsendi*, structural characters; DYAR, p. 242, Canad. Ent. xxvii.
- Omichlis*, n. g., *Notodontidae*, near *Nadata*, for *O. rufotincta*, n. sp., Pegu; HAMPSON, p. 279, Tr. ent. Soc. London, 1895.
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- Opisthodontia*, n. g., p. 114, *Lasiocampidae*, near *Epicnaptera*, for *O. dam-felti*, n. sp., Congo, p. 115; AURIVILLIUS, Ent. Tidskr. xvi.
- Oreopsyche pyrenælla*, p. lxiv, *tenella*, p. lxv, *plumistrella*, pl. lxvi, larvæ; HEYLAERTS, Tijdschr. Ent. xxxviii.
- Orete olga*, figure; Tr. ent. Soc. London, 1895, pl. i, fig. 14.
- Orgyia antiqua*, life-history; PACKARD, pp. 55-58, of *O. leucostigma*, id. t. c., pp. 59-62, of *O. cana*, p. 62-64, *O. definita*, p. 65, Ann. N. York Ac. viii. *O. nucula*, figure; Tr. ent. Soc. London, 1895, pl. i, fig. 15.
- Ormetica*, Clem. = (*Euplesia*, Feld.); SCHAUS, p. 61, Canad. Ent. xxvii.

- Paidia strigipennis* = (*Lyclene fruhstorferi*, Auriv.); SNELLEN, p. 207, Tijdschr. Ent. xxxviii.
- Parasa euchlora*, Trop. Africa, KARSCH, p. 366, pl. iii, fig. 6, Ent. Nachr. xxi; *P. prasina*, Ta-tsien-lou, ALPHÉRAKY, p. 186, Deutsche ent. Zeitschr. Lep. viii : n. spp.
- Pericopsis meta*, Colombia, DRUCE, p. 47, Ann. Nät. Hist. xv, n. sp.
- Perophora melsheimerii*, young larva; PACKARD, p. 175, J. N. York Ent. Soc. iii : larva; PACKARD, pp. 50-54, Ann. N. York Ac. viii.
- P. batesii*, peculiar eggs; SNELLEN, p. 53, pl. ivc, figg. 5 & 6, Tijdschr. Ent. xxxviii.
- Pettigramma*, n. g., p. 373, *Lymantriidae*, for *P. spiculata*, n. sp., Trop. Africa, pl. iv, fig. 5, p. 374; KARSCH, Ent. Nachr. xxi.
- Phacusa sizala*, figure; Tr. ent. Soc. London, 1895, pl. i, fig. 3.
- Phæoptera masoni*, Jalapa, SCHAUS, p. 29, Ent. News Philad. vi, n. sp.
- Phalacra nubodia*, figure; Tr. ent. Soc. London, 1895, pl. i, fig. 17.
- Phalacroptysis*, n. g., *Drepanulidae*, for *P. carnosia*, n. sp., Cherra Panji, pl. i, fig. 5; SWINHOE, p. 5, Tr. ent. Soc. London, 1895.
- Phalera staudingeri*, Sidémi, ALPHÉRAKY, p. 187, Deutsche ent. Zeitschr. Lep. viii, n. sp.
- Phaloe tellina*, Rio Grande do Sul, WEYMER, p. 327, Ent. Zeit. Stettin, Iv, n. sp.
- Philosamia*: synonymy; generically divided into *Philosamia* and *Drepanoptera*; ROTHSCHILD, p. 37, Nov. Zool. ii.
- Phobetron*: *Eurydoxa hipparchia* referred to this, characters of the species; DYAR, p. 245, Canad. Ent. xxvii.
- Phragmataecia territa*, n. var. *transcaspica*; GRUM-GRSHIMAILO, p. 292, Horæ Soc. ent. Ross. xxix.
- P. lata*, Sumatra, SNELLEN, p. 134, Deutsche ent. Zeitschr. Lep. viii, n. sp.
- Phryganidia californica*, habits and metamorphoses; KELLOGG & JACK, pp. 562-570, P. Calif. Ac. v : larva; PACKARD, pp. 89-91, Ann. N. York Ac. viii.
- Pisara argentescens*, p. 296, *argentsparsa*, p. 297, N. India, HAMPSON, Tr. ent. Soc. London, 1895, n. sp.
- Platypteryx* and *Drepana*, nomenclature; GROTE, p. 166, J. N. York Ent. Soc. iii.
- Plusiogramma*, n. g., *Notodontidae*, near *Hapigia*, for *P. aurosigna*, n. sp., Tenasserim; HAMPSON, p. 278, Tr. ent. Soc. London, 1895.
- Pompelon marginata* = (*ampliatum*, Butl., *valentula*, *subcyanca*, Swinh.); SNELLEN, p. 133, Deutsche ent. Zeitschr. Lep. viii.
- Preptos*: systematic position, *P. oropus* = (*Tagora corux*); SCHAUS, p. 94, Canad. Ent. xxvii.
- Prionoxystus robiniae*, egg and young larva; PACKARD, p. 91, Ann. N. York Ac. viii.
- Pristocerca*, n. g., p. 349, type *Agarista eriopis*, H.-S., and including *P. albigutta*, pl. ii, fig. 2, *inclusa*, fig. 5, n. spp., Trop. Africa, p. 357; KARSCH, Ent. Nachr. xxi.

- Problepsidis*, n. g. near *Drepana*, for *P. argyrialis*, p. 287, *albescens*, *cupreogrisea*, p. 288, n. spp., E. India; HAMPSON, Tr. ent. Soc. London, 1895.
- Pseudapistosia saduca*, Centr. America, DRUCE, p. 46, Ann. Nat. Hist. xv, n. sp.
- Pseudhypsba baumanniana*, Trop. Africa, KARSCH, p. 369, pl. iii, fig. 5, Ent. Nachr. xxi, n. sp.
- Pseudojana pallidipennis*, Tenasserim, HAMPSON, p. 278, Tr. ent. Soc. London, 1895, n. sp.
- Pseudospiris*, n. g. [? *Lithosiidæ*] for *P. paidiformis*, n. sp., Centr. Africa, pl. xv, figg. 8 & 9; BUTLER, p. 267, P. Zool. Soc. London, 1895.
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- Pyrosis potanini*, Se-Tchuen, ALPHÉRAKY, p. 186, Deutsche ent. Zeitschr. Lep. viii, n. sp.
- Pyrrharctia isabella*, life-history; PACKARD, pp. 76-78, Ann. N. York Ac. viii.
- Rhynchopalpus grisealis*, Cherra Punji, SWINHOE, p. 25, Tr. ent. Soc. London, 1895, n. sp.
- Robinsonia sabata*, p. 36, *deiopea*, *sanea*, p. 37, Centr. America, DRUCE, Ann. Nat. Hist. xvi; *R. grotei*, Centr. and S. America, p. 61, *fogra*, Venezuela, *lefaivrei*, Rio Janeiro, p. 62, SCHLAUS, Canad. Ent. xxvii: n. spp.
- Salassa* and allies, list; ROTHSCHILD, p. 45, Nov. Zool. ii.
- Sapinella*, Kirby, cf. *Pseudanaphora*, sub *Tineidæ*.
- Saturniideæ*: preliminary revision with list of types in the Tring Museum; ROTHSCHILD, pp. 35-51, Nov. Zool. ii: cocoons of some N. American; LAURENT, Ent. News Philad. vi, p. 274, pl. xiii: notes on some hybrid larvæ of different sorts; MORTON, P. ent. Soc. London, 1895, pp. xxxiv-xxxvi.
- Saturnina* of N. America, notes and list of species; GROTE, pp. 263-271 & 316, Canad. Ent. xxvii.
- Saturnia* and allies, new synonymy and changes of generic position; ROTHSCHILD, pp. 49, &c., Nov. Zool. ii. *S. pavonia* and *pyri*, hybrids, pp. 145-167, pl. ii, hermaphrodites, pl. iii; CASPARI, Jahrb. Nassau. Ver. xlviii. *S. pavonia*, black larva; CARPENTER, Ent. Mag. 1895, p. 119. *S. atlantica*, larva; VALLANTIN, Naturaliste, 1895.
- Scaptosylis*, n. g., *Zygænidæ*, for *S. hemichryseis*, n. sp., Tenasserim; HAMPSON, p. 283, Tr. ent. Soc. London, 1895.
- Schausia*, n. g., type *Egocera leona*, Schaus; KARSCH, p. 346, Ent. Nachr. xxi.
- Schizura nitida*, egg and larva, p. 395, *eximia*, larva, p. 397, cut; DYAR, P. Boston Soc. xxvi.
- Sciathos*, referred to *Megalopygidæ*; DYAR, Canad. Ent. xxvii, p. 15.
- Seirarctia echo*, larva; PACKARD, p. 80, Ann. N. York Ac. viii.
- Siglophora ferreilutea*, Sikhim, HAMPSON, p. 296, Tr. ent. Soc. London, 1895, n. sp.

- Soritia costimacula*, figured, pl. xiii, fig. 2 ; PAGENSTECHEER, Semon's Forschungreise, v.
- Spilosoma congrua*, young larva ; PACKARD, p. 176, J. N. York Ent. Soc. iii. *S. virginica*, young larva, p. 78, var. of larva, p. 79 ; PACKARD, Ann. N. York Ac. viii. *S. glatygygni*, dark var. ; LE SŒUF, p. 142, cut, Victorian Natural. xi.
- Stauropus fagi*, early stages ; TUGWELL, p. 276, Entomologist, 1895, and Ent. Mag. 1895, p. 274.
- Stemonoceras*, n. g., *Hypsidæ*, for *Phægorista leucomelas*, H.-S. ; KARSCH, p. 370, Ent. Nachr. xxi.
- Stenadonta*, n. g., *Notodontidæ*, near *Pydna*, for *S. cytarrosticka*, n. sp., Bhutân ; HAMPSON, p. 281, Tr. ent. Soc. London, 1895.
- Streptoperas*, n. g., near *Drepana*, for *S. luteata*, n. sp., Bengal ; HAMPSON, p. 289, Tr. ent. Soc. London, 1895.
- Syffania oberthuri*, Se-Tchuen, ALPHÉRAKY, p. 184, Deutsche ent. Zeitschr. Lep. viii, n. sp.
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- Syntomis pterophorina*, pl. xxi, fig. 7, *rubicunda*, fig. 8, figured, descriptions, pp. 152 & 153 ; MABILLE & VUILLOT, Nov. Lep.
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[Cf. ALPHÉRAKY (23), BUCKLER (155), BUTLER (170), CASPARI (194), DRUCE (298), DYAR (312), GROTE (462), HAMPSON (483), KARSCH (574), REBEL (918), REUTTI (961), SLINGERLAND (1067), SMITH (1074, 1075), STAUDINGER (1103, 1104, 1105), SWINHÖE (1116, 1118), WEYMER (1230).]

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- Westermannia celisigna*, Bhután, HAMPSON, p. 303, Tr. ent. Soc. London, 1895, n. sp.
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GEOMETRIDÆ, EPIPLEMIDÆ.

- [*Cf.* ALPHÉRAKY (23), BARRETT (74), BUTLER (166), DOGNIN (294), GUMPPENBERG (477), HAMPSON (483, 484), KARSCH (574), PACKARD (837), PAGENSTECHEK (841), POUJADE (899, 900), RÜBER (973) STAUDINGER (1104, 1105), SWINHOE (1117), THIERRY-MIEG (1129, 1130), WARREN (1187).]

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 n. spp., WARREN, Nov. Zool. ii.
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 ? Chili; WARREN, p. 82, Nov. Zool. ii.
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Allconeura, n. g., p. 112, *Hydriomenineæ*, for *A. marmorata*, n. sp., Petro-
 polis, p. 113; WARREN, Nov. Zool. ii.
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- Brephoscotosia*, n. g., for *Scotosia catocularia*, Wlk.; WARREN, p. 114, Nov. Zool. ii.
- Bronchelia scolopaiea*, note on, with synonymy; WARREN, p. 126, Nov. Zool. ii.
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- Cabira*, H.-S., revived for *C. (nec Deilinia) ochropurpuria*; WARREN, p. 120, Nov. Zool. ii.
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- Calletara*, n. g., type *Macaria ruptaria*, Wlk., with *C. grisea*, Nias, *sabulosa*, Engano, n. spp.; WARREN, p. 132, Nov. Zool. ii.
- Callhistia* referred to this family; cf. BOMBYCES, p. 291.
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- Campygramma albinotata*, note on; WARREN, p. 114, Nov. Zool. ii.
- Carige sinuosa*, Perak, WARREN, p. 105, Nov. Zool. ii, n. sp.
- Curipeta arcana*, Loja, DOGNIN, Ann. Soc. ent. Belgique, 1895, n. sp.

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- Cartellodes*, n. g., type, *Drepanodes levis*, Th.-Mg. ; WARREN, p. 140, t. c.
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- Chlorochroma*, n. subg. of *Nemoria* ; GUMPPENBERG, p. 493, Acta Ac. German. lxiv.
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- Cidariophanes*, n. g., *Selidoseminæ*, for *C. ischnopterata*, n. sp., Brazil, WARREN, p. 130, Nov. Zool. ii.
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- C. plumbeotinecta*, buda, India, SWINHOE, p. 297, Ann. Nat. Hist. xvi, n. spp.
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- Cosymbia angeronaria*, S. America, WARREN, p. 92, Nov. Zool. ii, n. sp.
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- Craspediopsis*, n. g., p. 96, type *Anisodes pallivittata*, Moore, with *C. bimaculata*, n. sp., Khasia Hills, p. 94; WARREN, Nov. Zool. ii.
- Decetia hypopyrata*, Sumatra, SNELLEN, p. 146, Deutsche ent. Zeitschr. Lep. viii, n. sp.
- Diasictis serenuria*, Mongolia, STAUDINGER, p. 364, pl. vi, fig. 16, Deutsche ent. Zeitschr. Lep. viii, n. sp.
- Dichostrepsia*, n. g., p. 121, *Braccine*, for *D. tricolorata*, S. America, unciata, Peru, p. 122; WARREN, Nov. Zool. ii.
- Dichromatopodia*, n. g., type *Pyrinia sigillata*, Wlk., with *pallida*, Amazons, *rubella*, Jamaica, n. spp.; WARREN, Nov. Zool. ii.
- Digonodes*, n. g., type *Apicia ovaria*, Gn., with *D. complana*, n. sp., S. America; WARREN, p. 140, Nov. Zool. ii.
- Dioproctasma*, n. g., p. 377, for *D. sphingata*, n. sp., Cameroons, p. 378, pl. iv, fig. 10; KARSCH, Ent. Nachr. xxi.
- Diptychis*, Feld., redescribed; WARREN, p. 125, Nov. Zool. ii.
- Discoloxia*, n. g., type *Cidaria obliquisigna*, Moore, with *D. megaspilata*, n. sp., Japan; WARREN, p. 105, Nov. Zool. ii.
- Docephora*, n. g., p. 108, *Tephroclystine*, for *D. bullata*, n. sp., Brazil, p. 109; WARREN, Nov. Zool. ii.
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- D. subferrugineata*, Mou-Pin, POUJADE, p. 307, Ann. Soc. ent. France, 1895, n. sp.
- Drepanulatrix*, n. g., for *Tephrosia fulcataria*, Pack.; GUMPENBERG, p. 454, Acta Ac. German. lxiv.
- Dyschloropsis*, n. g., *Geometrinae*, for *impararia*, Gn.; WARREN, p. 89, Nov. Zool. ii.
- Dysephyra*, n. g., type *Dosithea discopunctaria*, H.-S.; WARREN, p. 94, t. c.
- Dysethia longiramus*, Sikhim, HAMPSON, p. 312, Tr. ent. Soc. London, 1895, n. sp.
- Dysethiodes*, n. g., for *Coremia ocyptaria*, Swin.; WARREN, p. 106, Nov. Zool. ii.
- Dysmigia*, n. g., type *Halia loricaria*, Eversm.; WARREN, p. 134, t. c.
- Dysphania auriplaga*, Gunong Ijau, p. 85, *confluens*, Obi, *flavidiscalis*, Burma, *latiflava*, New Guinea, p. 86, *semiflava*, Nias, *supergressa*, Borneo, p. 87, WARREN, Nov. Zool. ii, n. spp.
- Dystyptoptila*, n. g., near *Sauris*, for *D. triangularis*, n. sp., Sumatra; WARREN, p. 106, Nov. Zool. ii.
- Ectropidia*, n. g., type *Acidalia exprimata*, Wlk.; WARREN, p. 126, t. c.
- Ellopiia pseudomacariata*, Mou-Pin, POUJADE, p. 308, Ann. Soc. ent. France, 1895, n. sp.
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- Emplocia*, H.-S., redefined; WARREN, p. 122, Nov. Zool. ii.
- Ennomos alniaria*, preparatory stages; BEUTENMÜLLER, p. 137, J. N. York Ent. Soc. iii. *E. alniaria* and *angularia*, hybrids; FARN, p. 280, Ent. Mag. 1895.

- Eois levitaria* = (*Euacidalia floridata*, Pack.) ; WARREN, p. 95, Nov. Zool. ii.
- E. latimarginata*, Japan, WARREN, *t. c.* p. 95, n. sp.
- Epigynopteryx*, n. g., type *Marcala modesta*, Butl. ; WARREN, p. 140, *t. c.*
- Epiplema sponsa*, Shillong, SWINHÖE, p. 293, Ann. Nat. Hist. xvi, n. sp.
- Epirrhoë delimitata*, N. America, WARREN, p. 114, Nov. Zool. ii, n. sp.
- Erateina*? *discothyrate*, Mou-Pin, POUJADE, p. 315, Ann. Soc. ent. France, 1895, n. sp.
- Erebochlora*, n. g., for *Spargania tesseralata*, Feld. ; WARREN, p. 115, Nov. Zool. ii.
- Erielyces*, n. g., for *Lyces flavissima*, Wlk. ; WARREN, p. 85, Nov. Zool. ii.
- Erosia auroguttata*, *E.*? *mabillaria*, Mou-Pin, POUJADE, p. 311, Ann. Soc. ent. France, 1895, n. spp.
- Eubolia roseicilia*, Bhután, HAMPSON, p. 312, Tr. ent. Soc. London, 1895, n. sp.
- Eulidiodes*, n. g., type *Heterophleps ophiusina*, Butl. ; WARREN, p. 141, Nov. Zool. ii.
- Eucosmia alternata*, Tibet, with var. *fasciata*, STAUDINGER, p. 332, Deutsche ent. Zeitschr. Lep. viii, n. sp.
- Eumelea rosalia*, discussed, with *E. sanguinata*, n. n. ? WARREN, p. 84, Nov. Zool. ii.
- Eupithecia satyrata*, n. var. *serenata* ; STAUDINGER, p. 340, Deutsche ent. Zeitschr. Lep. viii. *E. fenestrata*, generic position, &c. ; REBEL, p. 23, Verh. Ges. Wien, 1895.
- E. chlorophora*, p. 295, *melanolopha*, *nigrinotata*, p. 296, E. India, SWINHÖE, Ann. Nat. Hist. xvi, n. spp.
- Eusarca subfalcata*, Mou-Pin, POUJADE, p. 312, Ann. Soc. ent. France, 1895 ; *E. tibetaria*, Tibet, STAUDINGER, p. 331, Deutsche ent. Zeitschr. Lep. viii ; *E. fasciata*, Petropolis, *fractilineata*, Colombia, WARREN, p. 141, Nov. Zool. ii : n. spp.
- Euschema fruhstorferi*, Java, RÖBER, p. 34, Ent. Nachr. xxi, n. sp.
- Eusenea pulverosa*, Petropolis, WARREN, p. 142, Nov. Zool. ii, n. sp.
- Gelasma albistrigata*, Japan ; WARREN, p. 89, Nov. Zool. ii, n. sp.
- Gnamptoloma*, n. g., type *Timandra aventiaria*, Gn. ; WARREN, p. 95, *t. c.*
- Gnophos ochrofasciata*, Mongolia, STAUDINGER, p. 362, pl. vi, fig. 16, Deutsche ent. Zeitschr. Lep. viii ; *G. lilliputata*, Mou-Pin, POUJADE, p. 309, Ann. Soc. ent. France, 1895 : n. spp.
- Gubaria tricolorata*, Engauo, WARREN, p. 134, Nov. Zool. ii, n. sp.
- Gymnodisca*, n. g., near *Rhinoprora*, for *G. rubrifusa*, p. 109, *viridescens*, p. 110, n. spp., Perak ; WARREN, Nov. Zool. ii.
- Gymnoscelis polyodonta*, Shillong, SWINHÖE, p. 296, Ann. Nat. Hist. xvi, n. sp.
- Halesa epionata*, complex synonymy of *Drepanodes* species ; WARREN, p. 142, Nov. Zool. ii.
- Hamaptera semiobliterata*, Jamaica, WARREN, p. 115, Nov. Zool. ii, n. sp.
- Helastiodes*, n. g., for a portion of *Pusiphila*, Meyrick ; WARREN, p. 110, Nov. Zool. ii.

- Hemithea flagellaria*, Mou-Pin, POUJADE, p. 310, Ann. Soc. ent. France, 1895, n. sp.
- Hetara*, n. n., to replace *Heterolocha*, Pack. ; GUMPPENBERG, p. 471, Acta Ac. German. lxiv.
- Heterabraxas roseovittata*, Central Africa, BUTLER, p. 741, pl. xliii, figg. 2 & 3, P. Zool. Soc. London, 1895, n. sp.
- Heterarmia*, n. g., type *Boarmia butneri*, Hed.; WARREN, p. 143, Nov. Zool. ii.
- Heterophyra*, n. g., for *Zonosoma lateritiaria*, H.-S.; WARREN, p. 96, t. c.
- Heterolocha mediolimbata*, Mou-Pin, POUJADE, p. 308, Ann. Soc. ent. France, 1895, n. sp.
- Heteromiza leucogonia*, E. India, HAMPSON, p. 311, Tr. ent. Soc. London, 1895, n. sp.
- Holorista usta*, Perak, WARREN, p. 106, Nov. Zool. ii, n. sp.
- Hydatocapnia*, n. g., type *Zamarada marginata*, Warr. ; WARREN, p. 143, Nov. Zool. ii.
- Hydrochroa*, n. g., for *glaucaria*, L. ; GUMPPENBERG, p. 460, Acta Ac. German. lxiv.
- Hygrochroa distans*, Japan ; WARREN, p. 143, Nov. Zool. ii.
- Hymenomima*, n. g., type *Boarmia cogigaria*, Moesch.; WARREN, p. 127, Nov. Zool. ii.
- Hypochroma sinapiaria*, Mou-Pin, POUJADE, p. 309, Ann. Soc. ent. France, 1895, n. sp.
- Hypochrosis massagaria*, Cameroons, KARSCH, p. 359, pl. ii, fig. 10, Ent. Nachr. xxi, n. sp.
- Hyposidra davidaria*, Mou-Pin, POUJADE, p. 307, Ann. Soc. ent. France, 1895 ; *H. polia*, Ceylon, HAMPSON, p. 310, Tr. ent. Soc. London, 1895 : n. spp.
- Hysterura*, n. g., p. 115, for *multifaria*, Swinh. ; WARREN, p. 115, Nov. Zool. ii.
- Imitator*, referred to *Noctuidæ*, q.v. ; ALPHÉRAKY, p. 180, Deutsche ent. Zeitschr. Lep. viii.
- Lasiops*, n. g., type *Colotois chilendaria*, Feld. ; WARREN, p. 143, Nov. Zool. ii.
- Leptoctenopsis*, n. n. for *Leptoctenista*, Warr. ; WARREN, p. 84, t. c.
- Leptomeris alboverticata*, Timor, WARREN, p. 96, Nov. Zool. ii, n. sp.
- Ligia ciliaria* and *similiaria*, referred to the Noctuid genus *Imitator* ; ALPHÉRAKY, p. 180, Deutsche ent. Zeitschr. Lep. viii.
- Lipomelia ? curviplena*, Santos, *varia*, Demerara, WARREN, p. 96, Nov. Zool. ii, n. spp.
- Lissostolodes*, n. g., *Ennominae*, for *L. subcarnea*, n. sp., Santos ; WARREN, p. 144, Nov. Zool. ii.
- Lithina triumbrata*, Cashmere, WARREN, p. 131, Nov. Zool. ii, n. sp.
- Lygridopsis*, n. g., type *cervinaria*, Moore ; WARREN, p. 116, Nov. Zool. ii.
- Mucaria fumipennis*, Bhután, HAMPSON, p. 310, Tr. ent. Soc. London, 1895 ; *M. præsignaria*, p. cclxxvi, *imitatrix*, p. cclxxvii, Bolivia, THIERRY-MIEG, Bull. Soc. ent. France, 1895 : n. spp.

- Marmopteryx gibbicostata*, habit of seeking protective spots ; LUGGER, p. 138, Ent. News Philad. vi.
- Medasina reticulata*, Sikhim, HAMPSON, p. 311, Tr. ent. Soc. London, 1895, n. sp.
- Melanchroia* ? *aurantiaria*, Rio de Janeiro, THIERRY-MIEG, p. cclxxv, Bull. Soc. ent. France, 1895, n. sp.
- Mesaster*, n. g., *Ennomineæ*, p. 144, for *M. albidiscata*, Padang, n. sp., p. 145 ; WARREN, Nov. Zool. ii.
- Mesurodes*, n. g., for *Iodis erichlora*, Meyr ; WARREN, p. 89, Nov. Zool. ii.
- Metallolophia*, n. g., *Pseudoterpinæ*, for *Hypochroma vitticosta*, Wlk. ; WARREN, p. 88, Nov. Zool. ii.
- Miantochora*, n. g., *Ennomineæ*, for *M. inæquilinea*, n. sp., S. America ; WARREN, p. 145, Nov. Zool. ii.
- Miantonota*, n. g., *Geometrinæ*, for *integra*, Warr. ; WARREN, p. 89, t. c.
- Microgonia*, to be used in place of *Oxydia*, Gn., *M. apidania*, p. 146, *vesulia*, p. 148, complex synonymy ; WARREN, Nov. Zool. ii.
- M. olivacea*, Jamaica, *renipuncta*, S. Paolo, p. 147, *sociata*, Petropolis, p. 148, WARREN, Nov. Zool. ii, n. spp.
- Micronia oppositata* = (*Ps. cœlata*, Moore) ; SNELLEN, p. 62, Tijdschr. Ent. xxxviii. *M. sondaicata*, ♀ figured ; FÜRBRINGER, pl. xiii, fig. 10, Semon's Forschungsreise, v.
- M. thibetaria*, Mou-Pin, POUJADE, p. 311, Ann. Soc. ent. France, 1895, n. sp.
- Microxydia*, n. g., type *Stegania orsitaria*, Gn. ; WARREN, p. 148, Nov. Zool. ii.
- Milionia*, cf. BOMBYCES, p. 295.
- Mimandria*, n. g., *Pseudoterpinæ*, for *insularis*, Warr. ; WARREN, p. 88, Nov. Zool. ii.
- Mimochroa*: the type is *angulifascia*, Moore ; WARREN, p. 150, t. c.
- Mimogonodes*, n. g., *Ennomineæ*, for *M. constricta*, n. sp., S. America ; WARREN, p. 149, Nov. Zool. ii.
- Mixopsis*, n. g., type *Laudosia typtaria*, Feld. ; WARREN, p. 149, t. c.
- Mnesipenthe*, n. g., p. 122, type *Melanchroia subcana*, Wlk., with *M. obliquisignata*, n. sp., Petropolis, p. 123 ; WARREN, Nov. Zool. ii.
- Myrtea*, n. subg. of *Nemoria* ; GUMPPENBERG, p. 478, Acta Ac. German. lxiv.
- Nadagarodes*, n. g., type *Nadagara mysolata*, Wlk. ; WARREN, p. 133, Nov. Zool. ii.
- Nartheccusa*, Wlk. = (*Nolera*, Mab.) ; KARSCH, p. 377, Ent. Nachr. xxi.
- Nearcha benecrestata*, Australia and Thursday I. ; WARREN, p. 84, Nov. Zool. ii.
- Nelopsis*, n. g., type *Mennis nasuta*, Wlk. ; WARREN, p. 123, Nov. Zool. ii.
- Nemoria glauciptera*, Grenada, HAMPSON, p. 333, Ann. Nat. Hist. xvi, n. sp.
- Nephodia clara*, Loja, DOGNIN, p. 118, Ann. Soc. ent. Belgique, 1895, n. sp.
- Neuropolodes*, n. g., *Ennomineæ*, p. 149, for *N. sphingata*, n. sp., Old Calabar, p. 150 ; WARREN, Nov. Zool. ii.

- Numeria laterinata*, n. n. for *lateritiaria*, Pouj. ; POUJADE, p. 312, Ann. Soc. ent. France, 1895.
- Nyssia lapponaria*, metamorphoses ; FROHAWK, pp. 237-240, pl., Entomologist, 1895.
- Ochroplutodes*, n. g., *Plutodine*, for *O. sordida*, Africa ; WARREN, p. 120, Nov. Zool. ii.
- Ocelophora*, n. g., type *basipuncta*, Moore ; WARREN, p. 150, *t. c.*
- Odezia tibiale* and allies, characters ; WARREN, p. 116, Nov. Zool. ii.
- Odontopera brigitta*, Bolivia ; THIERRY-MIEG, p. cclx, Bull. Soc. ent. France, 1895.
- Orthobrachia*, n. g., type *Stegania latifasciata*, Moore ; WARREN, p. 121, Nov. Zool. ii.
- Ortholitha* : should be replaced by *Plerocymia*, Hüb. ; WARREN, p. 118, Nov. Zool. ii.
- Orthonama*, Hüb. : its composition ; WARREN, p. 116, Nov. Zool. ii.
- Osteodes semicolor*, Liu-Kiu Is., WARREN, p. 133, Nov. Zool. ii, n. sp.
- Otoplecta*, n. g., type *Coremia frigida*, Butl. ; WARREN, p. 116, *t. c.*
- Oxydia*, cf. *Microgonia*. *O. mixtata*, referred to *Ænoptila*, numerous synonyms ; WARREN, p. 131, Nov. Zool. ii.
- Pachyodes daviduria*, p. 310, *leucomelanaria*, p. 311, Mou-Pin, POUJADE, Ann. Soc. ent. France, 1895, n. sp.
- Parabapta*, n. g., type *B. atheriata*, Graeser ; WARREN, p. 121, Nov. Zool. ii.
- Paracomistis*, n. g., *Ennonineæ*, for *P. boarmiata*, p. 150, *lignicolor*, p. 151, n. spp., Petropolis ; WARREN, Nov. Zool. ii
- Paraplaneta*, n. g., type *Larentia conturbata*, Wlk. ; WARREN, p. 116, *t. c.*
- Parascotia olivacea*, N.W. India, WARREN, p. 129, Nov. Zool. ii, n. sp.
- Paratyria*, n. g., for *Cyllopoda darna*, Schaus ; WARREN, p. 85, *t. c.*
- Parosteodes*, n. n. to replace *Osteodes*, Meyr ; WARREN, p. 134, *t. c.*
- Pasiphilodes*, n. g., for *Pasiphila lepta*, Meyr ; WARREN, p. 110, *t. c.*
- Pero* (?) *scitaria*, synonymy ; WARREN, p. 151, Nov. Zool. ii.
- Petrodava albicatena*, no locality, WARREN, p. 133, Nov. Zool. ii, n. sp.
- Phanerothyris*, n. g., type *Boarmia incertaria*, Leech ; WARREN, p. 127, *t. c.*
- Phœnicocampa*, n. g., type *Itame terinata*, Feld. ; WARREN, p. 151, *t. c.*
- Phorodesma smaragdaria*, habits of larva ; AULD, Ent. Mag. 1895, p. 59.
- Photoscotia funebris, velutina*, China, WARREN, p. 117, Nov. Zool. ii, n. spp.
- Phrudocentra, Geometrineæ*, n. g. for *pupillata*, Warr. ; WARREN, p. 90, *t. c.*
- Pisoraca* = (*Trirachopoda*) ; WARREN, p. 97, Nov. Zool. ii.
- P. penumbra*, Celebes, *id. t. c.* n. sp.
- Plemyriopsis*, n. g., type *Erosia distincta*, Wlk. ; WARREN, p. 117, *t. c.*
- Polla ochreicosta, pallidiplaga*, S. Paolo ; WARREN, p. 152, Nov. Zool. ii.
- Polygonia variabilis*, no locality, WARREN, p. 153, Nov. Zool. ii, n. sp.
- Polythrena miegata*, Mou-Pin, POUJADE, p. 314, Ann. Soc. ent. France, 1895, n. sp.
- Priapodes*, n. g., type *longipalpata*, Th.-Mg. ; WARREN, p. 118, Nov. Zool. ii.
- Prionomelia*, n. g., *Ascotineæ*, type *P. grisea*, Wait. ; WARREN, p. 127, *t. c.*

- Proteopharmacis*, n. g., type *Scotopteryx valdiviata*, Feld. ; WARREN, p. 153, Nov. Zool. ii.
- Protestrenia*, n. g., type *P. strenioides*, Butl. ; WARREN, p. 153, t. c.
- Pseudobracca*, n. g., p. 123, *Braccinae*, for *P. imitatrix*, n. sp., S. America, p. 124 ; WARREN, Nov. Zool. ii.
- Pseudocollix*, n. g., type *hyperythra*, Hmps. ; WARREN, p. 118, t. c.
- Pseudoterpna hypoglaucæ*, India, HAMPSON, p. 313, Tr. ent. Soc. London, 1895, n. sp.
- Pseudothalera*, n. g., p. 153, *Ennominae*, for *P. stigmatica*, n. sp., W. China, p. 154 ; WARREN, Nov. Zool. ii.
- Pseustoplaca*, n. g., *Ennominae*, for *P. diversicolor*, n. sp., S. America, WARREN, p. 154, Nov. Zool. ii.
- Psilotaphria*, n. g., for *Eurytaphria*, Hmps. ; WARREN, p. 154, t. c.
- Pterocypha inangulata*, Jamaica, p. 118, *xantholiva*, hab. ?, p. 119, WARREN, Nov. Zool. ii, n. spp.
- Pyrochlora*, n. g. for *Phal. rhanis*, Cr. ; WARREN, p. 90, Nov. Zool. ii.
- Rambara lumenaria*, Hb. = (*ochreicostalis*, Hamps.) ; SNELLEN, p. 63, Tijdschr. Ent. xxxviii.
- Remodes auricula*, *lobata*, Perak, WARREN, p. 107, Nov. Zool. ii, n. spp.
- Rhinoligia*, n. g., *Prosopopolophinae*, type *Rhinodia biocellata*, Feld. ; WARREN, p. 159, Nov. Zool. ii.
- Rhinoprora*, n. g., p. 110, near *Chloroclystis*, for *R. regularis*, *variospila*, *viridata*, n. spp., Perak, p. 111 ; WARREN, Nov. Zool. ii.
- Rhodostrophia anomala*, hab. ?, *bicolor*, Kukli, *bisinuata*, Japan, *curvata*, Bhotan, p. 98, *dentilineata*, *olivacea*, Sikkim, p. 99, WARREN, Nov. Zool. ii ; *R. rubricostæ*, p. 331, *rubripictata*, p. 332, Grenada, HAMPSON, Ann. Nat. Hist. xvi : n. spp.
- Sangala*, Wlk., note on ; WARREN, p. 124, Nov. Zool. ii.
- Sungalopsis*, n. g., near *Siosta*, type *Nelo altera*, Wlk., for *S. linata*, Peru, p. 124, *marginata*, S. America, p. 125, n. spp. ; WARREN, Nov. Zool. ii.
- Scordylia hippomenatoides*, Loja, DOGNIN, p. 118, Ann. Soc. ent. Belgique, 1895 ; *S. particula*, Bolivia, THIERRY-MIEG, p. cclxi, Bull. Soc. ent. France, 1895 : n. spp.
- Scotosia*? *adornata*, Tibet, pl. vi, fig. 18, STAUDINGER, Ent. Zeitschr. Lep. viii, n. sp.
- Sebestia*, n. g., *Tephroclystinae*, for *S. maleformata*, n. sp., Santos ; WARREN, Nov. Zool. ii, p. 112.
- Selenia s-signata*, N. America, GUMPENBERG, p. 413, Acta Ac. German. lxiv, n. sp.
- Selidosema catoteniaria*, Mou-Pin, POUJADE, p. 313, Ann. Soc. ent. France, 1895, n. sp.
- Semaecopus* and *Chemodes*, synonymical note ; WARREN, p. 91, Nov. Zool. ii.
- S. ancillaria*, S. America, WARREN, p. 99, Nov. Zool. ii, n. sp.
- Semiothisa submarmorata*, Wlk., and *granitata*, Pack., synonymy ; WARREN, p. 134, Nov. Zool. ii.
- Sericosema*, n. g., type *Selidosema juturnaria*, Gn. ; WARREN, p. 131, t. c.

- Sicya dognini*, Bolivia, THIERRY-MIEG, p. cclx, Bull. Soc. ent. France, 1895, n. sp.
- Sigmathyris*, n. g., type *Andania scriptipemaria*, Wlk. ; WARREN, p. 155, Nov. Zool. ii.
- Smicropus*, n. n. for *Micropus*, with *S. angusta*, *latifusciata*, n. spp., S. America ; WARREN, p. 85, Nov. Zool. ii.
- Spilocraspeda*, n. g., *Ennominae*, for *S. curvilinea*, *submarginata*, p. 155, *subusta*, p. 156, E. S. America, n. spp. ; WARREN, Nov. Zool. ii.
- Spilopera ochreifusca*, Bhután, HAMPSON, p. 310, Tr. ent. Soc. London, 1895, n. sp.
- Spododes*, n. g., *Ennominae*, for *S. adumbrata*, p. 156, *sabulosa*, *trilineata*, p. 157, n. spp., S. America ; WARREN, Nov. Zool. ii.
- Stamnodes elwesi*, Sikhim, ALPHÉRAKY, p. 202, Deutsche ent. Zeitschr. Lep. viii, n. sp.
- Symmetroctena*, n. g., p. 127, *Ascotinae*, for *S. fumosa*, n. sp., Queensland, p. 128 ; WARREN, Nov. Zool. ii.
- Synnomos apicistrigata*, Amazons, WARREN, p. 158, Nov. Zool. ii, n. sp.
- Tephrosia extersaria*, larva described ; PORRITT, Ent. Mag. 1895, p. 65 ; FENN, t. c. p. 81.
- T. trisurca*, *gaviota*, p. 114, *corza*, *vaga*, p. 115, *ecuadorata*, *limosa*, p. 116, Loja ; DOGNIN, Ann. Soc. ent. Belgique, 1895, n. spp.
- Terpna dorsocristata*, Mou-Pin, POUJADE, p. 313, Ann. Soc. ent. France, 1895, n. sp.
- Timandra commixta*, Java, WARREN, p. 100, Nov. Zool. ii, n. sp.
- Traminda ocellata*, S. Africa, WARREN, p. 100, Nov. Zool. ii, n. sp.
- Trichodezia*, n. g., type *Odezia albovittata*, Gn. ; WARREN, p. 119, t. c.
- Trichostichia*, n. g., type *Syrtodes bifnita*, Wlk. ; WARREN, p. 131, t. c.
- Tympanota*, n. g., p. 107, near *Remodes*, for *T. erecta*, n. sp., Borneo, p. 108 ; WARREN, Nov. Zool. ii.
- Urepione*, n. g., type *Hyperetis quadrilineata*, Wlk. ; WARREN, p. 158, t. c.
- Xandrames xanthomelanaria*, Mou-Pin, POUJADE, p. 309, Ann. Soc. ent. France, 1895, n. sp.
- Xenimpia*, n. g., *Semiiothisinae*, for *X. erosa*, n. sp., Congo ; WARREN, p. 135, Nov. Zool. ii.
- Xiridava rufinigra*, Cherra Punji, SWINHÖE, p. 296, Ann. Nat. Hist. xvi, n. sp.
- Xylolocha*, n. g., type *Azelina gabraria*, Wlk. ; WARREN, p. 158, Nov. Zool. ii.
- Zalissolepis*, n. g., for *Amaurinia subviolaria*, Gn. ; WARREN, p. 100, t. c.
- Zamarada pulverosa*, S. Africa, WARREN, p. 158, Nov. Zool. ii ; *Z. mini-maria*, Karachi, SWINHÖE, p. 293, Ann. Nat. Hist. xvi : n. spp.
- Zeuctoneura*, n. g., p. 100, near *Trygodes*, for *Z. geminata*, n. sp., Novo Friburgo, p. 101 ; WARREN, Nov. Zool. ii.
- Zonosoma orbicularia*, var. ; SNELLEN, p. 53, pl. 4b, fig. 4, Tijdschr. Ent. xxxviii.
- Zygoctenia*, n. g., *Ascotinae*, for *Z. cinerosa*, n. sp., Adonara ; WARREN, p. 128, Nov. Zool. ii.

PYRALIDÆ: incl. THYRIDIDÆ, &c.

- [Cf. DRUCE (298, 441), DYAR (309), HAMPSON (482, 484), HART (489), HUBBARD (535), HULST (538), PAGENSTECHER (841), RAGONOT (911), SNELLEN (1077), SWINHOE (1116, 1117), WARREN (1186).]
- Relationship of *Pyralidæ* and *Pterophoridae* from the larvæ; DYAR, Ent. News Philad. vi, pp. 38 & 100.
- The *Schenobiinæ* and *Crambinæ* completely classified, with lists of species, woodcuts with details of many genera, &c.; HAMPSON, P. Zool. Soc. London, 1895, pp. 897-974.
- Acridura metallica*, figure, pl. lxi, fig. 22, Biol. Centr.-Amer. Heter. ii.
- A. prochyta*, fig. 23, *dædula*, fig. 24, *A. ? hadriana*, fig. 25, Central America, DRUCE, p. 227, Biol. Centr.-Amer. Heter. ii, n. spp.
- Ædiodes ? unipunctalis*, Panama, DRUCE, p. 261, pl. lxii, fig. 26, *t. c. n. sp.*
- Agathodes monstralis*, figure, pl. lxii, fig. 5, Biol. Centr.-Amer. Heter. ii.
- A. caliginosalis*, Java, SNELLEN, p. 147, Tijdschr. Ent. xxxviii, n. sp.
- Agrotera marucalis*, pl. lxii, fig. 3, *calanticalis*, fig. 4, p. 237, *darsunalis*, fig. 6, p. 238, Central America, DRUCE, Biol. Centr.-Amer. Heter. ii, n. spp.
- Ambia magnificalis*, Cherra Punji, SWINHOE, p. 299, Ann. Nat. Hist. xvi; *A. leucostictalis*, Grenada, HAMPSON, p. 344, *t. c. : n. spp.*
- Amblypalspis olivierella*, habits, parasites, &c.; DECAUX, p. 210, Naturaliste, 1895.
- Amblyura proclea*, fig. 15, *cecropia*, fig. 16, pl. lix, p. 191, Mexico, DRUCE, Biol. Centr.-Amer. Heter. ii, n. spp.
- Ancylolomia uniformella*, Hydrabad, HAMPSON, p. 967, P. Zool. Soc. London, 1895, n. sp.
- Aphomia sociella*, habits; MERRIFIELD, p. 95, CHAPMAN, p. 96, Ent. Mag. 1895: common cocoons; BARRETT, p. 72, *t. c. : photograph to illustrate life-history*; BLACKBURN-MAZE, Ent. Rec. vi, pl. i, p. 76.
- Aphytoceros lybialis*, figure, pl. lx, fig. 29, Biol. Centr.-Amer. Heter. ii.
- A. senahuensis*, Guatemala, pl. lxi, fig. 1, p. 214, *id. t. c. n. sp.*
- Argyrostola*, n. g., *Schenobiinæ*, for *A. ruficostalis*, n. sp., Rio Janeiro; HAMPSON, p. 907, P. Zool. Soc. London, 1895.
- Asopia hampsonialis* (= *Herculia ignifualis*, Hamps.), p. 110, *subregalis*, p. 111, *divagalis*, p. 112, Java, SNELLEN, Tijdschr. Ent. xxxviii, n. spp.
- Atheropoda remusalis*, figure, pl. lxi, fig. 5, Biol. Centr.-Amer. Heter. ii.
- A. pontalis*, Central America, p. 218, pl. lxi, fig. 6, DRUCE, *t. c. n. sp.*
- Aulacophora fuscinervalis*, Cherra Punji, SWINHOE, p. 300, Ann. Nat. Hist. xvi, n. sp.
- Azamora penicillana*, figure, fig. 17, pl. lix, Biol. Centr.-Amer. Heter. ii.
- Aziba macropterana*, figure, pl. lix, fig. 8, Biol. Centr.-Amer. Heter. ii.
- Benta slossonii*, Florida, HULST, p. 53, Canad. Ent. xxvii, n. sp.
- Blepharomastix gigantalis*, pl. lxiii, fig. 5, *pulverulalis*, fig. 2, *datialis*, fig. 3, p. 269, *romalis*, fig. 4, *B. ? demantrialis*, fig. 6, *B. sagralis*, fig. 7, *coatepecensis*, fig. 8, p. 270, *crusalis*, fig. 9, p. 271, Central America, DRUCE, Biol. Centr.-Amer. Heter. ii, n. spp.

- Bocchoris trivitalis*, Shillong, SWINHOE, p. 302, Ann. Nat. Hist. xvi, n. sp.
- Boreophila cereralis*, figure, pl. lx, fig. 25, Biol. Centr.-Amer. Heter. ii.
- Bostra igneusta*, Shillong, SWINHOE, p. 300, Ann. Nat. Hist. xvi, n. sp.
- Botys*, application of the name, p. 121, *B. histricalis*, Wlk., referred to *Stenophyes*, p. 125; SNELLEN, Tijdschr. Ent. xxxviii.
- B. (Phlyctenia) murcialis*, Spain, RAGONOT, p. xxiii, Bull. Soc. ent. France, 1895; *B. icterialis*, p. 119, *fuscociliatis*, p. 122, *fuscinerualis*, p. 123, Java, SNELLEN, Tijdschr. Ent. xxxviii, n. spp.
- Brihaspa bisangulata*, Sikhim, *B. (Leptosteges) nigricostella*, Brazil, HAMPSON, p. 910, P. Zool. Soc. London, 1895, n. spp.
- Calamotropha orontella*, Akbès, RAGONOT, p. c, Bull. Soc. ent. France, 1895, n. sp.
- Carbacu prognealis*, Costa Rica, DRUCE, p. 235, pl. lxii, fig. 2, Biol. Centr.-Amer. Heter. ii, n. sp.
- Cataclysta æalis*, fig. 12, *divulsalis*, fig. 13, pl. lxiii, figures, *t. c.*
- C. premalis*, pl. lxiii, fig. 11, Mexico, DRUCE, p. 272, Biol. Centr.-Amer. Heter. ii; *C. trigonalis*, Shillong, SWINHOE, p. 304, Ann. Nat. Hist. xv; *C. axis*, Grenada, HAMPSON, p. 343, *op. cit.* xvi: n. spp.
- Catadupa splendens*, Panama, DRUCE, pl. lix, fig. 25, p. 194, Biol. Centr.-Amer. Heter. ii, n. sp.
- Cateremna vinaceella*, Akbès, RAGONOT, p. ci, Bull. Soc. ent. France, 1895, n. sp.
- Cavifrons simplex*, Colorado, WARREN, p. 474, Ann. Nat. Hist. xvi, n. sp.
- Cecidipta*: systematic position; SNELLEN, p. 109, Tijdschr. Ent. xxxviii.
- Chalcidoptera rufilinealis*, Cherra Punji, SWINHOE, p. 303, Ann. Nat. Hist. xvi, n. sp.
- Charltona laminata*, Burma, *aurantifascia*, Accra, HAMPSON, p. 970, P. Zool. Soc. London, 1895, n. spp.
- Chilo pulverosellus*, Akbès, RAGONOT, p. xcvi, Bull. Soc. ent. France, 1895; *C. vinosella*, Brit. Honduras, *incanellus*, *nigristigmellus*, Brazil, p. 955, *fuscidentalis*, Bengal, *xylinalis*, *purpurealis*, Argentina, *ignitatis*, p. 956, *obliquilineellus*, Brazil, *luniferalis*, Abyssinia, *ceylonica*, Ceylon, p. 957, HAMPSON, P. Zool. Soc. London 1895: n. spp.
- Cliniodes opalalis*, figure, pl. lxii, fig. 1, Biol. Centr.-Amer. Heter. ii.
- C. cyllarusalis*, Mexico, pl. xli, figg. 31 & 32, p. 235, DRUCE, *t. c.*; *C. paucilinealis*, Columbia, SNELLEN, p. 130, Tijdschr. Ent. xxxviii: n. spp.
- Clydonopteron pomponius*, Mexico, DRUCE, p. 193, pl. lix, fig. 24, Biol. Centr.-Amer. Heter. ii, n. sp.
- Cœnodomus hockingii* = (*Alippa anomala*, Auriv.); SNELLEN, p. 107, Tijdschr. Ent. xxxviii.
- Comaria ruptilinealis*, Khasia Hills; WARREN, p. 466, Ann. Nat. Hist. xvi, n. sp.
- Conchylodes salamisalis*, pl. lxii, fig. 19, p. 251, *C. ? sabatalis*, fig. 18, p. 252, Central America, DRUCE, Biol. Centr.-Amer. Heter. ii, n. spp.
- Condylorrhiza sublutalis*, Central America; DRUCE, p. 211, pl. lx, fig. 26, Biol. Centr.-Amer. Heter. ii.

- Conogethes semistrigalis*, Java, SNELLEN, p. 128, pl. v, figg. 6 & 7, Tijdschr. Ent. xxxviii, n. sp.
- Coptobasis möllingeri*, Java, SNELLEN, p. 152, pl. v, fig. 12, t. c., n. sp.
- Cotachena ? fenestralis*, Queensland, WARREN, p. 470, Ann. Nat. Hist. xvi, n. sp.
- Crambus chrysoporellus*, Grenada, HAMPSON, p. 349, Ann. Nat. Hist. xvi ;
C. albistrigellus, Bonin I., *violacentellus*, *aurantilinecellus*, *hemixanthellus*, Brazil, p. 927, *bizonellus*, Valparaiso, *fulvitinctellus*, S. Africa, p. 929, *falklandicellus*, Falkland Is., *straminellus*, Valparaiso, p. 930, *radicellus*, Patagonia, *fernandesellus*, Juan Fernandez, *diatraxellus*, Cayenne, p. 931, *griseitinctellus*, Petropolis, *anescentellus*, E. Africa, p. 933, *dileucellus*, Sarawak, *punctivenellus*, Ceylon, *duplicellus*, Tonkin, p. 934, *melanosticta*, *argenticilia*, E. India, *aurifimbriellus*, Tonkin, p. 937, *impurellus*, Afghanistan, *distictellus*, Brazil, *ochristrigellus*, E. India, p. 938, *delineatellus*, *multiradiellus*, *argentilinecellus*, Brazil, p. 939, HAMPSON, P. Zool. Soc. London, 1895 : n. spp.
- Culladia suffusella*, Madagascar, India, HAMPSON, p. 925, t. c. n. sp.
- Diatræa saccharalis*, synonymical note ; RAGONOT, p. cccxi, Bull. Soc. ent. France, 1895.
- D. canella*, Antilles, S. America, HAMPSON, p. 349, Ann. Nat. Hist. xvi, n. sp.
- Dioryctria brucei*, Colorado, HULST, p. 55, Canad. Ent. xxvii, n. sp.
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- Dolichosticha subveniialis*, Java, SNELLEN, p. 124, Tijdschr. Ent. xxxviii, n. sp.
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- Draconia peripheta*, fig. 12, *denticulata*, fig. 10, pl. lix, figures ; Biol. Centr.-Amer. Heter. ii.
- D. ? rusina*, Guatemala, DRUCE, p. 188, pl. lix, fig. 9, t. c. n. sp.
- Endotricha evidalis*, p. 112, pl. v, figg. 2 & 3, *suavalis*, p. 113, figg. 4 & 5, *approximalis*, p. 115, Java, SNELLEN, Tijdschr. Ent. xxxviii, n. spp.
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- Epichronistis dadalis*, pl. lxii, fig. 24, *E. ? cyclonalis*, fig. 25, Central America, DRUCE, p. 258, Biol. Centr.-Amer. Heter. ii, n. spp.
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- Episemnia ligatalis*, Mexico, DRUCE, p. 189, pl. lix, fig. 11, Biol. Centr.-Amer. Heter. ii, n. sp.
- Ercta dizialis*, p. 149, pl. vi, fig. 12, *pedicialis*, p. 151, fig. 11, Java, SNELLEN, Tijdschr. Ent. xxxviii, n. spp.

- Eriulus calivitta*, pl. lxi, fig. 19, *croceiceps*, fig. 20, figures; Biol. Centr.-Amer. Heter. ii.
- E. purpuralis*, Costa Rica, fig. 21, p. 226, DRUCE, *t. c.* n. sp.
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- Eschata xanthorhyncha*, p. 960, *xanthocera*, p. 961, Ceylon, HAMPSON, P. Zool. Soc. London, 1895, n. spp.
- Eudiotis exclusalis*, figure, pl. lxi, fig. 30; Biol. Centr.-Amer. Heter. ii.
- E. praxialis*, pl. lxi, fig. 28, p. 231, *cumalis*, fig. 27, *damalis*, fig. 29, p. 232, Central America, DRUCE, Biol. Centr.-Amer. Heter. ii, n. spp.
- Eudorina*, n. g., p. 116, near *Scoparia*, for *E. aurantiacalis*, p. 117, *brunnealis*, p. 118, *incrustalis*, p. 119, n. spp., Java; SNELLEN, Tijdschr. Ent. xxxviii.
- Eurhyarodes splendens*, Central America, DRUCE, p. 271, pl. lxiii, fig. 10, Biol. Centr.-Amer. Heter. ii, n. sp.
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- Galusa deera*, Mexico, pl. lx, fig. 1, *G. ? daulialis*, Panama, fig. 4, DRUCE, p. 195, Biol. Centr.-Amer. Heter. ii, n. spp.
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- Goossensia darabitalis*, Java, SNELLEN, p. 107, pl. v, fig. 1, Tijdschr. Ent. xxxviii, n. sp.
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- H. phlegetonalis*, Java, p. 155, pl. vi, figg. 9 & 10, *cenosalis*, Celebes, p. 157, SNELLEN, Tijdschr. Ent. xxxviii, n. spp.
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- Ledereria randalis*, Mexico, DRUCE, p. 250, pl. lxii, fig. 17, *t. c.* n. sp.
- Lepidoplaga*, n. g., *Pyraustina*, type *flavicinctalis*, Snell., and including *L. fulvidalis*, p. 475, *multidentalis*, *uniformis*, p. 476, n. spp., Khasia Hills ; WARREN, Ann. Nat. Hist. xvi.
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- Oligostigma crassicornalis*, figure, pl. vi, figg. 15 & 16, SNELLEN, Tijdschr. Ent. xxxviii.
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salis, fig. 6, *lævigata*, var., fig. 4, figured, pl. lix, *Biol. Centr.-Amer.*
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TORTRICIDÆ.

[Cf. BORGMAN (134), CONSTANT (247), FUCHS (407), HARVEY (491), RAGONOT (913), WALSHINGHAM (1181, 1182).]

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- Epitheetis*, n. g., *Gelechiidae*, for *lathyri*, &c. ; MEYRICK, p. 580, Handbook British Lep.
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[*Cf.* FUCHS (407), WALSINGHAM (1181).]

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(D.) *DIPTERA.*

[*Cf.* ALDRICH (14), ALESSANDRINI (15), BANKS (68), BECKER (80, 81), BEZZI (108, 109), BRAUER (138), BRAUER & BERGENSTAMM (139), BRUCE (150), BUCKTON (156), BÜSGEN (161), CHILD (201), COQUILLET (248-258), CORTI (259), COUCKE (262), EATON (320), GIGLIO-TOS (433, 434), GIRSCHNER (438), GRIFFINI (454), HART (489), HUDSON (537), JOHNSON (563, 564), KIEFFER (592, 601), KÜNCKEL (662), LIOY (702), MARCHAL (720-722), MARTEN (732), MEIJERE (754), MEUNIER (761), MIALL (766, 767), MIK (768-772), MIK & WACHTL (773), MOLLIARD (777), MÜLLER (795), OSTEN SACKEN (826-828), PANDELLÉ (843), RÜBSAAMEN (992-996), SCHMIDT (1011), SKUSE (1063), SNOW (1086-1091), SØRENSEN (1093), STEIN (1107), STROBL (1112), TOWNSEND (1136-1140, 1142), VINE (1174), WANDOLLECK (1183, 1184), WEBSTER (1208-1210), WILLISTON (1238-1245), WULF (441, 1246-1248).]

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- Arthrocerastis*, n. g. for a part of *Diplosis*, type *inulæ*, Lw. ; RÜBSAAMEN, p. 186, Ent. Nachr. xxi.
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- Anatella rufithorax*, p. 162, *nigriclava*, p. 163, Styria, STROBL, *t. c.* n. spp.
- Boletina pseudosciarina*, Styria, STROBL, p. 143, *t. c.* n. sp.
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- Table of genera, &c., list of species ; BAKER, Canad. Ent. xxvii, pp. 19, &c., &c.
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N. America, BAKER, *t. c.* ; *P. hirsutus*, p. 130, *bruneri*, *longispinus*,

p. 131, *montanus*, p. 132, N. America, BAKER, *t. c.* ; *P. inæqualis*,

N. America, BAKER, p. 163, *t. c.* : n. spp.

Typhlopsylla fraterna, *alpina*, *americana*, N. America, BAKER, Canad.

Ent. xxvii, p. 189, n. spp.

(E.) *RHYNCHOTA*.

HEMIPTERA-HETEROPTERA.

[Cf. ASHMEAD (42), BERG (92), BERGROTH (95-100), CARLINI (184), DUDGEON (300), GILLETTE & BAKER (436), GRIFFINI (455), HAGLUND (481), HORVATH (520-522), KARSCH (575, 577), KIRBY (604), KÜNCKEL (663), MARLATT (727), MARTIN (733), MEINERT (756), MONTANDON (778-783), NOUALHIER (809), OSBORN (825), PREUSSE (902), PUTON (906), PUTON & NOUALHIER (907), REUTER (954, 956, 957, 959, 960), RÜBSAAMEN (992), SCHMIDT (1011), SCUDDER (1033), THEOBALD (1124).]

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- Coptosoma erugatum*, Giuba, MONTANDON, p. 100, Ann. Mus. Genova, xxxv; *C. vicinum*, N. Australia, p. 413, *loriæ*, p. 415, *miscellum*, p. 417, *validiceps*, p. 418, *rubromaculatum*, p. 420, *frontatum*, p. 421, *terminale*, p. 423, New Guinea, *atratum*, N. Australia, *feberi*, N. Guinea, p. 425, MONTANDON, Ann. Mus. Genova, xxxiv; *C. solitarium*, p. 126, *tenasserimense*, p. 127, *caudatum*, p. 129, *erosum*, p. 131, *pulchellum*, p. 136, *obrosum*, p. 138, *ophthalmicum*, p. 140, *feanum*, p. 142, Burma, *lativinctum*, Philippines, p. 135, MONTANDON, Ann. Mus. Genova, xxxiv : n. spp.
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- S. pluniceps*, Caucasus, p. 129, *robustus*, Armenia, p. 150, HORVATH, *t. c.* n. spp.

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Tenosius ferrugineus, Gallaland, CARLINI, p. 112, Ann. Mus. Genova, xxxv, n. sp.
Zenkeria, n. g., *Petascelides*, for *Z. membranipicta*, n. sp., W. Africa ; KARSCH, p. 273, Ent. Nachr. xxi.

LYGÆIDÆ, PYRRHOCORIDÆ.

- Arocatus fallaciosus*, Aden, PUTON, p. 85, Rev. Ent. franc. xiv, n. sp.
Cenæus sanguinolentus, bifasciatus, p. 465, *plebeius*, p. 466, Cameroons, HAGLUND, Ofv. Ak. Forh. 1895, n. spp.
Clerada rufangula, W. Australia, BERGROTH, p. 295, P. Soc. Victoria, vii, n. sp.
Cligenes : synonymy, list of species ; BERGROTH, pp. 142 & 143, Rev. Ent. franc. xiv.
C. ornatus, Queensland, p. 143, *minutus*, N. America, *noualhieri*, p. 144, *picticollis*, p. 145, Brazil, BERGROTH, t. c. n. spp.
Cymus glandicolor, n. var. *marginatus* ; PUTON, p. 86, Rev. Ent. franc. xiv.
Dieuches flavipes, p. 459, Cameroons, *dispar*, Gaboon, p. 460, HAGLUND, Ofv. Ak. Forh. 1895, n. spp.
Dysdercus argillaceus, Queensland, BERGROTH, p. 293, P. Soc. Victoria, vii, n. sp.
Eremocoris obscuratus, Roumania, MONTANDON (779), p. 2, n. sp.
Geocoris erythrocephalus, n. var. *litoreus* ; HORVATH, p. 157, Rev. Ent. franc. xiv.
G. provisus, Victoria, BERGROTH, p. 294, P. Soc. Victoria, vii, n. sp.
Germalus victoriae, Australia, BERGROTH, p. 294, P. Soc. Victoria, vii, n. sp.
Heterogaster nasutus, Algeria, HORVATH, p. 157, Rev. Ent. franc. xiv, n. sp.
Ischnocoridella, n. g., *Blissides*, for *I. picipes*, n. sp., Gaboon ; HAGLUND, p. 458, Ofv. Ak. Forh. 1895.
Lethæus foreli, Algeria, HORVATH, p. 159, Rev. Ent. franc. xiv, n. sp.
Nysius minutus, Colorado, UHLER, p. 22, Bull. Colorado Exp. Stat. xxxi ; *N. puberulus*, Tierra del Fuego, BERG, p. 197, An. Mus. Buenos Aires, iv : n. spp.
Pachymerus crudelis, Gaboon, HAGLUND, p. 462, Ofv. Ak. Forh. 1895, n. sp.
Paranysius, n. g., p. 156, *Lygæaria*, for *P. fraterculus*, n. sp., Russian Armenia, p. 157 ; HORVATH, Rev. Ent. franc. xiv.
Pionosomus : table of species ; HORVATH, pp. 39-41, Termes. Fuzetek, xviii.
P. opacellus, Sarepta, persimilis, Margelan, p. 40, *depressus*, Italy, *fuscipes*, Tauria, p. 41, HORVATH, t. c. n. spp.
Ptochiomera clavigera, Colorado, UHLER, p. 24, Bull. Colorado Exp. Stat. xxxi, n. sp.
Pyrrhocoris apterus, n. var. *carbonarius* ; HORVATH, p. 159, Rev. Ent. franc. xiv.

- Rhyparochromus maximus*, Akbès, PUTON, p. 173, Rev. Ent. franc. xiv ; *R. tricolor*, Asia Minor, HORVATH, p. 158, t. c.; *R. floralis*, Colorado, UHLER, p. 26, Bull. Colorado Exp. Stat. xxxi : n. spp.
Sericoris acromelanthes, description ; HAGLUND, p. 464, Ofv. Ak. Forh. 1895.
Synerotus, n. g., p. 292, for *S. circumscriptus*, n. sp., Queensland, p. 293 ; BERGROTH, P. Soc. Victoria, vii.
Trisecus, n. g., p. 296, *Heterogastrinæ*, for *T. pictus*, n. sp., p. 297, Tasmania ; BERGROTH, P. Soc. Victoria, vii.

TINGITIDÆ.

- Agrammodes*, n. g., synthetic, for *A. costatus*, n. sp., Colorado ; UHLER, p. 56, Bull. Colorado Exp. Stat. xxxi.
Cutoplatus distinctus, *dacicus*, Roumania ; MONTANDON (779), p. 3, n. spp.
Dictyonota (Eliua) fuentei, Spain ; PUTON, p. 86, Rev. Ent. franc. xiv, n. sp.
Laccometopus clavicornis, figure, pl. xv, fig. 8, male characters, pl. xvi, fig. 39, galls ; RÜBSAAMEN, Bull. Soc. Moscou, 1895, pp. 429, &c.
Monanthia putoni, Roumania ; MONTANDON (779), p. 4, n. sp.
Phyllonochila mayri, Cameroons, HAGLUND, p. 471, Ofv. Ak. Forh. 1895, n. sp.

ARADIDÆ.

- Aneurus cetratus*, New Guinea, BERGROTH, p. 112, Ann. Mus. Genova, xxxiv, n. sp.
Brachyrrhynchus abyssinicus, Abyssinia, BERGROTH, p. 163, Wien. ent. Zeit. 1895 ; *B. lorix*, New Guinea, BERGROTH, p. 111, Ann. Mus. Genova, xxxiv : n. spp.
Carventus mexicanus, San Marcos, BERGROTH, p. 167, Wien. ent. Zeit. 1895, n. sp.
Cinyphus armillatus, Central America, BERGROTH, p. 167, t. c. n. sp.
Neuroctenus uhleri, p. 170, *papyrinus*, *niger*, p. 171, Mexico, BERGROTH, t. c. n. spp.

HYDROMETRIDÆ.

- Sketch of natural history ; MIALL (767), chap. x.
Aëophilus bonnairii, habits ; KEYS, Ent. Mag. 1895, p. 136.
Ilalobates wüllerstorffi, *germanus*, *streetfieldanus*, sp. ? noticed ; GRIFFINI, Boll. Mus. Torino, x, No. 213.
Hydrometra stagnarum, habits ; ARROW, p. 201, Sci. Gossip, ii.
Limnotrechus productus, Colorado, UHLER, p. 61, Bull. Colorado Exp. Stat. xxxi, n. sp.
Mesovelina vittigera, Egypt ; HORVATH, p. 160, Rev. Ent. franc. xiv, n. sp.
Microvelina americana, Colorado, UHLER, p. 61, Bull. Colorado Exp. Stat. xxxi, n. sp.

- Rhagovelia aeneipes*, Cameroons, HAGLUND, p. 476, Ofv. Ak. Forh. 1895, n. sp.
Rheumatobates bergrothi, Grenada, W. Indies, MEINERT, p. 6, pls. i & ii, Ent. Meddel. v, n. sp.
Tenagogonus tristriatus, bottegoi, Giuba, CARLINI, p. 121, Ann. Mus. Genova, xxxv, n. spp.
Velia currens, macropterous form; GIARD, p. cccxxvi, Bull. Soc. ent. France, 1895.
Veliomorpha, n. g., *Veliidae*, for *V. maculata*, n. sp., Gallaland; CARLINI, p. 120, Ann. Mus. Genova, xxxv.

REDUVIIDÆ, incl. EMESIDÆ.

- Archilochus bispinosus*, Giuba, CARLINI, p. 115, Ann. Mus. Genova, xxxv, n. sp.
Chaetacantha, n. g., p. 146, near *Vesulus*, for *C. excellens*, n. sp., Madagascar, p. 147, BERGROTH, Rev. Ent. franc. xiv.
Chondrolophus, n. g., near *Vesulus*, for *C. mucescens*, p. 148, *tersus*, p. 149, n. spp., Madagascar; BERGROTH, Rev. Ent. franc. xiv.
Cimbus chalybaeus, Cameroons, HAGLUND, p. 474, Ofv. Ak. Forh. 1895, n. sp.
Ectrichodia andersoni, S. Arabia, KIRBY, p. 284, J. Linn. Soc. xxv, n. sp.
Gardena sjostedti, Cameroons, HAGLUND, p. 476, Ofv. Ak. Forh. 1895, n. sp.
Harpactor lineaticornis, Tangier, REUTER, p. 116, Wien. ent. Zeit. 1895; *H. fasciculatus*, Madagascar, BERGROTH, p. 151, Rev. Ent. franc. xiv: n. spp.
Havinthus obscurus, rufovarius, W. Australia, BERGROTH, p. 299, P. Soc. Victoria, vii, n. spp.
Margusus conifer, Madagascar, BERGROTH, p. 146, Rev. Ent. franc. xiv, n. sp.
Microcarenus, n. g., p. 165, for *M. villosus, clarus*, n. spp., W. Africa, p. 166, BERGROTH, Wien. ent. Zeit. 1895.
Nebriscus, n. g., p. 300, *Ectrichodiinae*, for *N. pupus*, n. sp., p. 301, Victoria; BERGROTH, P. Soc. Victoria, vii.
Onccephalus arcticeps, Akbès, NOUALHIER, p. 173, Rev. Ent. franc. xiv, n. sp.
Phonoclonus caesar, Cameroons, HAGLUND, p. 472, Ofv. Ak. Forh. 1895, n. sp.
Phorticus velutinus, Akbès, PUTON, p. 174, Rev. Ent. franc. xiv, n. sp.
Pygolampis frenchi, Victoria, BERGROTH, p. 301, P. Soc. Victoria, vii, n. sp.
Physorhynchus intermedius, W. Africa, HAGLUND, p. 474, Ofv. Ak. Forh. 1895, n. sp.
Ploiaria: characters of the species; NOUALHIER, pp. 166–168, pl. i, Rev. Ent. franc. xiv.
P. gutturalis, Algeria, *canariensis*, Canary Is., *abrupta*, N. Africa, p. 168, *putoni*, E. Pyrenees, p. 169, NOUALHIER, t. c. n. spp.

- Pristhesancus grassator*, Queensland, BERGROTH, p. 298, P. Soc. Victoria, vii, n. sp.
Reduvius (Sphedanolesthes) horridus, zonogaster, Giuba, CARLINI, p. 116, Ann. Mus. Genova, xxxv, n. spp.
Velinus perfuga, rotifer, Madagascar, BERGROTH, p. 150, Rev. Ent. franc. xiv, n. spp.

ANTHOCORIDÆ, SALDIDÆ.

- Anthocoris nemorum* and *confusus*, injurious to hops; THEOBALD (1124).
Athenidea sinuaticollis, Baeza, REUTER, p. 171, Ent. Mag. 1895, n. sp.
Lasiellidea, n. g., for *L. glaberrima*, n. sp., Victoria; REUTER, p. 172, Ent. Mag. 1895.
Lasiochilus (Dilasia) assiniensis, W. Africa, REUTER, p. 170, t. c. [*L.*, n. spp., misplaced in *Ceratocombidæ* last year. Zool. Rec., *Ins.*, xxxi, p. 356]: n. sp.
Oplobates, n. g., *Lyctocoraria*, for *O. femoralis*, n. sp., Victoria; REUTER, p. 171, Ent. Mag. 1895.
Salda muelleri and allies, characters; SAUNDERS, p. 236, Ent. Mag. 1895.
S. athiopica, Gallaland, CARLINI, p. 119, Ann. Mus. Genova, xxxv, n. sp.
Tennostethus bucucescensis, Roumania, MONTANDON (779), p. 4, n. sp.

CAPSIDÆ.

- Acetropis atropis*, Algeria, REUTER, p. 131, Rev. Ent. franc. xiv, n. sp.
Acorrhinium, n. g., p. 175, near *Systellonotus*, for *A. conspersum*, n. sp., Akbès, p. 176; NOUALHIER, Rev. Ent. franc. xiv.
Agalliasites apitatus, p. 53, *fumidus*, p. 54, *signatus*, p. 55, Colorado, UHLER, Bull. Colorado Exp. Stat. xxxi, n. spp.
Allodapus montandoni, Moldavia, REUTER, p. 115, Wien. ent. Zeit. 1895, n. sp.
Calocoris fulvo-maculatus, destructive to hops; THEOBALD (1124).
C. tinctus, Colorado, UHLER, p. 34, Bull. Colorado Exp. Stat. xxxi, n. sp.
Calloedemas, n. g., near *Calocoris*, for *C. levis*, n. sp., Colorado; UHLER, p. 33, Bull. Colorado Exp. Stat. xxxi.
Camptobrochis robustus, Colorado, UHLER, p. 39, t. c. n. sp.
Capsus laniarius eating *Aphididæ*; DOUGLAS, Ent. Mag. 1895, p. 238.
Cyllocoris persimilis, Syria, PUTON, p. 87, Rev. Ent. franc. xiv, n. sp.
Cyrtopeltis tenuis, Madeira, REUTER, p. 139, t. c. n. sp.
Cyrtorrhinus marginatus, Colorado, UHLER, p. 43, Bull. Colorado Exp. Stat. xxxi, n. sp.
Diaphnidia, n. g., near *Actorrhinus*, for *D. debilis*, p. 43, *pellucida*, p. 44, n. spp., Colorado; UHLER, t. c.
Dicyphus vestitus, Colorado, UHLER, p. 46, t. c. n. sp.
Diommatus angulatus, Colorado, UHLER, p. 44, t. c. n. sp.
Ecritotarsus scabrosus, Colorado, UHLER, p. 40, t. c. n. sp.
Eremobiellus, n. g., near *Phytocoris*, p. 135, for *E. sinuosus*, n. sp., Algeria; REUTER, p. 136, Rev. Ent. franc. xiv.

- Fulvius* (= *Teratodella*, Reut., *Pamerocoris*, Uhler, *Camelocapsus*, Reut.), monograph ; REUTER, pp. 129–154, Ent. Tidskr. xvi.
- F. brevicornis*, Rouen (? imported from Senegal), p. 138, *heinemanni*, N. America, p. 142 (altered, p. 254, to *heidemanni*), *dubius*, Venezuela, p. 147, *albifrons*, Aden, p. 151, *clavicornis*, Australia, p. 152, REUTER, *t. c. n. spp.*
- Globiceps angustata*, Colorado, UHLER, p. 42, Bull. Colorado Exp. Stat. xxxi, n. sp.
- Hadronema picta*, Colorado, UHLER, p. 31, *t. c. n. sp.*
- Helopeltis theivora*, habits, oviposition, eggs ; DUDGEON, pp. 33–38, Indian Mus. Notes, iii, No. 5.
- Hypsitylus punctipes*, Oran, REUTER, p. 140, Rev. Ent. franc. xiv, n. sp.
- Ithacora viridis*, Colorado, UHLER, p. 41, Bull. Colorado Exp. Stat. xxxi, n. sp.
- Ischnosceliicoris rubrinervis*, ♀ ; REUTER, p. 136, Rev. Ent. franc. xiv.
- Labops setosus*, Siberia, REUTER, p. 81, Hem. Gymn. iv [omitted from Zool. Rec. xxxi] ; n. sp.
- Lamocoris strigifrons*, Tunis, REUTER, p. 137, *t. c. n. sp.*
- Linocorocoris cariniventris*, amended description ; HAGLUND, Ofv. Ak. Forh. 1895.
- Liocoris tripustulatus*, n. var. *pallens* ; NOUALHIER, p. 175, Rev. Ent. franc. xiv.
- Lopidea nigridia*, Colorado, UHLER, p. 30, Bull. Colorado Exp. Stat. xxxi, n. sp.
- Lygus insularis*, Madeira, REUTER, p. 137, Rev. Ent. franc. xiv ; *L. guttatipes*, *plagiatus*, Colorado, UHLER, p. 35, Bull. Colorado Exp. Stat. xxxi : n. spp.
- Macrotylus affiguratus*, Colorado, UHLER, p. 50, *t. c. n. sp.*
- Mauroductylus angulatus*, *consors*, Colorado, UHLER, p. 53, *t. c. n. spp.*
- Neoborops*, n. g. near *Lygus*, for *N. vigilax*, n. sp., Colorado ; UHLER, p. 36, *t. c.*
- Neoborus rubeculus*, Colorado, UHLER, p. 37, *t. c. n. sp.*
- Odoniella*, n. g., for *O. reuteri*, n. sp., Cameroons ; HAGLUND, p. 468, Ofv. Ak. Forh. 1895.
- Oncotylus longipennis*, p. 48, *reperitus*, *sericatus*, p. 49, Colorado, UHLER, Bull. Colorado Exp. Stat. xxxi, n. spp.
- Orectoderus longicollis*, Colorado, UHLER, p. 47, *t. c. n. sp.*
- Orthocephalus* (*Dimorphocoris*) *tristis*, ♂, PUTON, p. 91, Rev. Ent. franc. xiv.
- O. sefrensis*, Algeria, REUTER, p. 138, Rev. Ent. franc. xiv, n. sp.
- Orthotylus viridicatus*, Colorado, UHLER, p. 48, Bull. Colorado Exp. Stat. xxxi, n. sp.
- Phytocoris martini*, Bou-Saada, p. 133, *pici*, p. 132, *pilipes*, p. 134, Tunis, REUTER, Rev. Ent. franc. xiv ; *P. interspersus*, Colorado, UHLER, p. 32, Bull. Colorado Exp. Stat. xxxi, : n. spp.
- Piezocranum corvixum*, Syria, PUTON, p. 87, Rev. Ent. franc. xiv, n. sp.
- Pilophorus gracilis*, Colorado, UHLER, p. 42, Bull. Colorado Exp. Stat. xxxi, n. sp.

- Plagiognathus vaulogeri*, Algeria, REUTER, p. 141, Rev. Ent. franc. xiv ;
P. annulatus, fraternus, p. 51, *politus*, p. 52, Colorado, UHLER, Bull.
 Colorado Exp. Stat. xxxi : n. spp.
Psallus brevicornis, Tunis, REUTER, p. 140, Rev. Ent. franc. xiv, n. sp.
Resthenia fuegiana, Tierra del Fuego, BERG, p. 200, An. Mus. Buenos
 Aires, iv, n. sp.
Sahlbergella, n. g., for *S. singularis*, n. sp., Congo ; HAGLUND, p. 469,
 Ofv. Ak. Forh. 1895.
Sthenarus rubidus, Colorado, UHLER, p. 41, Bull. Colorado Exp. Stat.
 xxxi, n. sp.
Siphrosoma robusta, Colorado, UHLER, p. 45, t. c. n. sp.
Teratocoris longicornis, Colorado, UHLER, p. 29, t. c. n. sp.
Tuponia subnitida, Colorado, UHLER, p. 45, t. c. n. sp.

HYDROCORISÆ.

- Sketch of natural history ; MIALL (767), chap. x.
 Manner in which the males participate with the female during oviposi-
 tion ; SCHMIDT, pp. 38-44, SB. Ges. naturf. Berlin, 1895.
 SCHMIDT's note on the oviposition of aquatic bugs on the backs of others,
 summary in Ent. Nachr. xxi, p. 206.
Aphelocheirus breviceps, Tiflis, HORVATH, p. 160, Rev. Ent. franc. xiv, n. sp.
Belostoma boutareli, Cochin China, p. 471, cut, p. 477, fig. 1, MONTANDON,
 Ann. Soc. ent. Belgique, 1895, n. sp.
Corixa : the discoverer of its stridulation ; NICHOLS, Irish Natural. iv,
 p. 79.
C. expleta, Colorado, UHLER, p. 63, Bull. Colorado Exp. Stat. xxxi, n. sp.
Macrocoris angusticeps, Cameroons, HAGLUND, p. 477, Ofv. Ak. Forh. 1895,
 n. sp.
Nepa : false stigmata ; MARTIN (733).
N. ampliata, Gaboon, p. 473, cut, p. 477, fig. 4, *dilatata*, Niam-Niam, p. 474,
 fig. 5, *depressa*, Congo, p. 475, MONTANDON, Ann. Soc. ent. Belgique,
 1895, n. spp.
Nepoidea, n. g., between *Nepa* and *Ranatra*, for *N. volxemi*, n. sp., Mexico,
 cut, fig. 6 ; MONTANDON, p. 476, Ann. Soc. ent. Belgique, 1895.
Sigara pusilla, Hungary, *vitticeps*, Bosnia, HORVATH, p. 161, Rev. Ent.
 franc. xiv, n. sp.

HEMIPTERA-HOMOPTERA.

- [Cf. BAKER (63), BUCKTON (157), DISTANT (291), DUZEE (306), FOWLER
 (441), GERSTAECKER (423), GILLETTE (435), GILLETTE & BAKER
 (436), GORING (440), GRIFFINI (452), HORVATH (522), KARSCH
 (576), LANDER (670), LATASSE (676), LINTNER (701), LOVE (703),
 PUTON (906), PUTON & NOUALHIER (907), SCUDDER (1033), UHLER
 (1153), WILCOX (1236) : also *Aphididae*, p. 361, and *Coccidae*, p. 362.]
Homoptera of Schleswig-Holstein ; WUSTNEI, pp. 267-279, Schr. Ver.
 Schleswig-Holstein, x.
 Fossil tertiary *Homoptera*, see SCUDDER, Palæontology, p. 113.

CICADIDÆ.

- Mode of capturing *Cicadas*; LATASTE, p. clxxxii, Bull. Soc. ent. France, 1895, and p. cccxcix, *t. c.*; LATASTE, pp. 157 & 158, Feuille Natural. xxv, and Act. Soc. Chili, v, p. 3. Mode of attracting *Cicada*; nature of insect's perception; GIARD (427).
- Mode of sound production; SØRENSEN (1093) pp. 70-76.
- Spermatogenesis of *Cicada tibicen*; WILCOX (1236).
- Cicada septendecim*, habits; LANDER, J. N. York Ent. Soc. iii, pp. 33-38, pl. ii: natural history notes; LOVE, pp. 37-46, pl. xlix, J. N. York Micr. Soc. xi: emergence from pupa; LINTNER, p. 253, P. Amer. Ass. xliii.
- Proarna squamigera*, St. Vincent, UHLER, p. 56, P. Zool. Soc. London, 1895, n. sp.

FULGORIDÆ.

- Suggestion that luminosity may be due to micro-organisms; DISTANT (291).
- Notes on African *Eurybrachides*; KARSCH, pp. 209-217, Ent. Nachr. xxi.
- Achilus (Myconus?) dulcis*, Peru, GERSTAECKER, p. 47, Mt. Ver. Vorpomm. xxvii, n. sp.
- Amblycratus*, n. g., p. 64, for *A. pallidus*, n. sp., St. Vincent, p. 65; UHLER, P. Zool. Soc. London, 1895.
- Amychodes cœruleus*, Usambara, KARSCH, p. 214, Ent. Nachr. xxi, n. sp.
- Anecephora sumptuosa*, W. Africa, p. 6, *militaris*, p. 8, *hilaris*, *cruenta*, p. 9, E. Africa, GERSTAECKER, Mt. Ver. Vorpomm. xxvii, n. spp.
- Aspidonitys casta*, p. 215, *trita*, p. 216, Cameroons, KARSCH, Ent. Nachr. xxi, n. spp.
- Atracis tabida*, p. 34, *nodosa*, p. 35, Sumatra, GERSTAECKER, Mt. Ver. Vorpomm. xxvii, n. spp.
- Catonia*, n. g., near *Plectoderes*, for *C. intricata*, n. sp., St. Vincent; UHLER, p. 61, P. Zool. Soc. London, 1895.
- Cenchrea exquisita*, St. Vincent, UHLER, p. 69, *t. c.* n. sp.
- Cheiloceps*, n. g., for *C. musca*, n. sp., St. Vincent; UHLER, p. 68, *t. c.*
- Cionoderus*, n. g., for *C. lineatus*, n. sp., St. Vincent; UHLER, p. 66, *t. c.*
- Cotyleceps*, n. g., p. 63, for *C. decorata*, n. sp., St. Vincent, p. 64, UHLER, *t. c.*
- Cubana*, n. g., for *C. tortrix*, p. 62, *irrorata*, p. 63, n. spp., St. Vincent; UHLER, *t. c.*
- Dictyophara jocosus*, p. 13, *figurata*, p. 14, W. Africa, GERSTAECKER, Mt. Ver. Vorpomm. xxvii; *D. psittacina*, Java, *pugnax*, Sumatra, p. 28, GERSTAECKER, *t. c.*; *D. emarginata*, St. Vincent, UHLER, p. 58, P. Zool. Soc. London, 1895; *D. callipepla*, Peru, GERSTAECKER, p. 44, Mt. Ver. Vorpomm. xxvii: n. spp.
- Dorysarthrus*, n. g., *Fulgorides*, for *D. mobilicornis*, n. sp., Jerusalem; PUTON, p. 88, Rev. Ent. franc. xiv.
- Encephora prasina*, New Granada, GERSTAECKER, p. 37, Mt. Ver. Vorpomm. xxvii, n. sp.

- Enhydria cicadina*, Bahia, GERSTAECKER, p. 38, *t. c. n. sp.*
- Epacria*, n. g., p. 16, near *Tropiduchus*, for *E. reticulata*, n. sp., Cameroons, p. 17; GERSTAECKER, *t. c.*
- Epteryx*, n. g., near *Tropiduchus*, for *E. plebeia*, n. sp., Java; GERSTAECKER, p. 31, *t. c.*
- Euphria imperatoria*, Borneo, p. 20, *satrapa*, Java, p. 21, GERSTAECKER, *t. c. n. spp.*
- Flatoides dealbatus*, habits, pp. 94-97, Bull. Mus. Paris, i.
- Fulgora (Hotinus) exsanguis*, Java, GERSTAECKER, p. 18, Mt. Ver. Vorpomm. xxvii, n. sp.
- Haplacha viridula*, Sicily, HORVATH, p. 162, Rev. Ent. franc. xiv, n. sp.
- Holodictya*, n. g., p. 10, near *Polydictya*, for *H. pudica*, p. 11, *porphyrea*, p. 12, n. spp., W. Africa; GERSTAECKER, Mt. Ver. Vorpomm. xxvii.
- Leptoprora*, n. g., p. 43, near *Dictyophora*, for *L. stratiotes*, n. sp., Bahia, p. 44; GERSTAECKER, *t. c.*
- Messena somnolenta*, p. 32, *M. ? paradoxa*, p. 33, Java, GERSTAECKER, *t. c. n. spp.*
- Metanira danaë*, Queensland, GERSTAECKER, p. 24, *t. c. n. sp.*
- Mycterodus anaticeps*, Syria, PUTON, p. 89, Rev. Ent. franc. xiv, n. sp.
- Nogodina fenestrata*, Chiriqui, p. 46, *pellucida*, Peru, p. 47, GERSTAECKER, Mt. Ver. Vorpomm. xxvii, n. spp.
- Ormenis contaminata*, St. Vincent, UHLER, p. 71, P. Zool. Soc. London, 1895, n. sp.
- Paropioxys gloriosus*, p. 212, *magnificus*, p. 213, Tropical Africa, KARSCH, Ent. Nachr. xxi, n. spp.
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Toumeyella, n. subg. of *Lecanium* ; COCKERELL, p. 2, Psyche, vii, Supp. i.

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- Hæmatopinus vitula*, egg ; HARVEY, p. 251, cut, Psyche, vii.

(F.) *NEUROPTERA.*

Fossil, carboniferous, *Neuropteroidea*; SCUDDER (1032).

TRICHOPTERA.

[*Cf.* BANKS (67), KLAPÁLEK (605, 606), MIALL (767), MARTIN (738), RIS (970).]

Account of the family; MIALL (767) chap. v.

Sketch of the family; SHARP (1055) chap. xxi.

Synopsis of *Leptocerines* of France; MARTIN (738).

Modes of connecting hind with front wings; KELLOGG, pp. 715-717, *Amer. Natural.* xxix. Structure of the scale-hairs; KELLOGG, *l. c.* Structure of hairs on wings; SPULER, p. 540, *Zool. Jahrb. Anat.* viii.

Arctecia concentrica, Zett., *nec auct.* = (*dualis*, MacLach.); MACLACHLAN, p. 140, *Ent. Mag.* 1895.

Brachycentrus montanus, sexes described; RIS, p. 239, *Mt. Schweiz. ent. Ges.* ix.

Hydroptila rheni, Switzerland, RIS, p. 241, *Mt. Schweiz. ent. Ges.* ix, n. sp.

Orthotrichia tetensii, notes and figures; KLAPÁLEK, No. xliii, pp. 2-5, pl. xv, *SB. Bohmisch. Ges.* 1894.

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O. tristella, Bohemia, KLAPÁLEK, p. 168, *Ent. Mag.* 1895, n. sp.

Philopotamus americanus, New York, BANKS, p. 316, *Tr. Amer. ent. Soc.* xxii, n. sp.

Rhyacophila pacifica, Washington, BANKS, p. 316, *t. c.* n. sp.

Setodes avara, Canada, BANKS, p. 316, *t. c.* n. sp.

Stenophylax permistus, n. n. for *S. concentricus*, auct.; MACLACHLAN, p. 139, *Ent. Mag.* 1895.

NEUROPTERA-PLANIPENNIA.

[*Cf.* BANKS (66, 67), GRIFFINI (453), LABOULBÈNE (667), MIALL (767), VINE (1174).]

Sketch of the suborder and its groups; SHARP (1055) chap. xx.

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Sialis lutarius, life-history; MIALL (767) chap. vi.

Raphidia australis, Lower California, BANKS, p. 515, *P. Calif. Ac.* v, n. sp.

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Mode of uniting wings ; KELLOGG, p. 718, Amer. Natural. xxix.

Panorpa communis, var. from Rhenish Prussia noticed ; MACLACHLAN, p. 110, Ent. Mag. 1895. Characters of N. American *Panorpa* ; BANKS, p. 316, Tr. Amer. ent. Soc. xxii.

P. canadensis, affinis, N. America, BANKS, p. 315, *t. c.* n. spp.

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Ant-lion larva in a spider's web ; RYVES, p. 152, J. Bombay Soc. x.

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Ulula bicolor, Lower California, BANKS, p. 521, P. Calif. Ac. v, n. sp.

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Nemoptera (Croce) baudii, Cyprus, GRIFFINI, Boll. Mus. Torino, x, No. 214, n. sp.

Mantispa syriaca, eggs, oviposition ; LABOULBÈNE, pl. lxiii, Bull. Soc. ent. France, 1895.

Hemerobiidæ.

Anatomy and habits of the Aphidivorous *Neuroptera* ; VINE, Int. J. Micr. (3) v, pp. 254-267, 395-408, pls. xii, xiii, xviii & xix.

Megalomus mæstus, New Mexico, BANKS, p. 314, Tr. Amer. ent. Soc. xxii, n. sp.

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Nothochrysa capitata, peculiar structure in ♀ ; MACLACHLAN, Ent. Mag. 1895, p. 121. *N.* (sub *Chrysopa*) *virginica*, Fitch = (*phantasma*, McGilliv.); BANKS, p. 315, Tr. Amer. ent. Soc. xxii.

Coniopteryx fitchi, Colorado, BANKS, p. 315, Tr. Amer. ent. Soc. xxii, n. sp.

PSEUDO-NEUROPTERA.

MALLOPHAGA.

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Physostronum longitarsatum, Transvaal, from *Lamprotornis* ; PIAGET, p. 101, Tijdschr. Ent. xxxviii.

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EMBIIDÆ, TERMITIDÆ.

The family *Embiidæ* discussed; SHARP (1055) pp. 351-355.

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Sketch of the *Termitidæ*; SHARP (1055) chap. xvi.

Replacement of a king and queen; SHARP, P. ent. Soc. London, 1895, p. xx: great number of kings and queens in a colony of *Eutermes morio*; RILEY, l. c.

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[*Cf.* BANKS (67), MACLACHLAN (718).]

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[*Cf.* KELLOGG (585), PEYTOUREAU (862), VAYSSIÈRE (1163).]

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Ephemeridæ in brackish water; EATON, p. 144, Ent. Mag. 1895.

Euthyplocia sikorui, Madagascar, VAYSSIÈRE, p. 296, pl. v, Ann. Soc. ent. France, 1895, n. sp.

ODONATA.

[Cf. BORDAS (130), CALVERT (176, 177, 178), COATS (211), KARSCH (578), KEL LICOTT (580, 581), MAC LACHLAN (717), MARTIN (737, 739), MORSE (789), NUNNEY (811), PROVANCHER (905).]

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Odonata of the Seychelles; MARTIN (739).

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The *Odonata* of N. York State; CALVERT (176).

Anax maritimus, Madeleine Is. [Canada], PROVANCHER, Natural. Canad. xxii, p. 79, n. sp.

Archilestes californica, California, MAC LACHLAN, p. 20, Ann. Nat. Hist. xvi, n. sp.

Argia agrioides (Selys, MS.), Lower California, CALVERT, p. 476, pl. xv, fig. 14, P. Calif. Ac. (2) iv, n. sp.

Aeschna grandis and *Libellula depressa*, structure of male copulatory organs; PEYTOUREAU, pp. 112 & 113, Act. Soc. Bordeaux, xlvi.

Æ. californica (Hag. MS.), California, CALVERT, p. 504, pl. xv, figg. 19, 20, & 23, P. Calif. Ac. (2) iv, n. sp.

Brachytron pratense, early stages; LUCAS, p. 272, Sci. Gossip, i, cut.

Cannacria furcata, *batesii*, synonymy queried; CALVERT, p. 551, P. Calif. Ac. (2) iv.

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Erythromma conditum, variation of venation; MORSE, p. 211, Psyche, vii.

- Gomphus vulgatissimus*, and *Cordulia aenea*, emergence of imago; MARTIN, pp. 141 & 142, Feuille Natural. xxv. *G. spiniceps*, characters; KEL-LICOTT, p. 209, J. Cincinnati Soc. xvii.
- Ichnura perparva* = (*defixa*, Selys), p. 494, *ramburii* = (*defixum*, Hag.), p. 497; CALVERT, P. Calif. Ac. (2) iv.
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- Lestes vigilax*, *inequalis*, characters, habits; KELLICOTT, pp. 200-202, J. Cincinnati Soc. xvii.
- L. albicauda*, New Guinea, p. 23, *tridens*, Delagoa Bay, p. 24, *simulatrix*, p. 25, *unicolor*, p. 27, Madagascar, MACLACHLAN, Ann. Nat. Hist. xvi, n. spp.
- Libellula lugubris* (Ehrenb.), Dongola, KARSCH, p. 199, Ent. Nachr. xxi, n. sp.
- Macrothemis inequinguis*, Lower California, CALVERT, p. 533, pl. xvi, figg. 40-45, P. Calif. Ac. (2) iv, n. sp.
- Nehalennia gracilis*, Massachusetts, MORSE, p. 274, Psyche, vii, n. sp.
- Opogastera*, n. g., for *Libellula lugubris* (*vide supra*); KARSCH, Ent. Nachr. xxi, p. 202.
- Ophiogomphus aspersus*, N. America, MORSE, p. 209, Psyche, vii, n. sp.
- Orolestes*, n. g., p. 21, for *O. selysi*, n. sp., Darjiling, p. 22; MACLACHLAN, Ann. Nat. Hist. xvi.
- Ortholestes clara* and *abbotti* noticed; MACLACHLAN, p. 19, t. c.
- Pyrrhosoma minium*, oviposition; MACLACHLAN, p. 180, Ent. Mag. 1895.
- Tetracanthägyna degorsi*, Borneo, MARTIN, p. cccxciii, Bull. Soc. ent. France, 1895, n. sp.
- Tetragoneuria indistincta*, N. America, MORSE, p. 210, Psyche, vii, n. sp.
- Trithemis basifusca*, Lower California, CALVERT, p. 536, pl. xvi, figg. 58-61, P. Calif. Ac. (2) iv, n. sp.
- Zygonyx ida*, Selys = (*Pseudomacromia luxuriosa*, Karsch); KARSCH, p. 203, Ent. Nachr. xxi.

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- [*Cf.* BOHLS (123), PERGANDE (857), TRYBOM (1144), UZEL (1157).]
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 The mouth-parts; BOHLS (123).
 Notes on *Thysanoptera* found on grasses in Sweden; TRYBOM, Ent. Tidskr. xvi, pp. 157-194.
 Thrips in wasps' nests; BLOESCH, p. 76, Feuille Natural. xxv.
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- Belothrips brevistylis*, Sweden, TRYBOM, p. 185, Ent. Tidskr. xvi, n. sp.
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- Cephalothrips*, n. g., p. 244, for *Phlæothrips monilicornis*, Reut.; UZEL, p. 245, Mon. Thysan.
- Chirothrips hamata*, Sweden, TRYBOM, p. 187, Ent. Tid-kr. xvi; *C. duda*, Bohemia, UZEL, p. 83, pl. i, fig. 7, pl. v, fig. 50, Mon. Thysan.: n. spp.
- Cryptothrips*, n. g., p. 228, for *C. lata*, p. 230, pl. iii, fig. 24, pl. vii, figg. 118-122, *angusta*, p. 231, pl. vii, figg. 123 & 124, *icarus*, p. 232, pl. vii, figg. 125 & 126, n. spp., Bohemia, including also *P. bicolor*, Heeg., *dentipes* and *nigripes*, Reut.; UZEL, Mon. Thysan.
- Dendrothrips*, n. g., p. 159, for *D. tilia*, p. 160, pl. ii, fig. 15, pl. vi, figg. 84-86, *degeeri*, p. 162, pl. vi, fig. 87, *saltatrix*, p. 164, pl. vi, fig. 88, n. spp., Bohemia; UZEL, Mon. Thysan.
- Dictyothrips*, n. g., p. 157, for *D. betæ*, n. sp., Bohemia, p. 158, pl. vi, figg. 81-83; UZEL, Mon. Thysan.
- Drepanothrips*, n. g., for *D. reuteri*, n. sp., Bohemia, p. 213, pl. vii, figg. 113 & 114; UZEL, Mon. Thysan.
- Euthrips occidentalis*, California, PERGANDE, p. 392, Insect Life, vii, n. sp.
- Heliothrips cestri*, N. America and Finland, *fasciata*, California, PERGANDE, p. 391, Insect Life, vii, n. spp.
- Liothrips*, n. g., p. 261, for *L. hradecensis*, p. 262, pl. vii, fig. 146, n. sp., Bohemia, and *P. setinodis*, Reut.; UZEL, Mon. Thysan.
- Megalothrips*, n. g., p. 224, for *Phlæothrips lativentris*, Heeg., and *M. bonannii*, n. sp., Bohemia, p. 227, pl. iii, fig. 19; UZEL, Mon. Thysan.
- Oxythrips*, n. g., p. 133, for *O. hastata*, p. 134, pl. v, fig. 66, *ajugæ*, p. 136, pl. v, fig. 67, *firma*, p. 138, pl. v, figg. 68 & 69, pl. vi, fig. 71, *parviceps*, p. 139, pl. vi, fig. 72, Bohemia, n. spp.; UZEL, Mon. Thysan.
- Pachythrips*, n. g., for *Thrips subaptera*, Hal.; UZEL, p. 141, t. c.
- Parthenothrips*, n. g., p. 170, for *Heliothrips dracæna*, Heeg.; UZEL, t. c.
- Phlæothrips*: life-history; TRYBOM, pp. 190-194, Ent. Tidskr. xvi.
- P. minor*, p. 256, pl. vii, fig. 143, *parva*, p. 257, pl. iii, fig. 27, pl. vii, fig. 144, Bohemia, UZEL, Mon. Thysan. n. spp.
- Physopus tenuicornis*, p. 99, *pallida*, p. 101, *nervosa*, p. 102, *robusta*, p. 104, *nigriventris*, p. 106, *pallipennis*, p. 110, pl. v, fig. 57, *intermedia*, p. 114, *inconsequens*, p. 117, *distincta*, p. 121, *pini*, p. 125, *frici*, p. 126, *frontalis*, p. 128, pl. v, fig. 64, *pilosa*, p. 129, fig. 65, Bohemia, UZEL, Mon. Thysan. n. spp.
- Platythrips*, n. g., for *Thrips tunicata*, Haliday; UZEL, p. 214, t. c.
- Pacilothrips*, n. g., for *P. albopicta*, n. sp., Bohemia, p. 264, pl. iii, fig. 25, pl. iv, fig. 30; UZEL, Mon. Thysan.
- Prosopothrips*, n. g., p. 165, for *P. vejdvovskyi*, n. sp., Bohemia, p. 166, pl. ii, fig. 9, pl. vi, fig. 89; UZEL, t. c.
- Rhaphidothrips*, n. g., for *R. longistylosa*, n. sp., pl. vi, fig. 70, Bohemia; UZEL, p. 131, Mon. Thysan.
- Rhipidothrips*, n. g., p. 66, for *R. gratiosa*, n. sp., Bohemia, p. 67, pl. v, figg. 42 & 43; UZEL, Mon. Thysan.

- Sminyothrips*, n. g., p. 206, for *S. biuncinata*, p. 207, pl. vii, fig. 110, *biuncinata*, p. 208, pl. vii, fig. 111, Bohemia; UZEL, Mon. Thysan.
- Stenothrips*, n. g., p. 209, for *S. graminum*, n. sp., Bohemia, p. 210, pl. ii, fig. 16; UZEL, Mon. Thysan.
- Thrips intonsa*, Sweden, TRYBOM, p. 188, Ent. Tidskr. xvi; *T. communis*, p. 176, pl. vi, fig. 100, *major*, p. 179, *salicaria*, p. 182, *valida*, p. 183, *adusta*, p. 185, *alni*, p. 189, *albopilosa*, p. 190, *angusticeps*, p. 191, pl. vi, figg. 101 & 102, *linaria*, p. 192, *calcárata*, p. 195, pl. vi, fig. 104, *viminalis*, p. 196, *longicollis*, p. 197, *nigropilosa*, p. 198, pl. vi, figg. 105 & 106, *dilatata*, p. 202, *klapaleki*, p. 203, pl. vi, fig. 107, Bohemia, UZEL, Mon. Thysan. : n. spp.
- Trichothrips*, n. g., p. 246, for part of *Phlæothrips*, and the following n. spp., *cæspitis*, p. 248, *semicæca*, p. 249, *copiosa*, p. 252, pl. iv, fig. 32, pl. vii, figg. 138-140, Bohemia; UZEL, Mon. Thysan.
- Zygothrips*, n. g., for *Z. minuta*, n. sp., Bohemia, pl. vii, figg. 132 & 133; UZEL, Mon. Thysan.

(G.) *APTERA*.

[*Cf.* CARPENTER (188), DALLA TORRE (269), GIARD (428, 429), HARVEY (492), OUDEMANS (831), PARONA (844), REUTER (958), SHARP (1055), VOGLER (1177).]

Sketch of the order ; SHARP (1055), chap. vii.

Table of characters of the genera of *Thysanura* and *Collembola*, with catalogue of the species, bibliographical list of a portion of the literature, and synonymical remarks ; DALLA TORRE (269).

For critical remarks on Dalla Torre's *Apterygogenea*, see REUTER, Wien ent. Zeit. 1895, pp. 272 & 273.

According to Dalla Torre a paper by TÖMÖSVÁRY in Math. term. Kozlem. Magyar Ak. xix (1883), describing a new family of *Thysanura*, has hitherto entirely escaped the notice of entomologists. We give the family below on the authority of Dalla Torre.

Thysanura.

The Netherlands *Thysanura* described with figures ; OUDEMANS, pp. 164-178, Tijdschr. Ent. xxxviii.

Anisosphaeride, n. fam. for the following :—*Anisosphaera*, n. g., for *A. problematica*, n. sp., Hungary ; TÖMÖSVÁRY, Math. term. Kozlem. Magyar Ak. xviii, p. 128, and xix (1883) pp. 47, *et. seq.*

Collembola.

Structure of scale of *Podura* ; LETHERLY (691).

Sketch of natural history of aquatic *Poduridae* ; MIALL (767) chap. xi.

Cypholeirus longicornis, Buenos Ayres, PARONA, p. 698, Ann. Mus. Genova, xxxiv ; *C. affinis*, Chili, GIARD, p. ccxviii, Act. Soc. Chili, iv : n. spp.

Degeeria decemfasciata, Packard, synonymy discussed ; HARVEY, p. 199, Psyche, vii.

Deuterolubbockia, n. n. for *Lubbockia*, Hall ; DALLA TORRE (269), p. 6.

Entomobrya heafasciata, p. 196, *pygmæa*, p. 198, N. America, HARVEY, Psyche, vii, n. spp.

Friesea, n. n. for *Triena*, Tullbg. ; DALLA TORRE (269), p. 6.

Lipura sp. causing red snow ; VOGLER, pp. 30-34, Bull. Soc. Vaudoise, xxxi.

L. wrightii, cave in Ireland, CARPENTER, p. 31, pl. ii, fig. 10, Irish Natural. iv ; *L. pusilla*, Chili, GIARD, p. ccxviii, Act. Soc. Chili, iv : n. spp.

Sinella cavernicola, Ireland, CARPENTER, p. 30, pl. ii, figg. 11-16, Irish Natural. iv, n. sp.

Sira pallidipes, Hungary, REUTER, p. 114, Wien. ent. Zeit. 1895, n. sp.

(H.) *ORTHOPTERA.*

[*Cf.* AZAM (59), BARLOW (72), BOLIVAR (124, 125), BORDAS (129, 131), BORMANS (135), BRUNER (151), BRUNNER (152, 153, 154), BULLER (159), CUÉNOT (267), FINOT (371), GIGLIO-TOS (432), GOULD (445), GRIFFINI (450), HANCOCK (485), HEYMONS (502, 503), HOWARD (528), HUTTON (539), KRAUSS (655), MORSE (790, 791), PAWLOWA (845, 846), PEYTOUREAU (862), PORTSCHINSKY (897, 898), PREUSSE (902), REBEUR-PASCHWITZ (919), SAUSSURE (1000, 1001), SAUSSURE & ZEHNTNER (1002, 1003), SCUDDER (1036, 1037, 1038, 1040, 1041), SHARP (1055), TEPPER (1121, 1122), WATERHOUSE (1198), WILCOX (1235, 1236).]

Morphology of the insect body based specially on examination of the development of *Orthoptera*; HEYMONS (503).

Morphology of abdomen, and of ♂ and ♀ copulatory organs; PEYTOUREAU (862).

Structure of labium discussed; WATERHOUSE (1196).

Notes on stomatogastric nervous system; PAWLOWA (845).

Studies in the physiology of *Orthoptera*; CUÉNOT (267).

Spermatogenesis of *Culoptenus*; WILCOX (1235, 1236).

Orthoptera of the Sandwich Is.; BRUNNER, pp. 891-897, P. Zool. Soc. London, 1895.

Descriptive work on the *Orthoptera* of Algeria and Tunis; FINOT, Ann. Soc. ent. France, 1895.

Fossil carboniferous *Orthoptera*; SCUDDER (1032).

Preparing *Orthoptera*; BRUNER, Amer. Natural. xxix, p. 684.

FORFICULIDÆ.

Sketch of the families; SHARP (1055) chap. viii.

Embryology of *Forficula* and other *Orthoptera*; HEYMONS (502).

Anatomy of alimentary canal; BORDAS (131).

In Burma and Sumatra earwigs fly to light in plenty; BORMANS, p. 371, Ann. Mus. Genova, xxxiv.

Anechura coriacea, Burma, BORMANS, p. 403, *t. c. n. sp.*

Apachya feæ, Burma, BORMANS, p. 373, *t. c. n. sp.*

Chatospania feæ, Burma, BORMANS, p. 390, *t. c. n. sp.*

Chelisochea feæ, Burma, BORMANS, p. 393, *t. c. n. sp.*

Forficula lucasi, woodcut, habits, &c.; KRAUSS, p. 99, Ent. Nachr. xxi.

F. escherichi, Tunis, KRAUSS, *t. c. p.* 97; *F. ? pulchripes*, Burma, BORMANS, p. 408, Ann. Mus. Genova, xxxiv: *n. spp.*

- Labia fasciata*, p. 387, *ridens*, p. 388, Burma, BORMANS, t. c. n. spp.
Opisthocosmia dux, p. 395, *simplex*, p. 396, *lugens*, p. 398, *O. ? dubia*,
 p. 399, Burma, BORMANS, t. c. n. spp.
Pygidicrana modesta, Burma, BORMANS, p. 375, t. c. n. sp.
Platylabia fallax, Burma, BORMANS, p. 380, t. c. n. sp.
Sphingolabis, defined; BORMANS, p. 405, t. c.
Spongophora nitidipennis, p. 382, *lutea*, p. 383, *semiflava*, p. 385, Burma,
 BORMANS, t. c. n. spp.

BLATTIDÆ.

- Sketch of the family, SHARP (1055) chap. ix.
 Revision of *Panesthiens* and *Epilampriens*; SAUSSURE, Rev. Suisse Zool.
 iii, pp. 299-364.
 Revision of the tribe *Perisphariens*; SAUSSURE & ZEHNTNER, Rev.
 Suisse Zool. iii, pp. 1-59, pl. i. [The Recorder regrets that he has
 only been able to guess at what is new in this paper.]
 A blood-circulating organ in head of *Periplaneta orientalis* and other
Orthoptera; PAWLOWA (846).
 Fossil *Blattidæ*: cf. PALÆO-ENTOMOLOGY, *antè*, p. 111.
Anaplecta africana, Central Africa, p. 70, *javanica*, Batavia, p. 71,
 SAUSSURE, Ann. Mus. Genova, xxxv, n. spp.
Aphlebia pallida, n. subsp., *cecconii*; GRIFFINI, Boll. Mus. Torino, x,
 No. 193.
Apolyta pallescens, *marginata*, *bicolor*, Australia, TEPPER, p. 152, Tr. R.
 Soc. S. Austral. xix, n. spp.
Aspidopis, n. g., *Epilampriens*, for *A. cyclops*, pl. ix, fig. 7, Borneo,
 p. 338, *A. ? oniscosoma*, Peru, p. 339, n. spp.; SAUSSURE, Rev.
 Suisse Zool. iii.
Blabera marmorata, figure; BRUNER, p. 60, pl. ii, fig. 1, Bull. Lab. Iowa,
 iii, No. 3.
Blatta madecassa, E. Africa and Madagascar, p. 72, *lobiventris*, p. 73,
B. (Phyllodromia) constricta, p. 74, E. Africa, SAUSSURE, Ann. Mus.
 Genova, xxxv, n. spp.
Calolampra biolleyi, pl. ix, fig. 8, *carinulata*, fig. 9, Central America, SAUS-
 SURE, p. 347, Rev. Suisse Zool. iii, n. spp.
Choristima, n. g., *Chorisoneuridæ*, for *C. kershawi*, n. sp., Melbourne;
 TEPPER, p. 165, Tr. R. Soc. S. Austral. xix.
Dasyposoma brunneri, Brazil, SAUSSURE & ZEHNTNER, p. 57, Rev. Suisse
 Zool. iii, n. sp.
Derocalymna bottegoiana, p. 30, *erythreina*, *abyssinica*, p. 31, E. Africa,
 SAUSSURE & ZEHNTNER, Rev. Suisse Zool. iii; *D. bottegoiana*, E. Africa,
 SAUSSURE, p. 90, Ann. Mus. Genova, xxxv : n. spp.
Deropeltis autraniana, p. 78, *barbeyana*, *schweinfurthi*, p. 79, *nigrita*, p. 80,
 E. Africa, SAUSSURE, Ann. Mus. Genova, xxxv, n. spp.
Desmosia, n. g., p. 369, near *Phyllodromia*, for *D. alluaudi*, n. sp.; Sey-
 chelles, p. 371; BOLIVAR, Ann. Soc. ent. France, 1895.

- Ectobia germanica*, a migration; HOWARD, p. 349, *Insect Life*, vii, and *P. Amer. Ass.* xliii, p. 253.
- E. minima, sublucida*, p. 147, *E. ♀ margarita*, p. 148, Australia, TEPPER, *Tr. R. Soc. S. Austral.* xix, n. spp.
- Ellipsica*, n. g., for four species from Madagascar, mentioned in a table; SAUSSURE & ZEHNTNER, p. 19, *Rev. Suisse Zool.* iii.
- Elliptoblatta*, n. g., for 12 species from Madagascar, mentioned in a table; SAUSSURE & ZEHNTNER, *Rev. Suisse Zool.* iii, pp. 19–21.
- Epilampra punctipennis*, p. 356, pl. ix, fig. 12, Zanzibar, *atriventris*, Brazil, p. 357, *hybrida*, N'Gami, p. 358, *puncticollis*, Sina, p. 359, *columbiana*, N. Granada, p. 360, pl. ix, fig. 13, *papua*, New Guinea, p. 361, fig. 14, SAUSSURE, *Rev. Suisse Zool.* iii; *E. perplexa*, Victoria, TEPPER, p. 156, *Tr. R. Soc. S. Austral.* xix, n. spp.
- Gymnonyx*, n. g., for *E. grandidieri* and *scabra*, n. spp., Madagascar; SAUSSURE & ZEHNTNER, p. 21, *Rev. Suisse Zool.* iii.
- Hedaia albina*, Java, p. 351, *acutipennis*, Amboina, p. 353, pl. ix, fig. 11; SAUSSURE, *Rev. Suisse Zool.* iii.
- Hemilatindia*, n. g., p. 83, for *H. doriana*, n. sp., Assab, p. 84; SAUSSURE, *Ann. Mus. Genova*, xxxv.
- Hemipanesthia*, n. g., for *P. kraussiana*, S.; SAUSSURE, p. 327, *Rev. Suisse Zool.* iii.
- Heterogamia gestroiana*, p. 81, *pilosella*, p. 82, E. Africa, SAUSSURE, *Ann. Mus. Genova*, xxxv, n. spp.
- Homaloblatta*, n. g., near *Melanosilpha*, for *H. peringueyi*, n. sp., S. Africa; SAUSSURE & ZEHNTNER, p. 54, *Rev. Suisse Zool.* iii.
- Homalopteryx pelewensis*, Pelew I., New Guinea, *major*, Java; SAUSSURE, p. 342, *Rev. Suisse Zool.* iii.
- Hormetica strumosa*, Ecuador, SAUSSURE & ZEHNTNER, p. 56, *t. c.* n. sp.
- Ichnoptera brunneonigra*, Victoria, TEPPER, p. 155, *Tr. R. Soc. S. Austral.* xix, n. sp.
- Lepidophora*, n. g., p. 20, *Perisphæriida*, for *L. furcata*, n. sp., S. Australia, p. 21; TEPPER, *Tr. R. Soc. S. Austral.* xix.
- Lioblatta*, n. g., for *Melanosilpha stylifera*, Stål, and *L. gibeliana*, Java or Africa, p. 51, *ruficornis*, S. Africa, p. 52, pl. i, fig. 13, n. spp.; SAUSSURE & ZEHNTNER, *Rev. Suisse Zool.* iii.
- Macropanesthia*, n. g., p. 328, for *M. rhinoceros*, pl. ix, fig. 4, *muelleri*, *Centr. Austr.*, fig. 5, p. 329, n. spp.; SAUSSURE, *t. c.*
- Mareta*, n. g., near *Phyllodromia*, for *M. conspicienda*, n. sp., Seychelles; BOLIVAR, p. 371, *Ann. Soc. ent. France*, 1895.
- Melanoblatta*, n. g., for *Derocalymma virescens*, Br.; SAUSSURE & ZEHNTNER, p. 43, *Rev. Suisse Zool.* iii.
- Melanosilpha capensis*, S. Africa, SAUSSURE & ZEHNTNER, *t. c.* n. sp.
- Mioblatta*, n. g., *Perisphæriens*, for *M. fornicata*, n. sp., Brazil, pl. i, fig. 15; SAUSSURE & ZEHNTNER, p. 55, *t. c.*
- Miopanesthia*, n. g., p. 323, for *M. bigibbosa*, Sikkim, p. 324, pl. ix, fig. 1, *stenotarsis*, p. 325, fig. 2, *discoidalis*, p. 326, Java, n. spp., SAUSSURE, *t. c.*

- Nauphoeta gestriana*; E. Africa, SAUSSURE, p. 86, Ann. Mus. Genova, xxxv, n. sp.
- Oxyhaloa africana*, S. Africa, SAUSSURE, p. 86, t. c. n. sp.
- Panesthia stellata*, p. 313, *serrata*, p. 315, E. India, *nicobarensis*, Nicobar Is., p. 316, *quadriglumis*, Australia, p. 316, *nigrita*, Macassar, p. 317, *sinuata*, Singapore, p. 318, *biglumis*, Sikkim, p. 319, SAUSSURE, Rev. Suisse Zool. iii, n. spp.
- Paranauphæta indica*, Assam, SAUSSURE & ZEHNTNER, t. c. p. 16, n. sp.
- Paratennopteryx australis*, ♂; TEPPER, p. 149, Tr. R. Soc. S. Austral. xix.
- P. blattoides*, Australia, TEPPER, p. 150, Tr. R. Soc. S. Austral. xix; *P. zietzii*, S. Australia, TEPPER, p. 20, t. c. : n. spp.
- Periplaneta jungii*, *parva*, Australia, TEPPER, p. 162, t. c. n. spp.
- Perispheria cotesiana*, p. 35, *himalaya*, Assam, *lucasiana*, Java, p. 36, SAUSSURE & ZEHNTNER, Rev. Suisse Zool. iii, n. spp.
- Phyllodromia obtusata*, Sandwich Is., BRUNNER, p. 892, P. Zool. Soc. London, 1895; *P. magna*, S. Australia, TEPPER, p. 19, Tr. R. Soc. S. Austral. xix; *P. lilorata*, Victoria, TEPPER, p. 150, t. c. : n. spp.
- Pilema dentata*, *herbetata*, S. Africa, SAUSSURE & ZEHNTNER, Rev. Suisse Zool. iii, n. spp.
- Pinaconota*, n. g., for *Epilampra bifasciata*, S.; SAUSSURE, p. 337, t. c.
- Plana*, Br. = (*Geoscaphus*, Tepper); SAUSSURE, p. 326, t. c.
- Platyzosteria bifida*, *coolardiensis*, p. 159, *maculimarginata*, p. 160, Australia, TEPPER, Tr. R. Soc. S. Austral. xix, n. spp.
- Paciloblatta*, n. g., p. 47, for *P. angusta*, Africa, p. 48, pl. i, fig. 9, *peringueyi*, p. 49, *bicolor*, p. 50, fig. 10, S. Africa, n. spp.; SAUSSURE & ZEHNTNER, Rev. Suisse Zool. iii.
- Polyzosteria subreflexa*, Australia, TEPPER, p. 158, Tr. R. Soc. S. Austral. xix, n. sp.
- Pronaonota*, n. g., for *P. cribrosa*, *forficata*, n. spp.?, S. Africa; SAUSSURE & ZEHNTNER, Rev. Suisse Zool. iii.
- Pseudoglomeris nepalensis*, *antennata*, E. India, SAUSSURE & ZEHNTNER, p. 42, t. c. n. spp.
- Stenopilema*, n. g., type *Derocalymma gracilis*, Burm., p. 25, with *S. macilentata*, S. Africa, *graniger*, p. 26, *somali*, p. 27, Somaliland, n. spp., SAUSSURE & ZEHNTNER, t. c. *Stenopilema*, n. g., p. 87, for *S. somali*, n. sp., E. Africa, p. 88, SAUSSURE, Ann. Mus. Genova, xxxv.
- Stilopyga guttata*, p. 75, *flavilatera*, p. 76, E. Africa, SAUSSURE, t. c. n. spp.
- Stilpnoblatta*, n. g., for *Parahormetica bengalensis*, Sauss.; SAUSSURE & ZEHNTNER, p. 44, Rev. Suisse Zool. iii.
- Tennelytra* is subgen. of *Periplaneta*; TEPPER, p. 163, Tr. R. Soc. S. Austral. xix.
- T. subtruncata*, *abbreviata*, p. 164, Australia, TEPPER, t. c. n. spp.
- Tennopteryx ferruginea*, Victoria, TEPPER, p. 148, t. c. n. sp.
- Theganopteryx æthiopica*, W. Africa, SAUSSURE, p. 72, Ann. Mus. Genova, xxxv, n. sp.

- Thliptoblatta*, n. g., pp. 54 & 13, for *T. obtrita*, *taurina*, n. spp., S. Africa ;
 SAUSSURE & ZEHNTNER, Rev. Suisse Zool. iii.
- Thoracopyga*, n. g., pp. 54 & 13, for *T. loricata*, n. sp., Madagascar,
 p. 54 ; *t. c.*
- Thyrsocera* ? *australis*, Queensland, BLACKBURN, p. 153, Tr. R. Soc.
 S. Austral. xix, n. sp.
- Trichoblatta*, n. g. (? *Trichocoma*, Stål), p. 44, for *T. guerini*, E. India,
 n. sp., p. 45, and *Perispheria*, *sericea*, *emortualis* ; SAUSSURE &
 ZEHNTNER, Rev. Suisse Zool. iii.
- Wodongia*, n. g. ; p. 155, *Epilampridæ*, for *W. lunata*, n. sp., Victoria,
 p. 156 ; TEPPER, Tr. R. Soc. S. Austral. xix.

MANTIDÆ.

- Sketch of *Mantidæ* and *Phasmidæ* ; SHARP (1055) chapp. x & xi.
- Blepharis mendica*, habits in Canary Is. ; REBEUR-PASCHWITZ, Berlin,
 ent. Zeitschr. xl, p. 265, pl. ii.
- Cheradodis rhombicollis*, figure ; BRUNER, p. 60, pl. ii, fig. 2, Bull. Lab.
 Iowa, iii, No. 3.
- Hierodula bipapilla*, food habits ; BARLOW, pp. 138 & 139, P. Asiat. Soc.
 Bengal, 1894.
- Hoplocorypha bottegi*, E. Africa, SAUSSURE, p. 91, Ann. Mus. Genova,
 xxxv, n. sp.
- Hypsicorypha julia*, habits in Canary Is. ; REBEUR-PASCHWITZ, Berlin,
 ent. Zeitschr. xl, p. 265, pl. ii.
- Mantis religiosa*, behaviour towards lizards ; MINGAUD, p. lxx, Bull. Soc.
 Nimes, xxii : *Mantis* eaten by *Ephippiger* ; *t. c.* : fighting with
 spider ; *t. c.* p. lxxiii.
- Tarachodes æstuans*, E. Africa, SAUSSURE, p. 91, Ann. Mus. Genova, xxxv,
 n. sp.

PHASMATIDÆ.

- Phasmidæ* of N. America ; SCUDDER, pp. 29 & 30, Canad. Ent. xxvii.
- Bacillus gallicus* on the Sarthe ; LABOULBÈNE, p. cccxiii, Bull. Soc. ent.
 France, 1895.
- Cotylosoma dipneusticum*, figured, habits, the locality is Tairuni, not
 Borneo ; WATERHOUSE, p. 498, Ann. Nat. Hist. xv.
- Lonchodes alhuandi*, p. 372, *sechellensis*, p. 373, Seychelles, BOLIVAR, Ann.
 Soc. ent. France, 1895, n. spp.
- Phyllium bioculatum* and *crurifolium* are one species ; BOLIVAR, p. 375,
t. c. n. spp.
- Prisopus phacellus*, lobes at knee ; WATERHOUSE, p. 498, Ann. Nat.
 Hist. xv.
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BY

F. A. BATHER.

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INTRODUCTION.

I. TITLES. In the Introduction to last year's Record, it was said, "There is good reason to believe that many publications anterior to 1895, and containing Echinoderm literature, remain unrecorded." This is confirmed by the inclusion in the present list of 41 such papers; viz., 1 from 1890, 3 from 1892, 9 from 1893, and 28 from 1894. The literature of 1895 has so far yielded 138 papers dealing with *Echinoderma*; more will doubtless be found when editors and publishers choose to send the volumes containing them to this country. From 1896, two papers are recorded, since it was not until the work had been done that proof of their true date was obtained. This makes a total of 181 books and papers of which the titles are given, and that the list is not more incomplete is largely due to the kindness of authors.

Of the works here recorded, 5 have not been seen by the Recorder, 1895. [VOL. XXXII.]

owing to their appearance in publications that are inaccessible to the ordinary Englishman, and among such publications many of those issued in Italy have to be included. This remark applies also to CRAGIN (26), RUSSO (106, 107), SITUKENBERGH (110), and TOMMASI (123) in the Record for 1894, and KEYES (138) in the Record for 1893. The others previously unseen have now been seen and checked by the Recorder (see under ZAHALKA, p. 21).

In the estimate of the number of titles, Reviews and Abstracts are not included unless published in the form of signed articles; they are, however, recorded under the name of the author reviewed, in all cases where they contain anything of interest to the student of Echinoderms. Of such Reviews, 122 are here recorded. Since the present record does not profess to abstract papers, and since a student can often see an abstract when quite unable to procure the original paper, this reference to abstracts seems worth the slight trouble and expense.

The figures between square brackets, that follow each title, are cross-references to the divisions of the Subject- and Systematic Indices. A better mode of cross-reference might be devised were one starting a Record *ab initio*, and without reference to the system of previous Recorders.

II. BIOLOGY. In the main the arrangement of this section is the same as in previous years, but in II, B, i, **Anatomy**, and II, F, **AUXOLOGY**, the catch-numbers have been slightly altered, so as to make the numbers of the various subdivisions consonant with one another. Thus, in Auxology, under each head (i) *Echinoderma*, (ii) *Holothurioidea*, (iii) *Echinoidea*, (iv) *Asteroidea*, (v) *Ophiuroidea*, (vi) *Crinoidea*, the further divisions are as follows:—(a) Relation of Ontogeny to Phylogeny, (b) General Embryology, (c) Formation of gonads, (d) Oviposition and fertilisation, Breeding season, (e) Larval stages, free or incubated, (f) Organogeny, especially skeletogeny, (g) Postembryonic growth-stages, down to death. Head vii is, as before, **Experimental Investigation**, but this year an attempt has been made to classify the experimental methods: some of these papers are also given in the division of the Zoological Record devoted to General Subjects, but it would be a pity to omit them, since these experiments have a direct bearing on questions of evolution and distribution of *Echinoderma*.

In **Anatomy** the chief work is by a palæontologist, JAEKEL, on Devonian *Crinoidea*. Under **Physiology** one notes SCHULTZ's observations on excretion in *Holothurioidea*. Among Bionomic researches, the most interesting is that by MARENZELLER on autotomy of an Asteroid due to a parasite. In **Auxology** there are the important embryological treatises by BURY & MACBRIDE; a fair number of scattered observations on later growth-stages; and much experimental investigation of fertilisation and segmentation on the ordinary species by the usual writers, BOVERI, LOEB, MORGAN, WILSON, &c.; here VERNON's memoir is worthy of special note as an extended record of facts.

III. DISTRIBUTION. The arrangement follows that of last year's Record. The establishment of a Section devoted to Bathymetric distribution might prove useful; this year it would have referred to BERNARD (10), MURRAY (125), HERDMAN (55), MARENZELLER (104), and especially VERRILL (164). Many of the papers that fill Section B, GEOLOGICAL DISTRIBUTION, seem to have their value lessened by inaccurate zoological nomenclature.

IV. SYSTEMATIC. This forms an Index to every genus and species mentioned in the recorded literature, provided that some definite statement has been made concerning it. When such statement is one of locality only, then nothing more than the name of the species is given. This Index should be used in connection with the cross-references given in the list of Titles.

The year 1895 saw the establishment of 264 new species and 34 new genera of *Echinoderma*, distributed as follows:—*Holothurioidea*, species 2; *Echinoidea*, genera 11, species 88; *Asteroidea*, genera 3, species 23; *Ophiuroidea*, genera 2, species 3; *Crinoidea*, genera 16, species 137; *Cystitida*, genera 2, species 8; *Blastoidea*, species 3. There are also many new varieties, and a regrettably large number of *nomina nuda*. Many of the new species are published without illustration; BERNARD, JAEKEL, LAMBERT, SLUITER, & VERRILL are a few of the zoologists who differ from their colleagues in seeing no harm in this.

The new *Echinoidea* are mostly extinct species from Sardinia and Persia, many of them based on fragments of spines, which the authors themselves regard as possibly belonging to pre-described species. It is a relief to turn to LAMBERT'S careful revision of the species of *Micraster*, though even he describes and names a species in one paragraph only to prove it a synonym in the next. The chief systematic work among *Asteroidea* is by VERRILL & LEIPOLDT, though many of the new species are due to SLUITER.

The species-factories in Illinois have recently glutted the market with new names for fossil *Crinoidea*, which do not seem to find ready acceptance; it is, however, to their credit that every proposed species is figured. In proposing new generic names, they are this year rivalled by JAEKEL, who has described, but not always figured, many new species from the Devonian rocks of Germany. HARTLAUB'S description of the "Blake" crinoids is a welcome contribution.

It is again necessary to point out that the numbers here given are liable to correction; indeed, these lists must continue inexact so long as authors continue to regard their scientific papers as a pleasurable and easy means of puzzling their colleagues.

Any personal remarks ventured by the Recorder are placed, as before, within square brackets.

I. TITLES.*

- ACQUISTO, V. See MONDINO, C., & ACQUISTO, V. (117).
- ALCOCK, A. (5) *Zool. Rec.* 1893. Abstract by H. LUDWIG, *Zool. Centralbl.* ii, p. 197 (May), and in LUDWIG (91).
1. —. Illustrations of the Zoology of the Royal Indian Marine surveying steamer "Investigator" . . . Echinoderma II. pls. iv & v. Calcutta, 4to.
Gives figures of the previously described—*Zoroaster carinatus*, *Z. squameus*, *Pontaster pilosus*, *Nymphaster florifer*, *N. nova*, *Pentagonaster investigatoris*, *Dorocidaris tiara*, and *D. alcocki*.
 2. APPELLÖF, A. Faunistiske undersögelser i Herlöfjorden. Bergens Mus. Aarbog. 1894-95, No. 11, 11 pp. [III, A, ii.]
 3. BALLOWITZ, E. Bemerkungen zu der Arbeit von Dr. phil. K. Ballowitz über die Samenkörper der Arthropoden nebst weiteren spermatologischen Beiträgen betreffend die Tunicaten, Mollusken, Würmer, Echinodermen, und Cœlenteraten. *Int. J. Anat.* xi, pp. 245-280, pls. xii & xiii (1894). [*Echinoderma*, pp. 259-269, pl. xiii, figg. 62-102. II, F, i, c. IV, B, D, E.]
Abstract in LUDWIG (91).
 4. BARTHELS, P. Notiz über die Excretion der Holothurien. *Zool. Anz.* xviii, pp. 493 & 494 (Dec.). [II, C.]
 - BATHER, F. A. (11) *Zool. Rec.* 1893. Review by O. JAEKEL, *N. Jahrb. Min.* 1895, ii, pp. 371-374 (Oct.).
 5. B[ATHER, F. A., not BATESON, as suggested in *Zool. Anz.* xviii]. Evolution of a protective habit in Sea-urchins. *Nat. Sci.* vi, p. 72 (Jan.). [II, D, V, b.]
 6. BATHER, F. A. The rosy Feather-Star. *Nat. Sci.* vi, p. 214 (March). [II, D, vi.]
 7. —. The Text-Book Writer among the Echinoderms. *Nat. Sci.* vi, pp. 415-423 (June). [II, B, i, f, 1, 2.]
A review of LANG (59), *Zool. Rec.* 1894.
 8. —. *Brachiocrinus* and *Herpetocrinus*. *Amer. Geol.* xvi, pp. 213-217 (Oct.). [II, B, i, f : D, vi. IV, F.]
Abstract in *Science* (n.s.) ii, p. 492 (Oct.).
 9. —, SLADEN, W. P., & THEEL, H. *Echinoderma* in "The Scientific Results of the 'Challenger' Expedition." *Nat. Sci.* vii, pp. 42-50, pls. viii-x (July). [III, A, i.]
 10. BERNARD, F. Liste des Echinides recueillis pendant les croisières du Travailleur et du Talisman. *Bull. Mus. Paris*, 1895, pp. 207-209 (July). [III, A, ii. IV, C.]

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

11. [BERNARD, F.] Sur un Lamellibranche nouveau (*Scioberetia australis*), commensal d'un Echinoderme. C.R. Ac. Sci. cxxi, pp. 569-571 (Oct.). [II, D, viii.]
12. —. Echinides recueillis par l'expédition du Cap Horn (1882-83). Bull. Mus. Paris, 1895, pp. 272-274 (December). [II, F, iii, e, g. III, A, ii. IV, C.]
- BITTNER, A. (9) Zool. Rec. 1894. Abstract by T. EBERT, N. Jahrb. Min. 1896, ii, pp. 195 & 196 (July).
13. BIZET, P. Note sur les limites du terrain Callovien dans le Nord-Ouest de la France. Bull. Soc. geol. Normand. xvi, pp. 79-119 (1894). [III, B, iii, C. IV, C.]
14. BONARELLI, G. Fossili domeriani della Brianza. Rend. Ist. Lombardo, ser. 2, xxviii, pp. 415-421 (April). [III, B, iii, C.]
15. BOVERI, T. Ueber das Verhalten der Centrosomen bei der Befruchtung des Seeigel-Eies nebst allgemeinen Bemerkungen über Centrosomen und Verwandtes. Verh. Ges. Würzburg, xxix, No. 1, pp. 1-75. [II, F, iii, d.]
Abstracts,—by R. FICK, Zool. Centralbl. ii, pp. 266-268 (July); J. R. Micr. Soc. 1895, pp. 433 & 434.
16. —. Ueber die Befruchtungs- und Entwicklungsfähigkeit kernloser Seeigel-Eier und über die Möglichkeit ihrer Bastardirung. Arch. Entwicklmech. ii, pp. 394-443, pls. xxiv & xxv (Oct.). [II, F, vii.]
Critical abstract by R. FICK, Zool. Centralbl. ii, pp. 750 & 751 (Dec.); and in LUDWIG, Zool. Jahresber. for 1895.
17. BURY, H. The Metamorphosis of Echinoderms. Quart. J. Micr. Sci. xxxviii, pp. 45-135, pls. iii-ix (Aug.). [II, A: F, i, a; ii, e; iii, e; iv, e; v, e; vi, e.]
Abstracts,—in J. R. Micr. Soc. 1895, pp. 636 & 637 (Dec.); by LUDWIG, Zool. Centralbl. iii, pp. 563-568 (Aug. 1896).
- CAPECELATRO, —. See PATRONI, C. (130).
18. CAPELLINI, G. *Rhizocrinus santagatai* e *Bathysiphon filiformis*. Rend. Acc. Lincei, ser. 5, iii, pp. 211-218 (March, 1894). [IV, F.]
Abstract in Boll. Com. geol. Ital. xxvi, p. 241.
19. —. Di alcuni fossili controversi riferiti a crinoidi, foraminiferi, vermi e corallarii. Rend. Acc. Lincei, iii (v), pp. 362-365 (Dec. 1894).
Abstract in Riv. ital. Pal. i, p. 4 (Feb.).
20. CHADWICK, H. C. Notes on some specimens of *Synapta inhaerens*, from Port Erin. Tr. Liverp. biol. Soc. ix, pp. 235-242, pls. xvi & xvii. [II, B, i, b, 1. IV, B.]
Abstract in J. R. Micr. Soc. 1896, p. 72 (Feb. 1896).

21. CHUN, C. *Atlantis. Biologische Studien über pelagische Organismen. II. Auricularia nudibranchiata.* *Bibl. Zool.* xix, Lief 1, pp. 53-76, pls. iii & iv. [II, B, i, a, 4 : C : F, ii, e, f.]
Review by LUDWIG, *Zool. Centralbl.* ii, pp. 197 & 198 (May, 1895). Abstract in *J. R. Micr. Soc.* 1896, pp. 71 & 72 (Feb. 1896).
22. CORTESE, E. *Descrizione geologica della Calabria.* *Mem. Carta Geol. Ital.* ix, xxviii & 312 pp., iv pls., 1 map. [III, B, ii, b, c ; iii, b. IV, c.]
23. CORRI, B. *Osservazioni stratigrafiche e paleontologiche sulla regione compresa fra i due rami del Lago di Como e limitata a sud dai Laglie della Brianza.* *Boll. Soc. geol. Ital.* xi, pp. 111-207, pl. ii (1893). [III, B, iii, b.]
24. —. *Sulla fauna giurese e cretacea di Campora presso Como.* *Rend. Ist. Lombardo, ser. 2,* xxvii, pp. 372-386 (April, 1894). [III, B, iii, c.]
COTTEAU, G. H. (46) *Zool. Rec.* 1893. Abstract by DAMES, *N. Jahrb. Min.* 1895, ii, pp. 180 & 181 (July).
25. * —. "Sur quelques espèces d'Échinides du Liban" is cited in LUDWIG (91) as Paris, 15 pp., 2 pls., 1894. Ludwig has not seen this edition ; compare (22) *Zool. Rec.* 1894.
26. —. *Description des Échinides recueillis par M. Lovisato dans le Miocène de la Sardaigne.* *Mem. Soc. geol. France, Pal.* v, fasc. ii, *Mem. No. 13,* 56 pp., v pls. (pls. iii-vii). [II, B, ii, a : F, iii, g. III, B, ii, c. IV, C.]
27. — & GAUTHIER, V. *Mission Scientifique en Perse par J. de Morgan. Tome troisième, Études géologiques, Partie II. Paléontologie. Première Partie, Échinides fossiles.* 142 pp. [as numbered, including blanks], xvi pls. 4to, Paris, 1895. Preliminary notice in *C.R. Soc. geol. France, ser. 3,* xxiii, pp. 107-109 (June). [II, B, i, c, 2 ; iii, b. III, B, iii, b. IV, C.]
28. COULON, L. *Catalogue des Échinides de la Seine-inférieure.* *Bull. Soc. Elbeuf,* 1894, pp. 49-112. [III, B, iii, a.]
29. CRAGIN, F. W. *A new Cretaceous genus of Clypeastridae.* *Amer. Geol.* xv, pp. 90 & 91 (Feb.). [III, B, iii, b. IV, C.]
CRETY, C. (27) *Zool. Rec.* 1894. Abstract by U. ROSSI in *Monit. Zool. Ital.* vi, pp. 78-81 (April).
30. CUNNINGHAM, K. M. *Notice of microscopic Fossils occurring in Tertiary Marl Strata.* *Amer. Micr. J.* xvi, pp. 193-196, i pl. (July). [III, B, ii, d.]
31. DEECKE, W. *Die Mesozoischen Formationen der Provinz Pommern.* *Mt. Ver. Vorpomm.* xxvi, pp. 1-115. [III, B, iii, b, c. IV, C : F.]

32. DEGRANGE-TOUZIN, A. Notice nécrologique sur M. Gustave Cotteau, membre correspondant de la Société. Act. Soc. Bordeaux, xlvi, pp. 251-260 (March). [II, E, iii.]
33. DESTINEZ, P. Recherches sur les fossiles du marbre noir, viséen b, de Petit-Modave. Ann. Soc. geol. Belgique, xxii, 2^{me} livraison, pp. lxiv-lxviii (Sept). [III, b, iv, e.]
Dow, W. See SIM, G. (149).
34. DYCHE, D. T. D. Remarks on the stems and roots of Crinoids from near Lebanon, Ohio. J. Cincinnati Soc. xv, p. 101.
The same as DYCHE (18) Zool. Rec. 1892.
35. *EISMOND, J. Ueber einige Fälle von anormaler Entwicklung der Eier bei *Toxopneustes lividus*. Arb. zoot. Lab. Warschau, i, 1 Beilage. [II, B, ii, e : F, iii, d ; vii.]
Review by P. MITROPHANOW, Arch. Entwicklmech. i, pp. 443-448 (March).
36. ENGEL, T. Ueber Pseudoschmarotzer auf unseren Petrefakten. Jahresh. Ver. Wurttemb. li, pp. lxxxii-ciii. [II, D, viii.]
FABER, C. L. See MILLER, S. A., & FABER, C. L. (113).
37. FARQUHAR, H. Notes on New Zealand Echinoderms. Tr. N. Zealand Inst. xxvii, pp. 194-208, pls. x-xiii (May). [II, B, ii, b, c, d, e : C : D, ii ; vii. III, A, iv. IV, C, D, E.]
38. FIELD, G. W. On the morphology and physiology of the Echinoderm Spermatozoon. J. Morphol. xi, pp. 235-270, pls. xv & xvi (Oct.). [II, E, iii : F, i, c.]
39. FORIR, H., & LOHEST, M. Découverte du niveau à paléchinides dans la bande carbonifère de la Meuse. Ann. Soc. geol. Belgique, xxii, 2^{me} livraison, pp. lxxi & lxxii (Sept.). [III, B, iv, e.]
FORTIN, R. See SCHLUETER, C. (145).
40. FUCINI, A. Fauna dei Calcari bianchi ceroidi con *Phylloceras cylindricum* Sow. sp. del Monte Pisano. Atti Soc. Toscana, xiv, pp. 125-351, pls. vi-xiii. [III, B, iii, d.]
41. FUCUS, P. Au bord de la mer. Les Oursins. Naturaliste, 2 ser., ix, pp. 191 & 192 (Aug.).
Popular account of the commoner European *Echinoidea*.
42. GADEAU DE KERVILLE, H. Recherches sur les Faunes marine et maritime de la Normandie. 1^{er} Voyage. Région de Granville et Iles Chausey (Manche) Juillet-Août, 1893. Bull. Soc. Rouen, 1894, pp. 55-126 (1894). Also published separately at Paris. *Ast.* and *Oph.* p. 80. [III, A, iii.]
43. GARBOWSKI, T. Kausalanalytische Theorie der epigenetischen Evolution mit dreifacher Rhythmusharmonie in der Ontogenese. Biol. Centralbl. xv, pp. 305-332 (April).
A criticism of DRIESCH, Zool. Rec. 1892 & 1893 (68, 70).

44. GLANGEAUD, P. Le Jurassique à l'Ouest du Plateau Central. Contribution à l'Histoire des Mers Jurassiques dans le Bassin de l'Aquitaine. Bull. Carte geol. France, No. 50, 261 pp., 1 map. [III, B, iii, c.]
45. GOODRICH, E. S. On the cœlom, genital ducts, and nephridia. Quart. J. Micr. Sci. xxxvii, pp. 477-510, pls. xlv & xlv (June). [II, B, i, a, 3.]
46. GRAF, A. Eine rückgängig gemachte Furchung. Zool. Anz. xvii, pp. 424-428 (Dec. 1894). [II, F, vii.]
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- GREGORY, J. W. (102) Zool. Rec. 1893. Abstract by T. EBERT, N. Jahrb. Min. 1895, i, p. 539 (June).
47. GREGORIO, A. DE. Description des faunes tertiaires de la Vénétie. Fossiles des environs de Bassano surtout du Tertiaire Inférieur de l'Horizon à *Conus diversiformis*, Desh., et *Serpula spirulæa*, Lamk. (Recueillis par M. Andrea Balestra). Ann. Geol. Pal. xiii, 40 pp., v pls. (Jan. 1894). [III, B, ii, d. IV, C: F.]
48. —. Note sur un Astéride et un Cirripède du Postpliocène de Sicile, des genres *Astrogonium* et *Coronula*. Ann. Geol. Pal. Livr. xvii, 8 pp., i pl. (Jan.). [III, B, ii, b. IV, D.]
Abstracts,—in Riv. ital. Pal. i, pp. 93 & 94 (June); Critical abstract by H. LUDWIG, Zool. Centralbl. ii, pp. 562 & 563 (Oct.); by DAMES, N. Jahrb. Min. 1896, ii, p. 196 (July).
49. GRIEG, J. A. Om echinoderm-faunaen i de vestlandske fjorde. Bergens Mus. Aarbog, 1894-95, No. 12, 13 pp. [II, B, ii, d, 1: D, iv; viii: F, ii, d; v, d. III, A, ii. IV, B, C, D, E, F.]
Abstract by H. F. E. JUNGENSEN, Zool. Centralbl. iii, p. 168 (March, 1896).
50. GUPPY, R. J. L. Observations upon the physical conditions and fauna of the Gulf of Paria. P. Inst. Trinidad, pt. 2, pp. 105-115 (March). [III, A, ii.]
GURLEY, W. F. E. See MILLER, S. A., & GURLEY, W. F. E. (114, 115).
51. HÆCKEL, E. Planktonic studies: a comparative investigation of the importance and constitution of the pelagic Fauna and Flora. A translation by G. W. FIELD, Rep. U. S. Fish Comm. 1889-91, pp. 565-641 (1893), of "Plankton-Studien," Jena. Zeitschr. xxv.
Echinoderms of the Plankton, pp. 599 & 600.
52. HALL, T. S., & PRITCHARD, G. B. The older Tertiaries of Maude; with an indication of the sequence of the Eocene rocks of Victoria. P. Soc. Victoria (n.s.) vii, pp. 180-200, pl. xi (Jan.). [III, B, ii, d.]

53. HARA, J. Description of a new species of Comatulida—*Antedon macrodiscus*, n. sp. Zool. Mag. Tokyo, vii, pp. 115 & 116. [III, A, iv. IV, F.]
Abstracts,—by H. LUDWIG, Zool. Centralbl. ii, p. 524 (Sept.); in Nat. Sci. viii, p. 10 (Jan. 1896); J. R. Micr. Soc. 1895, p. 638.
54. HARTLAUB, C. Reports on the dredging operations off the West coast of Central America to the Galapagos, to the West coast of Mexico, and in the Gulf of California, . . . steamer "Albatross," &c. xviii. Die Comatuliden. Bull. Mus. Harvard, xxvii, No. 4, pp. 129-152, pls. i-iv (Aug.). [III, A, iv. IV, F.]
Critical abstract by H. LUDWIG, Zool. Centralbl. ii, p. 642 (Nov.).
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55. HERDMAN, W. A. Eighth Annual Report of the Liverpool Marine Biology Committee and their biological station at Port Erin. P. Liverp. biol. Soc. ix, pp. 26-75. [II, B, ii, d, 1, 2 : D, iii. III, A, ii.]
56. — & SCOTT, A. Report on the investigations carried on in 1894 in connection with the Lancashire Sea-Fisheries Laboratory at University College, Liverpool. P. Liverp. biol. Soc. ix, pp. 104-162. [II, D, ix.]
57. HÉROUARD, E. De l'excrétion chez les Holothuries. Bull. Soc. zool. France, xx, pp. 161-165. [A criticism of E. A. SCHULTZ (147).] [II, B, i, b, 4 : C.]
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See also BARTHELS (4).
58. HILL, M. D. The maturation and fecundation of the ova of certain Echinoderms and Tunicates, being Appendix I to Report on the occupation of a table at the Zoological station at Naples. Rep. Brit. Ass. 1895, pp. 475-477. [II, F, iii, d.]
This is an abstract of (59).
59. —. Notes on the fecundation of the egg of *Sphæroechinus granularis*, and on the maturation and fertilisation of the egg of *Phallusia mammillata*. Quart. J. Micr. Sci. (n.s.) xxxviii, pp. 315-330, pl. xvii (Nov.). [II, F, iii, d.]
60. HIROTA, S. Anatomical Notes on the "Comet" of *Linckia multifora*, Lamarck. Zool. Mag. Tokyo, vii, pp. 67-76, pl. xi (April). [II, D, vii.]
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61. HOLZAPFEL, E. Das Obere Mitteldevon (Schichten mit *Stringocephalus burtini* und *Maeneceras terebratum*) im Rheinischen Gebirge. Abh. Preuss. geol. Landesanst. Heft. 16, 460 pp. Atlas with xix pls. [III, B, iv, f.]

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63. HORST, R. Liste des Echinodermes. In *Guide Zoologique. Communications diverses sur les Pays-Bas, publiées à l'occasion du 3ième Congrès International de Zoologie. Leyde—Septembre—1895, Helder, 8vo, p. 131.* [III, A, ii.]
64. JACKSON, R. T. The development of *Oligoporus*. *Science* (n.s.) ii, p. 705 (Nov.).
 [This is the abstract of a paper published under the title, "Studies of Palæechinoidea," *Bull. Geol. Soc. Amer.* Jan. 1896.]
65. — & JAGGAR, T. A. Arrangement and development of plates in the *Melonitida*. *Amer. Geol.* xvi, pp. 239 & 240 (Oct.).
 [Abstract of a paper published in *Bull. Geol. Soc. Amer.* Jan. 1896.]
66. JÄEKEL, O. Ueber die älteste Echiniden-Gattung *Bothriocidaris*. *SB. Ges. naturf. Berlin*, 1894, pp. 243-255 (Oct. 1894). [II, B, i, c, 2. IV, C.]
67. —. Beiträge zur Kenntniss der paläozoischen Crinoiden Deutschlands. *Pal. Abh.* vii, 116 pp., x pls. [II, B, i, f, h; iv, f: F, vi, c, g. IV, F: H.]
 Critical abstract by H. LUDWIG, *Zool. Centralbl.* ii, pp. 639-642 (Nov.).
68. —. Ueber die Organisation der Cystoideen. *Verh. Deutsch. Zool. Ges.* 1895, pp. 109-121. [II, B, i, g: F, vi, e. IV, G.]
 Abstract by LUDWIG, *Zool. Centralbl.* iii, pp. 456-458 (June 1896).
- JAGGAR, T. A. See JACKSON, R. T., & JAGGAR, T. A. (65).
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II. BIOLOGY.

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- Phylogeny of *Echinoderma* and relation to *Enteropneusta*; BURY (17) pp. 88-131. Relations to ancestor of *Chordata*; WILLEY (171) p. 250.
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A.—GEOGRAPHICAL.

(i) GENERAL.

Summary of our knowledge of distribution of *Echinoderma*; ORTMANN (128) p. 91.—General bathymetric and geographic distribution of *Echinoderma* dredged by "Challenger"; BATHIER, SLADEN, THEEL (9), and MURRAY (125).—*Echinoderma* of the Plankton; HAECKEL (51).—List of *Holothurioidea* in Amsterdam Museum, chiefly from Indian Archipelago, also Arctic, Mediterranean and American coast; SLUITER (152).—List of *Echinoidea* in Amsterdam Museum, especially Indian Archipelago and Arctic; SLUITER (151).

(ii) ATLANTIC AND ADJACENT SEAS.

Maximum depths of *Echinoidea* dredged by "Travailleur," "Talisman," "Blake," "Challenger," and "Porcupine"; BERNARD (10) p. 208.

Atlantic proper,—*Echinus melo* does not occur as is supposed; KOEHLER (75) p. 335.

Fjords of Iceland,—*Hol.*, *Ech.*, *Ast.*, *Oph.*; LUNDBECK (93) pp. 172 & 176.—Norway, fjords near Bergen, annotated list of *Echinoderma*; GRIEG (49).—Hørløfjord, list of *Echinoderma*, with some account of bottom; APPELLÖF (2).

Scotland, W. coast,—*Ast.*, *Oph.*, *Hol.*, *Ech.*, dredged, esp. *Echinocyamus* "among shore species"; SMITH (153).—E. coast, Smith's Bank, *Echinus acutus*; SIM (149).

Irish Sea, distribution of *Echinoderma* and other animals, in relation to depth and bottom; HERDMAN (55).

English Channel, Plymouth, list of *Echinoderma*; SUMNER (156).—Normandy coast, *Ast.* and *Oph.* collected; GADEAU DE KERVILLE (42) p. 80.—Coast of Netherlands, list of *Echinoderma*; HORST (63).

Baltic,—Hohwachter Bucht, S.W. part of Kieler Bucht, *Ophioglypha albida*, *Astracanthion rubens*; REH (137) p. 243.—Faenö Sound, N.W. end of Little Belt, *Ast.*, *Ech.*, *Oph.*; PETERSEN (133) pp. 29 & 33.

Mediterranean,—Eastern, list of 44 spp., with discussion of bathymetric distribution, especially *Stolasterias neglecta*, *Brisinga coronata*, and *Ophioglypha carnea*; MARENZELLER (104) pp. 123 & 144: see also (100).—*Luidia sarsi* occurs; KOEHLER (75) p. 317: but this has long been known; LUDWIG (92).—Golfe du Lion, neighbourhood of Banyuls, zonal distribution of *Echinoderma*; PRUVOT (135).

Echinoidea collected by "Princesse Alice," chiefly from neighbourhood of Azores and Spain, see especially *Echinus melo*, *E. alexandri*, *Echinocardium mediterraneum*, and *Peripatagus cinctus*, n. g. & sp.; KOEHLER (79).—*Echinoidea* collected by "l'Hirondelle," chiefly from neighbourhood of Azores; KOEHLER (78).

American coasts, various *Asteroidea*; SLUITER (150).—N.E. America, bathymetrical and geographical distribution of *Asteroidea*, and general remarks on distribution of *Echinoderma*; VERRILL (164) esp. pp. 128 & 212.—Caribbean Sea, G. of Paria, list of *Oph.*, *Ast.*, and *Ech.* found there; GUPPY (50).—C. Horn, *Echinoidea*; BERNARD (12).

(iii) INDIAN OCEAN AND ADJACENT SEAS.

Red Sea,—list of *Ech.*, with same n. spp. as noted last year for (78), with general considerations; MAZZETTI (107).—*Asteroidea* collected by Orsini, notably *Astropecten orsinii*, n. sp. (p. 645), *A. acanthifer* (p. 644), *Ogmaster capella* (p. 649); LEIPOLDT (84).—Indian Archipelago, *Thyonidium rigidum*, n. sp.; SLUITER (152) p. 80.—Numerous *Asteroidea*, esp. *Astropecten ternatensis* and *A. ornans*, n. spp., *Nectria ocellifera*, *Pentaceros sladeni*, *Pentaceroopsis euphues*, n. sp., *Culcita niassensis*, n. sp.; SLUITER (150).—G. of Manaar, *Hol.*, *Ech.*, *Ast.*, *Oph.*, *Crin.*; THURSTON (158) p. 113.

(iv) PACIFIC AND ADJACENT SEAS.

Japan,—*Antedon macrodiscus*, n. sp.; HARA (53).—*Echinaster spinosus* and other *Asteroidea*; SLUITER (150).

B. of Amboyna, *Hol.* and *Crin.* collected by Bedot & Pictet, including *Phyllophorus bedoti*, n. sp.; KOEHLER (73).

Java Sea, esp. Billiton Id., *Hol.*, *Ech.*, *Ast.*, *Oph.*, and *Crin.* collected by Korotnev, in 1885, esp. *Colochirus violaceus*, *Stellaster squamulosus*, *Ophioderma propinqua*, n. sp., *Ophiohelix*, n. g.; KOEHLER (77).—Gaspar Str., *Antedon subtilis*, n. sp.; HARTLAUB (54) p. 151.

Central Pacific,—Solomon Is., *Echinaster callosus*, n. sp.; MARENZELLER (101).—East Central, *Antedon agassizi*, *A. tanneri*, *A. parvula*, *A. bigradata*, n. spp.; HARTLAUB (54).

Asteroidea collected by "Vettor-Pisani" Expedition, 1882-85, chiefly in S.E. Pacific, extension of distribution of many spp., notably *Stichasterias aurantiacus* at Porto Lagunas (p. 578), *Asterina stellifer* (p. 593) and a *Luidia* (p. 610) at Magellan Str., *Pharia pyramidata* at Valparaiso (p. 633), with remarks on distribution of *Heliaster* (p. 546); LEIPOLDT (84).

New Zealand, list of Echinoderms, with their general distribution and remarks on same; FARQUHAR (37).

(v) ARCTIC OCEAN AND ADJACENT SEAS.

Arctic Ocean, Barents, and Kara Seas, numerous *Asteroidea*, esp. *Pseudarchaster tessellatus*, n. var. *arcticus*, *Asterina gibbosa*, and *Solaster intermedius*, n. sp.; SLUITER (150).—Inglefield Gulf and Murchison Sound, various *Echinoderma*; OHLIN (127) pp. 171 & 173.

B.—GEOLOGICAL.

(i) GENERAL.

General geological distribution of *Crinoidea* (p. 146), *Cystidea* (p. 158), *Blastoidea* (p. 162), *Ophiuroidea* (p. 169), *Asteroidea* (p. 172), *Echinoidea* (p. 202); ZITTEL (180).

List of Pyrenees fossils from Ordovician to Pliocene, with localities and horizons, *Ech.*, *Crin.*, *Cyst.*; ROUSSEL (138) pp. 2-40 & 279-297.

(ii) CAINOZOIC.

(a) **General**:—*Echinoidea* collected near Modena, Italy, list and geological and palæontological conclusions; MAZZETTI (108), esp. pp. 444-460.

(b) **Post-pliocene**:—Sicily, *Astrogonium* (*Petalastrum*) *propegeometricum*, n. sp.; GREGORIO (48).—Calabria, *Echinocyamus*; CORTESE (22) p. 178.

(c) **Pliocene**:—(Sabbie grossolane et gialle), Calabria, *Clypeaster*, *Echinocyamus*, *Leiocardaris*; CORTESE (22) pp. 171 & 173.

(d) **Miocene**:—Clay and sandstone of Walbersdorf, in Hungary, *Brissopsis ottunungensis* and *Echinus*, cf. *hungaricus*; PROCHÁZKA (134).—Algeria, lists of *Echinoidea* from various zones and localities, checking the age of those described by Pomel, Cotteau, and others; WELSCH (167).—List of *Ech.* found at Baselice, Italy; PATRONI (130), footnote, p. 2.—Sardinia, *Echinoidea*, see *Agassizia*, *Amphiope*, *Arbacina*, *Brissopsis*, *Brissus*, *Cidaris*, *Clypeaster*, *Diadema*, *Echinocyamus*, *Echinolampas*, *Heteroclypeus*, *Hipponoe*, *Linthia*, *Maretia*, *Opissaster*, *Pericosmus*, *Pliolampas*, *Psammechinus*, *Rhabdocidaris*, *Schizaster*, *Scutella*, *Spatangus*, *Trachyspatangus*; COTTEAU (26).—(Lower Tortonian) of Calabria, species of *Clypeaster*, including many nomina nuda, and *Echinolampas*; CORTESE (22) pp. 141-143.

(f) **Eocene**:—Calcare di Gassino, Italy, list of *Ech.*, *Ast.*, *Crin.*; TRABUCCO (161) p. 117.—Upper Eocene (*Serpula spirulæa* beds) Venetia, *Echinoidea* and *Pentacrinus subbasaltiformis*; GREGORIO (47) pp. 14-17.—Eocene? Marl, Chickasawhay river, Clarke co., Mississippi, Holothurian spicules figured; CUNNINGHAM (30).—(Upper Maude beds and Waurin Ponds) Victoria, list of *Echinoidea*; HALL & PRITCHARD (52) p. 184.—(Oamaru), New Zealand, *Echinoidea* and *Crinoidea* compared with Australian Eocene *Echinoderma*; TATE (157).

(iii) MESOZOIC.

(a) **General**:—*Echinoidea* of Seine-inférieure, from Kimeridgian to Senonian, catalogue raisonnée, with localities, horizons, and a key to genera; COULON (28).

(b) **Cretaceous**:—*Micraster* species discussed, with horizons, localities, and index nominum; LAMBERT (88).

Upper Cretaceous.—(Fox Hills Group), Colorado, *Scutellaster cretaceus*, n. g. & sp.; CRAGIN (29).—(Senonian),—Rügen, *Ech.*, *Ast.*, *Oph.*, and *Crin.*, critical list and remarks; DEECKE (31) p. 71: Persian *Echinoidea* allied to contemporaries, not of India, but of Algeria, Tunis, Spain, and Provence, proving extension of Mediterranean into Persia, *Hemipneustes*, *Holaster*, *Iraniaster*, *Hemiaster*, *Opissaster*, *Ornithaster*, *Pygurostoma*, *Parapygus*, *Catopygus*, *Pseudocatopygus*, *Vologesia*, *Echinobrissus*, *Pyrina*, *Echinoconus*, *Holactypus*, *Coptodiscus*, *Cidaris*, *Salenia*, *Hemipedina*, *Orthopsis*, *Cyphosoma*, *Coptosoma*, *Actinophyma*, *Orthechinus*, *Goniopygus*, *Plistophyma*; COTTEAU & GAUTHIER (27) p. 107.—(Cenomanian),—Calabria, *Hemiaster gracilis*; CORTESE (22) p. 114: Persian *Echinoidea* compared with those of Algeria, *Pseudananchys*, *Hypsaster*, *Hemiaster*; COTTEAU & GAUTHIER (27) p. 13.—(Friesener Schichten),—Zone of *Inoceramus cuvieri* at Tetschen, Bohemia, *Holaster planus*; MATOUSCHEK (106): Bohemia, Klein-Kahn, *Micraster*, *Antedon* (p. 145), Neugründel, *Cidaris*, *Stellaster* (p. 147), Kunětitzer Berg, *Holaster* (p. 163), Holitz, *Cidaris*, *Catopygus*, *Holaster* (p. 165), Nemoschitz, *Antedon*, *Cyphosoma*, *Micraster*, *Holothuria*? (p. 168), Jestbořitz, *Antedon*, *Stellaster*, *Holaster* (p. 169), Kalouschka, *Antedon*, *Holaster*, *Micraster*, *Holothuria*? (p. 180); JAHN (69).—(Teplitzer Schichten), Bohemia, Kočí, *Cidaris*, *Phymosoma*, *Stellaster*; JAHN (69) p. 214.—List of *Echinoidea* in Chalk of Jičína, Bohemia; ZAHÁLKA (178): and of Ripu, Bohemia; ZAHÁLKA (177).

Lower Cretaceous.—(Berrias Schichten), Sisikon, Switzerland, *Cidaris alpina*, *Collyrites berriassensis*, *Phyllocrinus* cf. *Malbosi*; TOBLER (159) pp. 254 & 265.—(Neocomian) Quadersandstein of Gersdorfer Burg, Germany, *Phyllobrissus*; MAAS (94) p. 273.

(c) Jurassic.—Aquitaine, lists of *Ech.* and *Crin.* with localities and horizons; GLANGEAUD (44).

Upper Jurassic.—(Tithonian), Campora, Lombardy, *Metaporhinus*, *Collyrites*, *Phyllocrinus* [sic], *Pentacrinus* [= *Balanocrinus*]; CORTI (23) p. 186: *Metaporhinus*, *Collyrites*, *Phyllocrinus*, *Pentacrinus*; CORTI (24) p. 386.—(Malm), Pomerania, *Echinoidea*, with localities; DEECKE (31) p. 24.—(Virgulien), Cirin in Ain, *Antedon*, *Plutonaster*, and *Pentagonaster chantrei*, n. sp.; LORIOU (88).—(Corallien inférieur ou Glypticien), Commercy, Meuse, list of *Ech.* and *Crin.*, esp. *Hemicidaris crenularis*, *Collyrites bicordata*, and *Millericrinus munsterianus*; PERON (131).—(Rauracien), Istein in Baden, *Cidaris florigemma*, *Glypticus hieroglyphicus*, *Hemicidaris intermedia*, *Apiocrinus*, *Pentacrinus censoriensis* (P); MIEG (112) p. 102.—(Rauracien inférieur), Jura Bernois, list of *Ech.* and *Crin.*; LORIOU (87) pp. 89–91.—(Callovian),—N.W. France, lists of *Echinoidea* from various localities; BIZET (13).

Lower Jurassic.—(Middle and Upper Oolites), England, lists of *Crinoidea* (p. 396), *Echinoidea* (p. 396), *Ophiuroidea* (p. 398), and *Asteroidea* (p. 398), and other pp. quoted in § I; WOODWARD (176).—(Domerian), Brianza, Italy, *Millericrinus*, *Pentacrinus*, *Cidaris*; BONARELLI (14) p. 417.

—(Bathonian) near Toulon, localities and horizons of *Ech.*, with *Heteropedina moteti*, n. g. & sp., also *Millericrinus morierei* and *Pentacrinus nicoleti*; MICHALET (111).—(*Humphresianus* zone and Hauptrogenstein), Tuniberge near Freiburg i. B., occurrence of *Galeropygus caudatus*, *Rhabdocidaris horrida*, and *Echinobrissus renggeri*, *Pseudodiadema pentagonum*, *Pentacrinus cristagalli*; SARDESON (144) pp. 113 & 116.

(d) Lias:—(Limestone with *Phylloceras cylindricum*), Mt. Pisano, Italy, *Pentacrinus*, *Cidaris*, *Diademopsis*; FUGINI (40) pp. 140–143.—(Lower Lias), Saltrio in Lombardy, *Millericrinus*, *Pentacrinus*, *Cidaris*; PARONA (129) pp. 70–73.

(iv) PALÆOZOIC.

(a) General:—Distribution of genera of Carboniferous *Crinoidea* through American Palæozoic rocks (p. 146), and Palæozoic Echinoderms of Missouri, catalogued, both systematically, with localities, and stratigraphically; KEYES (70).

(b) Trias:—Tuscany, *Encrinus liliiformis*, *E. silesiacus*?, *Cidaris transversa*; NOVARESE (126).—(Muschelkalk),—Italy, *Pentacrinus*, *Encrinus*, *Cidaris*, various localities; TOMMASI (160) pp. 57–63: (Goraszder Schichten), Upper Silesia, *Encrinus spinosus*, n. sp.; MICHAEL (110).—(Cassianer Schichten), Marmolatagebirge, *Cidaris*, *Encrinus* (pp. 83 & 84), and (Marmolatakalk), *Encrinus*, *Pentacrinus*, *Cidaris* (p. 138); SALOMON (143).

(e) Carboniferous:—(Culm), Herborn in Nassau and Wirringhausen in Waldeck, *Carduocrinus jaekeli*, n. g. & sp.; KOENEN (80).—(Viséen b), Petit-Modave, Belgium, *Palaechinus*; DESTINEZ (33).—(Tournaisien), Meuse, Belgium, *Palaechinus*; FORIR & LOHEST (39).

(Kaskaskia Group), Kentucky, n. spp. of *Onychocrinus*, *Poteriocrinus*, *Pterotoocrinus*, *Taxocrinus*, and *Zeocrinus*; MILLER (114).

(St. Louis Group),—Indiana, n. spp. of *Batocrinus*; MILLER (114): Alton, Ill., n. spp. of *Poteriocrinus*, *Cyathocrinus*; MILLER (115).

(Keokuk Group),—Kentucky, Tennessee, Illinois, and Indiana, n. spp. of *Actinocrinus*, *Agaricocrinus*, *Barycrinus*, *Batocrinus*, *Eretmocrinus*, *Platyocrinus*; MILLER (114): Button Mould Knob, Ky., n. sp. of *Batocrinus*, MILLER (115): Boonville, Mo., n. spp. of *Batocrinus*, *Zeocrinus*; MILLER (115).

(Burlington and Keokuk), accurate horizons of *Crin.* and *Blast.* in Missouri; WELLER (165) p. 198.

(Burlington Group),—Sedalia, Mo., n. spp. of *Batocrinus*, *Shumardocrinus*, n. g., *Strotocrinus*, *Actinocrinus*, *Poteriocrinus*, *Cyathocrinus*, *Platyocrinus*; MILLER (115).—(Upper Burlington Limestone), *Granatocrinus magnibasis*, n. sp.; ROWLEY (140) p. 220.

(Kinderhook Group),—*Allagecrinus americanus*, n. sp.; ROWLEY (140) p. 219.

(Chouteau Limestone),—Sedalia, Mo., n. spp. of *Actinocrinus*, *Samp-*

sonocrinus, n. g., *Amphoracrinus*, *Melocrinus*, *Poteriocrinus*, *Cyathocrinus*, *Platycrinus*, *Coduster*; MILLER (115): *Crin.* and *Blast.* of circum-insular habitat; WELLER (166) p. 910.

(f) Devonian:—Limestones of Lummaton and Wolborough in S. Devon, *Crinoidea* described; WHIDBORNE (168).—Columnals from Devonian of Elba ascribed to *Actinocrinus tenuistriatus*; STEFANI (155).—(Mid-Devon., Stringocephalen-kalk), Rhineland, list and localities of *Crinoidea* and *Pentatremites*; HOLZAPFEL (61) pp. 299–316.—Germany, *Crinoidea* and a *Blastoid*, occurrence discussed, with special reference to Lower Devon. Hunsrückschiefer; JAEKEL (67) *passim*, esp. p. 4.—(Lower Devon.) E. Ural, n. spp. ascribed to *Callicrinus*, *Lahusenocrinus*, n. g., and *Gissocrinus*, also *Condylocrinus verrucosus*; TSCHERNYSCHEW (162) p. 186.

(Hamilton Group),—Clarke Co., Ind., n. spp. of *Megistocrinus*; MILLER (115): Charleston, Ind., n. spp. of *Gilbertocrinus*, *Dolatocrinus*; MILLER (114): n. spp. of *Dolatocrinus*; MILLER (115).

(g) Silurian:—(Niagara Group),—Louisville, Ky., n. sp. of *Caryocrinus*; MILLER (114): Decatur Co., Tenn., n. spp. of *Thalamocrinus*, n. g.; MILLER (115): Madison, Ind., n. spp. of *Holocystites*; MILLER (115): St. Paul, Ind., n. spp. of *Saccocrinus*, *Cylicocrinus*, *Macrostylocrinus*, *Emperocrinus*, n. g., *Stribalocystis*; MILLER (114): n. spp. of *Pisocrinus*, *Indianocrinus*, n. g.; MILLER (115).

(h) Ordovician:—(Uppermost Hudson R. Group), Indiana, *Agelocrinus faberi*, n. sp.; MILLER & FABER (113) p. 156.—(Hudson R. Group), Alexander Co., Ill., n. sp. of *Cyclocystoides*; MILLER (114).

(Trenton Group), Knox Co., Tenn., n. sp. of *Archaeocrinus*; Mercer Co., Ky., n. sp. of *Pleurocystis*; MILLER (114).

(i) Cambrian:—(Mid-Cambrian), Coulouma in l'Hérault, *Trochocystis cannati*, n. sp.; MIQUEL (116) p. 9.

IV. SYSTEMATIC.†

(A.)—ECHINODERMA IN GENERAL.

Systematic review of *Echinoderma* and of Classes, with special reference to extinct forms; three main divisions *Pelmatozoa*, *Asterozoa*, and *Echinozoa*; ZITTEL (180).

† A dagger prefixed to the trivial name of a species indicates that it is fossil; prefixed to the name of the author, it denotes that the reference is to the species in a fossil state; prefixed to the name of a genus, it indicates that all species of the genus here recorded are fossil, and the † is therefore not repeated before each name. The abbreviations *l. c.* and *op. cit.* refer only to the place or work quoted immediately before.

A name and reference quoted without further statement (e.g., *Ankyroderma jeffreyi*, above) indicate that the original author's statement refers merely to locality or some question of slight importance. Further information can usually be gleaned from the cross-references under TITLES.

Incertæ sedis.

† *Pegmacrinus*, Virgulien, Cirin, figured, but are probably not *Echinoderma*; LORIOL (88).

Vide etiam *Rhizocrinus santagatai*.

(B.)—HOLOTHURIOIDEA.

Actinocucumis typica; KOEHLER (77) p. 380; young, spicules described; KOEHLER (73) p. 276.

Ankyroderma jeffreysii; SLUITER (152) p. 82.

"*Auricularia nudibranchiata*," a new form of Holothurian larva from Orotava; CHUN (21).

Chirodota liberata; SLUITER (152) p. 82. *C. pellucida*, excretion; SCHULTZ (147) p. 391. *C. rufescens*; SLUITER (152) p. 82.

Colochirus, maintained; KOEHLER (76) p. 358. *C. cucumis*, *C. doliolum*; SLUITER (152) p. 80. *C. quadrangularis*; KOEHLER (77) p. 375; SLUITER (152) p. 80. *C. scandens*; *l. c.* *C. tuberculosis*; *C. violaceus*, Billiton Id. ?; KOEHLER (77) p. 375.

Cucumaria, subgenera discussed, and key to species given; KOEHLER (76) pp. 358 & 360. *C. canescens*; KOEHLER (77) p. 376; SLUITER (152) p. 80. *C. cucumis*; *l. c.*: spermatogenesis; FIELD (38) p. 80: diagnosed; KOEHLER (76) p. 362. *C. elongata*; SLUITER (152) p. 80: diagnosed; KOEHLER (76) p. 362. *C. frondosa*; GRIEG (49) p. 4; SLUITER (152) p. 80: spicules described and figured; KOEHLER (76) p. 361. *C. glacialis*; SLUITER (152) p. 80. *C. grubii*, diagnosed; KOEHLER (76) p. 363. *C. hispida*; GRIEG (49) p. 4. *C. hyndmani*; *l. c.*; SLUITER (152) p. 80: spicules figured; KOEHLER (76) p. 361. *C. imbricata*; KOEHLER (77) p. 376. *C. japonica*; SLUITER (152) p. 80. *C. hirschbergii*, spicules described and figured (p. 360); *C. (Semperia) köllikeri*, diagnosed (p. 363); KOEHLER (76). *C. lactea*; SLUITER (152) p. 80: includes *C. mosterensis*; GRIEG (49) p. 4: diagnosed; KOEHLER (76) p. 363. *C. (Semperia) lefevrei*, spicules figured; KOEHLER (76) p. 364. *C. mirabilis*, covered with shells, spicules of podia perforate; SLUITER (152) p. 80. *C. montagui*, referred to *Colochirus* and distinguished from *C. lefevrei*, which is a *Semperia*, and from *C. elongata*; KOEHLER (76) pp. 355 & 360. *C. pentactes*; GRIEG (49) p. 4: excretion; SCHULTZ (147) p. 394. *C. planci*; SLUITER (152) p. 80: spicules figured; KOEHLER (76) p. 364; spermatozoon; BALLOWITZ (3). *C. (Semperia) syracusana*, diagnosed; KOEHLER (76) p. 363. *C. tergestina*; SLUITER (152) p. 80: spicules and arrangement of podia figured; KOEHLER (76) p. 362.

Echinocucumis typica; SLUITER (152) p. 80.

Elpidia glacialis; SLUITER (152) p. 81.

Haplodactyla molpadoides, *H. punctata*; *l. c.*

Holothuria, key to species; KOEHLER (76) p. 364. *H. argus*, "Anus très distinctement stellé"; KOEHLER (73) p. 279. *H. atra*; KOEHLER (77) p. 382: stone-red in life; SLUITER (152) p. 78. *H. cap-*

- tiva* (p. 79), *H. curiosa* (p. 78); SLUITER (152). *H. edulis*; KOEHLER (73) p. 281, and SLUITER (152) p. 79. *H. erinaceus* (p. 78), *H. flavo-maculata*, includes *H. fusco-cærulea*, Theel (p. 77); SLUITER (152). *H. forskali*, confused with *H. polii* by Naples Station, diagnosed; KOEHLER (76) pp. 357 & 365. *H. fuscocinerea* (p. 79), *H. glaberrima* (p. 78); SLUITER (152). *H. graeffei*, Semper's description confirmed; KOEHLER (73) p. 280. *H. helleri*, diagnosed; KOEHLER (76) p. 365. *H. immobilis*; SLUITER (152) p. 78. *H. impatiens*, *l. c.*; KOEHLER (73) p. 282: diagnosed; KOEHLER (76) p. 364. *H. intestinalis*; GRIEG (49) p. 4; MARENZELLER (104) p. 143; SLUITER (152) p. 78. *H. klunzingeri*, allied to *H. notabilis*; *l. c.* *H. maculata*; SLUITER (152) p. 79. *H. mammata*, discussed; KOEHLER (76) p. 366. *H. marmorata*; SLUITER (152) p. 78. *H. martensi*, spicules described; KOEHLER (77) p. 383. *H. monacaria*; KOEHLER (73) p. 281; (77) p. 381; SLUITER (152) p. 77. *H. notabilis*, *H. olivacea*, *H. œurropea*; SLUITER (152) p. 78. *H. pardalis*; KOEHLER (73) p. 283; (77) p. 381; SLUITER (152) p. 79. *H. pleuripus*, spicules described; KOEHLER (73) p. 283. *H. polii*; SLUITER (152) p. 78: diagnosed; KOEHLER (76) p. 365: spermatogenesis; FIELD (38). *H. pulchella*; SLUITER (152) p. 77. *H. pyxis*; *l. c.* *H. sanctori*, diagnosed; KOEHLER (76) p. 365. *H. scabra* (p. 78); *H. squamifera* (p. 79); SLUITER (152). *H. stellati*; *op. cit.* p. 78: distinguished from *H. tubulosa*, those of Naples Station are *H. polii*; KOEHLER (76) p. 366. *H. surinamensis*; SLUITER (152) p. 78. *H. tremula*; *op. cit.* p. 79; GRIEG (49) p. 4: spicules described and figured; KOEHLER (76) p. 366. *H. truncata*; SLUITER (152) p. 79. *H. tubulosa*; *l. c.*: spicules described and figured; KOEHLER (76) p. 366; *H. vagabunda*; KOEHLER (73) p. 284; SLUITER (152) p. 77: perhaps includes *H. lagoena*; KOEHLER (77) p. 383. *H. vitiensis*; SLUITER (152) p. 78: includes *H. tenuissima*, Semper; KOEHLER (77) p. 383.
- Muelleria flava-castanea* (?) twice as large as type; SLUITER (152) p. 79. *M. lecanora*; *l. c.*; *M. mauritiana*; *l. c.*; KOEHLER (77) p. 380. *M. miliaris*; SLUITER (152) p. 79.
- Myriotrochus rinkii*; GRIEG (49) p. 4; SLUITER (152) p. 82.
- Ocnus* suppressed; KOEHLER (76) p. 359. *O. javanicus*; SLUITER (152) p. 80.
- Orcula tenera*; SLUITER (152) p. 81.
- Phyllophorus granulatus*, *P. holothuroides*; SLUITER (152) p. 81. *P. occidentalis*, spicules first figured; KOEHLER (77) p. 377. *P. pellucidus*; GRIEG (49) p. 4.
- P. bedoti*, B. of Amboyna; KOEHLER (73) Rev. Suisse Zool. iii, p. 278, n. sp.
- Pseudocucumis acicula*, double spicules; SLUITER (152) p. 81. *P. africana*; KOEHLER (73) p. 276. *P. intercedens*, includes *Cucumaria bicolor*, Bell; KOEHLER (77) p. 378.
- Pseudostichopus occultatus*; MARENZELLER (104) p. 143.

- Psolus phantapus*; GRIEG (49) p. 4; SLUITER (152) p. 81. *P. regalis*; *l. c.* *P. squamatus*; *l. c.*; GRIEG (49) p. 4.
- Semperia*, see under *Cucumaria*.
- Stichopus chloronotus*; KOEHLER (73) p. 285; (77) p. 385; SLUITER (152) p. 79. *S. levis*; *l. c.* *S. natans*; GRIEG (49) p. 4. *S. regalis*; MARENZELLER (104) p. 143; SLUITER (152) p. 79: spermatogenesis; FIELD (38). *S. sitchaensis*; SLUITER (152) p. 79. *S. variegatus*; *l. c.*; KOEHLER (77) p. 384. *S. vastus*; SLUITER (152) p. 79.
- Synapta*, development; BURY (17) pp. 47-64. *S. beseli*; KOEHLER (73) p. 285; SLUITER (152) p. 82. *S. buski*, Bell's figures criticised, species perhaps indistinguishable from *S. inhaerens*; CHADWICK (20) p. 236. *S. digitata*; MARENZELLER (104) p. 144; SLUITER (152) p. 82: Bell's description of tentacles criticised; CHADWICK (20) p. 236. *S. dubia*, *S. glabra*, *S. godefroyi*, *S. grisea*, *S. indivisa*; SLUITER (152) p. 82. *S. inhaerens*; *l. c.*; GRIEG (49) p. 4: Bell's figures criticised, anatomy and histology described; CHADWICK (20). *S. kefersteinii*, *S. lactea*, *S. psara*; SLUITER (152) p. 82. *S. recta*; KOEHLER (77) p. 385. *S. reticulata*; *l. c.*; KOEHLER (73) p. 286; and with var. *maculata*; SLUITER (152) p. 82. *S. rodea*; *l. c.*
- Thyone fusus*; GRIEG (49) p. 4. *T. mirabilis*, variations from type; KOEHLER (77) p. 378. *T. raphanus*; GRIEG (49) p. 4. *T. sacella*; SLUITER (152) p. 80.
- Thyonidium rigidum*, Indian Archipelago; SLUITER (152) Bijdr. Dierk. xvii, p. 80, n. sp.
- Trochostoma arcticum* (p. 82), *T. boreale* (p. 81); SLUITER (152).

(C.)—ECHINOIDEA.

- General account, and classification of fossil forms thus: Subclass, *Palechinoidea*, with Orders, *Cystocidarida*, *Bothriocidarida*, *Perischoechinida*; Subclass, *Euechinoidea*, with Orders, *Regulares* (*Holostomata*, *Glyphostomata*), *Irregulares* (*Gnathostomata*, *Atelostomata*); ZITTEL (180) p. 174.
- † *Actinophyma*, n. g. of *Diadematiidae* (p. 96), with type *A. spectabile*, Senouian of Endjirkouh, Lauristan (p. 98); COTTEAU & GAUTHIER (27) *Ech. foss. Perse*, n. sp.
- † *Adytaster*, introduced as "Lambert, 1895," but apparently n. g. with type *Cyclaster lucentinus*, Cotteau; LAMBERT (88) p. 162.
- † *Agassizia lovisatoi*, Miocene, "Calcaire compacte de Fontanazzo," Sardinia; COTTEAU (26) *Mem. Soc. geol. France*, Pal. v, fasc. ii, Mém. No. 13, p. 49, n. sp.
- Amblypneustes ovum*, change of proportions with age; SLUITER (151) p. 71.
- † *Amphidotus sulcatus*, probably = *Cardiaster latecordatus*; TATE (157) p. 124.

- † *Amphiope* :—*A. hollandei*, slight variation from type, Sardinia ; COTTEAU (26) p. 16.
- A. dessii*, [ascribed to "Lovisato, 1895," but apparently n. sp.], Miocene under the Camposanto of Nurri, Sardinia (p. 17) ; *A. lovisatoi*, Miocene near Chiaramonti, Sardinia (p. 16) ; COTTEAU (26) Mem. Soc. geol. France, Pal. v, fasc. ii, Mém. No. 13 : n. spp.
- Arachnoides* :—† *A. conica* is a *Monostychia*, probably *M. australis* var. *loveni* ; TATE (157) p. 123. *A. placenta* ; SLUITER (151) p. 72 : distribution ; FARQUHAR (37) p. 197.
- Arbacia dufresnei*, resembles *A. alternans*, carries its young ; BERNARD (12). *A. nigra* ; SLUITER (151) p. 68. *A. punctulata* ; l. c. ; WILSON & MATHEWS (175). *A. pustulosa* ; KOEHLER (78) p. 224 ; SLUITER (151), p. 68 : spermatogenesis ; FIELD (38). *A. stellata* ; SLUITER (151) p. 68.
- † *Arbacina* :—*A. piae*, [ascribed to "Lovisato, 1895," but apparently n. sp.], Miocene near Cantoniera de Cadreas, Sardinia (p. 13) ; *A. sassarensis*, Miocene of C. St. Elia and Cantoniera de Cadreas, Sardinia (p. 12) ; COTTEAU (26) Mem. Soc. geol. France, Pal. v, fasc. ii, Mém. No. 13 : n. spp.
- † *Archæocidaris* :—*A. aculeata*, refigured (p. 130), *A. agassizi*, refigured (p. 127), *A. biangulata*, refigured (p. 130), *A. dininnii* (p. 130), *A. hallianus*, Geinitz, olim *Eocidaris* (p. 129), *A. keokuk* (p. 128), *A. megastylus*, refigured (p. 129), *A. newberryi* (p. 129), *A. norwoodi* (p. 129), *A. shumardana* (p. 128), *A. wortheni*, refigured (p. 128) ; KEYES (70).
- Asthenosoma hystrix* ; KOEHLER (78) p. 224 & (79) p. 228. *A. varium*, figures of specimen from Amboyna, with enlargements of apical system, peristome, ambulacrals, interambulacrals, spines, and pedicellariæ ; LORIOLE (89).
- Astriclypeus manni* ; SLUITER (151) p. 73.
- Astropyga radiata*, has globiferous spines as in *Centrostephanus* ; KOEHLER (77) p. 412 : includes forms previously referred by Sluiter to *A. pulvinata* ; SLUITER (151) p. 68.
- † *Bothriocidaris*, anatomy and place in system ; JAEKEL (66).
- † *Breynella vassali*, see *Pygorhynchus*.
- Brissois* :—† *B.* sp., Miocene of Fontanazzo in Sardinia ; COTTEAU (26) p. 41. † *B. alta*, fresh details of type ; TATE (157) p. 124. † *B. crescenticus* ; MAZZETTI (108) p. 436 : variations from type, Sardinia ; COTTEAU (26) p. 41. † *B. hectori*, invalid ; TATE (157) p. 124. *B. luzonica* ; KOEHLER (77) p. 418. *B. lyrifera* ; GRIEG (49) p. 11 ; KOEHLER (78) p. 225 & (79) p. 230 ; MARENZELLER (104) p. 143. † *B. lyrifera* [sic] ; MAZZETTI (108) p. 435. † *B. ottnangensis* ; MAZZETTI (108) p. 436 ; PROCHÁZKA (134) pp. 8, 10, 13, 17, & 23.
- Brissois* :—† *B.* sp. ; MAZZETTI (108) p. 436. *B. carinatus* ; SLUITER (151) p. 74. † *B. corsicus*, Sardinia ; COTTEAU (26) p. 50. † *B. eximius* ; TATE (157) p. 124. *B. unicolor* ; SLUITER (151) p. 74.

- †*Caratomus nuperus* is an *Echinolampas*, aff. *E. gambierensis*; TATE (157) p. 123.
- †*Cardiaster*:—*C. granulatus*, discussed, with allies *C. sequanicus*, *C. sarthacensis*; LAMBERT (83) p. 265. *C. latecordatus*, see *Amphidotus sulcatus*.
- †*Catopygus*:—*C. morgani* (p. 60) & *C. ovalis* (p. 61), Senonian of Derre-i-Chahr, Louristan; COTTEAU & GAUTHIER (27) *Ech. foss. Perse*: n. spp.
- Centrostephanus longispinus*, test redescribed and figured; KOEHLER (75) p. 339.
- Cidaris*:—†*C. (Rhabdocidaris)* sp., Eocene of Waihao R., N.Z.; TATE (157) p. 122. †*C. alpina*; TOBLER (159) p. 254. †*C.* cf. *amalthei*, spines; PARONA (129) p. 73. †*C. avenionensis*; MAZZETTI (108) p. 417: from Sardinia, variations in spines described; COTTEAU (26) p. 7. †*C. belgica*; MAZZETTI (108) p. 417. †*C. hirta*; l. c. †*C. hollandei*, redescribed and figured, from Sardinia; COTTEAU (26) p. 6. †*C. melitensis*; MAZZETTI (108) p. 417. *C. metularia*; SLUITER (151) p. 67. †*C. munsteri*, Sardinia; COTTEAU (26) p. 8. *C. papillata*; GRIEG (49) p. 10; MAZZETTI (108) p. 417. †*C. peroni*, syn. of *C. munsteri*; COTTEAU (26) p. 8. †*C. pleracantha*, discussed; LAMBERT (83) p. 261. †*C. propinqua*, doubtful if spines referred here really belong to test; PERON (131) p. 544. †*C. striata*, probably *Leiocidaris australiæ*; TATE (157) p. 122. †*C. terrenzii*; FUCINI (40) p. 141. †*C. transversa*; NOVARESE (126): spines figured and described, Muschelkalk, Lenna, Italy; TOMMASI (160) p. 62. *C. tribuloides*; KOEHLER (78) p. 224; SLUITER (151) p. 67. †*C. triserrata*, spine-fragments, figured; SALOMON (143) p. 138. †*C. (Leiocidaris) verneulli*, includes *C. pseudojurassica* and *C. scampicii*, found in Italy, figured; GREGORIO (47) p. 14. †*C. verticillum*; MAZZETTI (108) p. 417. See also *Leiocidaris*, *Rhabdocidaris*.
- †*C.*, indet. spine-fragment, Cassian beds, Oberes Fassathal; SALOMON (143) *Palæontogr. xlii* (1-3) p. 83. †*C.*, indet., Marmolata; *op. cit.* p. 139. †*C. aftabensis*, based on spines from Senonian of Aftab, Derre-i-Chahr, and Kolm, Louristan; COTTEAU & GAUTHIER (27) *Ech. foss. Perse*, p. 81. †*C. husseini* [ascribed to "Cott. & Gauth. 1894," but apparently n. sp.], Senonian of Derre-i-Chahr, Louristan; *op. cit.* p. 82. †*C. lovisatoi* [ascribed to "Cotteau, 1893," but apparently n. sp.], Miocene of Monteleone, Sardinia; COTTEAU (26) *Mem. Soc. geol. France, Pal. v, fasc. ii, Mém. No. 13*, p. 9. †*C. persica*, Senonian of Aftab, Derre-i-Chahr; and Endjir-Kouh, Louristan; COTTEAU & GAUTHIER (27) *Ech. foss. Perse*, p. 79: n. spp.
- Clypeaster*:—†*C.* sp., Miocene of S. Bartholomeo near Cagliari, Sardinia; COTTEAU (26). †*C. alticostatus*; CORTESE (22) p. 142. †*C.*, aff. *alticostatus*, Miocene of Sardinia; COTTEAU (26) p. 29. †*C. altus*, Sardinia; *op. cit.* p. 23. †*C. crassicostratus*, Sardinia; l. c. †*C. gibbosus*; CORTESE (22) p. 141: large size and broad ambulacra,

- also var. *dilatata*, Sardinia; COTTEAU (26) p. 20. *C. humilis*; MAZZETTI (107) p. 219; SLUITER (151) p. 72. †*C. insignis*, var. *acuminatus*; CORTESE (22) p. 142. †*C. intermedius*; *l. c.*: a large individual, Sardinia; COTTEAU (26) p. 24. †*C. marginatus*, slight variations from type in Sardinian specimens; COTTEAU (26) p. 21. †*C. michelini* (p. 141), †*C. philippii* (p. 142), †*C. planatus* (p. 143), †*C. pliocenicum* (p. 171), †*C. portentosus* (p. 142), †*C. pyramidalis* (p. 142); CORTESE (22). †*C.*, aff. *reidii*, Sardinia (p. 25), †*C. scillæ*, Sardinia (p. 22), †*C. tauricus*, slight variations from type in Sardinian specimens (p. 23); COTTEAU (26). †*C. tenuis*, var. *gigantea*; CORTESE (22) p. 143.
- †“*Clypeaster cortesei*, Di-Stef., n. sp.” (p. 142), †“*Clypeaster jonicus*, Di-Stef., n. sp.” (p. 141), †“*Clypeaster subintermedius*, Di-Stef., n. sp.” (p. 142), †“*Clypeaster submelitensis*, Di-Stef., n. sp.” (p. 142): nomm. nud. ; CORTESE (22) Mem. Carta Geol. Ital. ix.
- †*C. lovisatoi* (p. 26), †*C. sardiniensis* (p. 28), Miocene of Sardinia COTTEAU (26) Mem. Soc. geol. France, Pal. v, fasc. ii, Mém. No. 13: n. spp.
- Coelopleurus* [written *Caelopleurus*] *equis*, Italy; GREGORIO (47) p. 14.
- †*Collyrites*:—*C. berriasensis*; TOBLER (159) p. 265. *C. dorsalis* (p. 117) & *C. elliptica* (p. 116), described and figured, Upper Callovian of Carreaux (Orne); BIZET (13). *C. friburgensis*, Tithonian, Italy; CORTI (24) p. 386.
- Colobocentrotus atratus*, *C. mertensii*; SLUITER (151) p. 69.
- †*Conoclypeus*:—*C. anacoreta* (p. 442), *C. bordae* (p. 443), *C. depressus* (p. 443), *C. duboisii* (p. 442), *C. montesiensis* (p. 443), *C. ovum*, figured (p. 443); MAZZETTI (108). *C. plagiosomus*; *op. cit.* p. 442: referred to *Echinolampas*; COTTEAU (26) p. 31. *C. semiglobus*; MAZZETTI (108) p. 442. *C. subcylindricus*; *l. c.*
- †*Coptodiscus*, n. g. of *Holactypoidæ* (p. 76), with type *C. noemiæ*, Senonian of Endjir-Kouh, Aftab, Kouh-Mapeul, Derre-i-Chahr, and Awasa, Louristan (p. 77); COTTEAU & GAUTHIER (27) Ech. foss. Perse, n. sp.
- †*Coptosoma gemmatum*, Senonian of Derre-i-Chahr, Louristan; COTTEAU & GAUTHIER (27) Ech. foss. Perse, p. 95, n. sp.
- †*Corculum corculum*; LAMBERT (83) p. 265.
- †*Cosmocypphus*, Pomel, not admitted; COTTEAU & GAUTHIER (27) pp. 94 & 97.
- †*Cyclaster*, discussed and defined; LAMBERT (83) p. 160. *C. posita*, see *Hemiaster*.
- †*Cyphosoma*:—*C. persicum*, Derre-i-Chahr (p. 91), *C. speciale*, Awasa and Aftab (p. 93), Senonian of Louristan; COTTEAU & GAUTHIER (27) Ech. foss. Perse: n. spp.
- Diadema setosum*; KOEHLER (77) p. 410; SLUITER (151) p. 68.
- †*D. calareense*, based on fragments of spines possibly belonging to *D. sahelensis*, from Miocene of Sardinia; COTTEAU (26) Mem. Soc. geol. France, Pal. v, fasc. ii, Mém. No. 13, p. 14, n. sp.
- †*Diademopsis*, aff. *heeri*; FUCINI (40) p. 143.

- † *Discoides inferus*, perhaps syn. of *D. minimus*; LAMBERT (83) p. 262.
Dorocidaris alcocki; ALCOCK (1). *D. papillata*; KOEHLER (78) p. 224 & (79) p. 228; MARENZELLER (104) p. 142: commensal polychæt; MARENZELLER (102). *D. tiara*; ALCOCK (1).
- Echinanthus*:—† *E. angulatus*; MAZZETTI (108) p. 437. † *E. corsicus*, Cotteau, referred to *Pliolampas vassali*; COTTEAU (26) p. 38. † *E. marginatus*; MAZZETTI (108) p. 437. *E. rosaceus*, *E. testudinarius*; SLUITER (151) p. 72.
- Echinarachnius excentricus*, *E. mirabilis*; l. c. *E. parma*, KOEHLER (78) p. 225.
- † *Echinobrissus*:—*E. micraulus* (p. 118) & *E. pulvinatus* (p. 117), described and figured, Upper Callovian of Correaux (Orne); BIZET (13). *E. papillosus*, see *Nucleolites*.
- E. iranicus*, Senonian of Aftab and Derre-i-Chahr, Louristan; COTTEAU & GAUTHIER (27) *Ech. foss. Perse*, p. 67, n. sp.
- Echinocardium australe*, the New Zealand form, a well-marked variety, possibly species *E. zealandicum*, Gray; FARQUHAR (37) p. 196. *E. cordatum*; GRIEG (49) p. 11; SLUITER (151) p. 74: spermatogenesis; FIELD (38). *E. flavescens*; GRIEG (49) p. 11; SLUITER (151) p. 74. *E. mediterraneum*, distribution extended to coast of Portugal; KOEHLER (79) p. 230. *E. pennatifidum*, southern extension; KOEHLER (78) p. 225.
- † *Echinocoonus*:—*E. circularis*, *E. icaunensis*; LAMBERT (83) p. 262.
E. douvillei [ascribed to "Cott. & Gauth. 1894," but apparently n. sp.], Senonian of Derre-i-Chahr, Louristan; COTTEAU & GAUTHIER (27) *Ech. foss. Perse*, p. 70, n. sp.
- † *Echinocorys*:—*E. vulgaris*, discussed with its varieties and allies, *E. ovatus*, *E. gravesi*, *E. gibba*, *E. scutatus*, *E. striatus*, *E. conoideus*; LAMBERT (83) p. 263.
- E. meudonensis*, nom. nov. pro *E. ovatus*, Lamarek non Leske; l. c. n. sp.
- Echinocyamus ammonii*, Italy, figured; GREGORIO (47) p. 15. *E. crispus*, (p. 215) & *E. elegans* (p. 216), described and figured; MAZZETTI (107). † *E. minutus*; CORTESE (22) p. 173. *E. pusillus*; GRIEG (49) p. 11; KOEHLER (78) p. 225 & (79) p. 230; SLUITER (151) p. 72; † CORTESE (22) p. 178. † *E. siculus*; l. c. † *E. studeri*, Gregory, from Malta, is not *E. studeri*, Sismonda; COTTEAU (26) p. 19.
- † *E. marioi* [ascribed to "Lovisato, 1895," but apparently n. sp.], Miocene of C. St. Elia and St. Ambrogio, Sardinia (p. 19), † *E. pseudopusillus*, Miocene, various localities in Sardinia (p. 18); COTTEAU (26) *Mem. Soc. geol. France, Pal. v, fasc. ii, Mém. No. 13*: n. spp.
- Echinodiscus auritus*; MAZZETTI (107) p. 220; SLUITER (151) p. 72. *E. biforis*; l. c. *E. lævis*; l. c.
- Echinolampas*:—† *E. sp.*; GREGORIO (47) p. 16: Miocene of Isili, Sardinia; COTTEAU (26) p. 37. † *E. affinis* (p. 438), † *E. angulatus* (p. 438), † *E. beaumonti* (p. 441), † *E. blainvillei* (p. 441), † *E. conicus* (p. 440), † *E. depressus* (p. 437), † *E. discus* (p. 440), † *E. ellipticus* (p. 439), † *E. escheri*? (p. 438), † *E. eurysonus* (p. 438), † *E. globulus* (p. 438),

- †*E. hemipilus* (p. 441); MAZZETTI (108). †*E. hemisphaericus*; *op. cit.* p. 440; CÔRTESE (22) p. 143: large individual, Sardinia; COTTEAU (26) p. 32. †*E. kleini*; MAZZETTI (108) p. 439. †*E. nuperus*, see *Caratomus*. *E. oviformis*; SLUITER (151) p. 73: †*E. patellaris* (p. 440), †*E. pilus* (p. 441); MAZZETTI (108). †*E. plagiosomus*, olim *Conoclypeus*, Sardinia; COTTEAU (26) p. 31. †*E. productus* (p. 439), †*E. rostratus* (p. 439), †*E. scutiformis* (p. 440), †*E. similis* (p. 438), †*E. sphaericus* (p. 440), †*E. stelliferus* (p. 442); MAZZETTI (108). †*E. studeri*; *op. cit.* p. 440: mentioned by Marmora as from Calcaire grossier of Pirri, Sardinia, is not that species; COTTEAU (26) p. 37. †*E. subangulatus* (p. 438), †*E. subcylindricus* (p. 438), †*E. subellipticus* (p. 439), †*E. subquadrangulatus* (p. 439); MAZZETTI (108). †*E. sub-similis*, Italy, figured; GREGORIO (47) p. 16.
- †*E. calarensis*, Miocene of Frexenda in Cagliari, Sardinia (p. 32), †*E. lovisatoi*, Miocene of Torre de Iscale Sale near C. Mannu, Sardinia (p. 36); COTTEAU (26) Mem. Soc. geol. France, Pal. v, fasc. ii, Mém. No. 13. †*E. magnificus* [quoted as Mazzetti, 1888, possibly is n. sp.], Montese, Italy; MAZZETTI (108) p. 441. †*E. pseudoangulatus*, Miocene of Sardinia (p. 35), †*E. s.-micheli* [ascribed to "Lovisato, 1893," but apparently n. sp.], Miocene "calcaire argileux," of Mt. S. Michele, Cagliari, Sardinia (p. 33), †*E. sardiniensis*, Miocene of C. St. Elia, Sardinia, varieties from Fontanazzo (p. 34); COTTEAU (26) Mem. Soc. geol. France, Pal. v, fasc. ii, Mém. No. 13: n. spp.
- Echinometra lucunter*; KOEHLER (77) p. 415; SLUITER (151) p. 69. *E. subangularis*, *E. viridis*; *l. c.*
- Echinoneus cyclostomus*, *E. semilunaris*; SLUITER (151) p. 73.
- Echinothrix calamaris*; SLUITER (151) p. 68. *E. desori*, variations from type in direction of *E. calamaris*; KOEHLER (77) p. 411. *E. turcarum*; SLUITER (151) p. 68.
- Echinus acutus*; SLUITER (151) p. 71; GRIEG (49) p. 11; KOEHLER (78) p. 225 & (79) p. 228: distinguished in detail from *E. melo* and *E. sphaera*; KOEHLER (75) p. 334: E. Mediterranean, formerly referred by Marenzeller to *E. norvegicus*; MARENZELLER (104) p. 142. *E. alexandri*, distribution extended to Spain and Azores, and to a depth of 1674 metres; KOEHLER (79) p. 229. *E. angulosus*; SLUITER (151) p. 71. *E. elegans*; GRIEG (49) p. 11; SLUITER (151) p. 71. †*E. enysi*, probably *Psammechinus woodsi*; TATE (157) p. 122. *E. esculentus*; GRIEG (49) p. 11; SLUITER (151) p. 71. †*E. cf. hungaricus*; PROCHÁZKA (134) pp. 8, 17. *E. magellanicus*; FARQUHAR (37) p. 196; BERNARD (12). *E. margaritaceus*, includes *E. diadema*; *l. c.* *E. melo*; SLUITER (151) p. 71: 1103 metres with brilliant colour; KOEHLER (79) p. 228. *E. microtuberculatus*; SEELIGER (148); SLUITER (151) p. 71: spermatogenesis; FIELD (38): development of larva; BURY (17) pp. 75-83: genital system and madreporite; RUSSO (141). *E. miliaris*; GRIEG (49) p. 11; SLUITER (151) p. 71. *E. norvegicus*; *l. c.*; GRIEG (49) p. 11. *E. sphaera*; KOEHLER (78) p. 225. *E. verruculatus*; SLUITER (151) p. 71.

- Encope micropora* ; SLUITER (151) p. 73.
- † *Eocidaris hallianus*, referred to *Archæocidaris* ; KEYES (70) p. 129.
- † *Epiaster*, defined and discussed (p. 156), *E. anglicus*, Coquand, a doubtful *Micraster* (p. 220), *E. meridanensis*, discussed, considered as a *Micraster* (p. 223) ; LAMBERT (83). *E. michaleti*, see *Micraster matheroni*.
- † *Eupatagus* :—*E. formosus*, see *Hemipatagus*. *E. greyi*, type described ; TATE (157) p. 124. *E. tuberculatus*, see *Meoma*.
- Euspatangus multituberculatus*, perhaps includes *Brissopsis sowerbyiformis* of Schauroth ; GREGORIO (47) p. 16.
- Evechinus chloroticus*, habitat, distribution, abnormal specimen ; FARQUHAR (37) p. 194.
- Fibularia ovulum*, *F. volva* ; SLUITER (151).
- Goniocidaris canaliculata*, stages of growth, includes *G. membranipora* and *G. vivipara* ; BERNARD (12).
- † *Goniopygus superbus*, Senonian of Derre-i-Chahr, Awasa, and Aftab, Louristan ; COTTEAU & GAUTHIER (27) *Ech. foss. Perse*, p. 101, n. sp.
- Hemiaster* :—† *H. acuminatus* ; MAZZETTI (108) p. 427. *H. australis* ; SLUITER (151) p. 74. † *H. bufo* ? (p. 428), † *H. buklandi* ? [sic] (p. 428), † *H. cotteaudi* (p. 427), † *H. declivus* (p. 427), † *H. gibbus* (p. 426), † *H. hemiglobus* (p. 427) ; MAZZETTI (108). † *H. posita* is a *Cyclaster* ; TATE (157) p. 125. † *H. rostratus* (p. 426), † *H. semi-rostratus* (p. 427), † *H. truncatus* (p. 427), † *H. varus* (p. 426) ; MAZZETTI (108).
- † *H. decussatus*, Cenomanian of Kebir-kouh, Louristan (p. 12), † *H. iranicus* (p. 33), † *H. longus* (p. 40), † *H. noemiæ* (p. 35), † *H. opimus* (p. 38), Senonian of Awasa, Louristan ; COTTEAU & GAUTHIER (27) *Ech. foss. Perse* : n. spp.
- † *Hemicidaris intermedia*, probably syn. of *H. crenularis* ; PERON (131) p. 545.
- † *Hemipatagus* :—*H. cordiformis* ; MAZZETTI (108) p. 437. *H. formosus* ; TATE (157) p. 123. *H. grignonensis* ; MAZZETTI (108) p. 437. *H. tuberculatus* ; TATE (157) p. 123.
- † *Hemipedina noemiæ*, Upper Senonian of Endjir-Kouh, Louristan ; COTTEAU & GAUTHIER (27) *Ech. foss. Perse*, p. 85, n. sp.
- † *Hemipneustes* :—*H. italicus* ; MAZZETTI (108) p. 436.
- H. minor*, Aftab (p. 17), *H. persicus*, Aftab and Derre-i-Chahr (p. 15), Senonian of Louristan ; COTTEAU & GAUTHIER (27) *Ech. foss. Perse* : n. spp.
- † *Heterobrissus montesii* ; MAZZETTI (108) p. 436.
- Heterocentrotus mammillatus* ; KOEHLER (77) p. 414 ; SLUITER (151) p. 69. *H. trigonarius* ; l. c.
- † *Heteroclypeus* belongs to *Echinolampadæ*, not to *Conoclypeidæ* ; *H. semiglobus*, Sardinia ; COTTEAU (26) p. 30.
- † *Heteropedina*, n. g., with type *H. moteti*, Upper Bathonian, " Couches à Echinides de St. Hubert, près Solliès-Toucas (Var) " ; MICHALET (111) *Bull. Soc. geol. France* (3) xxiii, p. 71, n. sp.

- Hipponoë esculenta*; SLUITER (151) p. 71. †*H. parkinsoni*, Sardinia; COTTEAU (26) p. 10. *H. variegata*; SLUITER (151) p. 71: protective habit; BATHER (5).
- †*Holaster*:—*H. cordatus*, see *Macropneustes*. *H. planus*, in zone of *Inoceramus cuvieri* at Tetschen, Bohemia; MATOUSCHEK (106) p. 119. *H. spatangiiformis*, see *Macropneustes*.
- H. iranicus*, Aftab (p. 21), *H. morgani*, Derre-i-Chahr, referred by Gauthier in footnote to *Pseudholaster* (p. 19), *H. proclivis*, Aftab (p. 25), *H. sepositus*, Derre-i-Chahr (p. 23), Senonian of Louristan; COTTEAU & GAUTHIER (27) Ech. foss. Perse : n. spp.
- †*Holactypus*:—*H. depressus*, described and figured, Upper Callovian of Carreaux (Orne); BIZET (13) p. 116.
- H. circularis*, Derre-i-Chahr. (p. 75), *H. inflatus* [ascribed to "Cott. & Gauth. 1894," but apparently n. sp.], Aftab (p. 73), Senonian of Louristan; COTTEAU & GAUTHIER (27) Ech. foss. Perse : n. spp.
- †*Hypsaster*, maintained and discussed; LAMBERT (83) p. 155.
- H. husseini* (p. 9), *H. longesulcatus* (p. 10), Cenomanian of Kebir-kouh Louristan; COTTEAU & GAUTHIER (27) Ech. foss. Perse : n. spp.
- Ilarionia beggiatoi*, Italy; GREGORIO (47) p. 16.
- †*Iranianaster*, n. g. of *Spatangidae* (p. 26), with type *I. morgani* (p. 28), also *I. douvillei* (p. 30), both from Senonian clays of Awasa, Louristan; COTTEAU & GAUTHIER (27) Ech. foss. Perse : n. spp.
- †*Isaster*, defined and discussed; LAMBERT (83) p. 159.
- †*Isopneustes*, Pomel, maintained and discussed; *l. c.*
- †*Isopneustes*, Mun. Chal., syn. of *Cyclaster*; *l. c.*
- †*Kleinia conjuncta*, possibly a *Toxobrissus*, but species invalid; TATE (157) p. 124.
- Laganum bonani*; SLUITER (151) p. 72; distinguished from *L. depressum*; KOEHLER (77) p. 418. *L. depressum*; SLUITER (151) p. 72. *L. fragile*, described and figured; MAZZETTI (107) p. 217.
- †*Leiocidaris*:—*L. australica*, see *Cidaris striata*. *L. histrix*; CORTESE (22) p. 173.
- Linthia*:—†*L. arizensis*?; MAZZETTI (108) p. 435. *L. assabensis*, described and figured; MAZZETTI (107) p. 221. *L. aurisleporis* (p. 435), *L. batyolcos* (p. 435), *L. capellini*, includes *Prenaster falax* [sic], Mazz. (p. 434), *L. cavernosa* (p. 435), *L. cuoghii* (434), *L. inflata* (p. 435), *L. insignis* (p. 433), *L. locardi*? (p. 434); †MAZZETTI (108).
- †*L. locardi*, Sardinia; COTTEAU (26) p. 39. *L. perplexa* (p. 434), *L. subelliptica* (p. 434), *L. subglobosa* (p. 433); †MAZZETTI (108).
- Lovenia elongata*; SLUITER (151) p. 73: young; KOEHLER (77) p. 416. *L. subcarinata*; SLUITER (151) p. 74. †*L. tuberculata*, see *Hemipatagus*.
- †*Macropneustes*:—*M. australis*, invalid; TATE (157) p. 124. †*M. cordatus* probably a *Holaster*; *op. cit.* p. 123. †*M. meneghini*; MAZZETTI (108) p. 429. †*M. peroni*, see *Trachyspatangus*. †*M. spatangiiformis*; TATE (157) p. 123.

- Marettia*:—†*M. paretii*; MAZZETTI (108) p. 428. *M. planulata*; SLUITER (151) p. 73: colour-characters; KOEHLER (77) p. 416. †*M. simplex* (olim *Spatangus*), Sardinia; COTTEAU (26) p. 52.
- Mellita longifissa*, *M. sexforis*, *M. stokesii*, *M. testudinata*; SLUITER (151) p. 73.
- †*Melonites*:—*M. crassus* (p. 126), *M. multipora*, refigured (p. 125); KEYES (70).
- †*Meoma*:—*M. brevipetala* is a crushed *Pericosmus compressus*; *M. crawfordi*, syn. of *Pericosmus compressus*; *M. tuberculata*; TATE (157) p. 125.
- Mespilia globulus*; SLUITER (151) p. 70.
- Metalia maculosa*, *M. sternalis*; SLUITER (151) p. 74.
- †*Metaporinus convexus*, Tithonian, Italy; CORTI (24) p. 386.
- †*Micraster*, defined and discussed (p. 156); pre-Kleinian descriptions discussed (p. 248); *M. aichensis*, perhaps young of *M. peini* (p. 247); *M. anceps* [not a n. sp. as one would suppose, but] a new var. of *M. decipiens* (p. 245); *M. antiquus*, probably not Cenomanian, and a close ally of *M. aturicus* (p. 227); *M. arenatus*, Sism. non Agassiz, maintained (p. 181); *M. arnaudi* [not a n. sp. as one would suppose, but] a new var. of *M. turonensis* (p. 244); *M. aturicus*, Seunes ex Hébert, probably syn. of *M. antiquus* (p. 230); *M. beonensis*, discussed (p. 225); *M. borcharidi* (p. 212); *M. breviporus*, really due to Hébert, 1866, not Agassiz, 1840 (p. 178), defined and discussed with its varieties, which include *M. normanniae* (p. 204); *M. brevis*, Desor, fully discussed, = *Spatangus gibbus*, Goldf. (p. 182): LAMBERT (83). *M. brevisulcatus*, figured; MAZZETTI (108) p. 426. *M. brongniarti*, defined and discussed, with vars. *pseudoglyphus*, *marginalis*, *sismondæ* (p. 199); *M. bucaillei*, probably var. of *M. coranguinum* (p. 234); *M. cayeuxi*, discussed (p. 232); *M. coranguinum*, fully discussed (p. 163); *M. corbovis*, discussed (p. 194); *M. corcolumbarium*, maintained and discussed (p. 202); *M. cordatus*, Agassiz, rejected *in toto* (p. 179); *M. cortestudinarium*, defined and discussed (p. 174); *M. cotteaudi* (p. 247); *M. decipiens*, maintained and discussed (p. 217); *M. fastigatus*, probably syn. of *M. gibbus* (p. 227); *M. gauthieri*, discussed (p. 232); *M. gibbus*, defined and fully discussed, with synonymy (p. 168); *M. gleizezei* (p. 198); *M. glyphus*, discussed and compared with *M. schlœnbachi* (p. 209); *M. gosselleti*, discussed (p. 229); *M. gourdoni*, discussed (p. 229); *M. grossouvrei* [not a n. sp. as one would suppose, but] a new var. of *M. coranguinum* (p. 245); *M. heberti* (p. 212); *M. heinzi* (p. 247); *M. ide* (p. 211); *M. incisus*, rejected (p. 247); *M. integer*, referred to *Cyclaster*, and distinguished from "*Isopneustes integer*" of Seunes (p. 198); *M. intermedius*, a mutation of *M. turonensis* (p. 222); *M. larteti*, Munier Chalmas MS., Senonian S.E. of Vitoria, Spain, described, but considered as var. of *M. corbaricus* (p. 242); *M. latiporus*, discussed (p. 208); *M. latus*, Sism. non Agassiz, maintained (p. 181); *M. laxoporus*, defined and discussed, with vars. *campaniensis* et *durantica* (p. 195); *M. leskei*, discussed (p. 178);

- M. lorioli*, maintained (p. 234); *M. marginalis*, discussed (p. 228); *M. matheroni*, Desor, discussed and defined, includes *Epiaster michaleti*, Coquand (p. 188); *M. michelini*, defined and discussed (p. 192); *M. normannia*, probably var. of *M. breviporus* (p. 221); *M. peini*, discussed (p. 247); *M. regularis*, discussed (p. 224); *M. renati*, Gauthier, olim *Epiaster*, discussed (p. 226); *M. rostratus*, defined and discussed (p. 173); *M. sanctæ-mauræ* (p. 225); *M. sublucunosus* (p. 211); *M. ter-censis*, defined and discussed (p. 203); *M. tropidotus*, discussed (p. 191); *M. turonensis*, maintained and fully discussed, with varying details figured (p. 212): LAMBERT (83).
- M. carentonensis*, Senonian of Charentes and elsewhere, hitherto referred to *M. laxoporus* (p. 240); *M. corbaricus*, Lower Senonian, Pyrenees and elsewhere, hitherto confused with *M. brevis* (p. 237); *M. icauunensis*, Lower Senonian, l'Yonne, l'Aube, la Marne, et l'Aisne, hitherto considered a var. of *M. decipiens* (p. 235); *M. provincialis*, Mornasien (= Santonien inférieur) de Ceyreste, près-la Ciotat (Bouches-du-Rhône), (p. 219, NO FIGURE); *M. senonensis*, Lower Senonian of l'Yonne and elsewhere, hitherto confused with *M. gibbus* (p. 239): LAMBERT (83), n. spp.
- †*Monostychia australis*, see *Arachnoides conica*.
- Neolampas rostellata*; KOEHLER (79) p. 230.
- †*Nucleolites*:—*N. papillosus*; TATE (157) p. 123. *N. pyramidalis*; MAZZETTI (108) p. 437.
- †*Offaster pomeli*, Mun. Chalm., maintained; LAMBERT (83) p. 265.
- †*Oligoporus*:—*O. danae*, refigured (p. 126), *O. parvus* (p. 127); KEYES (70).
- O. mutatus*, Keokuk Limestone, Keokuk, Ia.; KEYES (70), Bull. Geol. Surv. Missouri, v, p. 126, n. sp.
- †*Opissaster*:—*O. bleicheri*, referred to *Schizaster*; COTTEAU & GAUTHIER (27) p. 45.
- O. centrosus*, Senonian of Derre-i-Chahr, Louristan; COTTEAU & GAUTHIER (27) Ech. foss. Perse, p. 45. *O. lovisatoi*, Miocene, "Calcaire argileux du Mt. S. Michele," "Marnes près de la Cantoniera de Cadreas," Sardinia; COTTEAU (26) Mem. Soc. geol. France, Pal. v, fasc. ii, Mém. No. 13, p. 48. *O. mariae* [ascribed to "Lovisato, 1893," but apparently n. sp.], Miocene, "Calcaire compact (tramezzario) des environs de Cagliari," Sardinia; *op. cit.* p. 49. *O. morgani*, Senonian of Awasa, Louristan; COTTEAU & GAUTHIER (27) Ech. foss. Perse, p. 43 : n. spp.
- †*Ornithaster*, rediagnosed; *O. douvillei*, Senonian; "Couches a grand Cérîtes" of Derre-i-Chahr, Louristan; *op. cit.* p. 48, n. sp.
- †*Orthechinus cretaceus*, Senonian of Derre-i-Chahr, Louristan; *op. cit.* p. 100, n. sp.
- †*Orthopsis*:—*O. globosa*, Aftab, Derre-i-Chahr, and Kouh-Mapeul (p. 89), *O. morgani*, Derre-i-Chahr (p. 87), Senonian of Louristan; *op. cit.* n. spp.
- Paleostoma mirabilis*; SLUITER (151) p. 74.

Paleotropus hironellei, S.W. of Pico, Azores, 927 metres; KOEHLER (78) Bull. Soc. zool. France, xx, p. 226; Azores, 523-1385 metres, G. of Gascony, 1262 metres; KOEHLER (79) p. 230, n. sp.

Palechinoidea, general discussion relative to *Bothriocidaris*; JAEKEL (66).

†*Parapygus*:—*P. acutus*, Derre-i-Chahr (p. 59), *P. inflatus*, Endjir-kouh in Aftab (p. 55), *P. petalodes*, Aftab (p. 58), *P. vassini*, Derre-i-Chahr (p. 56), Senonian of Louristan; COTTEAU & GAUTHIER (27) Ech. foss. Perse : n. spp.

Parasalenia gratiosa; SLUITER (151) p. 69.

†*Pericosmus*:—*P. aequalis* (p. 428), *P. affinis* (p. 429), *P. callosus* (p. 428); MAZZETTI (108). *P. compressus*, see *Meoma crawfordi* and *M. brevipetala*. *P. dilatatus*, *P. edwardsi*; MAZZETTI (108) p. 429. *P. latus*; *op. cit.* p. 428; Sardinia; COTTEAU (26) p. 40. *P. lyoni*, see *Schizaster*. *P. malatinus*; MAZZETTI (108) p. 429. *P. orbigny*, Sardinia; COTTEAU (26) p. 40.

Peripatagus, n. g., with type *P. cinctus*, Azores, W. of São Jorge; KOEHLER (79) p. 231, n. sp.

Peronella decagonalis; KOEHLER (77) p. 417; SLUITER (151) p. 72.

Phormosomum luculentum; KOEHLER (78) p. 224 & (79) p. 228.

Phyllacanthus annulifera; KOEHLER (77) p. 408. *P. baculosa* (p. 68), *P. gigantea* (p. 68), *P. imperialis*, individual variations, includes *P. dubia*, Br. (p. 67), *P. verticillata* (p. 68); SLUITER (151).

Phyllobrissus, cf. *P. gresslyi*; MAAS (94) p. 273.

†*Pliolampas*:—*P. colombi*, see *Pygorhynchus*. *P. vassali* (olim *Echinanthus corsicus*, *Breynella vassali*), Sardinia; COTTEAU (26) p. 38.

P. subcarinatus, Miocene of S. Catterina de Pitinuri, Sardinia; COTTEAU (26) Mem. Soc. geol. France, Pal. v, fasc. ii, Mém. No. 13, p. 38, n. sp.

†*Plistophyma* rediagnosed (p. 104), with *P. asiaticum*, Senonian of Derre-i-Chahr, Louristan (p. 105); COTTEAU & GAUTHIER (27) Ech. foss. Perse, n. sp.

†*Proraster*, includes *Spatangus lacunosus*, Goldf., and *Schizaster antiquus*, Cott., q.v.

Psammechinus:—†*P. biaritzensis*; GREGORIO (47) p. 14. *P. miliaris*; KOEHLER (79) p. 229. †*P. monilis*?; MAZZETTI (108) p. 418. †*P. woodsii*, see *Echinus enysi*.

†*P. calarensis*, Miocene of S. Catterina de Pitinuri and C. St. Elia, Sardinia, adult and young (p. 11); †*P. sardiniensis*, associated with *P. calarensis* (p. 12); COTTEAU (26) Mem. Soc. geol. France, Pal. v, fasc. ii, Mém. No. 13 : n. spp.

†*Pseudananchys* rediagnosed (p. 5), *P. persica* (p. 6), and *P. inaequifissa* (p. 7), Cenomanian of Kebir-kouh, Louristan; COTTEAU & GAUTHIER (27) Ech. foss. Perse : n. spp.

†*Pseudholaster*, Pomel em. Gauthier, maintained by Gauthier in footnote; COTTEAU & GAUTHIER (27) p. 21. See also *Holaster morgani*.

Pseudoboletia indiana; SLUITER (151) p. 70.

- †*Pseudocatopygus*, n. g. of *Cassidulidæ* (p. 62), with type *P. declivis* (p. 63), also *P. longior* (p. 64), both from Senonian of Aftab, Louristan; COTTEAU & GAUTHIER (27) Ech. foss. Perse : n. spp.
- †*Pseudodiadema inæquale*, described and figured, Callovian of Carreaux and Basse-Sussaye (Orne); BIZET (13) p. 115.
- †*Pygorhynchus* :—*P. colombi*; MAZZETTI (108) p. 437; is not a *Pliolampas*; COTTEAU (26) p. 38. *P. vassali*, Wright, "Gregory (1891) a démontré qu'elle ne pouvait rester dans ce dernier genre et a cru devoir la placer parmi ses *Brynella* . . . mais Pomel, en 1888, avait créé le genre *Pliolampas* (Paléont. de l'Algérie, Zooph. Echin. 2^e livr. p. 123, sous le nom générique de *Plesiolampas* (*non* Duncan) 1887)." [The Recorder and Dr. Gregory are unable to discover the meaning of this or the rights of Mr. Pomel, since repeated applications over eight years have failed to get a single copy of the work in question]; COTTEAU (26).
- †*Pygurostoma*, n. g. of *Cassidulidæ*, with type *P. morgani*, Senonian of Aftab, Louristan; COTTEAU & GAUTHIER (27) Ech. foss. Perse, p. 52, n. sp.
- Pygurus depressus*, described and figured, Upper Callovian of Carreaux (Orne); BIZET (13).
- †*Pyrina orientalis*, Senonian of Derre-i-Chahr and Endjir-kouh, Louristan; COTTEAU & GAUTHIER (27) Ech. foss. Perse, p. 68, n. sp.
- Rhabdобрissus perrieri*, 640–840 metres, coast of Sahara; BERNARD (10) Bull. Mus. Paris, 1895, p. 209, NO FIGURE, n. sp.
- †*Rhabdocidaris* :—*R. guttata*, described and figured, Upper Callovian of Carreaux (Orne); BIZET (13) p. 114. See also *Cidaris*.
- †*R. compressa* [ascribed to "Cotteau, 1893," but apparently n. sp.] based on a single plate and a fragment of spine from Miocene of Capo Sant' Elia, Sardinia; COTTEAU (26) Mem. Soc. geol. France, Pal. v, fasc. ii, Mém. No. 13, p. 10, n. sp.
- Rotula augusti*, *R. rumphii*; SLUITER (151) p. 73.
- Salenia hastigera*, small individuals; KOEHLER (78) p. 224 & (79) p. 228.
- †*S. cossiaæ*, Senonian of Derre-i-Chahr, Endjir-kouh, and Aftab, Louristan; COTTEAU & GAUTHIER (27) Ech. foss. Perse, p. 83, n. sp.
- †*Salenidia heberti*, discussed; LAMBERT (83) p. 262.
- Salmacis bicolor*, *S. dussumieri*; SLUITER (151) p. 70. *S. varispina*; KOEHLER (77) p. 413 : individual variations; SLUITER (151) p. 70. *S. sulcata*; l. c.
- Schizaster* :—†*S. ambulacrum*; MAZZETTI (108) p. 431. †*S. antiquus*, Cott., referred to *Proraster*; LAMBERT (83) p. 177. *S. archiaci* (p. 433), *S. aff. archiaci*, var. *lata* (p. 430), *S. baylei* (p. 432), *S. beloutchistanensis* ? (p. 432); †MAZZETTI (108). †*S. bleicheri*, removed from *Opissaster*; COTTEAU & GAUTHIER (27) p. 45. *S. canaliferus* (p. 431), *S. convexus* (p. 430), *S. cristagalli* (p. 433), *S. desori* (p. 432); †MAZZETTI (108). †*S. desori* ?, Sardinia; COTTEAU (26) p. 44. †*S. d'urbani*, includes *S. canaliferus*, Mazz. (p. 431), †*S. exagonalis* [sic] (p. 430); MAZZETTI (108). †*S. exoletus*, possibly syn. of *S. abductus*;

- TATE (157) p. 126. †*S. foveatus*; MAZZETTI (108) p. 432. *S. fragilis*; GRIEG (49) p. 11; SLUITER (151) p. 74. †*S. globulus*; GREGORIO (47) p. 16; MAZZETTI (108) p. 432. †*S. laubei* (p. 430), †*S. lorioli* (p. 432); *op. cit.* †*S. lyoni*, probably a *Pericosmus*; TATE (157) p. 125. *S. moseleyi*; BERNARD (12). †*S. oviformis*; MAZZETTI (108) p. 430. †*S. parkinsoni*; *op. cit.* p. 432: large individual described from Sardinia; COTTEAU (26) p. 43. †*S. peroni*, important variations from type, Sardinia; *op. cit.* p. 42. *S. philippii*; BERNARD (12). *S. princeps* (p. 432), *S. pumilius* (p. 433), *S. rimosus* (p. 431); †MAZZETTI (108). †*S. rotundatus*; TATE (157) p. 126. †*S. rotundus*; MAZZETTI (108) p. 430. *S. scillæ*; MAZZETTI (108) p. 431: Sardinia, includes the "*S. eurynotus*, Ag.; *S. ambulacrum*, Desh., and *S. græcus*, Ag.," recorded by De la Marmora from Sardinia; COTTEAU (26) p. 42. *S. studeri* (p. 433), *S. trigonalis* (p. 429), *S. vicinalis* (p. 431); †MAZZETTI (108).
- †*S. lovisatoi*, Miocene, "couche langhienne a *Vaginella depressa*," Castelsardo in Sassari, Sardinia (p. 45); †*S. sardiniensis*, Miocene, "Calcaire argileux de Cuccuruddu sous Chemerule (Thiesi)," Sardinia (p. 46); COTTEAU (26) Mem. Soc. geol. France, Pal. v, fasc. ii, Mém. No. 13: n. spp.
- †*Scutella propinqua*, Sardinia; *op. cit.* p. 15. †*S. subrotunda*, with var. *maxima*, Michelin, and another variation, from Miocene of Sardinia; *l. c.*
- †*Scutellaster*, n. g., with type *S. cretaceus*, Fox Hills group, Shook's Run, Platt Avenue, Colorado Springs, Col., has affinities with both *Clypeaster* and *Scutella*; CRAGIN (29) Amer. Geol. xv, p. 90, n. sp.
- Spatangus* sp.; KOEHLER (79) p. 230. *S. æquedilatatus* (p. 422), *S. arcuatus* (p. 418), *S. austriacus* (p. 423), *S. brissoides*, figured (p. 423), *S. chitonosus* (p. 421), *S. cor*, possibly syn. of *S. philippii* (p. 423); †MAZZETTI (108). †*S. cormarinum*, var. of *Micraster coranguinum*, discussed; LAMBERT (83) pp. 165 & 167. †*S. cersicus*; MAZZETTI (108) p. 419: distinct from *S. delphinus*, variations in tubercles, Sardinia; COTTEAU (26) p. 52. †*S. cuneatus* is young of *Micraster coranguinum*; DEECKE (31) p. 72. †*S. delphinus*; COTTEAU (26) p. 52; MAZZETTI (108) p. 418. †*S. desmaresti*; *l. c.* †*S. discoidalis*; *op. cit.* p. 422. †*S. gibbus*, Goldf., non Lamk., discussed, referred to *Micraster brevis*, Desor; LAMBERT (83) pp. 176 & 182. †*S. granulosis* is *Cardiaster ananchytis*; DEECKE (31) p. 72. †*S. hemiornatus*; MAZZETTI (108) p. 424. †*S. hemisphæricus*; *op. cit.* p. 420. †*S. lacunosus*, Goldf., non Linn. nec Leske, referred to *Procraster*; LAMBERT (83) p. 176. *S. lütkeni*; SLUITER (151) p. 73. *S. mutinensis* (p. 424), *S. ocellatus* (p. 422), *S. pagliarolensis* (p. 421); †MAZZETTI (108). †*S. peroni*, Sardinia; COTTEAU (26) p. 53. †*S. philippii*; MAZZETTI (108) p. 420. †*S. podex*; *op. cit.* p. 422. †*S. punctatus*, probably var. of *Micraster coranguinum*; LAMBERT (83) p. 167. *S. purpureus*; GRIEG (49) p. 11; MARENZELLER (104) p. 143; SLUITER (151) p. 73. †*S. purpureus*, Leske; MAZZETTI (108) p. 425. †*S.*

- purpureus* (Müll. ?) Agass., figured; MAZZETTI (108) p. 424. *S. raschii*; GRIEG (49) p. 11. *S. regina* (p. 420), *S. rissoi* (p. 424), *S. semelanensis* (p. 423); †MAZZETTI (108). †*S. simplex*, see *Maretia*. †*S. spinosissimus*, probably includes *S. purpureus*, *S. siculus*, and *S. meridionalis*, figured; MAZZETTI (108) p. 419. †*S. subconicus*; *op. cit.* p. 420.
- Sphærechinus australis*; SLUITER (151) p. 70. *S. granularis*; SÆELIGER (148); SLUITER (151) p. 70: spermatogenesis; FIELD (38): small specimen; KOEHLER (78) p. 225: karyokinesis of ovum; HILL (58): fecundation of ovum; HILL (59): genital system and madreporite; RUSSO (141).
- Stephanocidaris bispinosa*; KOEHLER (77) p. 409.
- Stomopneustes variolaris*; SLUITER (151) p. 69.
- Strongylocentrotus albus*; BERNARD (12). *S. depressus*; SLUITER (151) p. 69. *S. drübachiensis*; GRIEG (49) p. 11; KOEHLER (78) p. 225; SLUITER (151) p. 69. *S. eurythrogrammus*; *l. c.* *S. franciscanus*; *l. c.* *S. intermedius*; *l. c.* *S. lividus*; KOEHLER (78) p. 225 & (79) p. 229; SLUITER (151) p. 70; ZOJA (181): spermatogenesis; FIELD (38): experimental change of environment during development and its effect; VERNON (163). *S. mexicanus*; SLUITER (151) p. 70. *S. tuberculatus*; *l. c.* See also *Toxopneustes*.
- Temnechinus scillæ*, described and figured; MAZZETTI (107) p. 213.
- Temnopterus hardwickii*, *T. reynaudi*, *T. toreumaticus*; SLUITER (151) p. 70.
- Toxobrissus*, see *Kleinia*.
- Toxopneustes*, ovum; WILSON (173). *T. pileolus*; KOEHLER (77) p. 414; SLUITER (151) p. 71. *T. variegatus*; *l. c.*; WILSON (172); WILSON & MATHEWS (175). See also *Strongylocentrotus*.
- †*Trachyspatangus peroni* (olim *Macropneustes*), Sardinia; COTTEAU (26) p. 51.
- Trigonocidaris albida*; KOEHLER (78) p. 224 & (79) p. 228.
- †*Triopneustes parkinsoni*; MAZZETTI (108) p. 418.
- Tripylus excavatus*, syn. of *T. cavernosus*; BERNARD (12): with commensal Lamellibranch; BERNARD (11).
- †*Trisalenia*, n. g., with type *Salenia loveni*, Cotteau; LAMBERT (83) p. 262.
- †*Tylocidaris clavigera*, discussed; LAMBERT (83) p. 261.
- †*Vologesia*, n. g. of *Cassidulidæ* (p. 65), with type *V. tataosi*, Senonian of Aftab, Louristan (p. 66), COTTEAU & GAUTHIER (27) Ech. foss. Perse, n. sp.

(D.)—ASTEROIDEA.

- General account and classification of fossil forms under Orders:
Encrinasteria and *Euasteria*, the latter divided with Sladen into *Phanerozonia* and *Cryptozonia*; ZITTEL (180) p. 170.
- Acanthaster echinites*; KOEHLER (77) p. 402; SLUITER (150) p. 63.
- Anasterias minuta*, see *Asterias rugispina*.

- Anthenea flavescens*, *A. pentagonula*; SLUITER (150) p. 55.
- Archaster parelii*, see *Pseudarchaster intermedius*. *A. tenuispinus*, see *Pontaster hebitus*. *A. typicus*; KOEHLER (77) p. 386: hardly to be distinguished from *A. angulatus*; SLUITER (150) p. 52.
- Asteracanthion rubens*, specimens from Hohwachter Bucht, Baltic, measured; REH (137) p. 243.
- Asterias briareus*, distribution; VERRILL (164) p. 209. *A. (Stolasterias) calamaria*, difference of colour with depth, a variety with clavate and clustered spines; FARQUHAR (37) p. 200. *A. forbesi*; SLUITER (150) p. 64; WILSON & MATHEWS (175): spermatogenesis; FIELD (38): distribution; VERRILL (164) p. 206. *A. gelatinosa*, *A. gemmifera*; SLUITER (150) p. 64. *A. glacialis*; GRIEG (49) p. 8; SLUITER (150) p. 64: spermatogenesis; FIELD (38), see also *Brachiolaria*. *A. groenlandica*, *A. gunneri*, *A. linckii*; SLUITER (150) p. 64. *A. mülleri*; *l. c.*; GRIEG (49) p. 8. *A. panopla*; SLUITER (150) p. 64. *A. polaris*; *l. c.*; includes *A. borealis*; VERRILL (164) p. 208. *A. richardi*, autotomy due to *Myzostoma*, this species not a *Hydrasterias*; MARENZELLER (103) & (104) p. 134. *A. rubens*; GRIEG (49) p. 8; SLUITER (150) p. 64: deep water large, shallow small, due to variation or age?; HERDMAN (55) p. 35. *A. rugispina*, full description of external characters, includes *A. spirabilis*, *A. cunninghami*, *A. perrieri*, *A. rupicola*, *A. hynlesi*, *Anasterias minuta*, and probably *Asterias antarctica*, *A. fulgens*, *A. verrilli*, *Calvasterias antipodum*, and *C. stolidota*; LEIPOLDT (84) p. 563. *A. (Stolasterias) scabra*, external characters described, pedicellariæ figured; FARQUHAR (37) p. 202. *A. stellionura*; SLUITER (150) p. 64: distribution; VERRILL (164) p. 207. *A. (Cosmasterias) sulcifera*, full description of external characters, includes *A. fulva* and *Stichaster polygrammus*; LEIPOLDT (84) p. 553. *A. tanneri*, distribution; VERRILL (164) p. 209; *A. tenera*; SLUITER (150) p. 64. *A. (Cosmasterias) tomidata*, young described, and adult variations from type; LEIPOLDT (84) p. 552. *A. vulgaris*, includes *A. stimpsoni* pars, *A. pallidus*, and *A. fabricii*, distribution; VERRILL (164) p. 207.
- A. auster*, 33-35 fms., George's Bank and off C. Cod, perhaps a *Leptasterias*; VERRILL (164) Amer. J. Sci. xlix, p. 209. *A. enopla*, 53-100 fms., off Nova Scotia; *op. cit.* p. 208: n. spp.
- Asterina calcar*, *A. cephea*; SLUITER (150) p. 59. *A. chilensis*, full description and figures of external characters, possibly includes *A. gayi*; LEIPOLDT (84) p. 595. *A. coronata*; SLUITER (150) p. 60. *A. exigua*; *op. cit.* p. 59; KOEHLER (77) p. 388. *A. fimbriata*, 6-armed and young specimens, variations from type; LEIPOLDT (84) p. 594. *A. gibbosa*, development; RUSSO (142): Arctic Ocean and Greenland; SLUITER (150) p. 59. *A. marginata*; *l. c.* *A. pectinifera*; *op. cit.* p. 60. *A. pygmaea*, distribution; VERRILL (164) p. 140. *A. regularis*; SLUITER (150) p. 59: 6-rayed specimens, one with 2 madreporites; FARQUHAR (37) p. 199. *A. stellifer*, from Magellan Str.; LEIPOLDT (84) p. 592.

- Astellu simplex*, see *Luidia sarsi*; LUDWIG (92).
- Astrogonium propegeometricum*, vide *Petalastrum*. *A. pulchellum*, variety with apical plates but slightly swollen, and with well-developed supplementary plates; FARQUHAR (37) p. 200.
- Astropecten acanthifer*, Red Sea; LEIPOLDT (84) p. 644. *A. alatus*; SLUITER (150) p. 53. *A. americanus* and *A. articulatus*, distribution; VERRILL (164) p. 133. *A. aurantiacus*; SLUITER (150) p. 53. *A. irregularis*; l. c.; GRIEG (49) p. 5. *A. javanicus*; SLUITER (150) p. 53. *A. pentacanthus*, spermatogenesis; FIELD (38). *A. polyacanthus*; KOEHLER (77) p. 387; LEIPOLDT (84) p. 645; SLUITER (150) p. 53. *A. vestitus*, distribution; VERRILL (164) p. 133.
- A. ornans*, New Ireland and New Caledonia; SLUITER (150) Bijdr. Dierk. xvii, p. 54. *A. orsinii*, Perim Id., Red Sea, sandy bottom, allied to *A. tamilicus* and *A. zebra*; LEIPOLDT (84) Zeitschr. wiss. Zool. lix, p. 645. *A. ternatensus* [sic], Moluccas; SLUITER (150) Bijdr. Dierk. xvii, p. 53 : n. spp.
- Bathybiaster robustus*, distribution; VERRILL (164) p. 134.
- Benthopecten spinosus*, includes *Pararchaster armatus* and *P. semisquamatus*, var. *occidentalis* of Sladen, distribution; *op. cit.* p. 129.
- "*Bipinnaria asterigera*" (? of *Luidia*), development; BURY (17) pp. 65-71. Vide *Luidia sarsi*.
- "*Brachiolaria*" (? of *Asterias glacialis*), development; BURY (17) pp. 71-74.
- Brisinga coronata*, distribution in Mediterranean; MARENZELLER (104) p. 137. *B. costata*, distribution; VERRILL (164) p. 211. *B. mediterranea*, Perrier, syn. of *B. coronata*; MARENZELLER (100). *B. multicosata* (p. 211), and *B. verticillata* (p. 212), distribution; VERRILL (164).
- Calasterias antipodum* and *C. stolidota*, see *Asterias rugispina*.
- Chaetaster longipes*, spermatogenesis; FIELD (38).
- Chondraster*, n. g. or subg. for reception of *Porania grandis* pars; VERRILL (164), Amer. J. Sci. xlix, p. 137.
- Cosmasterias*, see *Asterias*.
- Craspidaster hesperus*; SLUITER (150) p. 52.
- Cribrella hyadesi*, external characters described, probably includes *C. obesa*, and perhaps other species from Antarctic Seas; LEIPOLDT (84) p. 578. *C. oculata*; SLUITER (150) p. 63. *C. pagenstecheri*, probably young of some species; LEIPOLDT (84) p. 579. *C. pectinata*, distribution; VERRILL (164) p. 204. *C. sanguinolenta* (= *C. oculata*), distribution; *op. cit.* p. 205. *C. simplex*, probably young of some species; LEIPOLDT (84) p. 579.
- Crossaster affinis*, specimens with 9 and 11 arms; SLUITER (150) p. 61. *C. helianthus*, distribution; VERRILL (164) p. 201. *C. papposus*; SLUITER (150) p. 61: spermatozoon; BALLOWITZ (3): distribution; VERRILL (164) p. 201.
- Ctenodiscus corniculatus*; SLUITER (150) p. 52. *C. crispatus* (= *C. corniculatus*), distribution; VERRILL (164) p. 132.

- Cyathra electilis*, external characters described; LEIPOLDT (84) p. 606.
C. nitida, external characters described, variation from type; *op. cit.* p. 602.
- Calcita coriacea*; SLUITER (150) p. 57: external characters, esp. *papulae*, described; LEIPOLDT (84) pp. 639 & 651. *C. nova-guineae*, re-described and distinguished from *C. pentangularis*, *C. grex*, *C. plana*, and (?) *C. arenosa*, with discussion of specific characters in the genus; KOEHLER (77) p. 388: specific characters discussed, change of form during life, probably includes *C. schmideliana*; SLUITER (150) p. 57. *C. plana*, variations from type; LEIPOLDT (84) p. 637.
- C. niassensis*, Nias Id., W. of Sumatra; SLUITER (150) Bijdr. Dierk. xvii, p. 58, n. sp.
- Diplopteraster multipes*, distribution; VERRILL (164) p. 202.
- Dytaster grandis*, includes *D. madreporifer*, and perhaps *D. exilis*, var. *carinata* of Sladen, distribution; VERRILL (164) p. 131.
- Echinaster eridanella*, *E. purpureus*; SLUITER (150) p. 64. *E. sepositus*, *l. c.*: spermatogenesis; FIELD (38). *E. spinosus*, Japan; SLUITER (150) p. 63.
- E. callosus*, Solomon Is.; MARENZELLER (101) Anz. Ak. Wiss. 1895, No. xviii, p. 191; also MARENZELLER (105). *E. panamensis*, Perlas Archipelago, G. of Panama, resembles *Othilia aculeata* and *Mithrodia victorie*; LEIPOLDT (84) Zeitschr. wiss. Zool. lix, p. 584: n. spp.
- Freyella aspera*, *F. elegans*, and *F. microspina*, distribution; VERRILL (164) p. 212.
- Fromia milleporella*; SLUITER (150) p. 60.
- F. major*, Sunda Is.; KOEHLER (77) p. 399, n. sp.
- Gnathaster pilulatus*, see *Odontaster meridionalis*.
- Goniodiscus articulatus*; KOEHLER (77) p. 392. *G. sebæ*; SLUITER (150) p. 55.
- Gymnasterius carinifera*; SLUITER (150) p. 59: pedicellariæ and spicules described; LEIPOLDT (84) p. 649.
- Helianthus cumingii*, number of arms, character of spines and of pedicellariæ; LEIPOLDT (84) p. 550. *H. helianthus*; SLUITER (150) p. 64: pedicellariæ described; LEIPOLDT (84) p. 547. *H. microbrachius*, pedicellariæ described; *op. cit.* p. 552. *H. multiradiatus*, colour and pedicellariæ described; *op. cit.* p. 551.
- Henricia sanguinolenta*; GRIEG (49) p. 8.
- Hippasteria phrygiana*; *op. cit.* p. 6: (= *H. plana*) distribution; VERRILL (164) p. 137. *H. plana*; SLUITER (150) p. 55.
- Hydrasterias ophidion*, distribution; VERRILL (164) p. 211.
- Hymenaster modestus*, distribution; *op. cit.* p. 203. *H. pellucidus*; SLUITER (150) p. 63.
- H. regulis*, 1374 fms., 36° 34' N., 73° 48' W.; VERRILL (164) Amer. J. Sci. xlix, p. 203, n. sp.
- Iconaster longimanus*; KOEHLER (77) p. 393.
- Isaster bairdii*, distribution; VERRILL (164) p. 136.

- Lasiaster*, probably young of *Porania* or *Poraniomorpha*; *op. cit.* p. 139.
- Leiaster leachii*; SLUITER (150) p. 60.
- Leptasterias compta* (p. 209), and *L. groenlandica* (p. 210), distribution; VERRILL (164) p. 210. *L. littoralis*, breeding season, distribution; *op. cit.* p. 211. *L. tenera*, perhaps = *L. compta* and *L. mülleri*, distribution; *op. cit.* p. 210. See also *Asterias*.
- L. hispidella*, 50 fms., station 2494 of U. S. Fish Comm., 45° 14' 30" N.; VERRILL (164) Amer. J. Sci. xlix, p. 210, n. sp.
- Leptoptychaster arcticus*; SLUITER (150) p. 53: distribution; VERRILL (164) p. 133.
- Linckia ehrenbergii*; LEIPOLDT (84) p. 649; SLUITER (150) p. 60. *L. guildingii*; *l. c.* *L. miliaris*; LEIPOLDT (84) pp. 634 & 648; SLUITER (150) p. 60. *L. multifora*; *l. c.*: anatomy of comet-form; HIROTA (60). *L. pacifica*; SLUITER (150) p. 60.
- Lophaster furcifer*; SLUITER (150) p. 63: distribution; VERRILL (164) p. 201.
- Lophopteraster*, n. g., with type *L. abyssorum*, 2021 fms., 37° N., 71° 54' W.; VERRILL (164) Amer. J. Sci. xlix, pp. 202 & 203, n. sp.
- Luidia ciliaris*, of Mediterranean, described and distinguished from *L. sarsi*; KOEHLER (75) p. 317: synonymy and full description of external characters; LUDWIG (92) p. 18. *L. clathrata*, distribution; VERRILL (164) p. 134. *L. columbiæ*; SLUITER (150) p. 54: variations in paxillæ; LEIPOLDT (84) p. 609. *L. elegans*, distribution; VERRILL (164) p. 134. *L. hardwickii*; SLUITER (150) p. 55. *L. maculata*; KOEHLER (77) p. 387; SLUITER (150) p. 55. *L. paucispina*, Marenzeller, referred with Ludwig to *L. sarsi*, as being young form, growth-stages discussed; MARENZELLER (104) p. 132. *L. sarsii*; GRIEG (49) p. 6: of Mediterranean, described and distinguished from *L. ciliaris*; KOEHLER (75) p. 320: synonymy, including *Astrella simplex*, external characters described, its larva is *Bipinnaria asterigera* (q.v.); LUDWIG (92) p. 19.
- L. magellanica*, Magellan Str., allied to *L. bellonæ*; LEIPOLDT (84) Zeitschr. wiss. Zool. lix, p. 610, n. sp.
- Marginaster*, probably young of *Porania* or *Poraniomorpha*; VERRILL (164) p. 139. *M. capreensis*; MARENZELLER (104) p. 133.
- Mithrodia clavigera*; SLUITER (150) p. 63. *M. victoriæ*, see *Echinaster panamensis*.
- Nardoæ novæ-caledoniæ*; SLUITER (150) p. 60. *N. pauciforis*, variations from type, parasitic *Stitifer linckia*; *op. cit.* p. 61. *N. semiregularis*, *N. tuberculata*, and *N. variolata*; *l. c.*
- Nectria ocellifera*, from Amboyna, the species includes *N. ocellata*, Perrier; SLUITER (150) p. 55.
- Neomorphaster forcipatus*, distribution; VERRILL (164) p. 206.
- Nidorellia armata*, variations in spines and pedicellariæ, includes *N. michelini*; LEIPOLDT (84) p. 634. *N. michelini*; SLUITER (150) p. 57.

- Nymphaster florifer* and *N. nora*; ALCOCK (1).
Odinia americana, distribution; VERRILL (164) p. 211.
Odontaster sp. juv., $r = 2$ mm., external characters fully described; LEIPOLDT (84) p. 630. *O. hispidus*, distribution; VERRILL (164) p. 136. *O. mediterraneus*, redescribed and figured, olim *Gnathaster*, compared with *O. hispidus*; MARENZELLER (104) p. 129. *O. meridionalis*, external characters fully described and figured, probably includes *O. grayi*, *O. pedicellaris*, and *Gnathaster pilulatus*; LEIPOLDT (84) p. 620. *O. singularis*, variations in adambulacral spines, pedicellariæ first described, one specimen with 6 rays but only 3 teeth, distinguished from *O. belli*; *op. cit.* p. 614.
Ogmaster capella, Red Sea; LEIPOLDT (84) p. 649.
†*Onychaster asper*, from Missouri; KEYES (70) p. 131.
Ophidiaster attenuatus, redescribed and distinguished from that so called by Perrier; MARENZELLER (104) p. 133. *O. cylindricus*; SLUITER (150) p. 60. *O. helichostichus*, var. nov. *inarmatus*, Sunda Is.; KOEHLER (77) p. 400. *O. ophidianus*, and *O. purpureus*; SLUITER (150) p. 60. *O. pusillus*, variation in pedicellariæ; *l. c.*
Oreaster alveolatus, see *Pentaceros mammillatus*.
Othilia aculeata, see *Echinaster panamensis*.
Palmipes membranaceus; SLUITER (150) p. 60.
Paragonaster formosus, perhaps includes *P. cylindratus*, distribution; VERRILL (164) p. 137.
Pararchaster armatus, and *P. semisquamatus*, var. *occidentalis*, see *Benthopecten spinosus*.
Pedicellaster typicus; GRIEG (49) p. 6: includes *P. palæocrystallus*, distribution; VERRILL (164) p. 205.
Pentacerosis euphues, young specimen from the Moluccas; SLUITER (150) Bijdr. Dierk. xvii, p. 56, n. sp.
Pentaceros affinis, *P. grayi*, and *P. hiulcus*; SLUITER (150) p. 55. *P. lutkeni*, redescribed with slight variations from type; KOEHLER (77) p. 395. *P. mammillatus*; LEIPOLDT (84) p. 651: neanic forms fully described, *Oreaster alveolatus*, Bell, is a syn.; KOEHLER (77) p. 396. *P. muricatus*; SLUITER (150) p. 56. *P. occidentalis*, large specimen; LEIPOLDT (84) p. 634. *P. productus*, slight variation from type; SLUITER (150) p. 56. *P. reinhardti*; SLUITER (150) p. 56. *P. reticulatus*; LEIPOLDT (84) p. 634: probably includes *P. lapidarius*, Grube; SLUITER (150) p. 56. *P. sladeni*, from Moluccas; *l. c.* *P. tuberculatus*; *l. c.* *P. turritus*, *l. c.*; KOEHLER (77) p. 394.
Pentagonaster astrologorum; SLUITER (150) p. 55. *P. attenuatus* has alveolar pedicellariæ on ventrolateral plates; MARENZELLER (100). *P. eximius*, distribution; VERRILL (164) p. 134. *P. granularis*; SLUITER (150) p. 55; distribution; VERRILL (164) p. 135; 4- and 6-rayed; GRIEG (49) p. 6. *P. hispidus*; GRIEG (49) p. 6. *P. hystericis*; MARENZELLER (104) p. 133. *P. investigatoris*; ALCOCK (1). *P. placenta*; MARENZELLER (104) p. 133.

- † *P. chantrei*, Virgulien, Cirin (Ain); LORIOLE (88) Arch. Mus. Lyon, vi, p. 6. *P. planus*, 156 fms., 39° 53' N., and *P. simplex*, 640 fms., Martha's Vineyard; VERRILL (164) Amer. J. Sci. xlix, p. 135 : n. spp.
- Petalastrum*, n. subg. *Astrogonii*, M. T., cum typo *A. propegeometricum*, Post-pliocene, Sicily; GREGORIO (48) Ann. Geol. Pal. Livr. xvii, n. sp.
- Pharia pyramidata*, found at Valparaiso, a specimen with 6 rays; LEIPOLDT (84) p. 633.
- Plutonaster agassizii*, includes *P. rigidus* and var. *semiarmata*, Sladen, distribution; VERRILL (164) p. 131. † *P. lithographicus*, Thiollière, olim *Astropecten*, from Cirin, described and figured; LORIOLE (88) p. 5. *P. (Tethyaster) parelii*; GRIEG (49) p. 5; SLUITER (150) p. 51.
- Pontaster forcipatus*, distribution; VERRILL (164) p. 130. *P. hebitus*, includes *Archaster tenuispinus*, Verrill, not D. & K., distribution; l. c. *P. pilosus*; ALCOCK (1). *P. sepius*, distribution; VERRILL (164) p. 131. *P. tenuispinus*; GRIEG (49) p. 5; SLUITER (150) p. 51.
- Porania antarctica*; LEIPOLDT (84) p. 588. *P. grandis*, see *Chondraster* and *P. insignis*, distribution; VERRILL (164) p. 137. *P. pulvillus*; GRIEG (49) p. 6; SLUITER (150) p. 59 : with one dichotomous ray, figured; HERDMAN (55) p. 71.
- P. insignis*, 65–373 fms., from 41° 28' 30" N., to 36° 38' 30" N., based on *P. grandis* pars, young described; VERRILL (164) Amer. J. Sci. xlix, p. 138, n. sp.
- Poraniomorpha borealis*, distribution, and a large specimen described; VERRILL (164) p. 139. *P. rosea*; SLUITER (150) p. 59. *P. spinulosa*, with var. *rudis* and *inermis*, and a large exceptional specimen, distribution; VERRILL (164) p. 139.
- Poraniopsis echinasteroides*, redescribed and figured, placed in *Poraniidae*; LEIPOLDT (84) p. 589.
- Porcellanaster ceruleus*, distribution; VERRILL (164) p. 133.
- Pseudarchaster concinnus*, distribution (p. 132), *P. intermedius*, includes *Archaster parelii*, Verrill, non D. & K., distribution (p. 131), *P. intermedius*, n. var. *insignis*, 100–1356 fms., Nova Scotia to 40° 09' 30" N. (p. 132); VERRILL (164) Amer. J. Sci. xlix. *P. tessellatus*, n. var. *arcticus*, Barent's Sea, 150 fms.; SLUITER (150) Bijdr. Dierk. xvii, p. 51.
- Psilaster andromeda*; GRIEG (49) p. 6. *P. floræ*, distribution; VERRILL (164) p. 133.
- Pteraster militaris*; SLUITER (150) p. 63 : distribution; VERRILL (164) p. 202 : not purely Arctic, a 7-rayed specimen; GRIEG (49) p. 7. *P. pulvillus*; GRIEG (49) p. 8; SLUITER (150) p. 63 : distribution; VERRILL (164) p. 201.
- Pycnopodia helianthoides*; LEIPOLDT (84) p. 577.
- Retaster*, see *Diplopteraster*.
- Rhegaster tumidus*, var. *tuberculata*; SLUITER (150) p. 59.
- R. abyssicola*, 2045 fms., off Delaware Bay, 37° N., 71° 54' W.; VERRILL (164) Amer. J. Sci. xlix, p. 140, n. sp.

- Solaster abyssicola* and *S. benedicti*, distribution ; VERRILL (164) p. 200. *S. endeca* ; GRIEG (49) p. 6 ; SLUITER (150) p. 61 : distribution ; VERRILL (164) p. 199. *S. earllii*, distribution and variations from type described ; *op. cit.* p. 200. *S. furcifer* ; GRIEG (49) p. 6. *S. glacialis* ; SLUITER (150) p. 61. *S. papposus*, eats *Asterias rubens* and *A. glacialis* ; GRIEG (49) p. 6. *S. syrteusis*, distribution ; VERRILL (164) p. 199.
- Solaster intermedius*, Barent's Sea, 45 fms., intermediate between *Solaster*, *Korethraster*, *Peribolaster*, *Lophaster*, and *Crossaster* ; SLUITER (150) Bijdr. Dierk. xvii, p. 61, n. sp.
- Stegnaster inflatus* ; FARQUHAR (37) p. 199.
- Stellaster equestris*, surface-characters described ; KOEHLER (77) p. 393. *S. incei* ; SLUITER (150) p. 55. *S. squamulosus*, found at Sunda Is. ; KOEHLER (77) p. 394.
- Stichaster albus*, distribution ; VERRILL (164) p. 206. *S. aurantiacus* ; SLUITER (150) p. 61 : found at Porto Lagunas, also a 4-rayed example ; LEIPOLDT (84) p. 578. *S. australis*, strength of tube-feet ; FARQUHAR (37) p. 202. *S. polygrammus*, see *Asterias* (*Cosmasterias*) *sulcifera*. *S. roseus* ; GRIEG (49) p. 6 ; SLUITER (150) p. 61.
- S. insignis*, from low-water mark to 12 fms., Wellington Harbour and Taylor's Mistake near Lyttelton, N. Z., full account of fission and figures of regenerating individuals (p. 203), *S. littoralis*, Taylor's Mistake near Lyttelton, and Stewart Id., N. Z., low water (p. 206) ; FARQUHAR (37) Tr. N. Zealand Inst. xxvii : n. spp.
- Stolasterias*, see *Asterias*. *S. neglecta*, found in E. Mediterranean, at only 160 metres, variations from type, parasitic *Myzostoma* ; MARENZELLER (100, 103, & 104).
- Tarsaster neozelunius*, on *Lessonia*, Ohiro and Lyall Bays, N. Z., examples of fission figured ; FARQUHAR (37) Tr. N. Zealand Inst. xxvii, p. 207, n. sp.
- Tethyaster*, vide *Plutonaster*.
- Temnaster hexactis*, distribution ; VERRILL (164) p. 202.
- Tremaster mirabilis*, distribution ; VERRILL (164) p. 141.
- Zoroaster carinatus* ; ALCOCK (1). *Z. diomedea*, probably includes *Z. fulgens* and *Z. ackleyi*, distribution ; VERRILL (164) p. 205. *Z. squameus* ; ALCOCK (1).

(E).—OPHIUROIDEA.

- †General account and classification of fossil forms in Orders : *Euryaleæ* and *Ophiureæ* ; ZITTEL (180) p. 166.
- Amphiura bellis*, var. *tritonis*, Hoyle, referred to n. g. *Paramphiura* ; KOEHLER (75) p. 333. *A. chiajei* ; GRIEG (49) p. 8 ; MARENZELLER (104) p. 139 ; 2 miles S. of Plymouth Breakwater ; SUMNER

- (156). *A. elegans*; GRIEG (49) p. 9. *A. filiformis*; GRIEG (49) p. 8; MARENZELLER (104) p. 139. *A. florifera*, in E. Mediterranean, same as *Amphilepis norvegica*, Ljungm.; MARENZELLER (100). *A. punctata*, Forbes, from Pas-de-Calais, made type of n. g. *Paramphiura*; KOEHLER (75) p. 331. *A. securigera*; GRIEG (49) p. 9.
- Amphilepis florifera*, Forbes, olim *Amphiura*, includes *A. norvegica*, Ljungman, re-found in E. Mediterranean, and properly described and figured; MARENZELLER (104) p. 139. *A. norvegica*; GRIEG (49) p. 9; see *A. florifera*.
- Euryale aspera*; KOEHLER (77) p. 407.
- Gorgonocephalus lamarchii*, and *G. linckii*; GRIEG (49) p. 10.
- Ophiacantha abyssicola*; GRIEG (49) p. 10.
- Ophiactis abyssicola*, *O. ballii*, and *O. clavigera*; GRIEG (49) p. 9.
- Ophiocoma nigra*; l. c. *O. scolopendrina*; KOEHLER (77) p. 402.
- Ophioconis forbesi*; MARENZELLER (104) p. 137.
- Ophiocten abyssicolum* [sic] redescribed and figured; l. c. *O. sericeum*; GRIEG (49) p. 8.
- Ophioderma longicauda*, spermatogenesis; FIELD (38).
- O. propinqua*, Sunda Is.; KOEHLER (77) Mem. Soc. zool. France, viii, p. 404, n. sp.
- Ophioglypha albida*, specimens from Hohwachter Bucht, Baltic, measured; REH (137) p. 243. *O. carnea*, in Mediterranean; MARENZELLER (104) p. 137. *O. lactosa*, spermatogenesis; FIELD (38).
- Ophiohelix*, n. g., with type *O. elegans*, Sunda Is., a Zygophiuroid; KOEHLER (77) Mem. Soc. Zool. France, viii, p. 405, n. sp.
- Ophiomastix annulosa*; *op. cit.* p. 403.
- Ophiomaza cacaotica*, n. var. *picta*, Sunda Is.; *op. cit.* p. 405.
- Ophiomyxa australis*; FARQUHAR (37) p. 199. *O. pentagona*; MARENZELLER (104) p. 142: spermatogenesis; FIELD (38).
- Ophionereis schayeri*, described, includes *O. fasciata*; FARQUHAR (37) p. 197.
- Ophiopeza cylindrica*, Hutton, not a syn. of *Pectinura rigida* as supposed by Lyman; FARQUHAR (37) p. 198.
- Ophiopholis aculeata*; GRIEG (49) p. 9.
- Ophiopinax stellatus*; KOEHLER (77) p. 404.
- Ophiopsila aranea*; MARENZELLER (104) p. 141.
- Ophioscolex glacialis*; GRIEG (49) p. 9. *O. purpurea*, breeding season, sudden appearance in Bergens fjord; *op. cit.* p. 10.
- Ophiothrix alopecurus*, maintained as inhabitant of Mediterranean in strongest opposition to Russo; MARENZELLER (104) p. 141. *O. caerulea*, from Fiji not New Zealand; FARQUHAR (37) p. 199. *O. echinata*, development; RUSSO (142): described, figured, and distinguished from *O. fragilis*; KOEHLER (75) p. 325. *O. fragilis*; GRIEG (49) p. 9: spermatozoon; BALLOWITZ (3): spermatogenesis; FIELD (38): described, and held to include the "forms" *abbildgardi*, *pentaphyllum*, *lusitanica*, *alopecurus*, all of which are described and figured; KOEHLER (75) p. 327. *O. longipeda*; KOEHLER (77)

- p. 407. *O. rosula*, syn. of *O. fragilis*, form *abbildgardi*; KOEHLER (75) p. 329.
- Ophiura affinis*, *O. albida*, *O. carnea*, *O. ciliaris*, *O. robusta*, *O. sarsii*; GRIEG (49) p. 8.
- Paramphiura*, n. g., with type *P. punctata* (olim *Amphiura*), and including *P. tritonis* (olim *Amphiura bellis* var. *tritonis*); KOEHLER (75) Rev. biol. Nord France, vii, p. 331.

(F.)—CRINOIDEA.

- General history of classification, followed by division into Orders:
Larviformia, *Camerata*, *Fistulata*, *Flexibilia*, *Articulata*; ZITTEL (180) p. 123.
- † *Acanthocrinus*:—*A. brevispina*, probably invalid (p. 24), *A. gregarius*, maintained (pp. 24 & 26), *A. longispina*, F. A. Roemer, probably from Mid-Devon. Wissenbacher Schiefer of Oberharz (pp. 24, 26, & 111); JAEKEL (67).
- A. gracilior* [Lower Devonian ?] Sandstone, Coblenz (p. 27, NO FIGURE); *A. rex*, Lower Devonian Hunsrückschiefer, Caub am Rhein (p. 16); JAEKEL (67) Pal. Abh. vii : n. spp.
- † *Actinocrinidae*, evolution of family; KEYES (70) p. 148.
- † *Actinocrinus*:—*A. arrosus* (p. 186), *A. britsi* (p. 188), *A. caelatus* [sic] (p. 187); KEYES (70). *A. cyathiformis*, Stringocephalenkalk; HOLZAPFEL (61) p. 302. *A. fossatus* (p. 188), *A. glans*, refigured (p. 189), *A. jugosus* (p. 190), *A. lobatus* (p. 190), *A. lowei* (p. 189), *A. multiradiatus* (p. 188), *A. pernodosus* (p. 190), *A. proboscidualis*, refigured (p. 185), *A. reticulatus* (p. 186), *A. scitulus* (p. 188), *A. tenuisculptus* (p. 187); KEYES (70). *A. tenuistriatus*, Devonian, Elba; STEFANI (155). *A. thalia*; KEYES (70) p. 187. *A. validus*, Meek & Worthen, referred to *Steganocrinus* and maintained as species; MILLER (115) p. 41. *A. verrucosus*, refigured; KEYES (70) p. 189.
- A. albersi*, Chouteau Limestone, Sedalia, Mo.; MILLER (115) Bull. Illinois Mus. vii, p. 46. *A. botruosus*, Keokuk Group, Tennessee; MILLER (114) Bull. Illinois Mus. vi, p. 22. *A. foveatus*, Burlington Group, Sedalia, Mo.; MILLER (115) Bull. Illinois Mus. vii, p. 49.
- A. obesus*, Lower Carboniferous, Burlington Limestone, Hannibal; KEYES (70) Bull. Geol. Surv. Missouri, v, p. 187 : n. spp.
- Actinometra divaricata*, a specimen with mouth interradial; KOEHLER (73) p. 289 : variation in position of syzygy; KOEHLER (77) p. 421. *A. multiradiata*; l. c. *A. parvicirra*; KOEHLER (73) p. 289. *A. pectinata*; KOEHLER (77) p. 422. *A. regalis*; *op. cit.* p. 420 : Hartlaub's account of III Br. confirmed in opposition to Carpenter's; KOEHLER (73) p. 292. *A. robustipinna*, variations from type due to a greater age, Amboyna; *op. cit.* p. 290. *A. sentosa*; KOEHLER (77) p. 421. *A. stelligera*, variations from type; KOEHLER (73) p. 292.

- †*Agaricocrinus*:—*A. americanus*, refigured (p. 168), *A. brevis* (p. 167), *A. pentagonus*, refigured (p. 167), *A. planoconvexus*, refigured (p. 167), *A. wortheni* (p. 168); KEYES (70).
- A. arcua*, Tennessee (p. 30), *A. profundus*, Tennessee (p. 26), *A. tugurium*, Brown Co., Ky. (p. 28), Keokuk Group; MILLER (114) Bull. Illinois Mus. vi: n. spp.
- †*Agassizocrinus*:—*A. sp.*, Stringocephalenkalk; HOLZAPFEL (61) p. 301. *A. dactyliformis*; KEYES (70) p. 221.
- †*Agriocrinus*:—*A. gracilior*, Roemer, olim *Cyathocrinus* pars; JAEKEL (67) p. 105.
- †*Agriocrinus*, n. g., with type *A. frechi* (p. 103), and *A. inermis* (p. 105), Lower Devonian Hunsrückschiefer of Bundenbach; JAEKEL (67) Pal. Abh. vii: n. spp.
- †*Allagecrinus americanus*, base of Kinderhook Group, Louisiana, Mo.; ROWLEY (140) Amer. Geol. xvi, p. 219, n. sp.
- †*Amphocrinus*:—*A. divergens*, refigured; KEYES (70) p. 166.
- A. sedaliensis*, Chouteau Limestone, Sedalia, Mo.; MILLER (115) Bull. Illinois Mus. vii, p. 54, n. sp.
- Antedon*, discussion of the value of P. H. Carpenter's arrangement of his Groups according to number of arms, and proposed arrangement according to ambulacrals and inter-primibrachial sutures; HARTLAUB (54) p. 136. *A. abyssicola*?, 1772 fms., near Malpelo Id., G. of Panama, with a *Mucronalia* parasitic; *op. cit.* p. 146. *A. anceps*; KOEHLER (77) p. 420. *A. andersoni*, Hartlaub, description and opinion confirmed in opposition to Carpenter's; KOEHLER (73) p. 287. *A. celticus*, floating; BATHER (6). *A. crassispina* (p. 420), *A. finschii* (p. 419); KOEHLER (77). *A. imparipinna*; KOEHLER (73) p. 288. *A. ludovici*, variations from Amboyna specimen described by Hartlaub; *op. cit.* p. 286. *A. milberti*; KOEHLER (77) p. 418: large specimen; KOEHLER (73) p. 288. *A. petasus*; GRIEG (49) p. 5. *A. phalangium*; MARENZELLER (104) p. 129. *A. rhomboidea*, variations from Carpenter's figure; HARTLAUB (54) p. 138. *A. rosacea*, spermatogenesis; FIELD (38): development of larva; BURY (17) pp. 86–88: larva described; HORNELL (62). *A. tenella*, varying extent in Strömfjorden; GRIEG (49) p. 5. †*A. thiollierei*, from Cirin, described and figured; LORIOL (88) p. 3. *A. variipinna*; KOEHLER (77) p. 419.
- A. agassizii*, Mariato Point in G. of Panama, 782 fms., and Galapagos Is., 327 & 684 fms., dimorphic arm-characters, Basicurva Group; HARTLAUB (54) Bull. Mus. Harvard, xxvii, No. 4, p. 131. *A. bigradata*, Mariato Point in G. of Panama, 555 fms., and between Chatham and Hood Is., 385 fms., Tenella Group; *op. cit.* p. 145. *A. macrodiscus*, Misaki, Japan, 3 fms., Milberti Group; HARA (53) Zool. Mag. vii, p. 115. *A. parvula*, Cocos Is., 978 fms., Tenella Group; HARTLAUB (54) Bull. Mus. Harvard, xxvii, No. 4, p. 144. *A. subtilis*, Gaspar Str., Java Sea, Palmata Group; *op. cit.* p. 151. *A. tanneri*, entrance to G. of Panama, 286 fms., Eschrichti Group; *op. cit.* p. 141: n. spp.

- † *Apiocrinus ellipticus*, Santagata, see *Rhizocrinus santagatai*; CAPELLINI (18 & 19).
- † *Archæocrinus knoxensis*, Trenton Group, Knox Co., Tenn.; MILLER (114) Bull. Illinois Mus. vi, p. 34, n. sp.
- † *Aristocrinus*, n. g., based on *Taxocrinus concavus*, Hamilton Beds. Callaway Co., Mo. "In case the name *Aristocrinus* should prove to be preoccupied our genus could be changed to *Callawaycrinus*"; ROWLEY (140) Amer. Geol. xvi, p. 217.
- † *Bactrocrinus*, maintained and defined (p. 81), *B. fusiformis*, Roemer sp. non Steininger, redescribed (p. 83), *B. nanus*, Roemer, olim *Poteriocrinus*, redescribed and figured (p. 85); JAEKEL (67).
- B. mülleri*, based on *Poteriocrinus fusiformis*, J. Müller, non Roemer, Middle Devonian of Gerolstein; JAEKEL (67) Pal. Abh. vii, p. 84.
- B. tenuis*, based on *B. fusiformis*, Schnur in Steininger, which is distinguished from *Poteriocrinus fusiformis*, Roemer, from Middle Devonian of Gerolstein; *op. cit.* p. 82. *B. zeileri*, based on *Poteriocrinus rhenanus*, Wirtgen & Zeiler pars, Lower Devonian of Nieder-Lahnstein; *op. cit.* p. 84: n. spp.
- † *Baerocrinus*, syn. of *Hoplocrinus dipentus*; JAEKEL (97) p. 93.
- † *Barrandeocrinus*, fused pinnules; JAEKEL (67) p. 36.
- † *Barycrinus*:—*B. hovayi* (p. 209), *B. magnificus*, refigured (p. 210), *B. meekianus* (p. 211), *B. rhombiferus* (p. 210), *B. spurius* (p. 209), *B. stellatus* (p. 210); KEYES (70).
- B. washingtonensis*, Keokuk Group, Washington Co., Ind.; MILLER (114) Bull. Illinois Mus. vi, p. 49, n. sp.
- † *Batocrinus*:—*B. æqualis* (p. 179), *B. æquibrachiatus* (p. 181), *B. biturbidatus* (p. 184), *B. blairi* (p. 180), *B. calvini*, refigured (p. 180), *B. christyi* (p. 181), *B. clypeatus* (p. 179), *B. dodecadactylus* (p. 183), *B. elegans* (p. 180), *B. euconus* (p. 184), *B. laura*, refigured (p. 182), *B. longirostris*, refigured (p. 180), *B. nashville* (p. 183), *B. planodiscus* (p. 184), *B. pulchellus* (p. 184), *B. pyriformis*, refigured (p. 182), *B. rotundus*, refigured (p. 182), *B. subtractus* (p. 183), *B. trohiscus*, refigured (p. 181); KEYES (70).
- B. arcula*, St. Louis Group, Washington Co., Ind.; MILLER (114) Bull. Illinois Mus. vi, p. 16. *B. broadheadi*, Keokuk Group, Boonville, Missouri; MILLER (115) Bull. Illinois Mus. vii, p. 15. *B. burketi*, Keokuk Group, Hamilton, Ill.; MILLER (114) Bull. Illinois Mus. vi, p. 19. *B. casualis*, Keokuk Group, Tenn.; *op. cit.* p. 15. *B. casula*, Keokuk Group, Little Barren R., Ky.; *op. cit.* p. 8. *B. curiosus*, Keokuk Group, Allen Co., Ky.; *op. cit.* p. 6. *B. formaceus*, Burlington Group, Sedalia, Mo.; MILLER (115) Bull. Illinois Mus. vii, p. 24. *B. heteroclitus*, Keokuk Group, Boonville, Mo.; *op. cit.* p. 31. *B. honorabilis*, Keokuk Group, Tenn.; MILLER (114) Bull. Illinois Mus. vi, p. 10. *B. ignotus*, Keokuk Group, Boonville, Mo.; MILLER (115) Bull. Illinois Mus. vii, p. 28. *B. imparilis*, Burlington Group, Sedalia, Mo.; *op. cit.* p. 20. *B. inconsuetus*, Keokuk Group, Boonville, Mo., *op. cit.* p. 25. *B. incultus*, Burlington Group, Sedalia, Mo.; *op. cit.* p. 21.

B. inopinatus, Keokuk Group, Boonville, Mo.; *op. cit.* p. 36. *B. insperatus*, Burlington Group, Sedalia, Mo.; *op. cit.* p. 22. *B. insuetus*, Keokuk Group, Boonville, Mo.; *op. cit.* p. 14. *B. labellum*, Keokuk Group, Washington Co., Ind.; MILLER (114) Bull. Illinois Mus. vi, p. 21. *B. lacinosus*, Keokuk Group, Tenn.; *op. cit.* p. 14. *B. laterna*, Keokuk Group, White Creek Springs, Tenn.; *op. cit.* p. 12. *B. modestus* (p. 30), *B. nitidulus* (p. 17), *B. peculiaris* (p. 18), Keokuk Group, Boonville, Mo.; MILLER (115) Bull. Illinois Mus. vii. *B. pileus*, St. Louis Group, Washington Co., Ind.; MILLER (114) Bull. Illinois Mus. vi, p. 18. *B. planus*, Burlington Group, Sedalia, Mo.; MILLER (115) Bull. Illinois Mus. vii, p. 37. *B. polydactylus*, Keokuk Group, Boonville, Mo.; *op. cit.* p. 5. *B. procerus*, ditto; *op. cit.* p. 33. *B. prodigialis*, Keokuk Group, Button Mould Knob, Ky.; *op. cit.* p. 39. *B. sampsoni*, Keokuk Group, Boonville, Mo.; *op. cit.* p. 7. *B. serratus*, ditto; *op. cit.* p. 27. *B. spinosus*, Keokuk Group, Little Barron It., Ky.; MILLER (114) Bull. Illinois Mus. vi, p. 5. *B. venustus* (p. 12), *B. veterator* (p. 8), *B. vetustus* (p. 10), *B. vicinus* (p. 34), Keokuk Group, Boonville, Mo.; MILLER (115) Bull. Illinois Mus. vii, p. 34. *B. wetherbyi*, Keokuk Group, White Creek Springs, Tenn.; MILLER (114) Bull. Illinois Mus. vi, p. 11 : n. spp.

† *Belemnocrinus? sampsoni*; KEYES (70) p. 207.

† *Brachiocrinus nodosarius*, Hall, rediagnosed and referred to *Herpetocrinus*; BATHER (8).

† *Briarocrinus*, systematic position; JAEKEL (67) p. 38.

† *Calceocrinus*:—*C. tunicatus*, refigured, *C. ventricosus*; KEYES (70) p. 222.

† *Callawayocrinus*, syn. of *Aristocrinus*, q.v.

† *Callicrinus uralicus*, Lower Devonian, E. Ural; TSCHERNYSCHEW (162) Trudui geol. Kom. iv, p. 186, n. sp.

† *Calycanthocrinus decadactylus*, redescribed and figured; JAEKEL (67) p. 51.

† *Camerata*, defined; BATHER in WHIDBORNE (168) p. 189.

† *Carduocrinus*, n. g., with type *C. jaekeli*, based on *Lophocrinus minutus* as figured by Jaekel (67) and a specimen from the Culm of Wirminghausen in Waldeck; KOENEN (80) N. Jahrb. Min. 1895, ii, p. 210, n. sp.

† *Carpocrinus*, discussed; JAEKEL (67) p. 36.

† *Catilloocrinus*, systematic position discussed; JAEKEL (67) p. 56.

† *Ceriocrinus hemisphericus*, refigured; KEYES (70) p. 220.

† *Codiocrinidae* defined; JAEKEL (67) p. 63.

† *Codiocrinus* (p. 63), *C. granulatus* (p. 64), *C. schultzei* (p. 64); JAEKEL (67).

† *Condylocrinus*, Eichwald, redescribed, and *C. verrucosus*, described and figured; TSCHERNYSCHEW (162) p. 188.

† *Costata*, discussed; JAEKEL (67) p. 93.

† *Cotylederma lineati*, found on Ammonites; ENGEL (36) p. lxxxv.

- †*Cromyocrinus*:—*C. buttsi*, *C. globosus*, and *C. kansasensis*, the last refigured; KEYES (70) p. 216.
- †*Ctenocrinus*, maintained (p. 31), *C. acicularis*, Follmann's description and figures criticised (p. 34), *C. decadactylus*, with n. var. *elegans*, Lower Devonian, Nieder-Lahnstein (p. 32, no figure), *C. rhenanus* (p. 34), *C. stellifer* (p. 34), *C. typus* (p. 32); JAEKEL (67).
- C. gracilis*, Gemünden (p. 35), *C. hercynicus*, Kahlenberg and Rammelsberg near Goslar (p. 33, NO FIGURE), *C. sculptus*, Oberweiler near Prüm (p. 34, NO FIGURE), Lower Devonian; JAEKEL (67) Pal. Abh. vii : n. spp.
- †*Culicocrinus*, systematic position and morphology (p. 37), *C. confluentinus*, formerly *Proteuryale*, J. Müller (p. 40), *C. nodosus* (p. 39); JAEKEL (67).
- C. inermis*, Nieder-Lahnstein, no figure, *C. spinatus*, Hunsrückschiefer of Lorch am Rhein, Lower Devonian; JAEKEL (67) Pal. Abh. vii, p. 40 : n. spp.
- †*Cupressocrinus*:—*C. abbreviatus*, and *C. crassus*, Stringocephalenkalk; HOLZAPFEL (61) p. 299. *C. crassus*, from Wolborough, figured (p. 207), *C. schlotheimii*, from Wolborough and Lummaton, described and figured (p. 209); WHIDBORNE (168).
- †*Cyathocrinacea*, instituted and defined; JAEKEL (67) p. 59.
- †*Cyathocrinidæ* defined; l. c.
- †*Cyathocrinus*:—*C. boonwillensis*; KEYES (70) p. 208. *C. enormis* refigured; l. c. *C. gracilior*, see *Agriocrinus*. *C. grebei*, redescribed and figured; JAEKEL (67) p. 60. *C. iowensis*, refigured; KEYES (70) p. 207. *C. stillatus*, see *Phialocrinus*.
- C. blairi*, Chouteau Limestone (p. 67), *C. brittsi*, Burlington Group (p. 70), *C. chouteauensis*, Chouteau Limestone (p. 68), Sedalia, Mo.; MILLER (115) Bull. Illinois Mus. vii. *C. goldbecki*, Lower Devonian Hunsrückschiefer of Bundenbach; JAEKEL (67) Pal. Abh. vii, p. 62, NO FIGURE. *C. macadamsi*, St. Louis Group, Alton, Ill.; MILLER (115) Bull. Illinois Mus. vii, p. 69 : n. spp.
- †*Cylicocrinus* (?) *indianensis*, Niagara Group, St. Paul, Ind.; MILLER (114) Bull. Illinois Mus. vi, p. 31, n. sp.
- †*Dadocrinus gracilis*, refigured, cups of different ages, and a tegmen, described; KOENEN (81) p. 284.
- †*Dendrocrinacea* instituted and defined; JAEKEL (67) p. 78.
- †*Desmidocrinus* discussed; JAEKEL (67) p. 36.
- †*Dianenocrinus* discussed, but not defined (p. 27), *D. gonatodes*, formerly *Rhodocrinus gonatodes*; J. Müller pars (p. 28); JAEKEL (67).
- D. grandis*, Silberschmelze near Ems, formerly *Rhodocrinus gonatodes*, J. Müller pars (p. 29), *D. pachydactylus*, Coblenz, formerly *Rhodocrinus gonatodes*, J. Müller pars (p. 28), *D. stellatus*, Siegburg (p. 28, NO FIGURE), Lower Devonian; JAEKEL (67) Pal. Abh. vii.

- † *Dichocrinus* :—*D. blairi*, refigured (p. 205), *D. ficus*, includes *D. coxanus*, Worthen, and *D. parvulus*, Miller (p. 204), *D. lineatus* (p. 203), *D. liratus* (p. 203), *D. striatus*, refigured (p. 203); KEYES (70).
- † *Dolatocrinus* :—*D. bellulus* (p. 57), *D. corporosus* (p. 50), *D. exornatus* (p. 54), *D. hammelli* (p. 52); MILLER (114) Bull. Illinois Mus. vi. *D. nodosus*; MILLER (115) Bull. Illinois Mus. vii, p. 56. *D. pulchellus*, MILLER (114) Bull. Illinois Mus. vi, p. 55. *D. sacculus*; MILLER (115) Bull. Illinois Mus. vii, p. 58. *D. salebrosus*; *op. cit.* p. 59. *D. vasculum*; MILLER (114) Bull. Illinois Mus. vi, p. 52 : Hamilton Group, Charlestown, Ind., n. spp.
- † *Dorycrinus* :—*D. chouteauensis* (p. 169), *D. cornigerus* (p. 172), *D. elegans* (p. 170), *D. gouldi*, refigured (p. 173), *D. intermedius* (p. 173), *D. kelloggi* (p. 173), *D. mississippiensis* (p. 174), *D. missouriensis*, re-described (p. 171), *D. parvus* (p. 171), *D. subaculeatus* (p. 170), *D. unicornis*, refigured (p. 169); KEYES (70).
- † *Eulriocrinus pocilliformis*; KEYES (70) p. 221.
- † *Emperocrinus*, n. g., with type *Emperocrinus iulianensis*, Niagara Group, St. Paul, Ind.; MILLER (114) Bull. Illinois Mus. vi, p. 42, n. sp.
- † *Eucrinus* :—"Nov. form. indet." columnals figured and described, Muschelkalk, Val di Scalve; TOMMASI (160) p. 61. *E.*, cf. *cassianus*; SALOMON (143) p. 138. *E. gracilis*, columnals described, Italian Muschelkalk; TOMMASI (160) p. 59. *E. liliiformis*; NOVARESE (126). *E. liliiformis*, columnals described, localities in Italian Muschelkalk; TOMMASI (160) p. 60. *E. silesiacus*?; NOVARESE (126).
- E. spinosus*, Schichten von Gorasdze, Unteren Muschelkalk, in Chorulla, Oberschlesien; MICHAEL (110) Jahresber. Schlesisch. Ges. lxxi, Abth. ii, p. 23. This was figured in Zeitschr. Deutsch. geol. Ges. xlv, p. 500 : n. sp.
- † *Eretmocrinus* :—*E. calyculoides*, refigured (p. 177), *E. carica* (p. 176), *E. corbulis*, refigured (p. 175), *E. coronatus* (p. 176), *E. depressus*, refigured (p. 176), *E. expansus*, refigured (p. 175), *E. konincki* (p. 178), *E. leucosia* (p. 176), *E. originarius* (p. 178), *E. remibrachiatus* (p. 178), *E. verneuillianus*, refigured (p. 177); KEYES (70).
- E. commendabilis*, Keokuk Group, Crawfordsville, Ind.; MILLER (114) Bull. Illinois Mus. vi, p. 25, n. sp.
- † *Eucladocrinus pleuroviminus*; KEYES (70) p. 202.
- † *Eupachyrcrinus* :—*E. ? harii*, refigured (p. 218), *E. magister*, refigured (p. 218), *E. maniformis* (p. 217), *E. orbicularis* (p. 217), *E. verrucosus*, refigured (p. 217); KEYES (70).
- † *Fistulata* divided into *Cyathocrinacea* [*Cyathocrinidæ*, *Crotalocrinidæ*, *Euspirocrinus*, *Gasterocomidæ*, *Marsupites*], *Dendocrinacea* [= *Dendocrinidæ* and *Decadocrinidæ* of Bather], and *Heterocrinacea* [*Heterocrinidæ*, *Calceocrinidæ*]; JAEKEL (67) p. 57.
- † *Flexibilia*, n. n. pro *Articulata*, W. & Spr. non Müller; ZITTEL (180) p. 137.
- † *Forbesiocrinus* :—*F. agassizi*, refigured, *F. wortheni*; KEYES (70) p. 224.

- † *Gastrocomida*, discussed; JAEKEL (67) p. 73.
- † *Gastrocrinus*, n. g., based on *Poteriocrinus patulus*, J. Müller, Lower Devonian, which is redescribed; JAEKEL (67) Pal. Abh. vii, p. 80.
- † *Gemmaocrinus trijugis*; KEYES (70) p. 174.
- † *Gilbertocrinus*:—*G. typus*; KEYES (70) p. 164.
- G. greenei* (p. 35), *G. indianensis* (p. 38), Hamilton Group, Charleston, Ind.; MILLER (114) Bull. Illinois Mus. vi, n. spp.
- † *Gissocrinus* ? *borealis*, Lower Devonian, E. Ural; TSCHERNYSCHEW (162) Trudui geol. Kom. iv, p. 189, n. sp.
- † *Glyptocrinus forshellii*, in Missouri; KEYES (70) p. 162.
- † *Hapalocrinidæ*, n. fam. of *Costata*, including *Hapalocrinus*, *Agriocrinus*, *Thallockrinus*, and *Coccoocrinus*; JAEKEL (67) p. 94.
- † *Hapalocrinus*, n. g., with type *H. elegans*, Lower Devonian Hunsrückschiefer of Bundenbach; JAEKEL (67) Pal. Abh. vii, p. 95, n. sp.
- † *Haplocrinus decipiens*, redescribed and figured; WHIDBORNE (168) p. 205.
- † *Herpetocrinus nodosarius*, Hall, olim *Brachiocrinus*, rediagnosed; BATHER (8).
- † *Hexacrinus*, rediagnosed (p. 189), *H. ? aberrans*, redescribed and figured (p. 199), *H. depressus*, syn. of *H. interscapularis* (p. 191); WHIDBORNE (168). *H. exsculptus*, Stringocephalenkalk; HOLZAPFEL (61) p. 302. *H. granifer* maintained; WHIDBORNE (168) p. 191. *H. granulifer* (p. 301), *H. interscapularis* (p. 302), Stringocephalenkalk; HOLZAPFEL (61). *H. interscapularis*, redescribed and figured (p. 190), *H. macrotatus*, redescribed and figured (p. 192), *H. microglyphicus*, redescribed and figured (p. 196), *H. ornatus*, redescribed and figured (p. 195), *H. pentangularis*, Austin non Miller, referred to *H. quintangulus* (p. 198), *H. perarmatus*, redescribed and figured (p. 194), *H. quintangulus*, redescribed and figured (p. 198), *H. vicarii*, redescribed and figured (p. 197); WHIDBORNE (168).
- † *Holocrinus wagneri*, redescribed, with tegmen, specimen with regenerate arms figured; KOENEN (81) p. 290.
- † *Homocrinus kayseri*, Lower Devonian Hunsrückschiefer of Wisperstein near Lorch; JAEKEL (67) Pal. Abh. vii, p. 78, n. sp.
- † *Hydreionocrinus*:—*H. acanthophorus* (p. 215), *H. mucrospinus* (p. 216), *H. pentagonus* (p. 215); KEYES (70).
- † *Ichthyocrinus burlingtonensis*; KEYES (70) p. 223.
- † *Indianocrinus*, n. g., with type *Indianocrinus punctatus*, n. sp., Niagara Group, St. Paul, Ind.; MILLER (115) Bull. Illinois Mus. vii, p. 83.
- † *Lahusenocrinus*, n. g., with type *L. tirlensis*, n. sp., Lower Devonian, E. Ural; TSCHERNYSCHEW (162) Trudui geol. Kom. iv, p. 187. Genus rejected; JAEKEL (67) p. 18.
- † *Larvata*, characters discussed; JAEKEL (67) p. 43.
- † *Lecythiocrinus olliculaformis*, refigured; KEYES (70) p. 208.

- † *Lophocrinus*, redescribed (p. 90); *L. minutus*, specimen from Geislicher Berg [Weinberg *apud* Von Koenen] near Herborn, figured, and species considered to include *L. speciosus* (p. 92); JAEKEL (67). The specimen figured by Jaekel distinguished from *L. speciosus*, Von Meyer; and made type of *Carduocrinus jaekeli*; KOENEN (80).
- † *Macarocrinus*, n. g., with type *M. springeri*, Lower Devonian Hunsrück-schiefer of Bundenbach; JAEKEL (67) Pal. Abh. vii, pp. 36 & 111, n. sp.
- † *Macrostylocrinus indianensis*, Niagara Group, St. Paul, Ind.; MILLER (114) Bull. Illinois Mus. vi, p. 33, n. sp.
- † *Mariacrinus*, maintained; JAEKEL (67) p. 31.
- † *Megistocrinus*:—*M. brevicornis*, refigured (p. 165), *M. evansi*, refigured (p. 164); KEYES (70).
- M. hemisphericus* (p. 44), *M. ornatus* (p. 42), Hamilton Group, Clarke Co., Ind.; MILLER (115) Bull. Illinois Mus. vii, n. spp.
- † *Melocrinus*, distinguished from *Ctenocrinus* and *Mariacrinus*; JAEKEL (67) p. 31. *M. gibbosus*, Stringocephalenkalk; HOLZAPFEL (61) p. 303. *M. hieroglyphicus*, from Lummaton Beds?, described and figured; WHIDBORNE (168) p. 201. *M. nodosus*, Hall, refigured; WHITFIELD (169). *M. stellaris*, from Torquay, described and figured; WHIDBORNE (168) p. 200.
- M. sampsoni*, Chouteau Limestone, Sedalia, Mo.; MILLER (115) Bull. Illinois Mus. vii, p. 55, n. sp.
- † *Millericrinus*:—*M.* cf. *adneticus*, columnals figured, Lower Lias; PARONA (129) p. 70. *M. munsterianus*; PERON (131) p. 542.
- † *Mycocrinus*, systematic position discussed; JAEKEL (67) p. 54.
- M. granulatus*, Middle Devonian of Prüm in the Eifel; JAEKEL (67) Pal. Abh. vii, p. 55, n. sp.
- † *Myelodactylus*, name rejected in favour of *Herpetocrinus*; BATHER (8).
- † *Onychocrinus*:—*O. monroensis*; KEYES (70) p. 224.
- O. pulaskiensis*, Kaskaskia Group, Pulaski Co., Ky.; MILLER (114) Bull. Illinois Mus. vi, p. 40, n. sp.
- † *Orthocrinus*, n. g., with type *O. simplex*, Lower Devonian, Nieder-Lahnstein, formerly *Poteriocrinus rhenanus*, J. Müller pars; JAEKEL (67) Pal. Abh. vii, p. 29, n. sp.
- † *Parisocrinus*, discussed (p. 64), *P. curtus* (p. 66); JAEKEL (67). *P. intermedius*; KEYES (70) p. 207. *P. stellaris*, olim *Poteriocrinus*, redescribed and figured (p. 67), *P. zeiformis*, redescribed and figured (p. 65); JAEKEL (67).
- P. canaliculatus*, Lower Devonian, Nieder-Lahnstein; JAEKEL (67) Pal. Abh. vii, p. 68, n. sp.
- Pentacrinoidea* (Jaekel) divided into *Fistulata*, *Larvata*, *Articulosa*, *Articulata*, and *Costata*; JAEKEL (67) p. 42.
- † *Pentacrinus*:—columnals; SALOMON (143) p. 138. *P. amblyscalaris*?; PERON (131) p. 543. *P. dubius*, columnals described, localities in 1895. [VOL. XXXII.]

- Italian Muschelkalk; TOMMASI (160) p. 57. *P. kloedeni* is based on cirrals of *P. agassizi*; DEECKE (31) p. 72. *P. rotatus*, Eocene, N. Z.; TATE (157) p. 122. *P. scalaris*; FUCINI (40) p. 140. *P. stellatus*, Eocene, N. Z. and S. Australia; TATE (157) p. 122. *P. subbasaltiformis*, n. var. *subrotundus*, Upper Eocene, Valrovina, Italy, figured; GREGORIO (47) p. 17. *P. subsulcatus*; FUCINI (40) p. 141. *P. subteres*, Tithonian, Italy; CORTI (24) p. 386. *P. tuberculatus*, columnals figured; PARONA (129) p. 71.
- † *Periechocrinus*? *whitei*; KEYES (70) p. 164.
- † *Phialocrinus*:—*P. basiliscus* (p. 220), *P. carbonarius* (p. 219), *P. harii*, refigured (p. 219), *P. magnificus*, refigured (p. 220), *P. stillativus*, White, olim *Oyathocrinus*, refigured (p. 219); KEYES (70).
- P. barydactylus*, Upper Coal-Measures, Kansas City; KEYES (70) Bull. Geol. Surv. Missouri, v, p. 220, n. sp.
- † *Phyllocrinus*:—*P. cf. malbosii*; TOBLER (159) p. 265. *P. (errore Phyllocrinus) fenestratus*, *P. cf. mabosianus*, *P. nutantiformis*, Tithonian, Italy; CORTI (24) p. 386.
- † *Physetocrinus*:—*P. ornatus*, refigured, *P. ventricosus*; KEYES (70) p. 192.
- † *Pisocrinus*:—*P. baccula*, Niagara Group, St. Paul, Ind. (p. 79). *P. milligani*, Niagara Group, Decatur Co., Tenn., but shown by Bather to be syn. of his *P. quinquelobus* (p. 80); MILLER (115) Bull. Illinois Mus. vii : n. spp.
- † *Platycrinus*, systematic position; JAEKEL (67) p. 38. *P. aberrans*, referred to *Hexacrinus*; WHIDBORNE (168) p. 199. *P. absentivus* (p. 196), *P. aequalis* (p. 200), *P. aequiternus* (p. 196), *P. allophylus* (p. 196), *P. americanus*, refigured (p. 199), *P. amosus* (p. 196), *P. bononensis* (p. 201), *P. boonvillensis* (p. 202), *P. britsi* (p. 195), *P. burlingtonensis* (p. 200), *P. discoideus*, includes *P. gorbyi* and *P. pulchellus* of S. A. Miller (p. 197), *P. halli*, refigured (p. 201), *P. ollicula* (p. 195); KEYES (70). *P. pentangularis*, Phillips non Miller, referred to *Hexacrinus vicarii*; WHIDBORNE (168) p. 197. *P. pileiformis*, refigured (p. 198), *P. prænuntius* (p. 198), *P. pratteni* (p. 198), *P. saffordi*, refigured (p. 202), *P. sampsoni*, Miller, "too imperfect to deserve recognition" (p. 199), *P. saræ* (p. 202), *P. sculptus* (p. 200), *P. subspinus* (p. 197); KEYES (70). *P. tuberculatus*, Phillips non Miller, syn. of *Hexacrinus macrotatus*; WHIDBORNE (168) p. 193.
- P. casula*, Burlington Group (p. 76), *P. clinatus*, Chouteau Limestone (p. 74), *P. formosus*, Burlington Group (p. 72). *P. germanus*, Chouteau Group (p. 78), *P. missouriensis*, Chouteau Limestone (p. 73), *P. modestus*, Burlington Group (p. 77), *P. pettisensis*, Chouteau Limestone (p. 73), *P. semifusus*, Burlington Group (p. 77), *P. sulciferus*, Burlington Group (p. 75), *P. tugurium*, Burlington Group (p. 70), Sedalia, Mo.; MILLER (115) Bull. Illinois Mus. vii. *P. vascellum*, Keokuk Group, Tennessee; MILLER (114) Bull. Illinois Mus. vi, p. 32 : n. spp.

- †*Poteriocrinus* :—*P. brittsi*; KEYES (70) p. 211. *P.* (olim *Cyathocrinus*) *gracilior*, see *Agriocrinus*. *P. isacobus* compared with *Plicatocrinus*; JAEKEL (67) p. 93. *P. minutus*, see *Lophocrinus*. *P. patulus*, see *Gastrocrinus*. *P. rhenanus*, J. Müller pars, see *Orthocrinus*.
- P. altonensis*, St. Louis Group, Alton, Ill. (p. 62), *P. blairi*, Burlington Group, Sedalia, Mo. (p. 61), *P. broadheadi*, Chouteau Limestone, Sedalia, Mo. (p. 63), *P. sampsoni*, Chouteau Limestone, Sedalia, Mo. (p. 65); MILLER (115) Bull. Illinois Mus. vii; *P. vagulus*, Kaskaskia Group, Pulaski Co., Ky.; MILLER (114) Bull. Illinois Mus. vi, p. 46: n. spp.
- †*Proteuryale confluentina*, see *Culicocrinus*.
- †*Pterotocrinus* :—*P. chesterensis*; KEYES (70) p. 206.
- P. wetherbyi*, Kaskaskia Group, Pulaski Co., Ky.; MILLER (114) Bull. Illinois Mus. vi, p. 44, n. sp.
- †*Ptychocrinus splendens*; KEYES (70) p. 162.
- †*Rhadinocrinus*, n. g., with type *R. rhenanus*, Lower Devonian of Coblenz; JAEKEL (67) Pal. Abh. vii, p. 87, n. sp.
- †*Rhipidocrinus*, synonymy discussed; JAEKEL (67) p. 25. *R. crenatus*?, from Lummaton, figured; WHIDBORNE (168) p. 203.
- †*Rhizocrinus santagatai*, not a crinoid, but = *Bathysiphon filiformis*; CAPELLINI (18 & 19).
- †*Rhodocrinus*, synonymy discussed; JAEKEL (67) p. 25. *R.* (*Acanthocrinus*) sp., fragment from Wolborough, figured; WHIDBORNE (168) p. 204. *R. coxanus*, refigured; KEYES (70) p. 163. *R. gonatodes*, Müller, referred to *Diamenocrinus gonatodes*, *D. pachydaetylus*, and *D. grandis*; JAEKEL (67) pp. 24, 28 & 29. *R. wachsmuthi* (p. 163), *R. whitei* (p. 163), *R. wortheni* (p. 162); KEYES (70).
- †*Saccocoma*, relations in Palæozoic; JAEKEL (67) pp. 93 & 96.
- †*Saccocrinus umbrosus*, Niagara Group, St. Paul, Ind.; MILLER (114) Bull. Illinois Mus. vi, p. 24, n. sp.
- †*Sampsonocrinus*, n. g., with type *S. hemisphericus*, Chouteau Limestone, Sedalia, Mo.; MILLER (115) Bull. Illinois Mus. vii, p. 51, n. sp.
- †*Scaphiocrinus* :—*S. ? boonvillensis* (p. 212), *S. dactyliformis* (p. 211), *S. ? gorbyi* (p. 213), *S. missouriensis*, refigured (p. 211), *S. proboscidiialis* (p. 212), *S. rusticellus*, refigured (p. 212), *S. ? sampsoni* (p. 213), *S. scoparius* (p. 212); KEYES (70).
- †*Scoliocrinus*, n. g., with type *S. eremita*, Middle Devonian of Pelm in the Eifel; JAEKEL (67) Pal. Abh. vii, p. 76, n. sp.
- †*Scytalocrinus*.—*S. dactylus*, and *S. vanhornei*; KEYES (70) p. 213.
- †*Shumardocrinus*, n. g., with type *S. concinnus*, Shumard, olim *Actinocrinus*, redescribed on a specimen from Burlington Group, Sedalia, Mo.; MILLER (115) Bull. Illinois Mus. vii, p. 41.
- †*Sphaerocrinida*, n. fam. for *Sphaerocrinus*, *Gastrocrinus*, and *Parisocrinus*; JAEKEL (67) p. 64.
- †*Sphaerocrinus*, morphological description; JAEKEL (67) p. 68. *S. geometricus*; JAEKEL (67) p. 72: discussed and specimens from Wolborough figured; WHIDBORNE (168) p. 211.

- S. lævigatus*, Middle Devonian of Kerpen in the Eifel; JAEKEL (67) Pal. Abh. vii, p. 72, n. sp.
- †*Steganocrinus*:—*S. araneolus* (p. 194), *S. concinnus* (p. 194), *S. pentagonus*, refigured (p. 195), *S. sculptus* (p. 194); KEYES (70).
- †*Storthingocrinus fritillus*, from Wolborough, figured, but English specimens referred here by J. Müller & Schultze are placed with *Hexacrinus macrotatus*; WHIDBORNE (168) p. 206.
- †*Strotocrinus*:—*S. regalis*, refigured, includes *S. bloomfieldensis* of S. A. Miller; KEYES (70) p. 193.
- S. blairi*, Burlington Group, Sedalia, Mo.; MILLER (115) Bull. Illinois Mus. vii, p. 48, n. sp.
- †*Symbathocrinus*:—*S. dentatus*, refigured (p. 206), *S. swallowi* (p. 207); KEYES (70). *S. tabulatus*, Stringocephalenkalk; HOLZAPFEL (61) p. 300. *S. wortheni*, refigured; KEYES (70) p. 206.
- †*Talarocrinus simplex*; KEYES (70) p. 205.
- †*Tazocrinus*:—*T. giddingei* (p. 223), *T. shumardianus* (p. 224), *T. thiemi*, refigured (p. 223); KEYES (70).
- T. wetherbyi*, Kaskaskia Group, Pulaski Co., Ky.; MILLER (114) Bull. Illinois Mus. vi, p. 41, n. sp.
- †*Teliocrinus* maintained as distinct from *Strotocrinus*, with which S. A. Miller places it (p. 191), *T. liratus*, refigured (p. 191), *T. umbrosus* (p. 190); KEYES (70).
- †*Thalamocrinidae*, n. fam., including only *Thalamocrinus*, n. g. (p. 81), with type-species *T. ovatus* (p. 82), and *T. cylindricus* (p. 82), Niagara Group, Decatur Co., Tenn.; MILLER (115) Bull. Illinois Mus. vii : n. spp.
- †*Thallocrinus retiaris*, Phillips, olim *Platycrinus*, redescribed; JAEKEL (67) p. 109.
- †*Thallocrinus*, n. g., with type *T. hauchecornei*, Lower Devonian Hunsrückschiefer of Bundenbach; JAEKEL (67) Pal. Abh. vii, p. 106, n. sp.
- Thylacocrinus*?, a fragment from Lummaton, figured; WHIDBORNE (168) p. 202.
- †*Triacrinidae*, n. fam. consisting of *Pisocrinidae*, Bather, and *Catillocrinidae*, Zittel, evolution discussed; JAEKEL (67) p. 44.
- †*Triacrinus*:—*T. altus*, ligament grooves in radial facet (p. 50), *T. depressus*, redescribed and figured, esp. anal tube (p. 48), *T. elongatus*, redescribed and figured (p. 46); JAEKEL (67).
- †*Woodocrinus*:—*W. elegans*, refigured, and *W. pocillum*; KEYES (70) p. 214.
- †*Zeacrinus*:—*Z. magnoliaeformis*; KEYES (70) p. 214.
- Z. blairi*, Keokuk Group, Boonville, Mo.; MILLER (115) Bull. Illinois Mus. vii, p. 66. *Z. durabilis* (p. 48), *Z. pulaskiensis* (p. 47), Kaskaskia Group, Pulaski Co., Ky.; MILLER (114) Bull. Illinois Mus. vi : n. spp.

(G).—†CYSTIDEA.

- Cystidea*, auctt., divided into *Thecoidea* and *Cystoidea*, the former containing *Hemicystis*, *Cytaster*, *Agelacrinus*, *Cyathocystis*, and allies; JAEKEL (68) p. 110. General account, with classification into Families: *Aristocystidae*, *Sphaeronitidae*, *Camarcocystidae*, *Echinosphæritidae*, *Cryptocrinidae*, *Caryocrinidae*, *Anomalocystidae*, *Callocystidae*, *Agelacrinidae*; ZITTEL (180) p. 148.
- Agelacrinus faberi*, uppermost part of Hudson R. Group, halfway between Osgood and Versailles, Ind.; MILLER & FABER (113) J. Cincinnati Soc. xvii, p. 156, n. sp.
- Caryocrinus kentuckiensis*, Niagara Group, Louisville, Ky.; MILLER (114) p. 59, n. sp.
- Comarocystites obconicus*, *C. shumardi*; KEYES (70) p. 132.
- Cyclocystoides illinoisensis*, Hudson R. Group, Orchard Creek, Alexander Co., Ill.; MILLER (114) Bull. Illinois Mus. vi, p. 61, n. sp.
- Echinodiscus kuskaskiensis*; KEYES (70) p. 133. *E. sampsoni*, Miller, "almost too imperfect for recognition"; l. c.
- Echinoencrinus armatus*, see *Schizocystis*.
- Iiolocystites asper* (p. 84), *I. sphaeroidalis* (p. 85), Niagara Group, Madison, Ind.; MILLER (115) Bull. Illinois Mus. vii: n. spp.
- Pleurocystites mercerensis*, Trenton Group, Mercer Co., Ky.; MILLER (114) Bull. Illinois Mus. vi, p. 60, n. sp.
- Proteroblastus*, n. g., Lower Silurian, Russia, not defined and no type-sp. mentioned; JAEKEL (68) Verh. Deutsch. Zool. Ges. 1895, p. 112.
- Schizocystis*, n. g., with type *Echinoencrinus armatus*, Forbes; JAEKEL (68) Verh. Deutsch. Zool. Ges. 1895, p. 113.
- Stribalocystites sphaeroidalis*, Niagara Group, St. Paul, Ind.; MILLER (114) Bull. Illinois Mus. vi, p. 58, n. sp.
- Thecoidea*, see *Cystidea*.
- Trochocystis cannati*, imperfectly described from fragments, Middle Cambrian, Coulouma in l'Hérault, France; MIQUEL (116) Bull. Soc. Beziers, xvii, p. 9, n. sp.

(H).—†BLASTOIDEA.

- General account, with classification after Etheridge & Carpenter; ZITTEL (180) p. 158.
- Codaster graciosus*, Miller, "too imperfect for recognition"; KEYES (70) p. 142.
- C. blairi*, Chouteau Limestone, Sedalia, Mo.; MILLER (115) Bull. Illinois Mus. vii, p. 86, n. sp.
- Cryptoblastus kirkwoodensis* and *C. melo*, both refigured; KEYES (70) p. 139.

- Granatocrinus curtus* (p. 140), *G. neglectus* (p. 139), *G. norwoodi* (p. 140); KEYES (70).
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- Metablastus bipyramidalis* (p. 137), *M. lineatus* (p. 136), *M. wortheni* (p. 137), all refigured; KEYES (70).
- Orophocrinus campanulatus* (p. 142), *O. stelliformis*, refigured (p. 141); KEYES (70).
- Pentremites conoideus*, refigured (p. 134), *P. elongatus*, refigured (p. 133), *P. godoni* (p. 136), *P. koninckanus* (p. 135), *P. obesus* (p. 135), *P. pyriformis* (p. 135), *P. sulcatus*, refigured (p. 135); KEYES (70).
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- Schizoblastus melonoides* (p. 138), *S. ? roemeri* (p. 137), *S. sayi*, refigured (p. 138); KEYES (70). Vide *Granatocrinus*.

XV. VERMES.

BY

FLORENCE BUCHANAN, B.Sc.

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e. *Fish.*

Fish parasites and diseases caused by them; LINTON. Freshwater fish of S. America,—3 new Cestodes; RIGGENBACH (188): of Gt. Lakes of N. America, histological relations of 20 species of Trematodes, Cestodes *Acanthocephala* and Nematodes in 102 fish; WARD (259). *Bothriocephalus* and *Distomum* in E. European fish; SCHRÖDER (213 & 214), BABES. 2 *Distomum* parasites of freshwater fish; MACCALLUM. 2 Cestodes in *Centrolophus*; ARIOLA. 7 species of Trematodes ectoparasitic on fish of Mediterranean; PARONA & PERUGIA: on fish of U. S. A. Atlantic coast; GOTO.

Nematodes and larvæ in fish; HAMANN (91) Nos. 1 & 2, v. LINSTOW.

f. *Ascidians.*

A *Syllis* in mantle-cavity of a *Ascidia mentata*; HORNELL (101).

g. *Molluscs.*

Gastropods: Several species serving as intermediate hosts of liver-fluke; FIELDER. *Chatogaster vermicularis* commensal on *Limnæa stagnalis*; BAILEY.

Lamellibranchs: *Donax*,—sporocyst and cercaria of a digenetic Trematode causing castration; PELSENER.

h. *Arthropoda.*

Insects: *Gordius aquaticus* in grub of *Saturnia* in Russia; RÖMER (191). 2 species of *Gordius* in *Feronia*; JANDA.

Crustaceans: Polychæt in gill-cavity of *Gorgon*; BIDENKAP. Marine Decapods serving as intermediate hosts for *Tetrahynchus ruficollis*; VAULLEGEARD. Freshwater Decapods: adult of *Stichocotyle nephropis* found in the American Lobster; NICKERSON. Isopods: a Rotifer ectoparasitic on *Ligia*; NĚMEC.

i. *Vermes.*

Polychætæ: with Polynoes commensal on them; HORNELL (101). *Orthonectidæ* in a *Pterocirrus*; SAINT-JOSEPH, p. 226.

Leeches: *Dendrocoelum lacteum* in *Aulostomum gulo*; BOLSIUS (26).

Nemertines: a Planarian commensal on a *Cerebratulus*; VERRILL.

j. *Echinoderms.*

Echinids : a Hermellid commensal on *Dorocidaris* ; V. MARENZELLER (136). Polynoids on *Spatangus* ; HORNELL (100).

Starfish : *Myzostomu* endoparasitic in *Asterius* and *Solaster* ; MARENZELLER (137).

k. *Corals.*

Polychætes inhabiting Corals ; HADDON, PRUVOT & RACOVITZA.

l. *Sponges.*

Leucodora coeca in *Microciona plumosa* (mouths of worm tubes having the appearance of oscula) ; HORNELL (101). *Syllis ramosa* in *Crateromorpha meyeri* ; OKA (166).

m. *Plants.*

Biology and characteristics of 3 species of Nematodes harmful in agriculture ; ORMEROD. An Earthworm pest ; COBB. Culinary roots : *Enchytraida* ; STIFT (234) ; Nematodes ; STIFT (232), VOIGT (256), VANTRA & STOKLASA. Tomato roots : a Nematode ; CAVARA. Hops : of Kent, Nematodes causing disease ; VOIGT (256), PERCIVAL, ORMEROD. Tropical orchids : *Anguillulida* in pseudo-bulbs ; DE MAN.

FAUNISTIC.

1. MARINE FORMS.

a. *Arctic Ocean.*

White Sea.—*Dinophilus* ; SCHIMKEWITSCH.

Barents Sea.—New species of *Amphiporus* ; Kara Sea.—New species of *Cerebratulus* ; BÜRGER (38).

b. *Atlantic Ocean.*

Tropical and North Atlantic.—Pelagic *Phyllodoceida* (13 species, 2 new genera) and *Typhloscolecida* (6 species), with 3 maps showing quantitative distribution ; REIBISCH. Acelous Turbellaria (7 new species) ; BÖHMIG.

Irish Channel.—23 species of Nemertines from Port Erin ; BEAUMONT.

North Sea.—Polychætes of the Netherlands (40 species) and a *Sagitta* ; HORST (103) ; of Norway (211 species, belonging to 109 genera) ; BIDENKAP (19).

Baltic.—Rotifers of Gulf of Finland, 45 species, estuarine or marine ; LEVANDER.

English Channel.—Geographical and bathymetrical distribution of 207 species of Polychætes off the coast of Dinard, 50 littoral only, 50 littoral and deep sea, 103 deep sea only, 4 pelagic ; SAINT-JOSEPH, pp. 329-420. *Ampharetida* of French side of the Channel ; FAUVEL (66) and

(68) : several more Northern species of Polychætes found there in the winter of 1894-95 ; FAUVEL (67). Channel Islands : Polychætes ; HORNELL (100). Coast of Cornwall : Pelagic Nemertines and Annelids ; J. Inst. Cornwall, xiii, p. 50.

Mediterranean.—Nemertines, including new species of *Amphiporus*, *Cerebratulus*, *Drepanophorus*, *Lineus*, *Nemertopsis*, *Ototyphlonemertes*, *Prosorhochmus*, and *Tetrastemma* ; BÜRGER (38) pp. 716-727. Gulf of Lyons : Polychætes ; PRUVOT, PRUVOT & RACOVITZA. Recent Serpulids of Mediterranean represented in Tertiary rocks of Austria ; ROVERETO. Trematodes ectoparasitic in fish ; PARONA & PERUGIA.

Coast of N. America.—60 species (2 pelagic) of marine Planarians and Nemertines of New England ; VERRILL. 3 new species Palæo-Nemertines ; COE (55). Ectoparasitic Trematodes ; GOTO. New species of *Sagitta* from Beaufort, N.C. ; CONANT.

Bemini I.—A new species of *Spadella* ; CONANT.

Barbadoes.—A new species of *Eupolia* ; BÜRGER (38) p. 604.

South Atlantic.—*Enteropneusta* of Brazil ; GOELDI. *Phyllodoceidæ* ; REIBISCH.

c. Indian Ocean.

Batavia.—2 new species. Philippines.—1 new species, of *Thysanozoon*, STUMMER-TRAUNFELS. Bay of Amboina.—*Chatognatha* ; BÉRANECK ; 3 new species of *Thysanozoon* ; STUMMER-TRAUNFELS.

Mauritius.—*Poliopsis lacazei*, Joub. ; BÜRGER (38) p. 608.

d. Pacific Ocean.

Coast of Japan.—*Syllis ramosa* (in Sponge) ; OKA (166). A new species of *Pelargonemertes* ; BÜRGER (38) p. 596.

Caroline Is.—Ponape : a new species of *Eupolia* ; BÜRGER (38) p. 604.

Samoa Is. and Paumotu Is.—A new species of *Eupolia* ; BÜRGER (38) p. 64.

Coast of Chili, Straits of Magellan and Falkland Is.—New species of *Cerebratulus*, *Carinoma* and *Amphiporus*, and a new species of *Micrura* ; BÜRGER (37) pp. 33-36 & 21-23 ; and (38) p. 537.

2. LAND AND FRESHWATER FORMS.

a. Palæarctic Region.

Oceanic Islands of Atlantic.—Earthworms ; BEDDARD (11).

British Isles.—North of England : Vermes reported on during the years 1884-92 ; ROEBUCK. Norfolk : Earthworms ; MAYFIELD, Tr. Norfolk Soc. v, pp. 574-577 : habitats of ; FRIEND, Rep. Rugby Soc. xxviii, pp. 33-37. Ealing and Hertford Heath : new Rotifers ; ROUSSELET (199). Isle of Thanet : new Rotifer ; PITTOCK. Kent : Nematodes of hops ; PERCIVAL. Ireland.—Tipperary : Earthworms ; Irish Natural. iv, p. 35 ; Leeches, p. 165 ; *Bipalium kewense*, p. 165. Mayo (and Galway) : 220 species of Rotifers ; HOOD (97).

N.W. Europe.—Holland : a new species of *Gordius*; CAMERANO (43), p. 4. Belgium and N. of France : *Phreoryctes menkeanus* in Liège and Limbourg ; V. BENEDEEN : near Nancy and in a well at Boussac (Creuse) ; Bull. Soc. Nord France, xi, p. 233 ; *Dendrocoelum punctatum* in Belgium ; WILLEM.

N. Germany.—Rotifers of Great Lake of Plön, according to temperature and season of year ; ZACHARIAS (267) : of L. Müggel, 9 species (2 new) ; ECKSTEIN. A new freshwater Nemertine near Berlin ; MONTGOMERY (150). Oligochætes, Leeches, Nematodes, and Platyhelminthes of W. Prussia, Schr. Ges. Dantzig, ix, pp. 247 & 266-268 ; 2 species of *Fridericia* which had before only been found in Norway ; PROTZ, p. 255.

Russia.—Finland : Rotifers around Helsingfors, several species (9 new) ; LEVANDER. *Nepheleis octocolata* (p. 59) and *Nais elinguis* (p. 96), in water supply of Riga ; KB. Ver. Riga, SB. Kazan : 26 species of Rhabdocœl Turbellarians ; SABUSSOW.

Middle Europe.—Galicia : *Enchytraïde*, including 2 new species ; NUSBAUM : blind Turbellarians of springs ; JAWOROWSKI. Austro-Hungary : Earthworms, 21 species ; ROSA (195). Triest : Ascarids ; HAMANN (91) No 2. Bohemia : Turbellarians (15 species of Tricladis, of which 2 terricolous) ; VEJDOVSKY (252) ; *Gordiïde* ; JANDA. Switzerland : Alpine Lakes ; ZSCHOKKE ; near Zurich : Oligochætes, 57 species (6 new) belonging to 23 genera (1 new) ; BRETSCHER ; Turbellarians, 24 species (1 new) ; KELLER. Lake of Geneva : the 4 marine species of *Macrorhynchus* found there ; DU PLESSIS (174) ; Rotifers, Arch. Sci. Nat. xxxiv, p. 462. Nice : a new species of *Allolobophora* ; ROSA (194).

S. Europe.—Italy : near Verona : freshwater Rhabdocœls (3 spp.), and Dendrocœls (6 spp.), Nemertine (1 sp.), Nematodes (7 spp.), Leeches (8 spp.), Oligochætes (7 spp.), Rotifers (12 spp.) ; GARBINI. Roman Provinces : Leeches ; CARRUCIO : Echinorhynchi of Reptiles ; SABBATINI (203). Italian helminthology ; SETTI.

N. Africa.—Madeira : new species of *Allolobophora* ; MICHAELSEN (145).

W. Asia.—Syria : Rotifers, ROUSSELET (200).

E. Asia.—Japan : new genus of land Leeches ; OKA (165) ; new species of *Chordodes* ; CAMERANO (43) ; presence of *Strongylus subtilis* ; IJIMA. China : new species of *Chordodes* ; CAMERANO (41) ; 2 new species of *Perichæta* ; MICHAELSEN (145). N. India : a new species of *Chordodes* from Calcutta ; RÖMER (191). Ceylon : a Cestode from *Manis* ; ZSCHOKKE (271).

b. Oriental Region.

E. Indian Archipelago.—Penang : new species of *Perichæta* ; BEDDARD (13) p. 407. Sumatra : 2 new species of *Gordiïde* ; CAMERANO (43). Java : 2 new species of *Perichæta* ; BENHAM. Neeb : 2 new species of *Gordius* ; CAMERANO (43). Borneo : a new species of *Mou-*

ligaster; BEDDARD (13) p. 203: 3 new species of *Perichæta*, 1 species of *Pontoscolex*, and 1 of *Megascolex*; BEDDARD & FEDARB, and BEDDARD (13) pp. 428 & 429: 2 new species of *Chordodes*; RÖMER (190): new species of *Gordiüs*; CAMERANO (43): a new species of *Bipalium*; LOMAN. Palawan: 3 new species of *Perichæta*; BEDDARD & FEDARB. Halmahera (Gilolo): 1 new species of *Chordodes*; RÖMER (190). Natuna Is.: a new species of *Bipalium*; LOMAN.

c. Australian Region.

Timor.—New species of *Chordodes*; CAMERANO (43).

Victoria.—Rotifers of Wilmshere; Victorian Natural, xii, p. 4.

Tasmania.—Earthworms, 6 new species of *Perichæta*, 2 of *Megascolides*, 10 of *Cryptodrilus*; SPENCER.

New Zealand.—2 new species of *Acanthodrilus*, 1 of *Microscölex*; BEDDARD (13). Land Planarians, 20 species, 13 (of *Geoplana*) new; DENDY (61). A land Nemertine; DENDY (62).

Oceanic Islands of Pacific.—Earthworms; BEDDARD (11). Sandwich Islands.—Kauai; new parasite in skin of bird; SHIPLEY (216). Hawaii: new species of *Pontoscolex*; BEDDARD (13) p. 660.

d. Ethiopian Region.

West Africa.—2 new species of *Benhamia* from Liberia; HORST (102). A new species of *Chordodes* from Gaboon; RÖMER (191). New species of *Dichogaster* and of *Benhamia* from Sierra Leone; MICHAELSEN (145).

East Africa.—37 species of Earthworms (6 new) from German E. Africa; MICHAELSEN (146): a new species of *Polytorentus*; BEDDARD (13) p. 612.

S. Africa.—New species of *Filaria* from Python of Natal; NEUMANN (162). New species of *Chordodes* at the Cape; CAMERANO (43).

Madagascar.—2 new species of *Kynotus*; MICHAELSEN (145).

e. Neotropical Region.

Benhamia on the American Continent; ROSA (196), and EISEN.

Straits of Magellan.—Several new species of Earthworms (*Acanthodrilus*); BEDDARD (13).

Chili.—21 new species of Earthworms; BEDDARD (12), & (13) p. 239.

Paraguay and Argentine Republic.—Earthworms, 16 new species and 1 new genus; ROSA (193) & (196). Freshwater Planarians (2 new species); BORELLI.

Buenos Ayres.—A new species of *Kerria*; BEDDARD (12).

Bolivia.—A new species of *Chordodes*; CAMERANO (42).

Brazil.—New species of Earthworm (*Criodrilus*); MICHAELSEN (145). Planarians (land), Trematodes, Hirudinea; GOELDI. Tæniae of freshwater fish; LÜHE, RIGGENBACH (188). *Filaria mansonii*; MAGALHÃES. *Gordiide* (*Chordodes*), 16 species in Orthopterous insects, one new from Bahia; RÖMER (191).

Venezuela and Columbia.—New species of *Anteus*; MICHAELSEN (145).

Ecuador.—2 new species of *Anteus*; ROSA (196) & (197).

Springs and Lakes of Guatemala, Central America, Mexico, and California.—Aquatic Oligochaetes, 4 new species of *Benhamia*, 4 new species and 3 new subspecies of *Sparganophilus*, 2 of *Acanthodrilus*, 1 of *Pontodrilus*, and one species of a new genus of *Acanthodrilidae*, and one of a new genus of *Ocnerodrilidae*; EISEN. *Acanthodrilus* as far north as Central America and Mexico; EISEN.

W. Indies.—Jamaica: a *Glossiphonia* and a *Rhynchodemus*; J. Inst. Jamaica, p. 170.

f. *Nearctic Region.*

N. America.—U. S. A.:—Nebraska: a new species of *Diplocardia*; UDE. Illinois: a new genus of Oligochaet; SMITH. A new species of *Diplocardia*; GARMAN. Pennsylvania: 4 new species of *Fridericia*; MOORE, J. P. (156); 1 new species of *Bimastos*; MOORE, H. F. (152); *Enchytraidea*, 1 new genus; MOORE, J. P. (155).

N. American Gt. Lakes.—Parasites of 102 fish (20 species), Trematodes and *Acanthocephala* numerous, Nematodes and Cestodes rare; WARD (259), STILES (237) No. 32.

III. SYSTEMATIC.

1.—HEMICHORDATA.

Ptychodera australiensis, Hill, anatomy; HILL, J. P. (94).

2.—ANNELIDA.

A.—*GEPHYREA.*

Absorption and retention of iron by nuclei of cells of *Gephyrea*; SCHNEIDER, R. (212).

B.—*CHÆTOPODA.*

a. *POLYCHÆTA* (including *Dinophilus* and *Polygordius*).

Ampharete grubei in the Channel; FAUVEL, (66).

Amphicteis gunneri in the Channel; FAUVEL (66) & (68).

Chaetopterus pergamentaceus, maturation and fecundation of eggs; MEAD.

Polynoids commensal in *Chaetopterus*; HORNELL (101).

Dinophilus: anatomy of the genus, and especially of the species found in the White Sea; SCHIMKEWITSCH, Zeitschr. wiss. Zool. lix, p. 46.

Eteonopsis, n. g. (of a new fam. *Pseudophyllodocidae*), with *E. geryonicola*, n. sp., from gill-cavity of *Geryon tridens*, Norway; BIDENKAP, Forh. Selsk. Christian. 1894, No. 10, pp. 72-74.

- Eunice harassii*, Aud. & Edw., *torquata*, Qfg., *florideana*, Pruvot, *rousseaui*, Qfg., anatomy; PRUVOT & RACOVITZA, Arch. Zool. exp. iii, pp. 384-423. Tubes of *Eunice*; HADDON.
- Eupolynoë*, n. g., with *E. paradoxa*, n. sp.; BIDENKAP, Forh. Selsk. Christian. 1894, No. 10, p. 64.
- Filigrana*, fission in; MALAQUIN.
- Haliplanes*, n. g., of pelagic *Phyllodocidæ* (*Lopadorhynchidæ*), with *H. gracilis*, n. sp., Atlantic (8° S.—4° N.), and *H. isochæta*, n. sp., Sargossa Sea; REIBISCH, *Ergebn. Plankton Exp.*, Humb. Stift. ii, H. c., pp. 25-27.
- Halla parthenopeia*, lymphatic glands; KOWALEVSKI.
- Harmothoë norvegica*, *abyssicola*, n. spp., Norway; BIDENKAP, Forh. Selsk. Christian. 1894, No. 3, pp. 1-6, and No. 10, pp. 57-60.
- Jospilus litoralis*, n. sp., Atlantic, off Para (Brazil), and Bermudas; REIBISCH, *Ergebn. Plankton Exp.*, Humb. Stift. ii, H. c., p. 6.
- Lopadorhynchidæ*, definition of subfam., and table to distinguish genera; REIBISCH, *t. c.* pp. 18-21 & 40-42; the genus *Lopadorhynchus*, and table to distinguish species, pp. 30-35; *L. henseni*, n. sp., Atlantic (7° S.—18° N., and at 42° N.), *macrophthalmus*, n. sp., N. of Ascension I., *nationalis*, n. sp., Equatorial Atlantic; *L. viguieri*, n. sp., for (*L. krohnii*, Viguiet); REIBISCH, *t. c.* pp. 35-39.
- Lumbriconereis variegatus*, n. sp., Norway; BIDENKAP, Forh. Selsk. Christian. 1894, No. 10, p. 80. *L. coccinea* (Ren.) Gr., anatomy; PRUVOT & RACOVITZA, Arch. Zool. exp. iii, pp. 374-384.
- Magelona*: blood-forming organ in dorsal vessel of larva; BUCHANAN.
- Marphysa* with a Polynoid commensal in its burrows; HORNELL (101).
- Maupasia coeca*, Viguiet; REIBISCH, *t. c.* p. 27.
- Nereis diversicolor*, sensory nervous system; RETZIUS. *N. cultrifera*, lymphatic glands; KOWALEVSKI.
- Nerine (floræensis)*, Saint-Joseph) = *N. girardi*; SAINT-JOSEPH.
- Owenia fusiformis*, septal organs; GILSON.
- Panthalis lacazii*, n. sp., p. 428, and *P. marenzelleri*, n. sp., for (*P. oerstedii*, Mrzllr.), p. 442; PRUVOT & RACOVITZA, Arch. Zool. exp. iii, pp. 428-452. *P. oerstedii*, Kbg., formation of tubes; WATSON.
- Pedinosoma*, n. g., of pelagic *Phyllodocidæ* (*Lopadorhynchidæ*), with *P. curtum*, n. sp., Atlantic (5° S.—44° N.); REIBISCH, *t. c.* p. 29.
- Pelagobia longecirrata*, Greef, N. Atlantic (7° S.—44° N.); REIBISCH, *t. c.* p. 21.
- Phalacrophorus borealis*, n. sp., N. Atlantic (near Newfoundland to near Iceland), *uniformis*, n. sp., Atlantic (8° S.—43° N.), and *pictus*, Greef; REIBISCH, *t. c.* pp. 10-17.
- Phalacrostemma*, n. g. of *Hermellidæ*, with *P. cidariophilum*, n. sp., from *Dorocidaris papillata*, E. Mediterranean, and near Pelagosa I. in deep sea; MARENZELLER, *Anz. Ak. wiss.* 1895, p. 191.
- Phyllodoce macropapillosa*, n. sp.; SAINT-JOSEPH, *Ann. Sci. Nat.* v, p. 224.
- † *Placostegus polymorphus*, n. sp., Austrian Tertiaries, Ehrenhausen; ROVERETO, *Atti Soc. Ligustica*, vi, p. 156.

- Podarke pallida*, Clp., anatomy ; PRUVOT & RACOVITZA, Arch. Zool. exp. iii, pp. 423-428.
- Polygordius pulchella*, ? n. sp., for (*Nareda pulchella*, Girard), larva only ; VERRILL, Tr. Connect. Ac. ix, p. 524.
- Pontodora pelagica*, Greef, Atlantic (7° S.—44° N.) ; REIBISCH, Ergebn. Plankton Exp. Humb. Stift. ii, H. c.
- Pseudophyllodocidæ*, n. fam., for gen. *Eteonopsis*, n. g. ; BIDENKAP, Forh. Selsk. Christian. 1894, No. 10, p. 72.
- Subella sarsi*, n. sp., Norway, BIDENKAP, t. c. No. 3, p. 6, and No. 10, p. 136. (*S. sarsi*, Krøyer, 1856) = *S. pavonia* ; BIDENKAP, t. c.
- Sagitella kowalewskii*, Wagn., Atlantic (7° S.—42° N.) ; REIBISCH, t. c. p. 56.
- Salmacina*, fission in ; MALAQUIN.
- Serpulide* of Austrian Tertiaries, 16 species, of which 5 are still living in the Mediterranean, and with †*Serpula elegantula* and †*fuchsii*, n. spp., Austrian Tertiaries, Lapuzy (Tortoniano) ; ROVERETO, Atti Soc. Ligustica, vi, p. 155. Operculum of Serpulids ; HORNELL (98).
- †*Spirorbis simplex*, ? n. sp., Austrian Tertiaries, Neulerchenfeld ; ROVERETO, Atti Soc. Ligustica, vi, p. 154.
- Staurocephalus rubrovittatus*, Gr., anatomy ; PRUVOT & RACOVITZA, pp. 349-373.
- Sthenelais* : remarks on genus, pp. 452-464, and anatomy of *S. minor*, n. sp., p. 465, and *S. limicola*, Ehl., p. 473 ; PRUVOT & RACOVITZA, Arch. Zool. exp. iii, pp. 452-478.
- Syllis ramosa*, McInt., found in *Crateromorpha meyeri*, 300-400 faths., 25 kilom. off Misaki, Japan, asexual reproduction ; OKA, Zool. Mag. Tokyo, vii, p. 117.
- †*Tentaculites canadensis*, n. sp., Silurian, Nova Scotia ; AMI, p. 412.
- Tomopteris onisciformis*, genital organs and their products ; FULLARTON.
- Travisiopsis lumbricoides*, n. sp., Sargossa Sea, and *T. lobifera*, Lev. ; REIBISCH, Ergebn. Plankton Exp. Humb. Stift. ii, H. c., pp. 57 & 58.
- Typhloscolecidæ*, pelagic forms, review of subfam. ; REIBISCH, t. c. pp. 43-51, 58 & 59. *Typhloscolex leuckarti*, and *T. phyllodes*, n. spp., and *T. mülleri*, Busch., Tropical and North Atlantic ; REIBISCH, t. c. pp. 52-55.
- †*Vermilia comata*, n. sp., Leythakalk of Gamlitz ; ROVERETO, Atti Soc. Ligustica, vi, p. 157.
- b. OLIGOCHÆTA (including *Myzostomidæ* and *Branchiobdellidæ*).
- Acanthodrilus tamajusi*, n. sp., Guatemala, Lowlands, p. 140, *A. vastiti*, n. sp., Tepic, Mexico, p. 142 ; EISEN, Mem. Calif. Ac. ii, pp. 140-145.
- A. parkeri*, n. sp., New Zealand, p. 534 ; *plumbeus*, n. sp., Mt. Pirongea, Auckland, N.Z. ; *decipiens*, *minutus*, *putablensis*, *chilensis* and *cingulatus*, n. spp., Valdivia ; *occidentalis*, n. sp., Valparaiso ; *magellanicus* and *purpureus*, n. spp., Magellan Straits ; *bicinctus*, n. sp., Picton I. and Juan I. ; *carneus*, n. sp., Quilipue, BEDDARD, Monogr. Oligoch. pp. 545-548 ; and P. Zool. Soc. London, 1895, pp. 213-215. *A. corralensis*, *simulans*, *albus*, n. spp., Corral ; BEDDARD, P. Zool. Soc. London, 1895, pp. 215-224.

- Aeolosoma fedleri*, n. sp., Katzensee; BRETSCHER, Rev. Suisse Zool. iii, p. 500.
- Aleodrilus*, n. g., of *Acanthodrilidae*, with *A. keyesi*, n. sp., N. part of Californian Peninsula (Pacific side); EISEN, Mem. Calif. Ac. ii, p. 146.
- Allolobophora möbbii*, n. sp., Madeira; MICHAELSEN, Abh. Ver. Hamburg, xiii. *A. jordani*, *paraguayensis*, n. spp., S. Bernardino, *A. parvus*, n. sp., Resistencia (Chaco, Argentina); ROSA, Mem. Ac. Torino, xlv. *A. robusta*, *mehadiensis*, *opisthocystis*, n. spp., Mehadia (Hungary); *A. sturanyi*, n. sp., Croatia, *A. lissaensis*, Mich., var. *croatica*, n. var., Carinthia and Croatia; *A. ganglbaueri*, Rosa, var. *annectens*, n. var., Siebenburgen; ROSA, Boll. Mus. Torino, x, No. 215. *A. gieseleri*, n. sp., Savannah, Georgia; UDE, Zeitschr. wiss. Zool. lxi, p. 127. *A. dugesii*, n. sp., Nice and Ormea, and recognition of what he has previously referred to as (*A. gigas*, Dugès) as the young of his new species; ROSA, Boll. Mus. Torino, x, No. 205.
- Alma nilotica*, Grube-Rüppel, description and discussion of relationships; MICHAELSEN, Abh. Ver. Hamburg, xiii; BEDDARD, Monogr. Oligoch. p. 175.
- Anteus*: revision of genus, with diagnoses and anatomical description of the species, including *A. crassus* and *iserni*, n. spp., Ecuador, pp. 89-96, *A. jordani*, *paraguayensis*, n. spp., Paraguay, pp. 100 & 101, *parvus*, n. sp., Chaco, Argentina, p. 104, and *papillifer*, Mich. (= *A. teres*, Ude), and 14 other species; ROSA, Mem. Acc. Torino, xlv, pp. 89-129. *A. callichætus*, Mich., varr. *sieversi*, and *maurei*, n. varr., Venezuela, and *A. shütti*, n. sp., Columbia; ROSA, An. Soc. Espan. iv, pp. 151 & 152. *A. appuni*, Mich., further description; MICHAELSEN, Abh. Ver. Hamburg, xiii.
- Bdellodrilus*, n. g., with 2 species, viz., *B. illuminatus* (for *Branchiobdella illuminata*, Moore), and *B. philadelphicus* (for *Astacobdella philadelphia*, Leidy), anatomy; MOORE, J. P., J. Morphol. x, pp. 497-540.
- Benhamia*: diagnosis of genus and its 10 extra-African species, with a table to distinguish them; full anatomy of *B. nana*, n. sp., San Blas, Mexico, at sea level, p. 127, *B. papillata*, n. sp., Tepic, Mexico, 4000 ft., p. 135, *rugosa*, n. sp., California? (hothouse) p. 136, and *palmicola*, n. subsp., Californian Peninsula, and Tepic, Mexico, p. 132; EISEN, Mem. Calif. Ac. ii, pp. 125-139. *B. liberiensis* and *stampflii*, n. spp., Liberia; HORST, Notes Leyden Mus. xvii, pp. 21-27. *B. octonephra*, n. sp., Paraguay and Argentina; ROSA, Mem. Acc. Torino, xlv, p. 137. *B. insularis*, n. sp., Sierra Leone; MICHAELSEN, Abh. Ver. Hamburg, xiii. *B. monticola*, *silvestris*, *castanea*, *parva*, *culminis*, *æquatorialis*, *curta*, *kafuruënsis*, n. spp., E. Africa; MICHAELSEN (146).
- Bimastos pallustris*, n. sp., Pennsylvania and New Jersey, anatomy; MOORE, H. F., J. Morphol. x, pp. 473-496.
- Branchiobdella*, see *Bdellodrilus*.
- Bryodrilus ehlersi*, Ude, full account of anatomy; UDE, Zeitschr. wiss. Zool. lxi.

- Chaetogaster langi*, n. sp., Katzenssee; BRETSCHER, Rev. Suisse Zool. iii, p. 512. *C. vermicularis* commensal on *Limnœa stagnalis*; BAILEY.
- Criodrilus iheringi*, n. sp., Pericicaba River, near São Paulo, S. Brazil; MICHAELSEN, Abh. Ver. Hamburg, xiii.
- Cryptodrilus irregularis*, *polynephricus*, *mortoni*, *hobartensis*, *campestris*, *tesselatus*, *insularis*, *ellisii*, *wellingtonensis*, *officieri*, n. spp., Tasmania; SPENCER, P. Soc. Victoria, vii, pp. 34-45.
- Deltania troyeri*, varr. *crassa* and *lagunæ*, n. varr., Californian Peninsula; EISEN, Mem. Calif. Ac. ii, pp. 169-171.
- Dichogaster braunsi*, n. sp., Sierra Leone; MICHAELSEN, Abh. Ver. Hamburg, xiii.
- (*Digitobranchus niloticus*, Lev.) = *Alma nilotica*; MICHAELSEN, *t. c.*
- Diplocardia*; summary of genus and of the 5 species, including *D. verrucosa*, n. sp., Omaha, Nebraska, and 2 species which have previously been referred to the genus *Geodrilus*; UDE, Zeitschr. wiss. Zool. lxi, pp. 129-139. *D. communis*, n. sp., Illinois; GARMAN, Bull. Illinois Lab. v, p. 47. *D. (Geodr.) singularis*, Ude, and *D. riparia*, Smith; SMITH, Bull. Illinois Lab. iv, pp. 285-297.
- Distichopus*, n. g. of *Enchytraëide*, allied to *Fridericia*; MOORE, J. P., Amer. Natural. xxix, p. 753.
- Eclipidrilus frigidus*, Eisen, anatomy, showing that the genus should be regarded rather as the type of a subfamily of the *Lumbriculidæ*, than as that of a separate family; EISEN, Mem. Calif. Ac. ii, p. 84.
- Eminoscolex*, n. g., with *E. torentus* and *viridescens*, n. spp., E. Africa; MICHAELSEN (146).
- Enchytraeus (Halodrilus) littoralis*, Verr.; SMITH, F., Bull. Illinois Lab. iv.
- Fridericia longa*, *agricola*, *parva*, and *alba*, n. spp., near Philadelphia; MOORE, P. Ac. Philad. 1895, pp. 341-345. *F. helvetica*, n. sp., near Zürich; BRETSCHER, Rev. Suisse Zool. iii, p. 516. *F. oligosetosa* and *bichæta* (subsp. *typica*), n. spp., E. Galicia, and *F. tenuis*, Mich., referred as another subsp. to *F. bichæta*; NUSBAUM, Biol. Centralbl. xv, pp. 27 & 28. *F. dura* and *callosa*, in Germany; PROTZ, p. 255.
- Geodrilus (singularis)*, Ude, and another species referred to genus *Diplocardia*, Garman; UDE, Zeitschr. wiss. Zool. lxi, p. 129.
- (*Halodrilus littoralis*, Verr.) referred to genus *Enchytraeus*; SMITH.
- Homochæta*, n. g. of aquatic Oligochæt, with *H. naidina*, n. sp., L. of Zürich; BRETSCHER, Rev. Suisse Zool. iii, p. 508.
- Kerria garmani*, p. 139, *eiseniana*, p. 141, *papillifera*, p. 145, n. spp., Paraguay, *subandina*, p. 143, n. sp., Salta (W. of Repub. Argent.) *asuncionis*, p. 145, n. sp., Asuncion; ROSA, Mem. Acc. Torino, xlv.
- K. rosæ*, n. sp., Buenos Ayres, and *saltensis*, n. sp., Valparaiso and Salta; BEDDARD, P. Zool. Soc. London, pp. 225 & 226. *K. macdonaldi*, nephridia; EISEN, p. 70.
- Kynotus oswaldi* and *distichotheca*, n. spp., Madagascar; MICHAELSEN, Abh. Ver. Hamburg, xiii.
- Macrochæta*, n. g. of aquatic Oligochæt, with *M. intermedia*, n. sp., L. of Zürich; BRETSCHER, Rev. Suisse Zool. iii, p. 509.

- Megascolides simsoni, bassanus*, n. spp., Tasmania; SPENCER, P. Soc. Victoria, viii, pp. 45-47.
- Microscolex griseus*, n. sp., Valparaiso, *robustus*, n. sp., Teja I., Valdivia, *michaelseni*, n. sp., Magellan Str., Uschuia and Navarin I. (aquatic and terrestrial), *longiseta*, n. sp., Uschuia, Puerto Pantalon and Navarin I., *papillosus* and *gracilis*, n. spp., Uschuia, *corralensis* and *diversicolor*, n. spp., Corral, Valdivia, *monticola*, n. sp., Mt. Pirongea, Auckland, N. Z.; BEDDARD, Monogr. Oligoch. pp. 464-467. *M. beddardi*, n. sp., Tucuman, Repub. Argent.; ROSA, Mem. Acc. Torino, xlv, p. 135.
- Momiligaster viridis*, n. sp., Borneo; BEDDARD, Monogr. Oligoch. p. 203.
- Myzostoma asterica*, n. sp., endoparasitic in Starfish from Mediterranean; v. MARENZELLER, Anz. Ak. Wiss. 1895, p. 191. *M. glabrum*, Leuck., behaviour of centrosomes in eggs; WHEELER.
- Ocnerodrilus borellii, paraguayensis*, n. spp., Asuncion; ROSA, Mem. Acc. Torino, xlv, pp. 147-150. *O. bipunctatus*, n. sp., E. Africa; MICHAELSEN (146).
- Opisthodrilus*, n. g., with *O. borellii*, n. sp., Luque (Central Paraguay) and Resistencia (Chaco, Argent.); ROSA, Mem. Acc. Torino, xlv, p. 130.
- Pachydriulus maculatus*, n. sp., moist earth, near Zürich; BRETSCHER, Rev. Suisse Zool. iii, p. 514.
- Perichæta guillelmi* and *hupciensis*, n. spp., China; MICHAELSEN, Abh. Ver. Hamburg, xiii. *P. sancti-jacobi*, n. sp., Santiago; BEDDARD, P. Zool. Soc. London, p. 239. *P. everetti, kinabaluensis*, 7700 ft. high, Sarawacensis, Sarawak, n. spp., Mt. Kina Balu, and *P. papillata*, Merabah, *merabahensis*, Padas Valley, and *padasensis*, Merabah and Padas Valley, n. spp.; BEDDARD & FEDAR, Ann. Nat. Hist. xvi, pp. 69-73, and BEDDARD, Monogr. Oligoch. pp. 428 & 429. *P. violacea*, n. sp., Penang; BEDDARD, Monogr. Oligoch. p. 407. *P. tasmanica, morava, richea, dilwynnia, scolecoidea, irregularis*, n. spp., Tasmania; SPENCER, P. Soc. Victoria, viii, pp. 47-54. *P. willeyi*, n. sp., Gedeh volcano, near Tjiboda, *P. sexta*, n. sp., Buitenzorg, and *P. caducichata*, n. sp., shedding the chætæ of the 10th segment on reaching maturity, Tjiboda and Buitenzorg; BENHAM, Ann. Nat. Hist. xvi, pp. 40-50.
- Phanico-drilus*, n. g. of *Ocnerodrilidae*, with *P. taste*, n. sp., Sierra el Taste (Cape Region of the Californian Peninsula), 4000 ft. high, and at Pescadero on Pacific coast, a few ft. above sea-level only, and on E. side of Sierra, and at San Blas, Tepic; anatomy; and *P. tepicensis*, n. sp., Tepic, Mexico; EISEN, Mem. Calif. Ac. ii, pp. 64 & 172.
- Photodrilus*: table to distinguish species; EISEN, t. c. p. 83.
- Polytorentus gregorianus*, n. sp., Giriama, near Fuladoya, E. Africa; BEDDARD, Monogr. Oligoch. p. 612. *P. usindjaensis, kirimaensis, silvestris*, n. spp., E. Africa; MICHAELSEN (146).
- Pontodrilus*: table to distinguish species, and anatomy of *P. michaelseni*, n. sp., shores of Californian Peninsula, between dry soil and high tide, and at Guaymas, Mexico; EISEN, Mem. Calif. Ac. ii, p. 73.

Pontoscolex hawaiiensis, n. sp., Hawaii; BEDDARD, Monogr. Oligoch. p. 660.

(*Siphonogaster cegyptiacus*, Lev.) = *Alma nilotica*; MICHAELSEN (145).
Sparganophilus; diagnosis of genus and of its 4 species and 3 subspecies, with a table to distinguish them. Full anatomy of *S. benhami*, n. sp., Tepic, Mexico, in mud of springs, at a height of 4000 ft., p. 161, with *carneus*, Mississippi River, near Clayton, Iowa, p. 155, and *guatemalensis*, Guatemala City, p. 167, n. subsp. *S. smithi*, n. sp., Laguna Puerca, San Francisco, p. 153, with *sonomæ*, n. subsp., Sebastopol, Sonoma Co., California, p. 160; also another species from Laguna Puerca, with 5 large eyes on the first segment and prostomium, p. 152; EISEN, Mem. Calif. Ac. ii.

Stuhlmannia gracilis, n. sp., E. Africa; MICHAELSEN (146).

Thinnodrilus, n. g., with *T. inconstans*, n. sp., N. America; SMITH, Bull. Illinois Lab. iv.

Tubifex bonneti, formation of new segments; MAKAROV (133).

Tykonus truncatus, n. sp., Central Paraguay, and in Asuncion; ROSA, Mem. Acc. Toriuo, xlv, p. 132.

Vermiculus pilosa, anatomy; GOODRICH (86).

Ungyoria, n. g., with *U. papillata*, n. sp., E. Africa; MICHAELSEN (146).

C.—HIRUDINEA.

Orobdella, n. g., of land Leech belonging to fam. *Herpobdellidæ*, of subord. *Arhynchobdellidæ*, with *O. whitmani*, *ijimai*, *octonaria*, n. spp., Japan; OKA, J. Coll. Japan, viii, pp. 278-299.

3.—PLATYHELMINTHES.

A.—CESTODA.

Adult Forms.

Anoplocephala (T.) globiceps, Dies, of Tapir, and *dicrescens*, Dies, of *Dicotyles*, anatomy; LÜHE, pp. 202-205. *A. (T.) wimerosa*, Moniez; STILES, Veterin. Mag. ii.

Blanchardella, n. g., for *Leuckartia raphaelis*, Moniez (1879) from pyloric appendages of a Salmon; MONIEZ, Rev. biol. Nord France, vii, p. 153.

Bothriocephalus schistochilos, n. sp., from Seal of E. Greenland, anatomy; GERMANOS, Jena. Zeitschr. xxx, pp. 1-38.

Chapmannia tauricollis, Chapm., "frontal sucker" shown to be a much retracted, strongly armed rostellum; ZSCHOKKE (271).

Ctenotania variabilis, var. *augusta*, irregularity in number of pores; STILES (237, No. 36).

Corallobothrium lobosum, n. sp., S. American Siluroid fish; RIGGENBACH, Centrbl. Bakter. xviii, p. 613.

- Davainea contorta*, n. sp., from *Manis*, Ceylon; ZSCHOKKE, Centrbl. Bakter. xvii, p. 634. *D. salmoni*, n. sp.; STILES, Veterin. Mag. ii, pp. 341-346.
- Diplogonoporus settii* and *lönnerbergi*, n. spp., from 2 species of *Centrolophus*; ARIOLA, Atti Soc. Ligustica, vi, pp. 248-253.
- Dipylidium gervaisi*, n. sp., from intestine of *Genetta tigrina*, Gray, Eritrea; SETTI, Atti Soc. Ligustica, vi, p. 99.
- Icthyotenia*, remarks on genus and description of *I. fossata* and *abscisa*, n. spp., from S. American Siluroid fish; RIGGENBACH, Centrbl. Bakter. xviii, pp. 609-612. *I. lönnerbergii*, n. sp., from intestine of *Necturus maculatus*, Raf.; FUHRMANN, Zool. Jahrb. Anat. ix, p. 218. (*Lew-kartia*) Moniez = *Blanchardella*; MONIEZ, Rev. biol. Nord France, vii, p. 153.
- Moniezia* (*T.*) *megastoma*, Dies, of Apes, *tetragonocephala*, Dies, of *Myrmecophaga* and *rugosa*, Dies, of *Ateles*, anatomy; LÜHNE, pp. 200-208.
- Panceria*, *P. arenaria*, for (*Tenia varani*, Stoss.), retention of genus and of the species in spite of the identity; SONSINO, Monit. Zool. ital. vi, p. 189.
- Tenia mucronata*, n. sp., from intestine of *Mycetus niger*, Paraguay, pp. 1-86, and *T. conferta*, n. sp., from *Macacus*, India, pp. 86-106; MEYNER, Zeitschr. Naturw. lxxviii. (*T. megastoma*, Dies), (*T. tetragonocephala*, Dies), and (*T. rugosa*, Dies), = *Moniezia*; (*T. globiceps*, Dies) and (*T. dicrescens*, Dies), = *Anoplocephala*: anatomy; LÜHNE. (*T. wimeroza*, Moniez), = *Anoplocephala*, and subdivision of the American *T. pectinata* into several species, none of them the same as the European; STILES, Veterin. Mag. ii. (*T. varani*, Stoss.) = *Panceria arenaria*, Sons.; SONSINO (225).
- T. dispar*, Goeze, anatomy and histology; FUHRMANN (75), pp. 207-218. *T. dujardini*, Krabbe, pp. 436-442, *T. capitellata*, Rud., pp. 443-449, *T. depressa*, v. Siebold, pp. 449-456, anatomy; FUHRMANN (76). *T. bothrioplitis*, anatomy and histology; FILLIPI. *T. ovilla*, Riv., anatomy and development of genital organs; LUNGWITZ. *T. dendrotica*, Goeze, anatomy; RIGGENBACH (187). *T. constricta*, Molin., p. 81, *T. globifera*, Molin., p. 87, *T. (Davainea) urogalli*, Modeer., p. 92, anatomy and life-history; MORELL. *T. serrata*, note on development; Irish Natural. iv, p. 342. *T. solium* and *saginata*, abnormalities in; CHOŁODKOWSKY (53, Nos. 3 & 4).
- Solenophorus megalcephalus*, Crepl., deformations and anomalies; STOSSICH (239).
- Tetrarhynchus ruficollis*, Eisenhdt., in Plagios tomous fish, anatomy and histology of adult and of larva, and (*T. longicollis*, v. Ben.) referred to this species; VAULLEGEARD.

Young Forms.

- (*Cenomorphus joyeuxi*) Vaulleg., of marine Decapod Crustaceans = larva of *Tetrarhynchus ruficollis*, Eisenhdt.; VAULLEGEARD.

B.—TREMATODA.

Adult Forms.

- Amphistomida*: revision of family, 2 species referred to n. g. *Pseudodiscus*; SONSINO, Monit. Zool. ital. vi, pp. 179-188.
- Anthocotyle*, revision of genus and anatomy of *A. merlucii*, v. Ben. & Hesse; CERFONTAINE, Bull. Ac. Belgique, xxix, pp. 510-526, and SONSINO, Monit. Zool. ital. pp. 118-121.
- Bilharzia hæmatobia*, anatomy and histology; LOOSS (125).
- Cyclobothrium*, n. g., for *Diclidophora sessilis*, Goto; CERFONTAINE, Bull. Ac. Belgique, xxx, pp. 141 & 144.
- Dactylocotyle*: revision of genus, 3 species of *Octobothrium*, 1 of *Pterocotyle*, and 2 of *Diclidophora* referred to it, anatomy; CERFONTAINE, Bull. Ac. Belgique, xxix, pp. 913-946, and xxx, p. 139.
- Diclidophora* (Goto, non Diesing) *labracis*, n. sp., ectoparasitic on gills of *Labrax lupus* of North Sea, and revision of genus and its 3 species; CERFONTAINE, Bull. Ac. Belgique, xxx, p. 126. (*D. sessilis*), Goto, referred to genus *Cyclobothrium*, n. g., and (*D. tetradonis*), Goto, to genus *Heterobothrium*, n. g.; CERFONTAINE, t. c. p. 141. (*D. longicollis*), Dies, and (*D. palmata*), Dies, to genus *Dactylocotyle*; CERFONTAINE, t. c. p. 139, and *op. cit.* xxix, pp. 913-946.
- Distomum lobotes*, n. sp., in freshwater fish, and description of *D. isoporum*, Looss, var. *armatum*, n. var.; MACCALLUM, Veterin. Mag. ii, No. 7.
- D. opisthotrias*, n. sp., from *Didelphus*; LUTZ, Rev. Mus. Paulista, i, p. 181. *D. poirieri*, n. sp., for (*gelatinosum*, Poir); STOSSICH, Boll. Soc. Adriat. xvi, p. 227. *D. westermanni*, Kerb., distribution in different parasites (dog, cat, tiger, and man of Japan and America); WARD (260, No. 1) & SONSINO (226). *D. filineum*, Riv., in U. S. A.; WARD (257); referred to *Opisthorcis*, n. g., and replacement of the genus *Distomum* by *Dicrocoelium*, Duj., BLANCHARD (21).
- (*Epidella*) *hippoglossi*, v. Ben., referred to genus *Phyllonella*; GOTO, Congr. Zool. Leyden, No. 4, p. 4.
- Heterobothrium*, n. g., for *Diclidophora tetradonis*; CERFONTAINE, Bull. Ac. Belgique, xxx, pp. 141 & 145.
- (*Octobothrium denticulatum*, Ols.), (*merlangi*, Kühn), (*palmatum*, F. S. Leuck.), referred to genus *Dactylocotyle*; CERFONTAINE (49).
- (*Octocotyle thunninae*, Par. & Per., referred to genus *Hexacotyle*; GOTO, t. c. p. 5.
- Opisthorcis*, n. g., for *O. (Distomum) felineus*, Riv., *O. (D.) conjunctus*, Cobb, *sinensis*, Cobb, and *buski*, Lank., BLANCHARD (21).
- Phylline (Epidella) monticellii*, n. sp., from gills of *Mugil*, Trieste; PARONA & PERUGIA, Atti Soc. Ligustica, vi, p. 85.
- Placunella vallei*, n. sp., from gills of *Naucrates*, Trieste; PARONA & PERUGIA, t. c. p. 86.
- Pterocotyle*, 1 species referred to *Dactylocotyle*: CERFONTAINE (49).
- Polystomum hassalli*, n. sp., from bladder of *Kinosternon pennsylvanicum*, E. coast of U. S. A.; *P. oblongum*, Leidy, distinguished from *P. oblongum*, Wright; GOTO, Congr. Zool. Leyden, No. 4, p. 4.

- Pseudodiscus*, n. g., for *Amphistomum haukesi*, Cobb, and *A. collinsi*, Cobb; SONSINO, Monit. Zool. ital. vi, p. 179.
Tristomum (ovale, Goto) = *T. læve*, Verr.; GOTO, Congr. Zool. Leyden, No. 4, p. 4.

Young Forms.

- Sporocyst and cercaria of a digenetic Trematode parasitic in *Donax*; PELSENER.

C.—NEMERTINEA.

- Renaming of Girard's New England species; VERRILL (253).
 (*Akrostomum stannii*) Gr. = *Amphiporus stanniusi*; BÜRGER (36).
Amphiporus bicolor, n. sp., Baronts Sea, at depth of 680 metres, *michaelseni*, n. sp., Straits of Magellan, and notes on anatomy of *A. stanniusi*, Gr., and *A. groenlandicus*, Oerst.: BÜRGER, Zeitschr. wiss. Zool. lxi, pp. 21-23. *A. langiaegemimus*, p. 558, *carinelloides*, p. 559, *validissimus*, p. 562, *polyommatus*, p. 564, *oligommatus*, p. 564, *virgatus*, p. 566, *glandulosus*, p. 568, *reticulatus*, p. 569, *algensis*, p. 570, n. spp., Naples, and 10 other species; BÜRGER, Monogr. Fauna and Flora G. Neapel. xxii, pp. 558-570 & 144-157.
Carinella pellucida, n. sp., Savin Rock, New Haven, at low water, among tubes of the annelid *Potamilla*; COE, Tr. Connect. Ac. ix, p. 515. Anatomy of 10 other species; BÜRGER, *t. c.* pp. 515-530 & 86-92.
Carinina grata, Hubr., anatomy; BÜRGER, *t. c.* pp. 86-92 & 513.
Carinoma patagonica, n. sp., Straits of Magellan, p. 537, and *C. armandi*, McInt., p. 111, BÜRGER, Monogr. Fauna and Flora G. Neapel, xxii, and Zeitschr. wiss. Zool. lxi, p. 19.
Cephalothrix, pp. 118-123, with 5 species, pp. 537-541; BÜRGER, Monogr.
Cerebratulus barenti, n. sp., Kara Straits, and *magelhaenicus*, n. sp., Straits of Magellan, Uschuaia, Picton I., Lemon I., and Falkland Is., and another species; BÜRGER, Zeitschr. wiss. Zool. lxi, pp. 34-36.
C. melanorhynchus, p. 681, *cestoides*, p. 584, n. spp., Naples, and 17 other species, pp. 655-684; BÜRGER, Monogr. *C. lacteus*, Verr., internal anatomy and histology; COE (54).
Drepanophorus igneus, p. 574, and *albolineatus*, p. 576, n. spp., Naples, and 5 other species; BÜRGER, Monogr.
Euborlasia, 2 species, anatomy; BÜRGER, Monogr. pp. 640-645.
Eunemertes, pp. 123-136, with 6 species, pp. 541-548, anatomy; BÜRGER, Monogr.
Eupolia lineolata, n. sp., Upolu (Samoa Is.), and Paumotu Is., *maculosa*, n. sp., Ponape, and *antillensis*, n. sp., Barbadoes, p. 604, and 9 other species, pp. 598-607 & 176-185, BÜRGER, Monogr., and Zeitschr. wiss. Zool. lxi, pp. 24-30.

- Geonemertes novæ-zealandiæ*, n. sp., New Zealand; DENDY, Tr. N. Zealand Inst. xxvii, p. 192: anatomy of 5 other species; BÜRGER, Monogr. Fauna and Flora G. Neapel. xxii, pp. 556, 557, 143 & 144.
- Hubrechtia desiderata*, v. Kenn., Mediterranean; BÜRGER, Monogr. pp. 531 & 104-111.
- Hyalonemertes*, 1 species; BÜRGER, Monogr. p. 595.
- Langia*, 1 species; BÜRGER, Monogr. p. 685.
- Lineus alienus*, n. sp., Naples, p. 626, and 19 other species, pp. 613-640 & 188-204; BÜRGER, Monogr.; 5 species, and 2 others which may belong to subg. *Micrura*; BÜRGER, Zeitschr. wiss. Zool. lxi, pp. 31-33.
- Malacobdella*, pp. 165-176, with *M. grossa*, O. F. M., p. 597; BÜRGER, Monogr.
- Micrura cæca*, n. sp., Thimble Is. and Outer I., New England; VERRILL, Tr. Connect. Ac. ix, p. 531. *M. (Lineus ?) glandulosa*, n. sp., W. coast of S. Patagonia; BÜRGER, Zeitschr. wiss. Zool. lxi, p. 33; 6 other species; BÜRGER, Monogr. pp. 645-655.
- (*Nareda pulchella*, Girard) = a *Polygordius*; VERRILL.
- Nectouemertes*, 1 species; BÜRGER, Monogr. pp. 594 & 161.
- Nemertopsis*, n. g., for *Nemertes (Eunemertes, Joubin) peronea*, Qfg., and for *N. tenuis*, n. sp., Mediterranean; BÜRGER, Monogr. pp. 549, 550, & 136-138.
- Oerstedtia*, 2 species; BÜRGER, Monogr. pp. 592-594.
- Olotyphlonemertes duplex*, *macintoshi*, and *brunnea*, n. spp., Naples; BÜRGER, Monogr. pp. 551, 552, & 138-141.
- Parapolia*, n. g., with *P. aurantiaca*, n. sp., Wood's Holl, Mass., living in sand at low water; COE, Tr. Connect. Ac. ix, p. 517. BÜRGER, (Monogr. p. 736), regards it as belonging to fam. *Lineida*.
- Pelagonemertes*, pp. 161-165, with *P. moseleyi*, n. sp., for *P. rollestoni*, Moseley and Hubrecht, *ex parte*, S.E. of Japan; BÜRGER, Monogr. p. 596.
- Poliopsis lacuzei*, Joubin, from Mauritius; BÜRGER, Monogr. p. 608, and Zeitschr. wiss. Zool. lxi, p. 30.
- Prosadehoporus*, 4 species; BÜRGER, Monogr. pp. 555 & 556.
- Prosorhochmus korotneffi*, n. sp., Villefranche-sur-mer, p. 554, and another Mediterranean species, pp. 553 & 141-143; (*P. bistriatus*, Bürger, 1891) = *Nemertopsis peronea*, Qfg.; BÜRGER, Monogr. p. 549.
- Tetrastemma cerasinum*, *nibatatum*, p. 579, *peltatum*, *falsum*, p. 580, *scutelliferum*, p. 581, *buxæum*, p. 582, *cephalophorum*, *vastum*, p. 583, *longissimum*, p. 584, *portus*, p. 585, *helvolum*, p. 586, *glanduliferum*, *conciatum*, p. 587, *interruptum*, p. 590, n. spp., Naples, and 8 other marine species, and the 4 freshwater species, pp. 157-161; BÜRGER, Monogr. *T. robertianæ*, McIntosh, off Port Erin, and supernumerary reserve stylet-sacs in 2 other species; BEAUMONT.
- Valencinia rubens*, n. sp., Wood's Holl, Mass., in sand at low water; COE, Tr. Connect. Ac. ix, pp. 515-522. Two other species; BÜRGER, Monogr. pp. 608-613 & 185-188.

D.—TURBELLARIA.

- Systematic position of acœlous Turbellarians; BÖHMIG, *Ergebn. Plankton Exp. Humb. Stift.* ii, H. g., p. 43.
- Aspidogaster conchichola*, anatomy; STAFFORD: histology, ZACHARIAS.
- Bipalium simrothi*, n. sp., Natuna Is. (S. Chinese Sea), and *B. expeditionis*, n. sp., Summit of Mount Damus (W. Borneo); LOMAN, *Notes Leyden Mus.* xvii, pp. 31 & 32.
- Bothrioplanide*, n. fam. of Alloiocœl Turbellarians intermediate between Rhabdocœls and Tricelads, to include the genera *Bothrioplana* and *Opistoma*. *B. bohémica*, n. sp., Bohemia, p. 165, and remarks on the 5 other species, which he suggests may be merged in a single species; VEJDOVSKY, *Zeitschr. wiss. Zool.* lx, pp. 163-200.
- Convoluta henseni*, n. sp., Tropical Atlantic, with ventral surface partly transformed into a sucker; BÖHMIG, *t. c.* p. 39.
- (*Dendrocœlum*), genus abolished; VEJDOVSKY, *t. c.* pp. 200-212.
- Derostoma gracile* and *anophtalmum*, n. spp., Bohemia, p. 128, and description of genital organs of the 3 other Bohemian species; VEJDOVSKY, *Zeitschr. wiss. Zool.* lx, pp. 113-130.
- Eustylochus ellipticus*, living in burrows of *Cerebratulus lacteus*, and feeding on its mucus; VERRILL, *Tr. Connect. Ac.* ix, p. 532.
- Geoplana triangulata*, n. sp., and *G. tr.* var. *australis*, n. var., *G. graffii*, *purpurea*, *inaequalistriata*, *splendens*, *marixæ*, *agricola*, *laingii*, *spectabilis*, *hamiltoni*, *gelatinosa*, *subquadrangulata*, *tenuis*, n. spp., New Zealand, and varieties of 2 other New Zealand species; DENDY, *Tr. N. Zealand Inst.* xxvii, pp. 177-189. *G. typhlops*, n. sp., for the blind "*G. alba*" of Tasmania; DENDY, *Rep. Austral. Ass.* v, pp. 421 & 422.
- Haplodiscus*, anatomy of genus and its systematic position, pp. 1-36; enumeration of spp., including *H. ovatus*, *orbicularis*, *weldoni*, *scutiformis*, *acuminatus*, and *obtusus*, n. spp., Tropical and N. Temperate Atlantic, pp. 36-38; BÖHMIG, *Ergebn. Plankton Exp. Humb. Stift.* ii, H. g.
- Macrorhynchus lemanus*, n. sp., Lake of Geneva; DU PLESSIS, *Zool. Anz.* xviii, p. 25.
- Macrostoma obtusum*, n. sp., with ciliated pits, Bohemia; VEJDOVSKY, *Zeitschr. wiss. Zool.* lx, p. 155.
- Mesostoma vejdovskyi*, n. sp., Cracow; JAWOROWSKI, *Arch. Naturg.* lxi, p. 327.
- Opistoma*: revision of genus and description of *O. schultzeanum*, de Man, distinguishing it from *O. pallidum*, Osch.; VEJDOVSKY, *Zeitschr. wiss. Zool.* lx, pp. 93-112.
- Planaria dubia*, n. sp., and var. *maculata*, n. var., Paraguay, and *P. andina*, n. sp., Cordigliera di San Pablo, near Tucuman; BORELLI, *Boll. Mus. Torino*, x, No. 2. *P. mrazeki*, n. sp., Bohemia, blind, and occurrence of *P. cavatica*, Fr., in the Rodatinerthal, near Prag; VEJDOVSKY, *t. c.* pp. 200-212.
- Polycherus caudatus*, Mark., early development; GARDINER.

- Prorhynchus fontinalis* (subterranean) and *hygrophilus* (in damp earth); n. spp., and other species, Bohemia; VEJDOVSKY, Zeitschr. wiss. Zool. ix, pp. 141-155. *P. tenuis*, Girard, shown to be hermaphrodite; MOORE, Zool. Anz. xviii, pp. 63-65.
- Stenostoma hystria*, n. sp., in an aquarium, Zürich; KELLER, Rev. Suisse Zool. iii, p. 296.
- Syndesmis echinorum*, Franc., morphology; RUSSO.
- Thysanozoon semperi*, n. sp., Philippines, p. 709, *boehmigi*, p. 710, *obscurum*, p. 712, and *langi*, p. 719, n. spp., Amboina, *minutum*, p. 718, and *distinctum*, p. 721, Batavia, n. spp., and description of 6 other Tropical species, with revision of genus; STUMMER-TRAUNFELS, Zeitschr. wiss. Zool. ix, pp. 689-725.
- Vortex microphthalmus*, p. 131, and *quadrioculatus*, p. 136, n. spp., Bohemia, and description of genital organs of other species of the genus; VEJDOVSKY, Zeitschr. wiss. Zool. ix, pp. 130-140.

4.—NEMATODA, ACANTHOCEPHALA, AND CHÆTOGNATHA.

A.—NEMATODA (and GORDIIDÆ).

a. *Nematoda*.

- (*Agamonema rubicundæ*) = young of *Ascaris rubicunda*; STOSSICH (240) p. 36.
- Ankylostomum*: revision of genus and description of the 5 species; STOSSICH, Boll. Soc. Adriat. xvi, pp. 21-25.
- Aphelenchus tenuicaudatus*, n. sp., in pseudo-bulbs of the orchid *Calanthes*; DE MAN, P. Liverp. biol. Soc. ix, p. 77.
- Ascaris rubicunda* in intestine of *Python reticulatus*; STOSSICH, Boll. Soc. Adriat. xvi, p. 35. *A. (falsi)*, Rud., = *biuncinata*, Molin.; HAMANN (91, No. 2). *A. osculata*, anatomy; v. LINSTOW: presence in stomach of a Seal; JOYEUX-LAFFUIE. *A. eperlani*, anatomy; v. LINSTOW.
- Dochmius vallei*, n. sp., from intestine of *Vipera ammodytes*; STOSSICH, t. c. p. 34.
- Filaria dahomensis*, n. sp., in Python of Natal; NEUMANN, Bull. Soc. zool. France, xx, p. 123. *F. labiata*, Creplin, from *Ciconia nigra*, Umbria, historical, and anatomy and histology; CONDORELLI. *F. uncinata*, Rud., in oesophagus of goose and duck, anatomy and life-history; HAMANN (91, No. 3). *F. (Dispharagus) anthuris*, Rud., anatomy; v. LINSTOW. *F. papillosa* in intestine of cattle; CHOLODKOWSKY (52, No. 2).
- Gongylonema*, genus defined, and 7 species recognized, all in mammals; NEUMANN (161).
- Heterodera schachtii*, small variety, in hops, Kent; PERCIVAL, Nat. Sci. vi, p. 187. *H. radicola*, Müll., causing disease of tomato roots; CAVARA. (*Heterodera vitis*, F. Philippi, 1884), shown to be really an insect; Ent. News Philad. vi, p. 86.

- Lecanocephalus annulatus*, from stomach of *Labrax*, anatomy; HAMANN (91, No. 1.)
- (*Myzomimus*, Stiles) = *Gongylonema*, Molin.; NEUMANN (161).
- Pelodera pellio*, parasitic in the Earthworm; FRIEDLANDER, p. 263.
- Physaloptera sonsinoi*, n. sp., from stomach of *Agama mutabilis*; v. LINSTOW, Arch. mikr. Anat. xlv, pp. 509-533.
- Rhabditis oxyerca*, n. sp., and *R. coronata*, Cobb (?), in pseudo-bulbs of tropical orchids; DE MAN, P. Liverp. biol. Soc. pp. 81-92. *R. lumbriculi*, n. sp., larva with 2 band-like appendages at posterior end; v. LINSTOW, t. c.
- Spiroptera linstowi*, n. sp., in œsophagus of Egyptian bat; SONSINO, Monit. Zool. ital. vi, pp. 1-7. *S. sanguinolenta*, in aorta, lymph glands, lung, and skin of dog; MÉGNIN (141).
- Spherularia bombi*, from body-cavity of Humble-bee in America; STILES, Ent. News Philad. vi, p. 248.
- Strongylus affinis*, n. sp., in Patagonian hare; MÉGNIN, Bull. Soc. zool. France, xx, p. 176. *S. subtilis*, n. sp., in man, Egypt; LOOSS, Centralbl. Bakter. xviii, p. 161: in Japan; IJIMA (105). *S. paradoxus*, early development; SPEMANN: histology; JELKMANN. *S. retortæformis*, Zeder, in lungs of hares; YUNG.
- Trichosoma contortum* in œsophagus of *Larus canus*; STOSSICH (240).
- Tylenchus devastatrix*, Kühn, in roots of hops, Kent; PERCIVAL.

b. *Gordiidae*.

- Chordodes liguligerus*, n. sp., ♀, Calcutta, p. 799, *variopapillatus*, n. sp., ♀, Bahia, and *hamatus*, n. sp., W. Central Africa; RÖMER, Zool. Jahrb. Syst. viii, pp. 790-803. *C. balzani*, n. sp., Bolivia; CAMERANO, Ann. Mus. Genova, xxxvi, p. 9. *C. moutoni*, n. sp.; Central China; CAMERANO, Bull. Soc. zool. France, xx, p. 99. *C. silvestrii*, n. sp., Japan, *jande*, and *timorensis*, n. spp., Timor, *penicillatus*, n. sp., Italy (?), *puncticulatus*, n. sp., E. Sumatra, *capensis*, n. sp.; C. of Good Hope; CAMERANO, Notes Leyden Mus. xvii, pp. 1-14. *C. baramensis*, ♀, from abdomen of a Mantis, and *compressus*, ♀, n. spp., in Baruin R., N. coast of Borneo, *C. molukkanus*, ♀, n. sp., from Sva Konorra, N.E. coast of Halmahera; RÖMER, Zool. Anz. xviii, p. 197. (*C. modiglianii*), Cam., = *C. bouveri*, Vill.; RÖMER, Zool. Jahrb. Syst. viii, pp. 790-803.
- Gordius corrugatus*, n. sp., Sumatra, *salvadorii*, and *emeryi*, n. spp., Neeb (in the Greater Sunda Islands), *horsti*, n. sp., Borneo, *obesus*, n. sp., Holland; CAMERANO, Notes Leyden Mus. xvii, pp. 1-6. *G. vejdoskyi*, n. sp., Bohemia, and biology of *G. preslii*, Vejd.; JANDA, SB. Bohmisch. Ges. 1894, No. iv. *G. longissimus*, n. sp., ♀, in a *Saturnia*, and 5 other species; RÖMER, Zool. Jahrb. Syst. viii, p. 796. *G. (doriæ)*, Cam.) = *aquaticus*, L., occurring in grub of *Saturnia*, Russia; RÖMER, t. c. p. 792. *G. aquaticus*, L., in Brazil, Chili, Valdivia, and E. Africa; *G. roseæ* = young ♂, *G. emarginatus* = young ♀, and 3 other species = very old ♂s of *G. aquaticus*; VILLOT (254).

B.—*ACANTHOCEPHALA*.

A new parasite, probably allied to *Echinorhynchus*, with body divided into three regions, from skin of a bird in the Sandwich Is.; SHIPLEY, P. Cambridge Soc. viii, pp. 277 & 278.

The 5 species of *Echinorhynchus* in *Cetacea*, and table to distinguish them; SABBATINI, Atti Soc. Ligustica, vi, pp. 238–246. Those in Reptiles of Roman Campagna; SABBATINI, Ric. Lab. Rom. iv, pp. 205–223. *E. clavula*, Duj., from freshwater fish of tributaries of Weser and Elbe, anatomy, and comparison with other species; V. LINSTOW (121). *E. strumosus*, from wall of intestine of a Seal; JOYEUX-LAFUÏE.

C.—*CHÆTOGNATHA*.

On the confusion between the genera of *Sagitta* and *Spadella*; CONANT (56), BÉRANECK (17).

Sagitta hispida, n. sp., Beaufort, N. Carolina; CONANT, Ann. Nat. Hist. xvi, p. 290. *S. bedoti*, n. sp., and 3 other species, Bay of Amboina; BÉRANECK, Rev. Suisse Zool. iii, p. 147.

Spadella schizoptera, n. sp., Bimini, with median fin divided and peculiar gonaducts; CONANT, Ann. Nat. Hist. xvi, p. 288. *S. vougai*, n. sp., and another species, Bay of Amboina; BÉRANECK, Rev. Suisse Zool. iii, p. 155.

5.—*ROTIFERA*.

Anuræa: remarks on genus and protest against the number of new species; SNEZEK. *A. frenzeli*, n. sp., L. Müggel; ECKSTEIN (63). *A. eichwaldi*, n. sp., for (*A. tecta*, Plate) non Gosse, Gulf of Finland, pelagic; LEVANDER, Acta Soc. Faun. Fenn. xii, No. 3, p. 62.

Brachionus: protest against the number of new species made; SNEZEK.

Callidina branchicola, n. sp., ectoparasitic on gills of *Ligia*; NEMEC, SB. Bohmisch. Ges. 1895, xxxii, p. 9.

Cuthypna appendiculata, n. sp., Straits of Löfö and Ramsö, and *affinis*, n. sp., on Kyto I. and Rysska; LEVANDER, Acta Soc. Faun. Fenn. xii, No. 3, p. 50.

Diaschiza: 2 n. spp.: "No. 1" on shores of Löfö, and "No. 2" near Helsingfors; LEVANDER, *t. c.* p. 45.

Diplax videns, n. sp., Finland; LEVANDER, *t. c.* p. 45.

Diplois trigona, n. sp., Ealing; ROUSSELET, J. Quekett Club, vi, p. 119.

Euchlanis plicata, n. sp., shores of Löfö; LEVANDER, Acta Soc. Faun. Fenn. xii, p. 48.

- Floscularia trifidlobata*, n. sp., Minster Marshes, Thanet; PITTOCK, J. Quekett Club, vi, p. 77. *F. hoodi*, anatomy; HOOD (96). *Floscularia*-like species, with large hypoderm cells in the foot, but not tube-forming, and with 2 peculiar processes on side of head, transversely striated at base, and with spherical strongly refringent epithelium at apex, and wreath of fine hairs below apex, L. Müggel; ECKSTEIN.
- Gastroschiza truncata*, n. sp., near Helsingfors; LEVANDER, Acta Soc. Faun. Fenn. xii, No. 3, p. 25.
- Mastigocerca fusiformis*, n. sp., near Helsingfors, and *curvata*, n. sp., shores of Löfö; LEVANDER, t. c. pp. 37 & 38.
- Metopidia lepadella*, Ehrb., var. *collaris*, n. var., on I. Gåsgrund; LEVANDER, t. c. p. 54.
- Microcodides doliaris*, n. sp., Hertford Heath, and figure and description of *M. robustus*, Glascott; ROUSSELET, J. Quekett Club, vi, p. 120.
- Notholea*: protest against number of new species; SNIEZEK.
- Notommata*: 2 n. spp.: "No. 1" near Helsingfors, and "No. 2" on shores of Löfö, figured; LEVANDER, Acta Soc. Faun. Fenn. xii, No. 3, pp. 31 & 32.
- Pleurotrocha littoralis*, n. sp., shore of I. of Löfö; LEVANDER, t. c. p. 28.
- Polyarthra platyptera*, Ehrb., with striated epithelium and 2 refringent bodies at hinder edge of brain, L. Müggel; ECKSTEIN.
- Pterodina crassa*, n. sp., ponds, Finland; LEVANDER, Acta Soc. Faun. Fenn. xii, No. 3, p. 57.
- Stephanops variegatus*, n. sp., I. of Gåsgrund and Löfö (freshwater); LEVANDER, t. c. p. 41.
- Synchata (apus)*, Plate, = *S. baltica*, Ehrb., and fig. of *S. monopus*, Plate; LEVANDER, t. c.
- Taphrocampa viscosa*, n. sp., near Helsingfors; LEVANDER, t. c. p. 26.

6.—MESOZOA.

[Nothing,]

XVI. CŒLENTERATA.

BY

R. T. GÜNTHER.

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II. BIOLOGY.

A. MORPHOLOGY.

HYDROZOA.

BICKFORD (18) : Investigations made on *Tubularia tenella* confirm Loeb's views on regeneration. Regeneration is not the result of budding or of new formation, but of the transference of stem tissue. If the stem is short, a partial hydranth is formed, which is subsequently completed by growth. [See also DRIESCH (56).]

BRAEM (26) corrects Lang's statement that in *Hydroidea* buds are formed from one layer only. [See LANG (135), BRAUER (27), and SEELIGER (190).]

BROOKS (29) discusses the sense organs or cordyli of *Laodice*, in relation to their development, physiological significance, and value from the point of view of classification.

BUNTING (35) describes the origin of the sex cells in *Hydractinia* and *Podocoryne*, and the development of *Hydractinia*. In *Hy.* the gonophor is a protrusion caused by the increase of cells, both in the ectoderm and endoderm. The ova appear to be endodermal in origin, and to pass into the ectoderm. They do not always rest on the supporting lamella. The spermatozoa are ectodermal. The medusa-buds and generative products of *P.* are similar in origin to the gonophor of *Hy.* The ova of *Hy.* are laid at a definite period of the day. Polar bodies, two in number. Segmentation, total and equal. Endoderm formed by multipolar delamination. Cœlenteric cavity, the result of a breaking down of endoderm cells. Tentacles are solid endodermal outgrowths, and the hydrorhiza is a stolon-like outgrowth which later becomes tubular.

CHUN (43) in an important paper on the laws of budding among the medusæ, has arrived at the conclusion that the germinal layers have no previously determined peculiarities, either of a histological or organogenetic character, and the only basis for an homology of the germinal layers is merely the relative position of those layers. The buds in the *Margelidæ* have an ectodermal origin.

DAVENPORT (50) gives an account of his regeneration experiments on *Obelia commissuralis*. The stems of various individuals were cut at three different levels, and it was found that the whole stem, the hydranth, and a few rings only, may be reproduced after a cut at any one of the levels. The nearer the cut was to the proximal end of the stalk, the greater was the percentage of cases of reproduction of an entire stalk ; but the nearer the cut was to the distal end, the greater was the definiteness of regeneration, the less was the mean number of rings regenerated, and the smaller were both the upper and lower limits in the number of rings regenerated. The facts are expressed in curves. The author concludes that the regenerative tissue is not differentiated at different levels for the purpose of producing different structures, but that it may pro-

duce the same at all levels. In certain embryonic tissues, a usual method of development may be acquired, but this is not the case with the germ-plasma at all levels. At all the levels the regenerative tissue has a tendency to produce preferably certain forms (in *Obelia* 3-6 or 9-11 rings).

In (51) DAVENPORT substitutes a new table for one in (50).

GARSTANG (75) finds that *Syncoryne sarsii* has dimorphic medusæ like those observed by Agassiz in *S. mirabilis*.

GRENACHER (84) describes the way in which the nematocysts of *Hydra* are discharged.

GÜNTHER (88) deals with the anatomy of *Limnocoñida tanganyicæ* in detail, and notes a peculiar type of budding, which he believes to be primitive. On page 16 is a discussion of the types of freshwater medusæ hitherto described.

GÜNTHER (89) has re-examined *Limnocodium* and elucidated further points in its structure.

HALLER (93): Histology of the nervous system of *Hydra*.

HARGITT (95, 96): Character and distribution of the genus *Perigonimus*.

LANG (135) reasserts that buds are wholly derived from the ectoderm in Hydroids. [See also BRAEM (26), SEELIGER (190).]

MURBACH (154): Nematocysts are developed in the proximal regions of the body, and then wander to the more distal regions.

NUTTING (161) notes that deep sea *Hydrocorallinæ* do not sting as much as the shallow water forms, p. 85.

NUTTING (162) describes the asexual reproduction of *Plumularia pimata*, and suggests the possibility of conjugation among the *Plumulariida*.

OSBORNE & HARGITT (166) give an account of a new Hydroid, *Perigonimus jonesii*, which possesses many primitive characters, and perhaps resembles the ancestor of the calyculate *Campanularia*, because, though a "naked Hydroid," it has a covering of slightly compacted slime which might, by a slight stiffening, become a hydrotheca like that of the *Campanularia*.

SEELIGER (190): Budding among *Cœlenterata*. The eggs are formed and migrate independently of the appearance of the budding zone in the chief hydranth stalk. In the formation of a budding zone, a disappearance of endoderm [LANG (135)] does not occur. In both *Eudendrium* and *Obelia* both layers take part in the formation of the buds.

WETZEL (210): Transplantation experiments on *Hydra*. The specimens operated on always exhibited an attempt to regain original form.

ZOJA (215): Ectoderm cells.

ZOJA (216) describes a series of observations on the development of the isolated blastomeres of the eggs of some *Medusæ* (*Clytia flavidula*, *Laodice cruciata*, *Mitrocoma annæ*, *Liriope mucronata*, *Geryonia proboscidalis*).

Aglaophenia myriophyllum; ROBERTSON (176).

Conopora tenuis, Moseley; ALCOCK (3).

Corynida; HORNELL (118).

Hydra; GRENACHER (84), GARBINI (73), HALLER (93), WETZEL (210), RICHARD (175).

Hydractinia, mentioned by Swammerdam; SCHERREN (187).

Obelia geniculata; HORNELL (117).

Perigonimus repens, Wright; HARTLAUB (98).

Sertularia pumila; HORNELL (119).

Stauridium productum, Wright; HARTLAUB (98).

Stromatopora is stated to be one of the constituents of *Prisciturben*, Kunth.; LINDSTRÖM (138).

Rhabdophora.

The recent additions to our knowledge of the structure of the Graptolites are the most important that have been made for many years.

COLLINS (47) figures a graptolite (*Cladochonus*?) from the Blackhead, Cornwall.

HOLM (113) was able to demonstrate the chitinous polyparies of several species of *Didymograptus*, *Tetragraptus*, and *Phyllograptus*.

MARR (144): Graptolites of Skiddaw slates.

NICHOLSON & MARR (158): Phylogeny.

PERNER (168): Microscopic structure of *Monograptus* and *Retiolites*.

RUEDEMANN (180) on the structure, and (181) on the development of *Diplograptus*.

SOLLAS (191): Minute structure of *Monograptus priodon*.

TÖRNQUIST (199) elucidated details of the structure of *Climacograptus scalaris* by grinding, and in (200) he defines the term "theca."

WIMAN (213, 214): *Diplograptidae*, Lapw., *Monograptus*, Geinitz. [See also GÜRICH (90), HALL (92), PRITCHARD (173), TÖRNQUIST (198).]

Siphonophora.

BEDOT (12) describes a *Velella* larva (*Rataria*), with two buds, a gastrozoid and a tentacle on the oral pole.

CHUN (45) has produced a monograph on the *Monophyidae* of the Canary Islands. The species, which are described at length, are *Monophyes brevitrunca*, *M. irregularis*, *Sphaeronectes gracilis*, *Muggiaea kochii*, *Doramasia picta*, *Halopyramis adamantina*.

GOTO (78) finds that the bell nucleus of *Physalia* is formed by the immigration of interstitial cells from the ectoderm; in (79) he notes the protoplasmic connection of lasso-cells in *Physalia*.

MAYER (147) refers *Rhizophysa eysenhardtii*, Fewkes, to *Cannophysa*, and describes *C. filiformis*.

PICTET (171): Spermatogenesis.

SCHNEIDER (188): Nematocysts.

WILLEM (212): The structure and phenomena of absorption exhibited in the tentacles of *Apolemia uvaria*, Esch.

SCYPHOZOA.

BROWNE (31, 32) studied variation of tentaculocysts of *Aurelia aurita*. He finds that of two sets of ephyrae, 22.6 and 20.9 per cent. were normal, while of adults 22.8 were normal. The genital pouches and buccal arms also presented considerable numerical variation. [See also SORBY (192), who notes 2-, 3-, 4-, 5-, and 6-fold symmetry.]

BROWNE (33): Variation of *Halicystus octoradiatus*.

GRIFFITHS & PLATT (86) on the composition of the colouring matter (pélagéine) of *Pelagia*.

HERDMAN (103): Pentamerous *Aurelia*. [See also MAAS (141), UNTHANK (201), BROWNE (31, 32).]

HESSE (106): Nervous system and sense organs of *Rhizostoma cuvieri*.

HYDE (120) finds that in the development of *Aurelia marginalis* gastrulation is by delamination, in *A. flavidula* by invagination or immigration, and in *Cyanea arctica* by a modified form of invagination. In the larvæ there is an invaginated ectodermal œsophagus and radial gastric pouches. From her observations the authoress concludes that the *Scyphomedusæ* and *Anthozoa* have a common ancestor, with scyphula-like form, and of a quadriradial symmetry.

LACAZE-DUTHIERS (134) notes that in the aquarium of the Arago laboratory, strobilisation commenced after two years. [See Zool. Rec. 1893, LACAZE-DUTHIERS (52).]

DUNCKER (61) calls attention to an abnormal *Aurelia*, in which the umbrella was reflexed over the exumbrellar surface, and the umbrellar aperture was reduced to a small hole of 4 mm. in diameter.

The following treat of variation in *Aurelia*:—BATESON (10), BROWNE (31, 32), HERDMAN (103), MAAS (141), SORBY (192), UNTHANK (201).

ANTHOZOA.

BELL (13) draws attention to the great amount of variation observable in different parts of even the same masses of *Turbinaria*.

BERNARD (15, 16) describes the various methods of growth of *Astræopora* and *Turbinaria*, and the relationship of these Madreporæ. The growth of *Astræopora* may be explanate, pulvinate, globular; that of *Turbinaria* crateriform, peltate, frondens, foliate, mesenteriform, tabulate, glomerate, or bifrontal. The cœnenchyma of *Turbinaria* differs as a result of its method of budding from that of *Astræopora*, both in its greater abundance and also in its distribution.

BOURNE (21) discusses the structure and affinities of *Heliopora cœrulea*, Pall., *Xenia*, and *Heteroxenia*. He finds that in *Heliopora* the calicoblasts are ectodermic. Cœnenchymal cœca are parts of a system of inosculating endodermal canals. The growth of a colony is effected by rapid growth and multiplication of cœnenchymal tubes. These and the cuticles have walls common to them and to the adjacent tubes. *Xenia* and *Heteroxenia* have also ectodermal spicules.

BROWN (30) finds that the mesogloea of *Alcyonium digitatum* is chiefly composed of hyalogen, and contains no gelatine or nucleo-albumen.

CARLGREN (38) states that *Gerardia*, Lac.-Duth., is a true Zoanthid allied to *Parazoanthus*.

CARLGREN (39) shows how the arrangement of the septa of the *Minyade* can be derived from that of a 10-rayed Hexactinian. In the *Minyade* the pedal disc is hollowed out deeply, and the chitinous axis does not lie in the centre of the concavity. In a form resembling *Minyas torpedo*, Bell, a peculiar arrangement of the septa was observed.

DUERDEN (58) describes the anatomy of *Alicia costæ*, Panc.

FAUROT (66) has an elaborate paper on the anatomy, histology, and development of Actinians.

FUCIIS (70) discusses the nature of the peculiar tubular bodies similar to *Cylindrites*, from the E. Mediterranean, and considers them to be *Cerianthus* tubes in which a *Phoronis* has taken up its abode, and which have since become filled with mud.

GIRTY (77) gives an account of the development of the corallum in *Favosites forbesii*, var. *occidentalis*.

HICKSON (107) revises the genera of *Alcyonaria Stolonifera*, and proposes the following classification:—

Order *Alcyonaria*.

- | | |
|-------------------------------------|-----------------------------------|
| 1. <i>Protoalcyonaria</i> | <i>Haimeia</i> , <i>Hartea</i> . |
| 2. <i>Stolonifera</i> | { Fam. 1. <i>Clavulariidae</i> . |
| | Fam. 2. <i>Tubiporidae</i> . |
| 3. <i>Alcyonacea</i> | { Fam. 1. <i>Alcyonidae</i> . |
| | Fam. 2. <i>Helioporidae</i> . |
| | &c., &c. |
| 4. <i>Gorgonacea</i> | { Section I. <i>Scleraxonia</i> . |
| | Section II. <i>Holaxonia</i> . |
| 5. <i>Pennatulacea</i> | Fam. <i>Pennatulidae</i> . |

HICKSON (109): Development and (110) anatomy of *Alcyonium digitatum*.

HOLM (114): *Spongodes*.

LACAZE-DUTHIERS (133): *Flabellum anthophyllum*.

LINDSTRÖM (138) states that *Prisciturben*, Kunth., is a composite structure consisting of a *Stromatopora* and of a *Cyathophyllum*.

LOEB (140) controverts certain statements of Nagel's with respect to the psychical phenomena exhibited by Actinians.

McMURRICH (150) proposes a new classification for the *Actiniaria*, and describes many new species from the West coast of Central America.

VOLZ (207) describes the microscopic structure of the septal apparatus in the genera *Thecosmilia*, *Montlivaltia*, *Omphalophyllia*, and *Myriophyllia*.

WENTZEL (209): Structure of *Zoantharia tabulata*.

Alcyonaria; STUDER (195, 196), HORNELL (116).

Arachnoactis albida, Sars. ; VANHÖFFEN (204).

Calypterinus — an abnormal *Stachyodes* ; STUDER (197).

"*Corallia ballica*," Linnæus ; LINDSTRÖM (139). 23 species referable to 18 existing species, 4 are doubtful and 1 is undeterminable. There are also 4 species of *Bryozoa*, of which 3 are fossil and 1 recent.

Favosites reticulata, Blainville ; KAYSER (124).

Lituaria phalloides ; FOWLER (69).

Sarcodictyon catenata, yellow variety ; HERDMAN (101, 102).

Tetraplatia volitans, Busch. ; BARGONI (9).

Virgularia mirabilis, from Eddystone, differs as regards growth from Oban specimens ; MARSHALL (145).

CTENOPHORA.

BETHE (17) has reinvestigated the subepithelial nerve plexus, and holds that a network of nerve cells is the most primitive condition from which isolated nerves have become subsequently differentiated. [See also SAMASSA (183).]

DRIESCH & MORGAN (55) describe their researches on the development of isolated blastomeres of the eggs of certain *Ctenophora*. [See also CHUN (44), ROUX (179).]

GOUX (80) redescrives the way in which *Beroë* feeds on *Cydippe*.

VANHÖFFEN (202) describes *Mertensia ovum*, *Bolina septentrionalis*, *Beroë cucumis*, *Pleurobrachia pileus*, from Greenland.

b. SYMBIOSIS AND PARASITISM.

BOUVIER (22-24) : *Stephanocercis rousseaui*, *Heteropsammia cochlea*, *H. sp. foss.*, *H. michelini*, *Heterocyathus equicostatus*, *Gephyrea* which occur commensal in polypes are *Aspidosiphon heteropsammiarum*, n. sp., *A. michelini*, n. sp., *Kellia deshayesii*, n. sp.

KERVILLE (125) gives a plate illustrating a *Rhizostoma* with young fish.

OSBORNE & HARGITT (166) describe *Perigonimus jonesii*, n. sp., which lives commensally on the pereopods of *Libinia emarginata*.

STRUBELL (194) : *Actinia* and *Trachichthys* described by Sluiter.

STUDER (197) : *Calypterinus*, Wright & Studer, is an abnormal *Stachyodes* inhabited by a parasitic annelid.

VESCOVI (206) : *Rhizostoma pulmo* and the fishes *Trachurus mediterraneus* and *Portunus holsatus*.

c. FAUNISTIC.

i. RECENT.

AGASSIZ (1) : Bermudas.

ALCOCK (2) records *Cerianthus* and *Cyathohelia* from Bay of Bengal.

ALCOCK (3) makes some additions to our knowledge of the deep-sea corals of the Indian Ocean.

- ALLEN (4): Plymouth. [See also GARSTANG (74, 75), MARSHALL (145).]
 APPELLÖF (7): Herloefjorden.
 BIGELOW (19) records a *Cassiopea* species from the Great Salt Pond, Jamaica.
 BROWNE (34): *Medusæ* of Liverpool District.
 CARLGRÉN (36): Northern *Actiniaria*.
 CHOPIN (42): *Cœlenterata*, Cumbær.
 CLARKE (46): Hydroids of West coast of Central America.
 STÜDER (196): *Alcyonaria* of West coast of Central America show that the fauna has intimate relations with that of the deep sea Atlantic and the Polar Sea. *Pennatulæ phosphorea*, *P. distorta*, *Umbellula encrinurus* and *U. güntheri*, are common to the two coasts of America. *Scleroptilum durissimum* and *Stenella döderleini* are common to the Japanese coast.
 CRAWFORD (49): Hydroids, St. Andrew's Bay.
 DUERDEN (59): Hydroids, West coast of Ireland, 1890-91.
 DUERDEN (60): *Cœlenterata*, Rush, county Dublin.
 FARQUHAR (64): Hydroids, New Zealand.
 GARBINI (73): Veronese *Cœlenterata*. The distribution of *Hydra* is described. *H. grisea* occurs at an altitude of 1000 metres in rain-water wells at Chiesa nuova.
 GARSTANG (74, 75): Plymouth.
 GERMANOS (76): *Gorgonacea* of Ternate.
 KÜKENTHAL (131): *Alcyonacea* of Ternate. [See also SCHENK (185).]
 GRIEG (85): Northern *Alcyonaria*.
 GÜNTHER (88): *Limnocnida*, Lake Tanganyika.
 HALLEZ (94): Sea anemones dredged on the coast of Boulogne.
 HARTLAUB (97): Helgoland.
 HERDMAN (104, 105): Irish Sea.
 HORNELL (115-119): Jersey. [See also SCHERREN (186), who records locality of *Olavatella* in Jersey.]
 LACAZE-DUTHIERS (132): Gulf of Lyons. [See also PRUVOT (174).]
 LEVANDER (137): Finland.
 MARKTANNER-TURNERETSCHER (143): Hydroids of E. Greenland.
 NUTTING (161): Bahamas, Egg I., pp. 45 & 46; Pourtalès Plateau, pp. 175-180; locality near Havana, pp. 83-89.
 RICHARD (175) records *Hydra* species ? from Kebao, Tonkin.
 ROEBUCK (177) has compiled a useful bibliography of the *Cœlenterata* recorded from the North of England between 1884-1892.
 SCLATER (189): Jellyfish of Lake Urumiah.
 VANHÖFFEN (202): *Ctenophora*, Greenland.

II. FOSSIL.

- ANGELIS (5): Tertiary corals in the collection of the Technical Institute of Udine.
 ANGELIS (6): Pliocene *Anthozoa* of Catalonia.
 COLLINS (47): Cornwall, *Petraia celtica* and *Graptolites (Cladochonus)*, Blackhead, St. Austell.

- GANE (72) : Neocene corals, United States.
 GREGORIO (81, 82) : Jurassic and Lower Tertiary corals, Sicily.
 GREGORY (83) : West Indies.
 HALL (92) : *Graptolitida*, Castlemaine.
 KATZER (123) : Palæozoic fauna of Central Bohemia.
 KAYSER (124) : La série rhénane : Pepinster, Goé, & Tilff. Notes and figures *Favosites reticulata*, Blainv.
 KEYES (126) : Corals, Missouri.
 KOPY (129) : Jurassic corals, Switzerland.
 MARR (144) : Skiddaw slates, Graptolites.
 MILLER & GURLEY (152, 153) : Palæozoic corals, Missouri, Illinois, and adjacent States.
 NETSCHAJEW (157) : Permian corals of Eastern Russia.
 NISHIWADA (159) : Tertiary Limestone coral and millepore, Sagara, Tōtōmi, Japan.
 NOETLING (160) : Miocene, Yenangyat, Upper Burma. *Paracyathus caeruleus*, Duncan ; *Eupsammia regulis*, Alcock.
 OSASCO (165) : Pliocene corals, Piedmont and Liguria.
 D'OSSAT (167) : Lists of Carboniferous and Devonian corals, Carnia.
 PERNER (168) : Silurian Graptolites, Bohemia.
 POČTA (172) : Silurian *Hydrozoa* and *Anthozoa*, Bohemia.
 PRITCHARD (173) : Lancefield Graptolites. *Dictyonema grande*, T. S. Hall ; *Clonograptus flexilis*, Hall ; *Tetragraptus quadribrachiatum*, Hall.
 ROTHPLETZ (178) : Permian, Triassic, and Jurassic corals, Timor and Rotti.
 VOLZ (207) : Corals of St. Cassian, S. Tyrol.
 WEISSERMEI (208) : Silurian corals of E. Prussia and E. West Prussia.
 WHITEAVES (211) : Guelph *Cœlenterata*, Ontario.

CORAL REEFS.

- AGASSIZ (1) describes the Coral Reefs of the Bermudas.
 MILL (151) discusses Basset Smith's studies on the Macclesfield Bank.
 GREGORY (83) arrives at the following conclusions with regard to the affinities of the fossil corals of Barbados:—
1. Those of the raised reefs of Barbados give no trace of the influence of admixture with Pacific types.
 2. The fauna is an offshoot of that of the Miocene of the Mediterranean basin.
 3. Its nearest living ally is, therefore, that of the Red Sea and Indian Ocean.
 4. The migration of this fauna westward across the Tropical Atlantic supports the theory of the existence of a shallow water ridge. [See also JUDD (122), "Challenger" corals ; MARTIN (146), coral reefs of Seran.]

III. SYSTEMATIC.

New Families, Genera, Species, and Varieties.

HYDROZOA.

GYMNOBLASTEÆ.

- Halecium argenteum*, allied to *H. macrocephalum*, 100 miles S. of Panama City, in 458 faths.; CLARKE (46). *H. kùkenhali*, E. Spitzbergen; MARKTANNER-TURNERETSCHER (143). *H. septentrionale*, Deeviebai, E. Spitzbergen; MARKTANNER-TURNERETSCHER (143).
- Halereimita*, n. g., intermedite between *Hydrarie* and other Hydroid polypes. Polyp enclosed in foreign particles; tentacles four in number, solid and simple; nematocysts pear-shaped; reproduction by budding. *H. cumulans*, SCHAUDINN (184).
- Perigonimus gelatinosus*, *P. inflatus*, S.W. Ireland; DUERDEN (59). *P. jonesii*, Long I.; OSBORNE & HARGITT (166).
- Tubiclava rubra*, Wellington, New Zealand; FARQUHAR (64).
- Coryne tenella*, New Zealand; FARQUHAR (64).

CALYPTOBLASTEÆ.

- Laomedia (Gonothyrea) clarkii*, E. Spitzbergen MARKTANNER-TURNERETSCHER (143).
- Lictorella geniculata*, 100 miles S. of Panama City, 458 faths.; CLARKE (46).
- Obelia castellata*, 140 miles S.W. Panama City, 782 faths.; CLARKE (46).
- Sertularia variabilis*, S. of Panama City, 458-1168 faths.; CLARKE (46).
- Thuiaria kirchenpaueri*, E. Spitzbergen; MARKTANNER-TURNERETSCHER (143).

HYDROCORALLINÆ (FOSSIL).

- Millepora* sp., Tertiary Limestone, Sagara, Tôtômi, Japan; NISHIWADA (159).

MEDUSÆ.

MAYER (147) describes the following, obtained on a cruise to the Bahamas:—

- Bougainvillea niobe*, Nassau Harbour.
- Cubaia*, n. g., *C. aphrodite*, Cay Frances, N. of Cuba.
- Hybocodon forbesii*, Nassau Harbour.
- Ireniopsis*, n. g., *I. primordialis*, Little Bahama Bank.

ZOJA (218) adds the following new genus:—*Octogonade*, n. g. Leptomedusan with 8 simple radial canals, which spring independently from the cylindrical gastric cavity; manubrium with 8 oral lappets; marginal vesicles with numerous otoliths. *O. mediterranea*, Messina.

STROMATOPOROIDEA.

POČTA (172) adds the following species from the Silurian strata of Central Bohemia :—

Actinostroma contextum, Barrande; *A. frustulum*, *A. perspicuum*, *A. vastum*.
Clathrodictyon bohemicum, Barrande; *C. clarum*, *C. neglectum*, *C. socium*,
C. subtile, *C. terminatum*.

Stromatopora columnaris, Barrande; *S. compta*, *S. florida*, Novák; *S. latens*; *S. rarissima*, Barrande.

ETHERIDGE (63) makes the new genus *Cystistroma* for *Labechia* (?) (*Cystistroma*) *donnellii*, Cowra, county Bathurst. *Cystistroma*, like *Actinostroma*, belongs to the "Hydractinioid" section of the *Stromatoporoidea*, in which the radial pillars and concentric laminae are present as distinct, though closely connected structures.

RHABDOPHORA.

Callograptus? *capillosus*, *C. dichotomus*, *C. exilis*, *C. muscosus*, *C. nullus*,
C. parvus, *C. scopatus*; POČTA (172).

Climacograptus nováki; PERNER (168).

Dendrograptus constrictus; PERNER (168).

Desmograptus agrestis, *D. attextus*, *D. plexus*, *D. textorius*, *D. undulatus*,
Barrande; POČTA (172).

Dictyonema bohemicum, Barrande, *D. confertum*, *D. ? dubium*, *D. grande*,
Barrande, *D. graptolithorum*; POČTA (172).

Didymograptus barraudei, *D. bifidus*, Hall, var. *incertus*, *D. clavulus*,
D. denticulatus, *D. lapworthi*, *D. linguatus*, *D. lonchotheca*, *D. oligo-*
theca, *D. pennatulus*, Hall, var. *hamatus*, *D. retroflexus*, *D. spinu-*
losus, *D. vacillanoides*; PERNER (168).

Diplograptus euglyphus, Lapworth, var. *angustus*, *D. insculptus*, *D. lingu-*
litheca, *D. lobatus*, *D. rugosus*, Emmons, var. *fritschi*, *D. teres*,
Barrande, *D. trubinensis*; PERNER (168).

Inocaulis aculeata, *I. atrita*, *I. dumetosa*; POČTA (172).

Monograptus ansulosus, Gulleråsen; *M. cygneus*, Kallholn; *M. flagellaris*,
Nitsjö; *M. limatulus*, Kallholn; *M. singularis*, Nitsjö; TÖRNQUIST (198).

Ptilograptus glomeratus, *P. ramale*, ? *P. suavis*; POČTA (172).

Rodonograptus, n. g. (in part = *Sphaerococcites*, Goeppert); *R. asteriscus*
(in part = *S. scharyanus*); POČTA (172).

Stelechocladia, n. g.; *S. fruticosa*, *S. horrida*; POČTA (172).

Thamnocealum, n. g.; *T. fruticosum*, *T. pennulatum*; POČTA (172).

SCYPHOZOA.

DIXON (53) brings forward evidence to show that—

Lucernaria cyathiformis, Sars.; *Carduella cyathiformis*, Allman;
Depastrum cyathiforme, Gosse, are all the same form.

KISHINOYE (127) adds two new species of rhizostome medusæ :—

Mastigias physophora.

Thysanostoma denscrispum.

ANTHOZOA.

ZOANTHARIA.

ACTINIARIA.

Aliciidæ, n. fam., including *Alicia*, *Cystiactis*, and possibly *Bunodeopsis*; sphincter muscle endodermal and diffuse; DUERDEN (58).

Edwardsia adenensis, Aden; FAUROT (66) pp. 121-127.

Octineonidæ, n. fam.; FOWLER (68).

Octineon (Moseley, MS.), n.g.: an Actiniarian with the habit of a Zoanthid, the 12 mesenteries of a Hexactinian, and the 8 muscles of an Edwardsid. *O. lindahli* (= *Ammodiscus*, Carp.), Cape St. Vincent, 364 faths.; FOWLER (68). Fowler's description is criticised by DIXON (52), as regards the identification of mesenteries.

Ptychodactis, n. g.; *P. patula*, Drontheimsfjord; the type of a new family of Hexactinians; APPELLÖF (8).

CARLGREN (36) adds the following:—

Actinostola abyssorum, p. 66, Altenfjord, 100 faths. *A. spetzbergensis*, p. 76, Spitzbergen.

Andvakianæ, n. subfam. *Ilyanthidæ* with sphincter mesodermal; acontia and cinclides present.

Gonactinidæ, n. fam. *Protantheæ* with pedal disc; only 8 complete septa, which represent the *Edwardsia* septa; sphincter endodermal, feebly developed or absent.

Halcampa arctica, p. 45, Spitzbergen.

Halcampinæ, n. subfam. *Ilyanthidæ* with sphincter mesodermal; acontia and cinclides absent.

Halcampomorphinæ, n. subfam. *Ilyanthidæ* with an endodermal sphincter.

Metridinæ, n. subfam. of *Sagartidæ*.

Milne-Edwardsia, n. g.; *M. lovéni*, p. 17, Väderöarne.

Milne-Edwardsidæ, n. fam., *Edwardsidæ*, with tentacles developed according to the Hexactinian type (6-6-12, &c.).

Minyæ, tribus, CARLGREN (39).

McMURRICH (150) adds the following from the West coast of Central America:—

Actinauge fastigata, p. 187 (= *A. nodosa*, var. *coronata*, Verrill). *A. verrilli*, p. 184 (= *Urticina nodosa*, Verrill).

Actinernus plebeius, p. 166, 677 faths.

Actinia infecunda, p. 146, = *Comactis flagellifera*, Hert. (non Dana), Abrolhos Is.

Actinostola excelsa, p. 170, 50-58 faths. *A. pergamentacea*, p. 171, 51 faths.

Adamsia (?) *involvens*, p. 182, 741 faths.

Anemonia (?) *inequalis*, p. 149, Pichilingue Bay, Lower California. *A. variabilis*, p. 147, 43 faths.

- Boloceridæ*, n. fam. *Actininae* usually with stout non-retractile tentacles, strongly constricted immediately above their insertion into the disk, and hence readily deciduous. Sphincter muscle endodermal, diffuse, or in some forms approaching the circumscribed type; the tentacles and disk fully exposed in the contracted condition; with more than 6 pairs of perfect mesenteries.
- Bolocera brevicornis*, p. 158, 414 faths.; *B. occidua*, p. 154, 50½–122 faths.;
B. pamosa, p. 156, 414 faths.
- Cerianthus vas*, p. 202, 44 faths.
- Chitonanthus*, n. g., for *Phellia pectinata* and *P. spinifera*, Hærtwig.
- Cradactis*, n. g. of *Phyllactidæ*. *C. digitata*, p. 198, 10½ faths.
- Cymbactis*, n. g. of *Paractidæ*. *C. fœculenta*, p. 174, 414 faths.
- Edwardisia intermedia*, p. 136, 122 faths.
- Halcurias*, n. g. of *Halcampidæ*. *H. pilatus*, p. 142, 449 faths.
- Lciotealia badia*, p. 194, 77½ faths.
- Myonanthus*, n. g. of *Antheadæ*. *M. ambiguus*, p. 151, 414 faths.
- Oractis*, n. g. of *Protactinidæ*. *O. diomedææ*, p. 138, 414 faths.
- Oulactis californica*, p. 196, Pichilingue Bay.
- Paractis vinosa*, p. 163, 414 faths.
- Peachia koreni*, p. 144, 11½ faths.
- Pycnanthus*, n. g. of *Paractidæ*. *P. maliformis*, p. 172, 414 faths.
- Sagartia lactea*, p. 176, 449 faths. *S. paradoxa*, p. 180, 10½ faths. *S. sancti matthæi*, p. 179, 11½ faths.
- Stephanactis hyalonematis*, p. 193, 812 faths.

ZOANTHIDÆ.

- Zoanthus chierchie*, locality unknown; HEIDER (99). *Z. sp.*, Bay of Bengal; DUERDEN (57).

MADREPORARIA.

ALCOCK (3) describes the following new species from the deep waters of India :—

Caryophyllia scilleomorpha.

Flabellum pari-pavoninum.

Stephanotrochus oldhami.

JOURDAN (121) adds :—

Caryophyllia margaritata.

Stephanotrochus crassus.

Galaxea anthophyllites, I. of Kamarane, Red Sea; FAUROT (65).

BOURNE (21) adds :—*Xenia garcia*.

FOSSIL CORALS.

Astrocœnia almerai, Tertiary; ANGELIS (5).

Campophyllum kansansense, Upper Coal Measures, Kansas, Missouri; MILLER & GURLEY (152) p. 67.

- Columniphyllum panormensis*, Jurassic, Sicily; GREGORIO (81) p. 24.
Cyathophyllum glabrum, Missouri; KEYES (126) p. 105.
Hydrophyllum tennesseense, Subcarboniferous, Lincoln county, Tennessee;
 MILLER & GURLEY (152) p. 87.
Heliolithes interstinctus, var. *irregularis*, *intermedius*, *H. bohemicus*, var.
major, *H. decipiens*; WENTZEL (209).
Heliastrea ? *guardiolensis*, Lower Tertiary, Sicily; GREGORIO (82).
Isastrea arenellensis, Jurassic, Sicily; GREGORIO (81) p. 23.
Leptophyllia ? *rotulensis*; *id. t. c. p.* 25.
Michelinia branneri, Coal Measures, Danville, Illinois; MILLER &
 GURLEY (152) p. 68.
Miria, n. subg. of *Latimæandra*, *L. (Miria) himerensis*, Lower Tertiary,
 Termini, Sicily; GREGORIO (82).
Mucophyllum, n. g., *rugosa*, *M. crateroides*, Upper Silurian, co. Wellesley,
 N. S. W.; ETHERIDGE (62) p. 18.
Petraja permiana, Permian, E. Russia; NETSCHAJEW (157).
Stelliporella lamellata; WENTZEL (209).
Thecosmilia panormitana, var. *arenellensis*, Jurassic, Sicily; GREGORIO
 (81).
Zaphrentis, sp. indet., Permian, E. Russia; NETSCHAJEW (157).

GANE (72) describes the following Neocene corals from the United States:—

- Cladocora johnstoni*, Pliocene, S. Carolina.
Desmophyllum willcoxi, Miocene, Florida.
Manicina pliocenica, Pliocene, Florida.
Paracyathus vaughani, Miocene, Virginia.
Phyllangia floridana, Pliocene, Florida.

GREGORY (83) adds:—*Echinopora franksi*, Barbadoes, *Hydnophora latefundata*, Barbadoes, and suggests that the following genera be regarded only as synonyms:—(*Antillastræa*) = synonym of *Stephanocœnia*. (*Mycedium*) = synonym of *Agaricia*. *Antillia* is to be abandoned, because the epitheta are not a reliable diagnostic character among the *Astræidæ simplices*.

GREGORY reduces the following species to synonyms:—

- Antillastræa spongiformis*, Dunc., p. 276; *Antillia bilobata*, Dunc., p. 260; *Astræa barbadensis*, Dunc., p. 272; *A. cylindrica*, Dunc., p. 271; *A. endothecata*, Dunc., p. 271; *Barysmilia intermedia*, Dunc., p. 269; *Dichocœnia tuberosa*, Dunc., p. 268; *Heliastrea altissima*, Dunc., p. 272; *Siderastræa crenulata*, var. *Antillarum*, p. 279; *S. grandis*, Dunc., p. 279; *Stephanocœnia dendroidea*, Dunc., p. 258.

KOBY (129) monographs the Jurassic corals of Switzerland, and distinguishes the following new species:—

- Baryphyllia jaccardi*, p. 18, Gilley, Rauracien.
Convexastræa jaccardi, p. 10, Gilley, Rauracien.
Cymosmilia, n. g., p. 8, *C. conferta*, Gilley, Rauracien.
Dermoseris humilis, p. 19, Liesberg, Rauracien.

Mouliavanllia rochensis, p. 14, near Bressaucourt, Toarcien.

Phytogyra rauracina, p. 6, Röschenz, Laufon, Rauracien.

P. jaccardi, p. 7, Gilley, Rauracien.

Thecosmilia acaulis, p. 17, Gilley, Rauracien.

OSASCO (165) adds the following new species and varieties from the

Pliocene of Piedmont and Liguria :—

Eupsammia porosissima, p. 179, Astigiano.

Flabellum peolæ, p. 186, Monte Castello.

F. trapezoidale, p. 188, Monte Capriolo.

New varieties :—

<i>Balanophyllia italica</i> (Michn.) . . .	var. <i>gigantea</i> , p. 180, Astigiano.
<i>Dendrophyllia digitalis</i> (Blainv.) . . .	„ <i>crassa</i> , p. 180, Albenga.
<i>Trochocyathus arenulatus</i> (Ponzi) . . .	„ <i>tubinata</i> , p. 182, Zinola.
„ „	„ <i>lævis</i> , p. 182, Zinola.
<i>Paracyathus pedemontanus</i> (Michn.) . . .	„ <i>alternicostata</i> , p. 183, Astigiano.
„ „	„ <i>michelottii</i> , p. 183, Astigiano.
<i>Ceratocyathus duodecimcostatus</i> (Goldf.)	„ <i>producta</i> , p. 184, Viale.
„ „	„ <i>floriformis</i> , p. 185, Zinola, Albenga.
„ „	„ <i>expansa</i> , p. 185, Viale, Rivarone.
„ <i>multispina</i> (Michtt.) . . .	„ <i>lævis</i> , p. 185, Zinola.
„ <i>multiserialis</i> (Michtt.) . . .	„ <i>miopliocenicæ</i> , p. 186, Bussana.
<i>Flabellum avicula</i> (Michtt.) . . .	„ <i>ornata</i> , p. 187, Albenga.
„ „ . . .	„ <i>erecta</i> , p. 187, Torrento, Pogliola.
„ „ . . .	„ <i>subroissiana</i> , p. 188, Monte Castello.
„ <i>trapezoidale</i> (Osc.) . . .	„ <i>semiovoidalis</i> , p. 189, Monte, Capriolo.

WEISSERMEL (208) adds the following new species from the Silurian of

East Prussia and of Eastern West Prussia :—

Acerularia luxurians, var. *breviseptata*, Kalthof.

Amplexus borussicus, *A. eurycalyx*, E. Prussia.

Cyathophylloides contortus, Thorn.

Cyathophyllum pseudodianthus, n. n. for *C. dianthus*, Lonsdale, Lauth.

Endophyllum contortiseptatum, var. *præcursor*, Lauth.

Storthygyphyllum, n. g., *S. megalocystis*, Siewenberg.

ROTHPLETZ (178) : Corals from Permian, Triassic, and Jurassic, of

Ajermati, Timor :—

Clisiophyllum wichmanni, *C. torquatum*.

Pachypora pusilla.

Polycælia angusta.

Zaphrentis beyrichi.

ALOYONARIA.

ALCYONACEA.

Ammothea carnosa, p. 427, Ternate; KÜKENTHAL (131).

Nephtya amentacea, Celebes, *N. columnaris*, Celebes; STUDER (195).

HOLM (114) adds *Panope*, n. subg. of *Spongodes*, and the following new species :—

Spongodes albida, Suez Bay; *armata*, 40 miles N. of Hongkong; *aspera*, Hirudo St., Japan; *inermis*, Hirudo St.; *lanxifera*, Port Darwin, Australia; *lateritia*, Hirudo St.; *lobulifera*, 40 miles N. of Hongkong; *mollis*, Hirudo St.; *pallida*, *pectinata*, *suensoni*, *tenera*, Hirudo St., Japan; *spinifera*, Viti Is.; *ulex*, Mindanao.

KÜKENTHAL (131) adds the following new species from Ternate :—

Spongodes (*Nephtya*) *chabrolii*, Holm., varr. *ternatana*, *molukkana*, *grisea*, p. 428; *S. nigra*, p. 428, *elongata*, p. 429, *pyramidalis*, p. 430, *debilis*, p. 431, *robusta*, p. 432, *dispersa*, p. 433, *acuminata*, p. 433, *tenuis*, p. 434, *splendens*, p. 434, *rosea*, p. 435, *depressa*, p. 437, *involuta*, p. 438, *indivisa*, p. 438.

Paraspongodes, n. g., *P. crassa*, p. 439.

Siphonogorgia pendula, Stud., var. *ternatana*, p. 440; *S. miniacea*, p. 440, *S. cylindrata*, p. 441.

SCHENK (185) adds :—

Xenia blumii, p. 273, *X. crassa*, p. 272, *X. fusca*, p. 272, *X. membranacea*, p. 272, *X. plicata*, p. 274, *X. rubens*, p. 274, *X. ternatana*, p. 273, *X. viridis*, p. 272, Ternate.

Voeringia pacifica; STUDER (195).

ALCYONACEA (FOSSIL).

Aulophora gracilis, p. 123, Missouri; KEYES (126).

POČTA (172) adds the following species from Silurian strata of Central Bohemia :—

Aulopora bohémica, Barrande, *buccinata*, *conferta*, Barrande, *conoidea*, *crassa*, *disjecta*, *serrulata*, *symetrica*.

Fistulipora permiana, Permian, E. Russia; NETSCHAJEW (157).

Oncopora, n. g., related to *Aulopora*. *O. paradoxa*, Silurian, Bohemia; POČTA (172).

STOLONIFERA.

Clavularia celebensis, p. 342, 10 faths., N. Celebes; *garciae*, p. 341, shallow water, Diego Garcia, HICKSON (107); *gregaria*, W. Central America, STUDER (196); *reptans*, p. 342, 5–10 faths., N. Celebes, HICKSON (107); *aspera*, p. 327, Ternate, SCHENK (185); *inflata*, p. 326, Ternate SCHENK; *ternatana*, p. 326, Ternate, SCHENK (185).

Sarcophytum beetgeri, p. 328; *dispersum*, p. 330; *fungiforme*, p. 328; *plicatum*, p. 331; *reichenbachii*, p. 329; *trocheliophorum*, Marenz., var. *molukkanum*, p. 330, Ternate; SCHENK (185).

Stereosoma, n. g. *Clavulariidae* forming small colonies, consisting of stiff non-retractile polypes situated at considerable intervals from each other on a thick plate-like stolon. Tentacles non-retractile. Pinnæ few and widely separated. Spicules absent. *S. celebense*, p. 337, N. Celebes; HICKSON (107).

GORGONACEA.

- Acamptogorgia acanthostoma, fruticosa*, Ternate; GERMANOS (76).
Acanthogorgia brevispina; STUDER (196).
Amphilaphis abietina; STUDER (196).
Anthothela argentea; STUDER (196).
Astromuricea, n. g.; *A. polyclados, theophilasi*; GERMANOS (76).
Callirhabdos, n. g., has, according to Hilgendorff, considerable resemblance to Studer's *Primnoella magelhuensica*, Chiloe; PHILIPPI (169).
Callistephanus wrightii; STUDER (196).
Calyptrophora agassizii; STUDER (196).
Dasygorgia fruticosa; STUDER (196).
Echinomuricea coronalis, Ternate; GERMANOS (76).
Euplexaura rhipidalis; STUDER (195).
Lepidisis inermis; STUDER (196).
Melitodes stormii, sulphurea; STUDER (195).
Muriceides ramosus, Trondhjemfjord; GRIEG (85).
Paramuricea placomus, Trondhjem; GRIEG (85).
Plexauroides lenzii, P. unilateralis; STUDER (195).
Psammogorgia variabilis; STUDER (196).
Sclerosolenocaulon, n. subg. of *Solenocaulon*; *S. diplocalyx, sterroclonium*, Ternate; GERMANOS (76).
Malacosolenocaulon, n. subg. of *Solenocaulon*; *S. acalyx*, Ternate; GERMANOS (76).
Stachyodes ambigua; STUDER (196).
Stenella ramosa; STUDER (196).

PENNATULACEA.

- Cavernularia malabarica*, Calicut; FOWLER (69).
 STUDER adds the following from the Pacific near the W. coast of Central America :—
Cladiscus agassizii.
Distichoptilum verrillii.
Kophobelemnion affine.
Pennatula alata; *P. koellikeri*.
Stachyptilum superbum.
Umbellula geniculata.

XVII. SPONGIÆ.

BY

PROFESSOR R. VON LENDENFELD.

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INTRODUCTION.

THE most important papers on Sponges published in 1895 are : (5) in which the views held by the Recorder concerning the non-existence of Sollas' membrane are corroborated by BIDDER ; (15) in which a number of new Desmacidonid Sponges are described by DENDY ; (22) in which HANITSCH records certain American types of freshwater Sponges from Ireland ; (57) in which some new Hexactinellids are described by F. E. SCHULZE ; (61) in which TORSENT gives a monographic account of those Sponges of the French coast which he places in his order *Carnosa* ; and (69) in which WELTNER gives a list of the known species of *Spongillidæ*, with extensive references and localities.

I. TITLES.*

The following list includes not only the titles of papers on Sponges published in 1895, but also those known to Recorder which were published in 1893 and 1894, and have not been mentioned in previous volumes of the Zoological Record. It also includes the titles of abstracts, translations, and reprints, but these are not numbered. Certain papers of 1895 (13, 20, 22, 40, 41, 43, 45, 54, 59, & 69) have already been recorded in Zool. Rec. 1894. They are here again mentioned to make the list as nearly as possible complete for the year 1895. The papers of 1893 and 1894 above alluded to are not included in the Subject Index.

1. ANONYMOUS. La pesca delle Spugne lungo la costa Istriana. *Neptunia*, viii, p. 23 (1893).
2. —. Leitfaden für das Aquarium der Zoologischen Station in Neapel. 4th Edition. Berlin: 102 pp., 175 figg. (1894).
3. BERGHAUS, —. Die Schwammfischerei in Italien 1892. *Mt. Deutsch. Fisch. Ver.* pp. 42, 120 & 121 (1894).
4. BIDDER, G. P. *Porifera*. *Zool. Jahresber.* 1894, 12 pp. (1895).
5. —. The collarcells of *Heterocela*. *Quart. J. Micr. Sci.* (n.s.) xxxviii, pp. 9-43, pl. ii (1895). [Summaries, *Zool. Centralbl.* ii, pp. 748 & 749; *J. R. Micr. Soc.* 1895, pp. 642 & 643.]
6. BLEICHER, —. Contribution à l'étude des Bryozoaires et des Spongiaires de l'oolithe inférieur (bajocien et bathonien) de Meurthe-et-Moselle. *Bull. Soc. Nancy* (2 ser.) xiii, Fasc. xxviii, pp. 89-102, pls. i-iii [1894, appeared 1895].
7. BRAEM, F. Notiz über *Cristatella*. *Zool. Anz.* xvi, pp. 65 & 66 (1893).
8. BUCK, E. [Ueber sein Zimmeraquarium.] *Blätt. Aquar. Terrar. Freunde*, iv, pp. 271 & 272 (1893).
9. —. [Briefliche Mittheilung an den Triton.] *Op. cit.* v, p. 70 (1894).
10. —. Winterfutter für kleine Wasserthiere. *T. c.* pp. 241 & 242 (1894).
11. —. Beobachtungen an Schwämmen des Bodensees und ihre Züchtung im Aquarium. *Ber. Offenb. Ver.* xxxiii-xxxvi (36ster Jahresber.) pp. 25-70 (1895).
12. CAYEUX, L. [Precambrian Sponges.] *Ann. Soc. geol. Nord*, xxxii (1895).
13. DEECKE, W. Eocäne Kieselschwämme als Diluvialgeschiebe in Vorpommern und Mecklenburg. *Mt. Ver. Vorpomm.* xxvi, pp. 166-170, pl. i (1895).

1 new genus; 1 new species.

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

14. DELAGES, YVES. La structure du Protoplasma et les théories sur l'hérédité et les grands problèmes de la biologie générale. Paris : 1895, xiv, 880 pp. [Sponges, p. 112.] (1895).
15. DENDY, A. Catalogue of Non-Calcareous Sponges, collected by J. Bracebridge Wilson, Esq., M.A., in the neighbourhood of Port Phillip Heads. Part II. P. Soc. Victoria (n.s.) viii, pp. 14-51 (1895).
3 new genera ; 26 new species.
— (7) Zool. Rec. 1894. Summaries, J. R. Micr. Soc. 1895, p. 321; Zool. Centralbl. ii, p. 587.
16. FRIČ, A., & VAVRA, V. Die Thierwelt des Unterpocernitzer und Gatterschlager Teiches als Resultat der Arbeiten an der übertragbaren Zoologischen Station. Arch. Landesf. Böhmen, ix, pp. 44 & 62 (1894).
17. GARBINI, A. Primi materiali per una monografia limnologica del Lago di Garda. Bull. Soc. ent. Ital. xxvi, 51 pp. (1894).
18. HÆCKEL, E. Sponges. The scientific results of the "Challenger" Expedition. Nat. Sci. vii, p. 35 (1895).
19. HALLEZ, P. Quelques réflexions sur la classification embryologique des Métazoaires et sur la nécessité d'un nouvel embranchement des Cœlentérés. Rev. biol. Nord France, vi, pp. 1-39 (1895).
20. HANITSCH, R. American Freshwater Sponges in Ireland. Nature, li, p. 511 (1895).
21. —. Notes on a collection of Sponges from the West coast of Portugal. P. Liverp. Biol. Soc. ix, pp. 205-219, pls. xii & xiii (1895). [Summary, Zool. Centralbl. ii, p. 636.]
2 new genera ; 6 new species.
22. —. The Freshwater Sponges of Ireland, with remarks on the general distribution of the group. Irish Natural. iv, pp. 122-131, pl. iv (1895). [Summaries, Nature, lii, p. 85; Zool. Centralbl. ii, pp. 587 & 588.]
— (14) Zool. Rec. 1894. Summary, J. R. Micr. Soc. 1895, p. 185.
23. HERDMAN, W. A. The sixth annual report of the Liverpool Marine Biology Committee, and their biological station at Port Erin (Isle of Man). P. Liverp. biol. Soc. vii, pp. 45-97, figg. [sep. pp. 1-55], (1893).
24. —. The seventh annual report of the Liverpool Marine Biology Committee, and their biological station at Port Erin (Isle of Man). *Op. cit.* viii, pp. 3-55, figg. [sep. pp. 1-55], (1894).
25. —. The eighth annual report of the Liverpool Marine Biology Committee, and their biological station at Port Erin (Isle of Man). *Op. cit.* ix, 52 pp. (1895).
26. HICKSON, S. J. The fauna of the deep sea. London : 168 pp. (1895).

27. HINDE, G. J. On a well-marked horizon of Radiolarian rocks in the Lower Culm-measures of Devon, Cornwall, and West Somerset. *Quart. J. Geol. Soc.* li, pp. 609-668, pls. xxiii-xxviii (1895). [Sponges, p. 644.]
28. HORNEL, J. The use of formalin as a preservative medium for marine animals. *Nat. Sci.* vii, pp. 416-420 (1895).
29. HUNDESHAGEN, F. Ueber jodhaltige Spongien und Jodospongien. *Zeitschr. f. angew. Chemie Jahrg.* 1895, pp. 473-476 (1895).
30. *IJIMA, I. (On two new *Hexactinellida* from Sagami Bay.) *Zool. Mag. Tokyo*, vii, pp. 93-96 (1895). [Summary, *J. R. Micr. Soc.* 1895, p. 541.]
31. JAMES, J. F. Sponges, recent and fossil. *Amer. Natural.* xxix, pp. 536-545, 7 figg. (1895).
32. KELLER, C. *Das Leben des Meeres.* Leipzig: (1894).
33. KERVILLE, H. GADEAU DE. Recherches sur les faunes marine et maritime de la Normandie. Premier voyage. Région de Granville et îles Chansey (Manche). Juillet-Août, 1893. Paris: 181 pp., 11 pls. (1894).
34. KIRK, H. B. Further contribution to a knowledge of the New Zealand Sponges. *Tr. N. Zealand Inst.* xxvii, pp. 287-292, pls. 24-26 [for 1894, published 1895].
1 new genus; 2 new species.
35. KNIPOVITCH, N. Étude sur la repartition verticale des animaux le long du littoral des îles Solovetsky et sur le but vers lequel doivent se diriger tout d'abord les recherches sur la faune de la mer Blanche. *Congr. Zool.* 2 partie, Moscou, pp. 53-72 (1893).
36. LAMBE, L. M. Sponges from the Pacific coast of Canada. *Tr. R. Soc. Canada*, 1893, pp. 25-43, pls. ii-iv (1893).
37. —. Sponges from the western coast of North America. *Op. cit.* 1894, pp. 113-138, pls. ii-iv (1894).
38. LAMEERE, A. *Manuel de la Faune de Belgique.* Tome I. Animaux non Insectes. Bruxelles: 640 pp., 701 figg. (1895).
39. LAMPERT, K. Bemerkungen zur Süßwasserfauna Württembergs. *Jahresb. Ver. Württemb.* 1893, pp. 102-109 (1893).
40. LENDENFELD, R. v. Entwicklung und Nahrungsaufnahme von *Oscarella*: Kritische Bemerkungen. *Zool. Anz.* xviii, pp. 17-19 (1895). [Summary, *J. R. Micr. Soc.* 1895, pp. 320 & 321.]
41. —. *Papillina, Osculina* und ihre Beziehungen unter einander und zu Bohrschwämmen. *Zool. Anz.* xviii, pp. 149-151 (1895).
42. LENZ, H. Die Fauna der Umgegend Lübecks.—Lübeck. Festschrift den Theilnehmern der 67. Versammlung Deutscher Naturforscher und Ärzte gewidmet von dem ärztlichen Verein und dem naturwissenschaftlichen Verein zu Lübeck. Lübeck: 1895, pp. 309-325 (1895). [Sponges, p. 325.]

43. LETELIER, A. Une action purement mécanique permet d'expliquer comment les Cliones creusent leurs galeries dans les valves des huîtres. Bull. Soc. Normand. (4 ser.) viii, pp. 149-166 (1895.)
44. LEVANDER, K. M. *Ephydatia fluviatilis* in den Esboer Skären bei Helsingfors. Medd. Soc. Faun. Fenn. Heft 20, p. 120 (1894.)
45. MALFATTI, P. Silicospongiæ plioceniche. Atti Acc. Lincei (5 ser.) Rendic. iv, pp. 116-121 (1895).
2 new species.
46. MARSHALL, W. Niedere Thiere (Die Niederen Thiere von Professor Dr. Oskar Schmidt, neubearbeitet von Professor Dr. W. Marshall). Brehms Thierleben (3 ed.) x. [Spongien, pp. 625-656.] (1893.)
47. MERRILL, J. A. Fossil Sponges of flint-nodules. Bull. Mus. Harvard, xxviii, pp. 1-26 (1895). [Summary, J. R. Micr. Soc. 1895, p. 643.]
8 new species of *Geodia*.
48. MINCHIN, E. A. On the origin of the triradiate spicules of *Leucosolenia*. P. R. Soc. London, lviii, pp. 204 & 205 (1895). [Summaries, J. R. Micr. Soc. 1895, p. 642; Ann. Nat. Hist. (6) xvi, pp. 427 & 428.]
49. MONTGOMERY, T. H., JUN. On successive, protandric and proteogynic hermaphroditism in animals. Amer. Natural. xxix, pp. 528-536 (1895). [Sponges, p. 529.]
NÖLDEKE, B. (35) Zool. Rec. 1894. Summaries, J. R. Micr. Soc. 1895, p. 60; Zool. Centralbl. i, pp. 818-822.
50. OKA, A. Ueber die Knospungsweise bei *Syllis ramosa*, M'Int. Zool. Anz. xviii (1895), pp. 462-464.
51. OSTROUMOV, —. Liste des Spongiaires de la Mer Noire, tirée des travaux de Mr. Tscherniavsky. Congr. Zool. 2 sess. Moscou (1892), pt. 2, pp. 159 & 160 [sep. 1 & 2] (1893).
52. PALMÉN, J. A. Det zoologiska sommerlaboratoriet på Esbo-Löfö. Medd. Soc. Faun. Fenn. xix, pp. 101-109 (1893).
53. PERRIER, R. Traité de Zoologie. Pt. I. Paris: [Éponges, pp. 537-586, figg. 517-547] (1893).
PETR, F. (37) Zool. Rec. 1894. Summary, Zool. Centralbl. ii, pp. 301 & 302.
54. RAUFF, H. Palaeospongiologie. Zweiter Theil. Fortsetzung. Spongien des Silurs. Ordnung *Tetractinellida*. Unterordnung *Lithistina*. Palaeontogr. xli, pp. 223-271 [sep. pp. 347-395] 49 figg. pls. xx-xxvi [sep. xviii-xxiv] (1895). [Summary, Zool. Centralbl. ii, p. 749.]
3 new genera; 7 new species.
55. REGEL, F. Thüringen. Ein geographisches Handbuch. 2. Theil. Biogeographie Bd. I. Pflanzen- und Thier-Verbreitung. Jena: (1894) [*Spongillida*, p. 355].
56. SAVILLE-KENT, W. The Great Barrier Reef of Australia, its products and potentialities. London: 387 pp., 64 pls. (1893).

57. SCHULZE, F. E. Hexactinelliden des Indischen Oceans. 1. Theil. Die Hyalonematiden. Abh. Ak. Berlin, 1894 [published 1895], 60 pp.; 9 pls. Summary, Zool. Centralbl. ii, pp. 588 & 589.
13 new species.
58. SOLLAS, J. W. Sponges. The scientific results of the "Challenger" Expedition. Nat. Sci. vii, pp. 35-38 (1895).
59. THURSTON, E. Rámésvaran Island and fauna of the Gulf of Manaar. Bull. Mus. Madras, No. 3, 2nd ed., 138 pp., 7 pls.
60. TOPSENT, E. Campagnes du yacht "Princesse Alice." Notice sur les Spongiaires recueillis en 1894 et 1895. Bull. Soc. zool. France, xx, pp. 213-216 (1895).
61. —. Étude monographique des Spongiaires de France. II. *Carnosa*. Arch. Zool. exp. (3 ser.), iii, pp. 493-590, pls. xxi-xxiii (1895).
1 new genus ; 1 new species.
— (44) Zool. Rec. 1894. Summary, Zool. Centralbl. i, p. 818.
— (45) Zool. Rec. 1894. Summary, Zool. Centralbl. i, p. 818.
— (46) Zool. Rec. 1894. Summaries, J. R. Micr. Soc. 1895, p. 321 ; Zool. Centralbl. i, p. 817.
62. TRAXLER, L. *Ephydatia fossilis*, eine neue Art der fossilen Spongilliden. Földtani Közl. xxiv, pp. 234-237 [66-69], pl. iv (1894).
Summary, Zool. Centralbl. i, p. 822.
63. —. Ku izučeniju badigi (Contributions to our knowledge of Spongilla) [Russian]. Russ. Pharm. Journ. No. 39, 10 pp. (1894).
64. —. Die Schwammspikule des Schlammes im See Héviz. Földtani Közl. xxv, pp. 142-145, pl. ii (1895). [Also in Hungarian, *t. c.* pp. 109-112.]
65. —. Spikule von Süßwasserschwämmen aus Brasilien. *T. c.* pp. 238-240, pl. iii. [Summary, Zool. Centralbl. ii, p. 588.]
1 new species.
66. —. Beiträge zur Kenntnis der Süßwasserschwämme. *T. c.* pp. 241 & 242 (1895). [Also in Hungarian, *t. c.* pp. 181-185. Summary, Zool. Centralbl. ii, p. 588.]
67. VANGEL, E. A Balaton mohállatai (The *Bryozoa* of the Platten Lake) [Hungarian]. Termes. Közl. Magyar Tars. No. 29, pp. 110-117 (1894).
68. VOSMAER, G. C. J., & PEKELHARING, C. Collar-cells of Sycon. Tijdschr. Nederland. Dierk. Ver. (2) iv, Deel Versl. p. xlv (1894).
69. WELTNER, W. Spongilliden-Studien. III. Katalog und Verbreitung der bekannten Süßwasserschwämme. Arch. Naturg. 1895, pp. 114-144 (1895). Summary, Zool. Centralbl. ii, pp. 521 & 522.
12 new species.

- [WELTNER, W.] (50) Zool. Rec. 1894. Summary, Zool. Centralbl. ii, pp. 586 & 587.
- WILSON, H. V. (52) Zool. Rec. 1894. Summary, J. R. Micr. Soc. 1895, p. 320.
70. ZACHARIAS, O. Forschungsberichte aus der Biologischen Station zu Ploen. Berlin : (1894).

II. BIOLOGY.

MORPHOLOGY and PHYSIOLOGY.

A. GENERAL (31, 48).

JAMES (31) gives a short popular account of the life-history of Sponges.

MINCHIN (48) concludes from his observations on the formation and growth of the spicules in *Ascetta coriacea* that this Sponge and the lower forms of Sponges generally, have no "mesoderm," but consist of the two primary layers only: (1) the dermal layer, which is composed of the outer superficial neuromuscular, and the inner connective tissue cells; and (2) the gastral layer, composed of the collar-cells. To the latter perhaps also the amoeboid wandering cells belong. In short, what Schulze and others name mesoderm, Zwischenschicht, interstitial layer, Minchin considers as a part of the dermal layer.

B. CANAL-SYSTEM (5, 61).

BIDDER (5) met with ciliated chambers only 0.0067-0.0083 mm. wide in a Sponge identical with, or at least closely resembling, *Acanthella stipitata*, Carter.

TOPSENT (61) says that three different kinds of ciliated chambers occur in the *Carnosa*: (1) eurypleuses, which open direct without special efferent canals into the sides of the wide efferents (*Placina*); (2) aphodales, with short and wide special efferents (*Dercitus*, *Corticium*); and (3) dolichodales, with long and slender special efferents (*Chondrosia*, *Thymosia*). Concerning the efferent canals he finds Sollas's statements and also F. E. Schulze's figures of *Chondrosia* not in accordance with his own sections, and upholds the views previously expressed on the subject by the Recorder. The afferent pores are scattered over the whole surface in the *Oligosilicina* and in *Dercitus*, but confined to the upper face in the *Microsclerophora*. He proposes to replace the old term "subdermal cavities" ("cavités sous-dermiques"), which he considers defective, by two new terms: "cavités préporales" and "cavités intracorticales." It seems that Topsent designates as "pore" not, as the Recorder and others, the openings on the external surface of the Sponge, but the entrances to the canals of the pulpa in the floor of the subdermal cavities or on the border between pulpa and rind. Thus his "cavités

préporales" correspond to our term subdermal cavities (Subdermalraum), and his term "cavités intracorticales" to our canals or lacunes of the cortex (Rindenkanäle oder Lakunen). What we call pores Topsent terms stomions, and the canals which lead down from them to the subdermal cavities euthuchones, if they run direct, and plagiouchones, if they pass through lacunes.

The oscules of the *Carnosa* lie, according to him, on the summits of the lobes (*Oscarella*), or more frequently on papillæ. *Placinastrella* and *Chondrosia* have a single raised osculum. In *Placina*, *Placortis*, and *Corticium* the oscula are not distinguished from the afferent pores, only perhaps a little larger.

C. SKELETON (48, 57, 61).

MINCHIN (48) states that in *Ascetta coriacea* the spicules are formed by six cells derived from the outer epithelium. Three epithelial cells wander inwards, and each dividing into two give rise to these six cells. They form two layers of three each, the lower forms the spicule. Often the three rays of the spicule appear to be formed separately and afterwards joined in the centre. Each one of the three lower cells forms one ray, and afterwards continues to secrete the calcareous substance necessary for its growth, at first at the base. When the base has attained its full thickness the cell wanders outwards, thickening the ray to its full stoutness as it goes, and finally, when the ray has attained its full size, it lies at the extreme tip of the ray. Concerning the phylogeny of Sponge spicules MINCHIN upholds the views of Schulze against Dreyer.

F. E. SCHULZE (57) states that in the Hexactinellids most of the megascleres continue to grow with the Sponge. They are much larger in large than in small specimens, and their dimensions cannot therefore be used for systematic purposes. The microscleres on the contrary, particularly the Amphidiscs, the Pinules, and the Microhexactins of the *Hyalonematidæ* do not grow secondarily, but always have nearly the same constant size, so that their dimensions can very well be utilized by the systematist for distinguishing the species. The number of these spicules is variable; large specimens may contain many microscleres of a particular kind, whereas only very few or none at all are found in small specimens of obviously the same species.

According to TOPSENT (61) no diactine megascleres occur in the *Carnosa* except in *Triptolemus*. He considers the microchelotrop as the typical spicule of *Placina*, *Placinastrella*, and *Corticium*, from which all other spicule-forms of these Sponges have been derived. *Dercitus* has chelotrop or short-shafted triaen megascleres and microrhabd microscleres. In *Dercitus bucklandi* toxes occur also. TOPSENT considers these toxes as peculiarly modified diactine asters, and states that in the species of *Thoasa* all transitions between four-, three-, and two-rayed asters are met with; that the rays of these asters are curved; and that some of the diactine forms are very similar to toxes.

D. EPITHELIA AND THE CUTICULA (5, 61).

BIDDER (5) has very carefully examined the collar-cells of *Grantia compressa* and other forms, with a view to find fresh proofs for the positive statements previously made by him concerning the existence and importance of the membrane connecting the collar-margins of these cells, known under the name of Sollas's membrane. The result of his work was a negative one; he was obliged to corroborate the statement made first by the Recorder (in 1889), and later by Vosmaer & Pekelharing (in 1893), that in life no such membrane exists, and that, where it is found, it is a post-mortem artefact, produced by want of care in hardening.

In *Grantia compressa* the collar is made up of about thirty parallel rods, united by a film of some other substance. The flagellum is intimately connected with the nuclear membrane. Concerning the existence of a substance sometimes occurring between the collar-cells, the discovery made previously (in 1889) by the Recorder is here for the first time corroborated. The smallest collar-cells were observed by him in a Sponge identical with, or at least very similar to, *Acanthella stipitata*, Carter. Here they measure only 0.0017 mm. in height, and 0.0008 mm. in basal width. Among the largest collar-cells observed were those of *Grantia compressa*, which measure in life 0.012 mm. in height, and 0.0066 in basal width.

TOPSENT (61) corroborates the statement previously made by the Recorder, that in *Corticium candelabrum* the canals are clothed with a high epithelium, the elements of which are cylindrical, and have a convex free terminal face, which is destitute of a flagellum. On the other hand flagellated epithelial cells were found by him in the walls of the wide canals of *Placina*, in *Oscarella*, *Placortis simplex*, and *Placinastrrella copiosa*. In *Placina* these flagella are stouter than the flagella of the collar-cells; in *Oscarella* they are particularly long. By the possession of these flagellated epithelial cells these Sponges are distinguished from the other groups in which no such flagellated epithelia occur. He has found a well-developed cuticula on the outer surface of *Corticium candelabrum*. This is sometimes detached in the sections. He gives a photograph of such a section with a partially detached cuticula

E. CORTEX (61).

TOPSENT (61) finds the cortex very variously developed in the *Carnosa*. In *Dercitus* a thin ectochrote with microhabds and a collenchymatous layer, with large spherical cells, are met with. The latter contain—in *D. bucklandi*—pigment granules. In *D. plicatus* these elements are particularly large, twice the diameter of the homologous cells in *Ancorina mucronata*. In the living state they are filled with yellow, non-refringent globules. In paraffin sections they appear as vesicles, the contents of which are amassed in the centre, these forming a sort of nucleus. In the *Microsclerophora* the cortex is chondrenchymatous, that is to say, composed of a substance "fondamentale anhiste," which contains spherical

cells. It is thin on the upper side, but attains a considerable thickness on the lower face of the Sponge, where it surrounds the basal lacunes and forms the stolons by means of which the Sponge is fixed to the ground.

F. INTERSTITIAL LAYER (61).

TOPSENT (61) states that in the *Carnosa* this layer is sometimes (*Chondrosia*) very voluminous, and quite encloses the ciliated chambers, whilst in other forms (*Placina*) it is only slightly developed.

G. SEXUAL CELLS, PROPAGATION, AND DEVELOPMENT (14, 40, 49, 61).

DELAGE (14) says that the statoblasts of *Spongillidæ* are apparently nothing but indifferent portions of the body tissue, separated from the rest and surrounded by a capsule.

LENDENFELD (40) upholds the correctness of Sollas's figures of blastulæ of *Oscarella* against Heider.

MONTGOMERY (49) quotes two cases of protandric hermaphroditism in Sponges.

TOPSENT (61) vainly sought for sexual cells in *Chondrosia* and *Dercitus* in the winter months.

H. PHYSIOLOGY (5, 29, 40, 43, 61).

BIDDER (5) has made feeding experiments on Sponges. His results give, in every point, fresh testimony to the five conclusions drawn from his own experiments previously by the Recorder. Only in one point of less importance, not contained in these five theses, Bidder has come to a different conclusion. He thinks that the presence of carmine- and starch-grains in the surrounding water does *not* induce the Sponge to contract its pores. He has been just as unable, as was previously the Recorder, to discover anything in support of the views entertained by Sollas and Masterman concerning the sinking of collar-cells, when full of nutriment, into the interstitial layer, and there being transformed into amœboïd cells. Migration of collar-cells does seem to occur occasionally, but rarely, and then only under exceptionally unhealthy conditions. In certain pathological circumstances, probably connected with suffocation, the collar-cells elongate very greatly, diminishing in the diameter of the upper part, or collum. In certain other pathological conditions the collar is lost, though apparently it can be regenerated.

LENDENFELD (40) gives the reason why Heider's statements concerning the absorption of carmine by the collar-cells were not separately quoted by him.

TOPSENT (61) states that *Dercitus plicatus* is white, but contains in the interior yellow cells which sometimes become violet. He has also observed this change of colour taking place after the Sponge was immersed in alcohol.

LETELLIER (43) again treats of the manner in which the boring Sponges excavate their burrows. He says that if a small object is firmly attached to an oyster-shell and then torn off, it takes a portion of the shell with it and leaves a cavity, similar to the microscopic cavities in the walls of the tunnels excavated by the *Vioa*. The traction necessary to tear out a piece of the shell in this manner is smaller than the traction necessary to tear the tissue of boring Sponges. According to L., the boring Sponge produces some adhesive substance, glues itself therewith at any given point to the oyster-shell, then contracts in such a manner as to exert strong traction on the bit of shell-surface to which it is glued, tears a semi-globular piece out of it and finally ejects this. [The Recorder has observed a strong cuticula on all the surfaces of the boring *Vioas* coming in contact with the stone or shell in which they live.]

HUNDESHAGEN (29) gives an account of the iodine contained in the horny Sponges. This he says was the effective part of the "Spongix ustæ" of the old Pharmacopoea against goitre, and was first proved to exist in Sponges analytically by Vogel, jun. The bath Sponge contains only very little iodine, some tropical forms, however, which H. examined, were found to contain 8-14 per cent. : *Aplysina cauliformis* (*Luffaria cauliformis*, Carter), 8-10 per cent. ; *Aplysilla compressa* (*Aplysina compressa*, Carter), 9-10 per cent. ; and a Sponge [unknown to the Recorder] named *Verongia plicifera*, 11-14 per cent. No doubt all these analyses refer to the skeleton only. The "eingetrocknete Fleischmasse" of the last named contains 10 per cent. of iodine. In all these 1-2 per cent. of bromine and chlorine were also found. The less macerated and darker specimens contained much more iodine than the more macerated lighter coloured ones. Also in other tropical species, which the author refers to *Stelospongos*, *Cacospongia*, *Luffaria*, and *Verongia*, iodine was found, sometimes in great quantities, whilst in the tropical species of *Euspongia*, *Euchalina*, and *Chalinopsis*, only very little iodine, no more than in the common bath Sponge, was met with. The Mediterranean *Aplysina aërophoba* contains but little iodine, although its tropical relations are so rich in this substance. Bromine and chlorine, however, occur also in this species in considerable quantities.

That tropical Sponges, as a rule, contain more iodine than those of cooler climes, is analogous to the fact that the seaweeds of the tropics (the Gulf-stream drift-weed of the west coast of Ireland) is three times as rich in iodine as the seaweed of the temperate zone (the cut-weed of the Irish coast).

The chemical composition of the Spongin seems to be the same in all the Sponges rich in iodine, which the author calls iodine Sponges. It contains about 11-12 per cent. nitrogen and 4-6 per cent. ash (mostly carbonate of lime). On heating it burns under the formation of violet vapours. Boiling water has little effect. Under high pressure, however, the super-heated water dissolves the Spongin, whereby the iodine compounds are destroyed and the iodine itself left in the shape of iodide of ammonia. Ether, alcohol, etc., dissolve hardly any part of the Spongin.

Concentrated mineral acids drive out the iodine in violet vapours, which condense in the shape of pure iodine crystals. Diluted mineral acids produce hydrojodic acid and other volatile iodine compounds. Warm alkalis dissolve the Spongin. Neutralized, or after treatment with concentrated nitric acid, all the iodine may be precipitated with nitrate of silver. The silver præcipitate is in great part soluble in dilute nitric acid.

It appears that some of the iodine is lost by a process of natural fermentation and escapes in the shape of volatile compounds. This accounts for the smaller quantities of iodine in the more macerated specimens [and—as the Recorder would like to add—probably also for the peculiar smell of organic drift on the beach]. By the decomposition of this iodine-Spongin there is produced, besides glycocoll and leucin—which are contained in the decomposition products of ordinary Spongin—also tyrosin, which is absent from the latter. Although unable to ascertain in what combination the iodine is contained in these Sponges, he believes himself justified in supposing that “es müssten jodirte Amidosäuren vorliegen und zwar Iodamidofettsäuren oder Iodtyrosine oder beide zugleich.” According to the chemical differences of the different kinds of Spongin, H. proposes the terms Iodospongin, Chlorospongin, and Bromospongin. II. thinks that if these iodine-Sponges could be procured in sufficient quantities they would form a most valuable material from which iodine could be manufactured.

I. HABITS, BIONOMICS (5, 11, 50).

OKA (50) found *Syllis ramosa* living symbiotically in *Crateromorpha meyeri*.

BIDDER (5) says that the specimens of *Leucandra aspera* growing in impure water “throw out a fur of fine spicules,” and it has occurred to him “that this may be a filter against bacteria.”

BUCK (11) observed on *Spongylla fragilis* (Leidy), kept in an aquarium, repeated positive and negative growth, the Sponge waxing and waning alternately during the year and a half the observation lasted. The water current observed at the osculum was strong enough to carry small bodies to a distance of 5 cm. from the Sponge. The fresh specimens in the Bodensee are flesh-coloured, in the aquarium they became yellow. Similar observations were made on *Ephydatia mülleri*, Lieberkühn. Small fragments of this Sponge are able to live and grow. Nine days after the gemmulæ were placed in the aquarium the young Sponges crept out of them, and a fortnight later they began to develop Oscula. Concrecence of young Sponges growing near each other was frequently observed. Very detailed accounts of the rate of growth are given. The best food for *Spongillide* is, according to BUCK, water in which salad has been decaying; such water is full of Infusoria. The author gives an account of the sexuality of *Spongillide*, and states that, according to his experience, they do not, as other authors have supposed, die when their sexual products mature, or when they have produced gemmulæ. He has

repeatedly observed Spongillids continuing to live and to grow for months after propagation, and even producing two successive lots of gemmulæ: "meine Schwämme haben vor Beginn des Winters 1894-95 nochmals gemmulæ erzeugt, während die älteren Gebilde dieser Art im Mutterthiere unverändert verblieben." He thinks that, normally, gemmulæ are produced in the same Sponge many times successively.

GEOGRAPHICAL DISTRIBUTION.

A. GENERAL (22, 69).

WELTNER (69) gives a detailed account of the distribution of *Spongillidæ*. They occur up to altitudes of 2150 metres (*Spongilla lacustris*, Sierra Nevada). The highest locality for *Spongillidæ* in Central Europe is the St. Moritz Lake in Switzerland, which lies 1767 metres above the sea. They generally grow in shallow water, but also occur at greater depths if they find firm bodies there to which they can attach themselves. Of the 82 species, 38 are recorded from one locality only, and 32 have, as far as known, a very small distribution. Only 12 are widely distributed. Of known genera, 6 occur in the European-Siberian area, 2 in the Mediterranean, 1 in the Chinese, 3 in the Indian, 3 in the African, 1 in the Madagascarean, 3 in the Australian, 6 in the North American, and 7 in the South American areas. The most widely distributed genera are *Spongilla* and *Ephydatia*.

To the eight species of *Spongillidæ* hitherto found in Europe, HANITSCH (22) adds three species, *Ephydatia crateriformis*, Potts, *Heteromeyenia ryderi*, Potts, and *Tabella pennsylvanica*, Potts, which had previously only been known from America. These three American species have been found only in the west of Ireland. HANITSCH does not consider them as a remnant of a Spongillid fauna, in former times of a greater extent than now, but as immigrants from America, brought over the Atlantic, as gemmules, either by the Gulf-stream or by migratory birds.

B. FAUNISTIC.

Great Britain.—HANITSCH (20, 22) adds 3 species of *Spongillidæ* to the fauna of the west of Ireland. HERDMAN (25) adds 3 species to the fauna of Liverpool bay. BÜDDE (5) notices 5 species from Plymouth.

Continent of Europe.—BUCK (11) found 3 species of *Spongillidæ* in the Bodensee, and another in a pond in its vicinity. LENZ (42) records 2 species of *Spongillidæ* from the vicinity of Lübeck. LAMEERE (38) mentions 1 species of *Spongillidæ* from Belgium. HANITSCH (21) records 1 species of *Spongillidæ* from Portugal, the first Spongillid found in the Spanish peninsula.

Atlantic coast of Continental Europe.—LENZ (42) enumerates 5 species of Sponges from the coast near Lübeck. LAMEERE (38) records 5 species

from the Belgian coast. TOPSENT (61) records 8 species from the Atlantic coast of France. HANITSCH (21) mentions 27 species from the Portuguese coast.

Atlantic.—TOPSENT (60) states that the "Princess Alice" captured 15 species of *Hexactinellida*, 20 species of *Tetraxonida*, and 70 species of *Monaxonida* on her trip to the Azores.

Mediterranean.—BIDDER (5) notices 2 species of *Calcarea* from Naples. TOPSENT (61) records 14 species of Sponges from the Mediterranean coast of France. TOPSENT (35) says that 22 species were captured by the "Princess Alice" during her first cruise in the Mediterranean.

Indian Ocean.—F. E. SCHULZE (57) describes 15 species of *Hexactinellida* from the Indian Ocean. THURSTON (59) gives a list of the Sponges of the Gulf of Manaar after Dendy (1887 and 1889).

Northern Pacific.—OKA (50) mentions 1 species from the Japanese sea.

Australia.—DENDY (15) records 58 species of *Cornacuspongia* from the south coast of Australia. KIRK (34) describes 2 species of *Calcarea* from the coast of New Zealand.

GEOLOGICAL DISTRIBUTION (6, 12, 13, 27, 31, 45, 47, 54).

Precambrian.—OAYEUX (12).

Lower Cambrian.—JAMES (31).

Silurian.—RAUFF (54), *Lithistida*.

Culm.—HINDE (27), *Hexactinellida*.

Cretaceous.—MERRILL (42).

Oolithe.—BLEICHER (6).

Eocene.—DEECKE (13), *Tetractinellida*.

Pliocene.—MALFATTI (45).

PHYLOGENY and CLASSIFICATION (50, 58, 61).

LENDENFELD (50) states that his views concerning the systematic position of Sponges are similar to those previously expressed by Heider.

SOLLAS (58) gives a short account of the Sponges obtained by the "Challenger." The number of species obtained by the "Challenger" are: *Hexactinellida*, 90; *Tetraxonida*, 87; *Monaxonida* (including *Hexaceratina*), 247; *Calcarea*, 30. Together, 454.

TOPSENT (61) proposes the following arrangement of the Sponges combined by him to form the order *Carnosa* (Carter emend.): *Carnosa* (modified *Tetractinellids* of divers origin with a reduced spiculation). I. Suborder *Microtrienosa*: Genus 1, *Dercitus*, Gray; 2, *Corticella*, Sollas; 3, *Rhachella*, Sollas; 4, *Triptolemus*, Sollas; 5, *Thrombus*, Sollas; 5, *Samus*, Gray. II. Suborder *Microsclerophora*: Familia 1, *Corticidæ*; genus 7, *Corticium*, O. Schmidt; Familia 2, *Placinidæ*; genus 8, *Placina*, F. E. Schulze; 9, *Placortis*, F. E. Schulze; 10, *Placinastrella*, F. E. Schulze; Familia 3, *Oscarellidæ*; genus 11, *Oscarella*. III. Suborder *Oligosilicina*; Familia *Chondrosidæ*; genus 12, *Chondrilla*, O. Schmidt; 13, *Chondrosia*, Nardo; 14, *Thymosia*, Topsent.

METHODS.

HORNEL (28) recommends Formaline for the preservation of various marine animals, also Sponges.

BIDDER (5) says that *Grantia compressa* is particularly well adapted for being examined in the fresh (living) state; "the collars and moving flagella appear with diagrammatic distinctness."

BIDDER (5) says that collar-cells preserved and cut by the paraffin method show an average contraction of 5 : 4 linear in the best sections. In most preparations this contraction is uneven, producing Sollas's membrane and other fictitious appearances. His further statements concerning the general ill effects of the paraffin method contain nothing that is not well known to all practical workers.

III. SYSTEMATIC.

CALCAREA.

HOMOCOELA.

[Nothing.]

HETEROCOELA (5, 21, 34).

Lamontia, n. g., for *L. zona*, n. sp.; KIRK, Tr. N. Zealand Inst. xxvii, p. 289.

Sycon dendyi; KIRK, t. c. p. 287, n. sp.

Leucandra bulbosa; HANITSCH, P. Liverp. biol. Soc. ix, p. 206, n. sp.

Sycandra raphanus and *Leucandra aspera*: notes on; BIDDER, Quart. J. Micr. Sci. xxxviii.

Amphite paulini, description; HANITSCH, P. Liverp. biol. Soc. ix, pp. 207 & 208.

SILICEA.

TRIAXONIA.

HEXACTINELLIDA (14, 30, 57).

Hyalonematidae: F. E. SCHULZE (57) considers the dimensions of the microscleres as fairly constant within the species (of *Hyalonematidae*), and makes use of them in the diagnoses of the species. He gives tables for the identification of the genera and species.

Poliopogon united with *Pheronema*; F. E. SCHULZE, Abh. Ak. Berlin, 1894 (1895).

Hyalonema, modified diagnosis; F. E. SCHULZE, t. c.

† *Craticularia razzorei*, MALFATTI, Atti Acc. Pont. Lincei, iv, p. 116, n. sp.

Donatispongia patellaris, MALFATTI, t. c. p. 116, n. sp.

F. E. SCHULZE, Abh. Ak. Berlin, 1894 (1895), describes the following new species of *Hyalonematidae*:—

Pheronema raphanus, p. 8; *P. circumpalatum*, p. 13.

Hyalonema aculeatum, p. 19; *H. heideri*, p. 23; *H. indicum*, p. 24; *H. pirum*, p. 27; *H. heymonsi*, p. 29; *H. weltneri*, p. 30; *H. masoni*, p. 31; *H. alcocki*, p. 34; *H. investigatoris*, p. 37; *H. machrenthali*, p. 41; *H. cucumis*, p. 45.

HEXACERATINA.

[Nothing.]

TETRAXONIA.

TETRAXONIDA.

TETRACTINELLIDA (13, 21, 61).

MERRILL (47) describes fossil spicules, and establishes—with a ?—8 new species of *Geodia* on them.

TOPSENT (61) considers *Dercitus* as a degenerate descendant of the *Sani-dasterina*.

†*Astrophora*, n. g., for *A. baltica*, n. sp.; DEECKE, Mt. Ver. Vorpomm. xxvi, p. 169.

Pæcillastra armata, HANITSCH, P. Liverp. biol. Soc. ix, p. 213, n. sp.

TOPSENT, Arch. Zool. exp. iii, gives full descriptions of the following species:—

Placina monilopha, Schulze, p. 549; *P. dilopha*, Schulze, p. 552; *P. trilopha*, Schulze, p. 555.

Plucortis simplex, Schulze, p. 557.

Placinastrella copiosa, Schulze, p. 559.

Oscarella lobularis, Schmidt, p. 561.

Dercitus bucklandi, Bowerb., p. 528; *D. plicatus*, Schmidt, p. 531.

Corticella stelligera, Schmidt, p. 539.

Corticium candelabrum, Schmidt, p. 543.

Pæcillastra saxicola, Topsent, p. 584; *P. amygdaloides*, Carter, p. 585.

LITHISTIDA (31).

RAUFF (54) divides his Tribus *Pæcilocladinide* into two subtribes: (1) *Eutaxicladinæ* (skeleton composed entirely or chiefly of *Ennomoclones*). (2) *Anomocladinæ* (skeleton composed chiefly of *Anomoclones*).

†*Anomoclonella*, †*Pycnopegma*, and †*Dendroclonella*, n. gg.; RAUFF, Palæontogr. xli.

New species described by RAUFF, t. c. :—

†*Aulocopella winnipegensis*, p. 269 [sep. p. 393].

†*Anomoclonella zitteli*, p. 226 [sep. p. 350].

†*Pycnopegma pileum*, p. 233 [sep. p. 357]; †*P. callosum*, p. 236 [sep. p. 360]; *P. stromatoporides*, p. 239 [sep. p. 363].

†*Chiastoclonella headi*, p. 244 [sep. p. 369].

†*Dendroclonella rugosa*, p. 252 [sep. p. 376].

RAUFF, t. c. gives full descriptions of the following species:—

†*Aulocopium aurantium*, Oswald, p. 257 [sep. p. 381]; *A. cylindraceum*, Rømer, p. 267 [sep. p. 391].

†*Aulocopella cepa*, Rømer, p. 268 [sep. p. 392].

MONAXONIDA.

CLAVULINA (11, 23, 36).

LENDENFELD (41) states that *Papillella* (*Papillina*) *suberea*, O. Schmidt, is a free form of a boring Sponge, without microscleres, and probably identical with *Cliona dissimilis*, Ridley & Dendy. *Papillella* (*Papillina*) *nigricans*, O. Schmidt, has spirastrose microscleres, and is identical with *Osculina polystomella*, O. Schmidt; both are free forms of the boring Sponge described by O. Schmidt as *Vioa viridis*, by Sollas as *Cliona subulata*, by Ridley as *Vioa carteri*, and by Carter as *Cliona caribbea*. All these names are therefore synonyms of *Vioa viridis*. Besides the genera *Papillina* and *Osculina*, O. Schmidt, also the genus *Raphyrus*, Bowerbank, is to be considered as the free form of a boring Sponge.

Physcaphora, n. g., for *P. decorticatedum*, n. sp.; HANITSCH, P. Liverp. biol. Soc. ix, p. 214.

Chondrosia reniformis, Nardo, redescribed; TOPSENT, Arch. Zool. exp. iii, p. 568.

CORNACUSPONGIÆ.

Marine Forms (15, 21, 61).

Microtylotella, n. g., p. 25, for *M. güntneri*, n. sp., p. 26; DENDY, P. Soc. Victoria, viii.

Amphiestrella, n. g., DENDY, t. c. p. 27.

Fusifer, n. g., p. 49, for *F. fistulatus*, n. sp.; DENDY, t. c.

Thymosia, n. g., p. 574, for *T. guernei*, n. sp.; TOPSENT, Arch. Zool. exp. iii.

DENDY, P. Soc. Victoria, viii, describes the following new species:—

Esperella phillipensis, *spongiosa*, p. 15, *toxifer*, p. 16, *crassa*, p. 17, *rara*, p. 18.

Desmacidon australis, p. 19, *intermedia*, p. 20, *arcuifibrosa*, p. 21.

Iotrocha acerata, p. 24.

Forcepia carteri, p. 25.

Damiria australiensis, p. 28.

Myxilla victoriana, p. 30.

Clathria angulifera, p. 32, *alata*, p. 34, *myxilloides*, p. 35, *imperfecta*, p. 35.

Plumohalichondria uncifer, p. 41, *gravida*, p. 42.

Echinodictyum spongiosum, p. 45.

Acarinus tenuis, p. 50.

Ophlitaspongia gabrieli, p. 38, *axinelloides*, p. 39.

Raspailia vestigifera, p. 47.

Gellius pyrri, HANITSCH, P. Liverp. biol. Soc. ix, p. 211, n. sp.

Raspailia formidabilis, HANITSCH, p. 212, t. c. n. sp.

SPONGILLIDÆ (11, 20, 22, 64, 65, 66, 69).

- WELTNER (69) gives the number of known species of *Spongillidæ* as 82.
- WELTNER (69) classifies the *Spongillidæ* as follows:—Familia *Spongillidæ*, Gray. 1. Subfamilia *Spongillinæ*, Carter; Genus 1, *Spongilla*, Lamarck. 2. Subfamilia *Meyennia*, Vejdovsky; Genus 2, *Trochospongilla*, Vejdovsky; 3, *Ephydatia*, Lam.; 4, *Heteromeyenia*, Potts; 5, *Tubella*, Carter; 6, *Parmula*, Carter; 7, *Carterius*, Potts; 8, *Uruguayia*, Carter; 9, *Potamolepis*, Marshall. 3. Subfamilia *Lubomirskina*, Weltner; Genus 10, *Lubomirskia*, Dyb.
- TRAXLER (66) finds that the fossil spicules on which Ehrenberg based *Amphidiscus antediluvianus*, *clavatus*, *Spongolithes furca*, *acicularis*, *inflexa*, *aciculira*, *aspera*, *mesogougyla*, *philippensis*, *Lithasteriscus tuberculatus*, and *Lithosphæridium irregulare*, all belong to one and the same species, viz., *Spongilla lacustris*.
- TRAXLER (64) describes and figures some Spongillid spicules from the ooze at the bottom of the warm Héviz lake, some of which resemble the remarkable Amphistrongyles of *Uruguayia*, a genus found hitherto only in the tropics (Central Africa and South America).
- TRAXLER (65) describes and figures some Spongillid spicules from a "Kieselguhr," which originally came from Brazil (probably San Paulo), and refers them to two species of *Tubella*, and one species of *Meyenia*, two of these are recent.
- HANITSCH (10) mentions 3 American species as occurring in the West of Ireland.
- BUCK (4) mentions 4 species from the Bodensee and a pond in its vicinity.
- HANITSCH (12) redescribes the 7 species occurring in Great Britain, and gives figures of their spicules.
- WELTNER, Arch. Naturg. 1895, describes the following new species:—
Spongilla biseriata, *loricata*, p. 138, *permixta*, *sansibarica*, p. 140.
Ephydatia fecunda, p. 140, *fortis*, *subtilis*, p. 141.
Heteromeyenia insignis, p. 142. *Tubella multidentata*, p. 142, *pottsi*, p. 143.
Parmula cristata, p. 143.
Uruguayia amazonica, p. 144.
Tubella thumii, TRAXLER, Földtani Közl. xxv, p. 240.

Doubtful Forms.

- HÆCKEL (9) has a note on his deep-sea *Keratosa*, and states that "it required a very careful study before I could confirm the view of Dr. John Murray (stated immediately after their capture) that they were undoubtedly true Sponges."

XVIII. PROTOZOA.

BY

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AND

FREDERICK CHAPMAN, A.L.S., F.R.M.S.

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INTRODUCTION.

THE RECORD for 1895 shows a slight diminution in the number of titles, due to the smaller number of papers specially devoted to human pathology, as compared with the previous year.

Under Anatomy, the papers by LISTER and RHUMBLER on *Foraminifera*, and that of KARAWAIEW on *Radiolaria*, are of considerable importance. From the systematic aspect, the monograph of Crag *Foraminifera*, by RUPERT JONES, calls for special notice, it being the continuation of the monograph published by JONES, PARKER, & BRADY in 1866. Under Physiology, the processes of digestion in *Carchesium* are fully discussed by GREENWOOD. From the palæontological point of view, the discovery by HINDE & FOX of a series of strata almost entirely composed of *Radiolaria* is of special interest.

I. TITLES.*

1. *ANDREAE, A. Das fossile Vorkommen der Foraminiferengattung *Bathysiphon*, M. Sars. Verh. Ver. Heidelb. v (1894), p. 106. [Abstract in Zool. Centralbl. 2 Jhg. No. 1, fig. 8.]
2. ANDREWS, M. K. Notes on Moel Tryfaen. P. Belfast Nat. Field Club, ser. ii, iv, pt. 2, 1894-95.
List of *Foraminifera* by J. WRIGHT.
3. BAGG, R. M. The Cretaceous *Foraminifera* of New Jersey. Johns Hopkins Univ. Circ. xv, No. 121, pp. 10-12.
94 species, 4 of which are new.
— [See CLARKE, W. B. (38).]
4. BALBIANI, E. G. Sur la structure et la division du noyau chez le *Spirochona gemmipara*. Ann. Microgr. vii (1895), pp. 241-260 & 289-312, pl. ii. [Abstract in J. R. Micr. Soc. 1895, p. 644.]
BARBAGALLO-RAPISARDI, P. [See CASAGRANDE, O. G. V., & BARBAGALLO-RAPISARDI, P. (23).]
5. BARROIS, TH. Quelques observations au sujet du *Bodo urinarius*, Hassall. Rev. biol. Nord France, vii, No. 5, pp. 165-177, 5 figg.
6. BEARD, J. The conjugation of the *Infusoria*, and the meaning of the processes involved. Anat. Anz. ii, Bd. No. 8, pp. 245-255, 5 figg.
7. BERNDT, —. *Protozoen* in einem Leberabscesse. Deutsch. Zeit. für Chirurgie, Bd. xl, Nos. 1 & 2, 1894. [Abstract in J. R. Micr. Soc. 1895, pp. 543 & 646.]
— [See Centrbl. Bakter. Abt. i, ii, 1895, p. 212, and xvii, Nos. 18 & 19, p. 673.]
8. BILLET, A. Sur les *Hématozoaires* des Ophidiens du Haut-Tonkin. C.R. Soc. Biol. 1895 (10), ii, No. 2, pp. 29-31. Abstract in Ann. Microgr. vii, 1895, pp. 171-173, and in J. R. Micr. Soc. 1895, p. 441.
2 new species.
BLANCHARD, R. [See LAVERAN, A., & BLANCHARD, R. (126).]
9. BONNEY, T. G. On the mode of occurrence of *Eozoon canadense* at Côte St. Pierre. Geol. Mag. iv, Dec. ii, pp. 292-299, figg. 1 & 2. [Abstract in J. R. Micr. Soc. 1895, p. 543.]
10. BOSANQUET, W. C. On the anatomy of *Nyctotherus ovalis*. J. R. Micr. Soc. 1895, pp. 404-406, pl. ix. [Abstract in Zool. Centralbl. Jhg. 2, No. 19, p. 586.]
11. BRANDT, K. Biologische und faunistische Untersuchungen an *Radiolarien*. Zool. Jahrb. Syst. ix (1895), pp. 27-74.

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

12. BRAUN, M. Zum Vorkommen der *Sarcosporidien* beim Menschen. Centrbl. Bakter. xviii, No. 1, p. 13.
13. °——. Tierische Parasiten des Menschen. Würzburg : 1895.
- 13A. BROECK, E. VAN DEN. Étude préliminaire sur le dimorphisme des *Foraminifères* et des *Nummulites* en particulier. Proc.-verb. Soc. Mal. Belg. xxii, 1893, pp. xviii-xxiii.
14. BROWNE, E. T. Faunistic notes. J. Mar Biol. Ass. iv, p. 169.
15. BUNDLE, A. Ciliate Infusorien im cœcum des Pferdes. Zeitschr. wiss. Zool. Bd. 60, Hft. 2, pp. 284-350, pls. xv & xvi. [Abstract in Zool. Anz. xviii, No. 489, p. 408, and J. R. Micr. Soc. 1895, pp. 644 & 645.]
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[See also ANDREWS (2).]
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II. BIOLOGY.

1. ANATOMY.

BOSANQUET (10) describes a micronucleus in *Nyctotherus ovalis*.

CHAPMAN (30) discusses the position of the *Amphisteginae* with thickened tests, and shows that in this genus there is a definite inter-septal canal-system.

EHRMANN (60) considers that the contractile vacuole in the *Infusoria* has an excretory function, and discusses the character and significance of the canals connected with it.

KARAWAIEW (110). The structure of the central capsule of the Radiolarian *Aulacantha scolymantha* is carefully described, and the division of the nucleus is shown to be brought about by very complex processes of a karyokinetic character. The Phaeodellæ are considered to play an important part in connection with assimilation, and not to be algal cells. It is also shown that as many as four central capsules may be co-existent.

LABBÉ (119) describes a *Bananella lacazei*, a new genus and species of the *Cocciidiidea*.

LAUTERBORN (124) describes a new genus and species of lobose Rhizopod, *Paulinella chromatophora*, possessing a test and belonging to the *Euglyphinae*, mainly remarkable for the presence of two large blue-green bodies, which are true chromatophores.

LAUTERBORN (125) describes a freshwater species of the genus *Multicila*.

LISTER (138) shows (1) *Foraminifera* are dimorphic; (2) the two forms differ in the size of their central chamber, in the shape and mode of growth of the chamber succeeding the megalosphere and microsphere, and in the character of the nuclei; (3) that the megalospheric is much more abundant than the microspheric variety; (4) the megalospheric form comes into existence already invested by a shell; (5) and that under certain circumstances active zoospores are produced by *Foraminifera*. He argues in favour of a recurring cycle of generations.

RHUMBLER (176) describes the manner in which entosolenian *Lagenæ* may have been derived from *Nodosarian* forms.

RHUMBLER (178) suggests a new classification for the *Foraminifera*, based largely on palæontological considerations. The sandy forms are in general the more ancestral, the subsequent modifications into vitreous and porcellanous types, by ensuring greater protection for the organism, becoming more common in the later geological periods.

RHUMBLER (179) finds that many freshwater *Rhizopoda* do not add to their tests after the budding stage. Describes *Cyphoderia margaritacea* in detail, and finally discusses the mechanical importance and phylogeny of the test in the above organisms.

RYDER (182), having examined the "nettle-threads" of *Paramœcium*, comes to the conclusion that they do not differ from true cilia.

SCHAUDINN (191) discusses the life-history of *Calcituba polymorpha* describing the passage from plasmodial forms to those having distinct calcareous tests. The nuclear division is traced step by step, numerous nuclei being eventually produced from the division of the single nucleus.

STOKES (207) gives an account of the Infusorian *Vasicola annulata*, the only species of this genus having a brackish-water or marine habitat.

2. EMBRYOLOGY,

BALBIANI (4) gives an account of karyokinetic changes observed in the nucleus, during the process of gemmation in *Spirochona gemmipara*.

BEARD (6) discusses and supports an antithetic alternation of generations and spore-formation, with reduction in the *Infusoria*.

CHAPMAN (30) figures an embryo of *Amphistegina radiata* occurring in one of the peripheral chambers of the adult shell.

CLARKE, J. J. (35), describes the mitotic changes, resulting in direct segmentation, observed in *Coccidium oviforme*.

KEUTEN (113). The karyokinesis of *Euglena* must be regarded as a simple intermediate stage between direct and indirect nuclear division, the chromatic substance showing mitotic relationships, whilst the persistence and division of the nucleolus recall direct division.

LABBÉ (118) regards the nucleus in the *Protozoa* as homologous with that of the cell of the *Metazoa*, and it is only in the ciliated *Infusoria* that two nuclei occur which are distinct in function; in these the division is abnormal, due probably to physiological causes.

LAUTERBORN (121) regards the nuclear division in *Oeratum hirundinella* as neither direct or truly karyokinetic, but, as in the macro-nucleus of the ciliate *Infusoria*, of an intermediate character.

MITROPHANOW (154) observes that the nuclear division in the *Spherozoa* (*Radiolaria*) is truly indirect, but of a very simple character.

SCHAUDINN (192) describes *Amoeba binucleata*, the nuclei in which both act as one. The nuclear division is commonly mitotic, but direct nuclear division also yields individuals capable of propagating themselves. Other methods of nuclear division also exists.

3. PHYSIOLOGY AND BIOLOGY.

BRANDT (11) discusses the floating, sinking, and rising of *Radiolaria*, especially the *Spherozoa* and *Collidæ*. It is shown that sinking and rising are intimately associated with disappearance and re-appearance of vacuoles.

EBERLEIN (57) believes the ciliate *Infusoria* present in the stomachs of Ruminants to be helpful in changing cellulose into materials more capable of assimilation by the host.

GREENWOOD (78) studies the process of digestion in *Carchesium poly-pinum*, noting that this action may take place at any point throughout a relatively large part of the central substance; but the region of ejection is, like that of ingestion, definite.

KANTHACK & HARDY (109) discuss and compare the processes observed in the *Protozoan* and endodermal cell of the *Metazoa*, resulting in the capture, ingestion, and absorption of food-materials.

LE DANTEC (128) studies the method of nutrition in *Gromia* and *Amœba*.

LE DANTEC (130) holds that an *Amœba* completely spread out adheres by molecular attraction.

LINDNER (136) discusses an example of a stalkless parasitic *Vorticella*.

LUDLOFF (142) discusses the effect of electric currents upon the *Paramœcia*.

LUIÉ (143), following Schewiakoff, believes the movement of Gregarines, like that of the Diatomacœ, to be due to the propulsion of excretions from the body of the *Protozoon*.

MENDELSON (150) describes experiments showing that *Paramœcia* are negatively thermotropic to temperatures above 28° C., and positively thermotropic to temperatures below 24° C.

ZACHARIAS (227) continues his researches bearing on the periodic distribution of the Plankton fauna of Plön.

4. METHODS OF PRESERVATION AND PREPARATION.

CELLI & FIOCCA (27) find that *Amœbæ* are readily cultivated on *Fucus crispus*.

HORNELL (97) describes Formalin as a preservative medium for *Protozoa*.

5. DISTRIBUTION.

A. HOSTS AND SEATS OF PROTOZOA.

1. PROTOZOA (generally).

For their rôle in Human and Animal Pathology generally, see BRAUN (13), GABRITSCHESKY (76), HAUSER (91), who discusses in detail the relation of the *Protozoa* to malaria, the pébune in silkworms and tumours; MILLER (151), in relation to cancer; PFEIFFER (171-173), PICK (174), SICCIARDI (202), WINOGRADSKY (222), in nitrification; and ZUNE (229).

2. AMŒBA.

BERNDT (7), in abscess of liver; CAPITANIO (21), CELLI & FIOCCA (25-27), in human intestine and vagina; MONIEZ (155), and VIVALDI (218).

A. coli: CASAGRANDE & BARBAGALLO-RAPISARDI (23), and HARRIS (88).

3. SPOROZOA.

CLARKE, J. J. (34, 37), *Spermatobium* in *Oligochaeta*; EISEN (61), in birds and man; MINGAZZINI (153), in carcinoma, &c.; SAWTSCHENKO (187):

4. GREGARINIDEA.

In vaccine lymph, OGATA (164).

5. COCCIDIIDEA.

In mice, CLARKE, J. J. (33), SCHUBERG (198); *Klossia* in kidney of snail and dog, CLARKE, J. J. (34); *Coccidium oviforme* in liver of pigs, DEUPSER (54), LAGUESSE (120); in eggs of fowls, MONIEZ (155), PODWYSZOZKY (175), and SANFELICE (186).

6. MYXOSPORIDEA.

In fish, CLARKE, J. J. (34); THÉLOHAN (210) describes these in detail.

7. SARCOSPORIDEA.

In rabbit and horse, CLARKE, J. J. (31); man, BRAUN (12), and KASPAREK (112).

8. FLAGELLATA.

In liver, BERNDT (7), DOCK (55); in alimentary canal of man, SCHÜRMEYER (199); *Haematozoa* in relation to malaria, DANILEWSKY (40), HARTZELL (90), LAVERAN & BLANCHARD (126), and OZZARD (167); in serpents, BILLET (8).

9. CILIATA.

In urine, BARROIS (5); in cecum of horse, BUNDLE (15); in stomachs of Ruminants, EBERLEIN (57); *Vorticella* on *Daphnia pulex*, HARRIS (87), TORTORI (211); in blood of tortoises, THOMOPOULOS (212); *Peridinea* generally, SCHÜTT (200).

10. ACINETARIA.

CLARKE, J. J. (36), and SAND (185).

B. FAUNISTIC.

Plymouth.—Distribution of *Noctiluca*; BROWNE (14).

Ireland, Galway.—*Foraminifera*; WRIGHT (226).

France.—Roscoff, *Protozoa*; LABBÉ (117).

Germany.—Lakes of Plön, Holstein; seasonal distribution of Plankton *Protozoa*; ZACHARIAS (227).

Upper Rhine.—*Protozoa*, LAUTERBORN (122).

Tegern See, Bavaria.—*Protozoa*; RICHARD (180).

Sweden.—Pudde-, By-, and Hjeltefjords, *Foraminifera*; SCHAUDINN (190).

Finland.—Helsingfors, *Protozoa*; NORDQUIST (163A) & LEVANDER (133).

Italy.—Belluno.

Arabian Sea, near Laccadives.—*Foraminifera*; CHAPMAN (30).

Coasts of North America and West Indies.—*Foraminifera*; WOODWARD (223).

General Distribution in Oceans.—*Foraminifera* and *Radiolaria* especially; MURRAY (160).

C. GEOLOGICAL.

Eozoon canadense.—For organic nature; DAWSON (42 & 43). On petrographical nature; JOHNSTON-LAVIS & GREGORY (106). On occurrence; BONNEY (9).

Precambrian.—*Radiolaria*; CAYEUX (24).

Palæozoic, ? Ordovician.—Mullion I.: *Radiolaria*; FOX (74).

Carboniferous (Culm Measures).—*Radiolaria*, Devon and Somerset; HINDE & FOX (96).

Mesozoic.—Rhaetic, Wedmore, Somerset: *Foraminifera*; CHAPMAN (31).

Jurassic, Switzerland.—Mürren: *Nummulites* in Malm (criticism); LUBBOCK & ETHERIDGE (141).—Upper Jurassic: *Cyclamina*; SCHRODT (197).

Cretaceous.—Lower Greensand, Bargate Beds, Surrey: *Foraminifera*; CHAPMAN (29).—Surrey: *Radiolaria*; GRIMES (80).—Gault of Folkestone: species of *Cristellaria*; CHAPMAN (28).—Upper Greensand, Surrey: *Radiolaria*; GRIMES (80).—Chalk (Swanscombe, near Gravesend): *Foraminifera*; CHAPMAN (32).—Chalk (Melbourn Rock): *Radiolaria*; HILL & JUKES-BROWNE (94).—Chalk of England: general synopsis of *Foraminifera*; HERON-ALLEN (93).—Chalk of England: zonal distribution of *Foraminifera*; HUME (100).—Bohemia: *Foraminifera* in Baculite-marl of Tetschen; MATOUSCHIEK (148).—America, Cretaceous of New Jersey: *Foraminifera*; BAGG (3) and WOODWARD (224).—Chalk (Iowa): *Foraminifera*; CALVIN (20).—Cretaceous, Central Australia: *Foraminifera*; HOWCHIN (99).

Tertiary.—Eocene, Florence: *Orbitolites* and *Nummulites*; TRABUCCO (213).—Alabama and Mississippi: *Radiolaria*; CUNNINGHAM (39).—Mid-Atlantic: *Foraminifera*; CLARKE, W. B. (38).

Oligocene.—? Doberg, near Bünde: *Foraminifera*; HOSIUS (98).
Septarian-clay of Cleistow: *Foraminifera*; SCHACKO (188).

Miocene.—Apennines: *Radiolaria*; PANTANELLI (168).—New Jersey: *Foraminifera*; WHITFIELD (221).

Pliocene.—Orag of East Anglia: *Foraminifera*; JONES, T. R. (107), and BURROWS, H. W. (16–18).—St. Erth, Cornwall: *Foraminifera*; MILLET (152).—Austria, Vienna Basin: *Foraminifera*; KARRER (111), and RZEHAK (183).—Hungary, Upper Mediterranean beds: *Foraminifera*; FRANZENAU (75).—Pliocene of Italy: *Foraminifera*; DE AMICIS (44, 46–48), DERVIEUX (50, 52 & 53), EGGER (59), FORNASINI (64 & 65), and OPPENHEIM (166).—Tertiary of Poland: *Foraminifera*; GRZYBOWSKIEGO (81).—West Indies: *Radiolaria*; GREGORY (79).—Trinidad: *Foraminifera*; GUPPY (82).—Madagascar: Cretaceous and Tertiary *Foraminifera*; NEWTON (162).

Pleistocene.—Ireland, Glacial Deposits: *Foraminifera*; WRIGHT in SOLLAS & PRAEGER (204).—Moel Tryfaen: *Foraminifera*; WRIGHT in ANDREWS (2).—Denmark and Holstein: *Foraminifera*; MADSEN (145).

Comparative.—Cretaceous and Present: *Foraminifera*; HUME (101), and BURROWS & HOLLAND (19).

III. SYSTEMATIC.

A.—GYMNOMYXA.

Class 3.—LOBOSA.

- Amœba endodivisa*, n. sp., KING, J. Quekett Club, ser. ii, v, pp. 412 & 413, pl. xix, figg. 1-3.
- Lecquereusia modesta*, n. sp., RHUMBLER, Zeitschr. wiss. Zool. lxi, p. 101, pl. iv, fig. 2.
- Faulinella*, n. g., with *P. chromatophora*, n. sp., LAUTERBORN, Zeitschr. wiss. Zool. lix, pp. 537-544, pl. xxx, figg. 1-5.
- Pontigulasia*, n. g., with *P. compressa*, p. 105, pl. iv, fig. 13a, b; *P. incisa*, p. 105, pl. iv, figg. 5, 22-25; *P. spiralis*, p. 105, pl. iv, figg. 6-8, n. spp.; RHUMBLER; Zeitschr. wiss. Zool. lxi.

Class 6.—RETICULARIA.

- Ammodiscus auricula*, n. sp., p. 319, pl. xi, figg. 18a, b, *fusiformis*, n. sp., p. 319, pl. xi, figg. 20a, b, Rhætic, Wedmore, CHAPMAN, Ann. Nat. Hist. xvi. *A. pleurotomarioides*, n. sp., Neocomian of Surrey, CHAPMAN, Quart. J. Geol. Soc. 1, 1894, p. 697, pl. xxxiv, figg. 3a-c.
- Assilina subexponens*, n. sp., p. 28, pl. —, fig. 16, *subgranulosa*, pp. 27 & 28, pl. —, figg. 13 & 14, Tertiary of Venice, OPPENHEIM, "Ueber die Nummulites des venetianischen Tertiärs."
- Bathysiphon appeninicus*, n. sp., pp. 166 & 167, woodcut, fig. 1, *Taurinensis*, n. sp., pp. 168 & 169, woodcut, fig. 2, Oligocene and Miocene of Northern Italy, SACCO, Bull. Soc. geol. France, ser. 3, xxi, 1893.
- Bolivina arenosa*, n. sp., Arabian Sea, CHAPMAN, P. Zool. Soc. London, 1895, p. 24, pl. i, figg. 3a, b. *B. dilatata*, Rss., n. var. *angusta*, Older Pliocene of Monte Bartolomeo, EGGER, Jahresber. Naturhist. Ver. Passau, xvi, p. 11, pl. i, figg. 7, 12a, b. *B. gibbera*, n. sp., Pliocene of St. Erth, MILLET, R. geol. Soc. Cornwall, 1894, p. 656, pl. — figg. 1 & 2.
- Bulimina ovata*, d'Orb., n. var. *apiculata*, Older Pliocene of Monte Bartolomeo, EGGER, Jahresber. Naturhist. Ver. Passau, xvi, p. 17, pl. iii, fig. 15. *B. elongata*, d'Orb., n. var. *cylindrica*, p. 189, pl. ii, fig. 14, *truncata*, Gümbel, n. var. *angusta*, p. 189, pl. ii, fig. 11, Tertiary, Carpathians, GRZYBOWSKIEGO, Rozpr. Ak. Krakow, ix.
- Buliminopsis*, n. g., with *B. conulus*, n. sp., Tertiary of Austria, RZEHA, Ann. Hofmus. Wien, x, p. 217, pl. vi, fig. 2.
- Cristellaria articulata*, Rss., n. var. *verruculosa*, p. 106, pl. 1, fig. 9, *auris*, Soldani, n. var. *subtrigona*, p. 105, pl. i, fig. 15, *cultrata* (Montfort), n. var. *imperfecta*, pp. 107 & 108, pl. i, fig. 8, Lower Pliocene of Bonfornello, Sicily, DE AMICIS, Natural. Sicil. xiv, Nos. 4-7. *C. projecta*, n. sp., Cretaceous of New Jersey, BAGG, Johns Hopkins Univ. Circ. xv, No. 121, p. 11. *C. lobata*, Rss., n. var. *subangulata*,

- Cretaceous (Baculite-marls) of Tetschen, MATOUSCHEK, Lotos, Neue Folge, xv (xliii), p. 148, pl. —, fig. 10. *C. clericii*, n. sp., Italian Tertiaries, FORNASINI, Bologna, 1895. *C. bradyana*, n. sp., p. 654, pl. x, figg. 13a, b, *costulata*, n. sp., p. 649, pl. ix, fig. 10, *exilis*, Rss., n. var. *crispata*, p. 647, pl. ix, figg. 4a, b, *striata*, n. sp., p. 646, pl. ix, figg. 2a, b, Gault of Folkestone, CHAPMAN, J. R. Micr. Soc. 1894.
- Cyclammia aculidorsata* (Hantken), n. var. *exigua*, Septarian Clay, Frankfort-on-Main, p. 735, woodcut, *jaccardi*, n. sp., Astartian of Col des Roches, Neuchatel, pp. 734 & 735, woodcut, SCHRODT, Zeitschr. Deutsch. geol. Ges. xlv, 1893. *C. pliocæna*, n. sp., Lower Pliocene of Bonfornello, Sicily, DE AMICIS, Natural. Sicil. xiv, pp. 60–63, pl. i, fig. 19.
- Dimorphina capellinii*, n. sp., Lower Pliocene of Bonfornello, Sicily, DE AMICIS, Natural. Sicil. xiv, pp. 111 & 112, pl. i, figg. 18a, b.
- Discorbinda uhligi*, n. g., Tertiary, Carpathians, GRZYBOWSKIEGO, Rozpr. Ak. Krakow, ser. ii, ix, p. 199, pl. iv, figg. 10 & 11.
- Ellipsoidina exponens*, n. sp., pp. 650 & 651, pl. xli, fig. 13, *subnodosa*, n. sp., p. 650, pl. xli, fig. 12, Tertiary of Trinidad, GUPPY, P. Zool. Soc. London, 1894.
- Flabellina rugosiformis*, n. sp., Tertiary of Piedmont, DERVIEUX, Boll. Soc. geol. Ital. xi (2) 1893, p. 242, pl. iv, figg. 24, 26.
- Fronicularia bicostata*, n. sp., pp. 141 & 142, pl. —, fig. 6, *longicostata*, n. sp., p. 142, pl. —, fig. 7, Cretaceous (Baculite-marls) of Tetschen, MATOUSCHEK, Lotos, Neue Folge, xv (xliii). *F. clarki*, n. sp., Cretaceous, New Jersey, BAGG, Johns Hopkins Univ. Circ. xv, No. 121, p. 11. *F. flabelliformis*, n. sp., Tertiary of Trinidad, GUPPY, P. Zool. Soc. London, 1894, p. 651, pl. xli, figg. 5 & 6. *F. frondicula*, n. sp., Miocene, Italy, FORNASINI, Bologna, 1895. *F. revoluta*, n. sp., p. 240, pl. iv, fig. 3, *Rovasendree*, n. sp., pp. 240 & 241, pl. iv, fig. 17, Tertiary of Piedmont, DERVIEUX, Boll. Soc. geol. Ital. xi (2), 1893.
- Gaudryina lobata*, n. sp., p. 651, pl. xli, fig. 2, *pariana*, n. sp., p. 651, pl. xli, figg. 21 & 22, Tertiary of Trinidad, GUPPY, P. Zool. Soc. London, 1894.
- Gonatosphæra*, n. g., with *G. prolata*, Tertiary of Trinidad, GUPPY, P. Zool. Soc. London, 1894, pp. 651 & 652, pl. xli, figg. 14–19.
- Haplophragmium concava*, n. sp., Cretaceous, New Jersey, BAGG, Johns Hopkins Univ. Circ. xv, No. 121, p. 11. *H. fornasinii*, n. sp., Lower Pliocene, Trinité-Victor (Nizzardo), DE AMICIS, Bull. Soc. geol. Ital. xii, 1893, p. 328, pl. iii, figg. 3a, b. *H. neocomianum*, n. sp., Neocomian, Surrey, CHAPMAN, Quart. J. Geol. Soc. 1, 1894, p. 695, pl. xxxiv, figg. 2a, b. *H. rhæticum*, n. sp., Rhætic, Wedmore, CHAPMAN, Ann. Nat. Hist. xvi, p. 314, pl. xi, figg. 3 & 4. *H. truncatuliniforme*, n. sp., Arabian Sea, CHAPMAN, P. Zool. Soc. London, 1895, pp. 16 & 17, pl. i, figg. 2a–c. *H. wrighti*, n. sp., Lower Pliocene, Bonfornello, DE AMICIS, Natural. Sicil. xiv, p. 58, pl. i, fig. 12.

- Hormosira lateralis*, n. sp., Tertiary, Carpathians, GRZYBOWSKIEGO, Rozpr. Ak. Krakow, ser. ii, ix, p. 186, pl. ii, fig. 2.
- Lacazina wichmanni*, n. sp., Tertiary, N.W. coast of New Guinea, SCHLUMBERGER, Bull. Soc. geol. France, xxii, 1894, pp. 296-298, pl. xii, figg. 2-5, woodcut, fig. 1.
- Lagena amnectens*, n. sp., p. 203, pl. vii, figg. 11a, b, *lacunata*, n. sp., pp. 205 & 206, pl. vii, figg. 12a, b, Crag of Suffolk, BURROWS & HOLLAND, Pal. Soc. Mon. 1895. *L. apiculata*, Rss., n. var. *odontostoma*, Lower Pliocene, Trinité-Victor (Nizzardo), DE AMICIS, Boll. Soc. geol. Ital. xii, 1893, pp. 352 & 353, pl. iii, figg. 9a, b. *L. aspera*, Rss., n. var. *spinifera*, p. 27, pl. i, fig. 4, *marginata* (W. & J.), n. var. *catenulosa*, p. 23, pl. i, figg. 5a, b, Arabian Sea, CHAPMAN, P. Zool. Soc. London, 1895. *L. cornubiensis*, n. sp., pp. 657 & 658, pl. i, figg. 4a, b, *cymbæformis*, n. sp., p. 657, pl. i, figg. 3a-c, Pliocene, St. Erth, MILLETT, Rep. Geol. Soc. Cornwall, 1894. *L. clavata*, d'Orb., n. var. *exilis*, Pliocene, Ponticello di Savena, FORNASINI, Bologna, 1895. *L. felsinea*, n. sp., Pliocene, Ponticello di Savena, FORNASINI, Bologna, 1894. *L. meyeriana*, n. sp., Neocomian, Surrey, CHAPMAN, Quart. J. Geol. Soc. 1, 1894, p. 706, pl. xxxiv, figg. 7a, b. *L. sphaericostata*, n. sp., Tertiary, Carpathians, GRZYBOWSKIEGO, Rozpr. Ak. Krakow, ser. ii, ix, pp. 189 & 190, pl. ii, fig. 18. *L. danica*, n. sp., Pleistocene, Denmark, MADSEN, Medd. Dansk. Geol. For. No. 2, 1895, pp. 196 & 197, pl. —, fig. 4. *L. horrida*, n. sp., Cretaceous (Baculite-marls) of Tetschen, MATOUSCHEK, Lotos, Neue Folge, xv (xliii), p. 132, pl. —, fig. 3.
- Linderina*, n. g., with *L. brugesi*, n. sp., Upper Eocene of Bruges (Gironde); SCHLUMBERGER, Bull. Soc. geol. France, xxi, 1893, pp. 120-123, pl. iii, figg. 7-9, woodcuts 3-5.
- Lingulina hibschi*, n. sp., Cretaceous (Baculite-marls) of Tetschen, MATOUSCHEK, Lotos, Neue Folge, xv (xliii), p. 193, pl. —, fig. 5. *L. semiornata*, Rss., n. var. *crassa*, Neocomian, Surrey, CHAPMAN, Quart. J. Geol. Soc. 1, 1894, p. 708, pl. xxxiv, figg. 8a, b. *L. sherborni*, n. sp., Tertiary, Austria, RZEHA, Ann. Hofmus. Wien, x, No. 2, p. 219, pl. vi, fig. 3.
- Lingulinopsis himerensis*, n. sp., Lower Pliocene of Italy, DE AMICIS, Atti Soc. Toscana, Memorie, xiv, 1894, pp. 24-29, pl. ii, figg. 3a-c.
- Margulinina horrida*, n. sp., pp. 101 & 102, pl. i, fig. 5, *hirsuta*, d'Orb., n. var. *subechinata*, p. 101, pl. i, fig. 4, Lower Pliocene, Bonfornello, DE AMICIS, Natural. Sicil. xiv. *M. ostiata*, n. sp., Tertiary, Carpathians, GRZYBOWSKIEGO, Rozpr. Ak. Krakow, ser. ii, ix, p. 194, pl. iii, fig. 12.
- Miliolina tetschensis*, n. sp., Cretaceous (Baculite-marls) of Tetschen, MATOUSCHEK, Lotos, Neue Folge, xv (xliii), p. 124, pl. —, fig. 2.
- Nodosaria camerani*, n. sp., pp. 612 & 613, pl. v, figg. 40 & 41, *conica*, Silvestri, n. var. *rovasendæ*, pp. 620 & 621, *de amicis*, n. sp., p. 624, pl. v, figg. 62 & 63, *forasini*, n. sp., pp. 602 & 603, pl. v, fig. 13, *globulosa*, n. sp., p. 614, pl. v, fig. 44, *inornata* (d'Orb.), n. var. *brady-*

- ensis*, p. 610, pl. v, figg. 30 & 31, *paronæ*, n. sp., pp. 611 & 612, pl. v, figg. 36-39, *pauperata* (d'Orb.), n. var. *elongata*, p. 612, pl. v, fig. 39, *plicosuturata*, n. sp., pp. 613 & 614, pl. v, fig. 43, *radicula* (L.), n. var. *glanduliniformis*, pp. 600 & 601, pl. v, figg. 3-7, Tertiary of Piedmont, DERVIEUX, Boll. Soc. geol. Ital. xii (4) 1893. *N. ciofali*, n. sp., pp. 22-24, pl. ii, figg. 2a, b, *di stephani*, n. sp., pp. 20-22, pl. ii, figg. 1a, b, Lower Pliocene, Italy, DE AMICIS, Atti Soc. Toscana, Memorie, xiv, 1894. *N. columnaria*, n. sp., p. 191, pl. iii, fig. 13, *longisulcata*, n. sp., pp. 191 & 192, pl. iii, fig. 5, Tertiary, Carpathians, GRZYBOWSKIEGO, Rozpr. Ak. Krakow, ser. ii, ix. *N. communis* (d'Orb.), n. var. *inaequaliter-loculata*, p. 91, pl. 1, fig. 2, *himerensis*, n. sp., p. 70, pl. i, fig. 1, Lower Pliocene of Bonfornello, DE AMICIS, Natural. Sicil. xiv. *N. scabra*, n. sp., Lower Pliocene, Trinité-Victor (Nizzardo), DE AMICIS, Boll. Soc. geol. Ital. xii, 1893, pp. 374 & 375, pl. iii, figg. 10a, b. *N. soluta*, Rss., n. var. *subaculeata*, Arabian Sea, CHAPMAN, P. Zool. Soc. London, 1895, p. 31, pl. i, fig. 6. *N. tenuis*, n. sp., Cretaceous (Baculite-marls) of Tetschen, MATOUSCHEK, Lotos, Neue Folge, xv (xlili), p. 135, pl. —, fig. 4. *N. williamsi*, n. sp., Cretaceous, New Jersey, BAGG, Johns Hopkins Univ. Circ. xv, No. 121, p. 11.
- Nodosinella wedmorensis*, n. sp., Rhætic, Wedmore, CHAPMAN, Ann. Nat. Hist. xvi, p. 320, pl. xi, figg. 21-24.
- Nummulites veronensis*, n. sp., Tertiary, Venice, OPPENHEIM, "Ueber die Nummulites des venetianischen Tertiärs," pp. 26 & 27, pl. —, figg. 6 & 7.
- Patellina antiqua*, n. sp., Neocomian, Surrey, CHAPMAN, Quart. J. Geol. Soc. l, 1894, pp. 718 & 719, pl. xxxiii, figg. 12a-c.
- Planispirina obscura*, n. sp., Neocomian, Surrey, CHAPMAN, Quart. J. Geol. Soc. l, 1894, p. 693, pl. xxxiv, figg. 1a-c.
- Polymorphina concava*, Williamson, n. var. *dentimarginata*, p. 717, pl. xxxiv, figg. 14a, b, *frondicularioides*, n. sp., pp. 716 & 717, pl. xxxiv, figg. 13a, b, *rhabdogonioides*, n. sp., p. 716, pl. xxxiv, figg. 12a, b, Neocomian, Surrey, CHAPMAN, Quart. J. Geol. Soc. l, 1894. *P. deflexa*, n. sp., p. 196, pl. iv, figg. 1 & 2, *obovata*, n. sp., p. 197, pl. iii, fig. 23, Tertiary, Carpathians, GRZYBOWSKIEGO, Rozpr. Ak. Krakow, ser. ii, ix. *P. regularis*, n. var. *parallela*, Pliocene, St. Erth, MILLETT, Rep. Geol. Soc. Cornwall, 1894, p. 658, pl. —, figg. 5a, b.
- Pulvinulina herculea*, n. sp., Tertiary, Carpathians, GRZYBOWSKIEGO, Rozpr. Ak. Krakow, ser. ii, ix, pp. 203 & 204, pl. v, fig. 7.
- Ramulina exigua*, n. sp., p. 223, pl. vi, fig. 4, *globulifera*, Brady, *miocenica*, n. var., p. 222, pl. vi, fig. 6, Austrian Tertiary, RZEHAH, Ann. Hofmus. Wien, x, No. 2.
- Rhaphidoscene*, n. g., with *R. conica*, n. sp., Faroe Channel, 440 faths., JENNINGS, J. Linn. Soc. xxv, pp. 320 & 321, pl. x.
- Robulina cincta*, n. sp., p. 195, pl. iii, fig. 19, *fallax*, n. sp., pp. 195 & 196, pl. iii, fig. 20, Tertiary, Carpathians, GRZYBOWSKIEGO, Rozpr. Ak. Krakow, ser. ii, ix.

- Rotalia beccarii* (L.), *lucida*, n. var., Pleistocene, Denmark, MADSEN, Medd. Dansk. Geol. For. No. 2, 1895, pp. 214 & 215, pl. —, fig. 6.
- R. hantkeni*, n. sp., Tertiary, Carpathians, GRZYBOWSKIEGO, Rozpr. Ak. Krakow, ser. ii, ix, p. 205, pl. v, fig. 17.
- Seguenza anomala*, n. sp., Lower Pliocene, Paternò, SILVESTRI, Atti Rend. Accad. Sc. Lett. Arti Acireale (n.s.) v, 1893, p. 17, pl. iv, figg. 50-52.
- Silicina epigona*, n. sp., Austrian Tertiary, RZEHAk, Ann. Hofmus. Wien, x, No. 2, p. 214, pl. vi, fig. 1.
- Spirocolulina arenaria*, Brady, n. var. *perlonga*, Lower Pliocene, Trinité-Victor (Nizzardo), DE AMICIS, Boll. Soc. geol. Ital. xii, 1893, pp. 313 & 314, pl. iii, figg. 1a, b. *S. plana*, n. sp., Oretaceous (Baculite-marls) of Tetschen, MATOUSCHEK, Lotos, Neue Folge, xv (xliii), p. 124, pl. —, fig. 1.
- Spiroplecta clarki*, n. sp., Eocene of Maryland and Virginia, BAGG, Johns Hopkins Univ. Circ. xv, No. 121, p. 6.
- Stacheiu cuspidata*, n. sp., p. 325, pl. xii, figs. 9 & 10, *dispansa*, n. sp., p. 324, pl. xii, fig. 8, *intermedia*, n. sp., p. 322, pl. xi, fig. 25, *triradiata*, n. sp., p. 323, pl. xii, figg. 3-5, Rhætic, Wedmore, CHAPMAN, Ann. Nat. Hist. xvi.
- Stilostomella*, n. g., with *S. rugosa*, n. sp., Tertiary, Trinidad; GUPPY, P. Zool. Soc. London, 1894, pp. 649 & 650, pl. xli, figg. 10 & 11.
- Textularia gibbosa*, d'Orb., n. var. *transcendens*, pp. 337 & 338, pl. iii, figg. 5a-c, *tuberosa*, d'Orb., n. var. *compressa*, p. 336, pl. iii, figg. 4a-c, Lower Pliocene, Trinité-Victor (Nizzardo); DE AMICIS, Boll. Soc. geol. Ital. xii, 1893.
- Trillina howchini*, n. sp., Tertiary, Muddy Creek, Victoria, SCHLUMBERGER, Bull. Soc. geol. France, xxi, 1893, p. 119, pl. iii, fig. 6, woodcuts, figg. 1 & 2.
- Tritaxia pleurostoma*, n. sp., Austrian Tertiary, RZEHAk, Ann. Hofmus. Wien, x, No. 2, p. 216, pl. vii, fig. 4.
- Trochammina squamata*, J. & P., n. var. *limbata*, Neocomian, Surrey, CHAPMAN, Quart. J. Geol. Soc. 1, 1894, p. 697, pl. xxxiv, figg. 4a-c.
- Truncatulina livida*, n. sp., p. 200, pl. v, fig. 19, *omphalia*, n. sp., p. 201, pl. iv, fig. 14, *rzhaki*, n. sp., p. 202, pl. v, figg. 1-5, Tertiary, Carpathians, GRZYBOWSKIEGO, Rozpr. Ak. Krakow, ser. ii, ix.
- T. stelligera*, n. sp., Rhætic, Wedmore, CHAPMAN, Ann. Nat. Hist. xvi, p. 327, pl. xii, figg. 14a, b.
- Uvigerina canariensis*, d'Orb., n. forma *distoma*, Lower Pliocene, Italy, DE AMICIS, Atti Soc. Toscana, Memorie, xiv, 1894, pp. 29 & 30, pl. ii, figg. 5a, b.
- Vaginulina laubei*, n. sp., Oretaceous (Baculite-marls) of Tetschen, MATOUSCHEK, Lotos, Neue Folge, xv (xliii), p. 145, pl. —, fig. 9.
- V. neocomiana*, n. sp., Neocomian, Surrey, CHAPMAN, Quart. J. Geol. Soc. 1, 1894, p. 711, pl. xxxiv, figg. 10a, b, & 11.

Class 7.—RADIOLARIA.

- Acanthosphæra laxa*, n. sp., Lower Culm Measures, West of England, HINDE & FOX, Quart. J. Geol. Soc. li, p. 637, pl. xxvi, fig. 6.
- Carposphæra neocomiensis*, n. sp., Lower Greensand, Surrey, GRIMES, Geol. Mag. Dec. iv, ii, pp. 346 & 347, woodcut, fig. 1.
- Lithocyclia devoniensis*, n. sp., Lower Culm Measures, West of England, HINDE & FOX, Quart. J. Geol. Soc. li, p. 639, pl. xxvi, fig. 4.
- Porodiscus brevis*, n. sp., p. 640, pl. xxvii, figg. 2 & 3, *P. clathratus*, n. sp., p. 640, pl. xxvii, figg. 4 & 12, *P. lens*, n. sp., p. 640, pl. xxvii, fig. 10, *P. percinctus*, n. sp., p. 640, pl. xxvii, figg. 1 & 11, Lower Culm Measures, West of England, HINDE & FOX, Quart. J. Geol. Soc. li.
- Rhopalastrum clavatum*, n. sp., p. 641, pl. xxvii, fig. 9, *R. ingens*, n. sp., p. 641, pl. xxvii, fig. 6, Lower Culm Measures, West of England, HINDE & FOX, Quart. J. Geol. Soc. li.
- Sethodiscus chudleighensis*, n. sp., Lower Culm Measures, West of England, HINDE & FOX, Quart. J. Geol. Soc. li, p. 639, pl. xxvi, fig. 13.
- Theodiscus aculeatus*, n. sp., Lower Culm Measures, West of England, HINDE & FOX, Quart. J. Geol. Soc. li, p. 639, pl. xxvi, fig. 3.

B.—CORTICATA.

Class 1.—SPOROZOA.

- Bananella*, n. g., with *B. lacazei*, n. sp., LABBÉ, Arch. Zool. exp. (3) iii, No. 2, notes, pp. xv & xvi.
- Ceratomyxa*, n. g., with *C. appendiculata*, n. sp., p. 337, pl. vii, fig. 4, *C. arcuata*, n. sp., p. 335, pl. vii, figg. 16-19, *C. globulifera*, n. sp., p. 338, pl. viii, figg. 42 & 43, *C. pallida*, n. sp., p. 336, *C. reticularis*, n. sp., p. 337, pl. vii, figg. 26 & 27, *C. sphærulosa*, n. sp., p. 334, pl. vii, figg. 1-3, *C. truncata*, n. sp., p. 336, pl. viii, figg. 50-52, THÉLOHAN, Bull. Sci. France Belgique, xxvi.
- Chloromyxum caudatum*, n. sp., p. 346, pl. vii, fig. 36, *C. quadratum*, n. sp., p. 347, pl. ix, fig. 100, THÉLOHAN, Bull. Sci. France Belgique, xxvi.
- Danilevskya pythonis*, n. sp., BILLET, C.R. Soc. Biol. (10) ii, No. 2, p. 30, woodcuts, figg. 2 & 3.
- Glugea acuta*, n. sp., p. 358, pl. ix, fig. 132, *G. cordis*, n. sp., p. 359, pl. ix, fig. 130, *G. depressa*, n. sp., p. 359, pl. ix, fig. 129, *G. gigantea*, n. sp., p. 359, pl. ix, figg. 143 & 144, *G. marionis*, n. sp., p. 359, pl. vii, figg. 14 & 15, *G. ovoidea*, n. sp., p. 357, pl. ix, fig. 131, *G. punctifera*, n. sp., p. 357, pl. ix, figg. 118 & 119, THÉLOHAN, Bull. Sci. France Belgique, xxvi.
- Laverania hungari*, n. sp., BILLET, C.R. Soc. Biol. (10) ii, No. 2, p. 30, woodcuts, figg. 5 & 6.

- Leptotheca*, n. g., with *L. agilis*, n. sp., p. 332, pl. vii, figg. 11 & 29-31, *L. elongata*, n. sp., p. 332, pl. viii, figg. 37 & 38, *L. hepseti*, n. sp., p. 334, *L. parva*, n. sp., p. 333, pl. viii, figg. 23-25, *L. ranæ*, n. sp., p. 333, *L. renicola*, n. sp., p. 333, THÉLOHAN, Bull. Sci. France Belgique, xxvi.
- Myxidium histophilum*, n. sp., p. 341, pl. viii, fig. 49, *M. sphericum*, n. sp., p. 341, pl. vii, fig. 25, THÉLOHAN, Bull. Sci. France Belgique, xxvi.
- Myxobolus dispar*, n. sp., p. 348, pl. ix, fig. 86, *M. exiguus*, n. sp., p. 349, pl. ix, fig. 98, *M. pfeifferi*, n. sp., p. 350, pl. viii, figg. 65-78, THÉLOHAN, Bull. Sci. France Belgique, xxvi.
- Myxosoma ambiguum*, n. sp., THÉLOHAN, Bull. Sci. France Belgique, xxvi, p. 344.
- Rhabdospora thelohani*, n. sp., LAGUESSE, Rev. biol. Nord France, vii, No. 9, p. 360.
- Spermatobium*, n. g., in *Oligocheta* from Pacific coast of N. America, with *S. eclipidrii*, n. sp., pp. 2 & 3, pl. i, figg. 5, 10, 19, 38, & 42, *S. freundi*, n. sp., p. 2, pl. i, figg. 1-4, 6-9, 11-18, 20-32, 34-37, 39-41, & 43-45, EISEN, P. Calif. Ac. v.
- Sphaerospora divergens*, n. sp., p. 339, pl. vii, figg. 12 & 13, *S. rostrata*, n. sp., p. 339, pl. ix, figg. 92 & 93, THÉLOHAN, Bull. Sci. France Belgique, xxvi.

Class 2.—FLAGELLATA.

- Bicosæca phiala*, n. sp., from a pond, Trenton, N. Jersey, STOKES, P. Amer. Phil. Soc. xxxiii, 1894, p. 341, pl. xxi, fig. 10.
- Holomastigina*: a new sub-order of the *Flagellata*, proposed by LAUTERBORN, Zeitschr. wiss. Zool. lx, p. 245.
- Monas nephrodes*, n. sp., MAGGI, Rend. Ist. Lombardo, xxvi (1893), p. 354.
- Multicilia lacustris*, n. sp., LAUTERBORN, Zeitschr. wiss. Zool. lx, heft. 2, pp. 236-248.
- Salpingæca collaris*, n. sp., from standing water, Morris and Essex Canal, New Jersey, pp. 338 & 339, pl. xxi, fig. 2, *S. globosa*, n. sp., fresh-water near Trenton, attached to filamentous algæ, p. 338, pl. xxi, fig. 1, STOKES, P. Amer. Phil. Soc. xxxiii, 1894.

Class 3.—DINOFLAGELLATA.

- Prorocentrum hamatum*, n. sp., brackish water, Coney I., N. York, STOKES, P. Amer. Phil. Soc. xxxiii, 1894, p. 339, pl. xxi, fig. 3.

Class 5.—CILIATA.

- Blepharocodon*, n. g., with *B. appendiculatus*, n. sp., BUNDLE, Zeitschr. wiss. Zool. lx, heft. 2, pp. 336-338, pl. xvi, fig. 20.
- Blepharocorys*, n. g., with *B. jubata*, n. sp., BUNDLE, Zeitschr. wiss. Zool. lx, heft. 2, pp. 305-309, pl. xv, fig. 11.
- Blepharoprosthium*, n. g., with *B. pireum*, n. sp., BUNDLE, Zeitschr. wiss. Zool. lx, heft. 2, pp. 331-334, pl. xvi, fig. 18.

- Blepharosphæra*, n. g., with *B. intestinalis*, n. sp., BUNDLE, Zeitschr. wiss. Zool. lx, heft. 2, pp. 334-336, pl. xvi, fig. 19.
- Buetschlia postciliata*, n. sp., BUNDLE, Zeitschr. wiss. Zool. lx, heft. 2, pp. 329-331, pl. xvi, fig. 17.
- Caulicola*, n. g., with *C. valvata*, n. sp., brackish water, Coney I., N. York, STOKES, P. Amer. Phil. Soc. xxxiii, 1894, p. 341, pl. xxi, fig. 9.
- Codonella brandti*, n. sp., NORDQUIST, Medd. Soc. Faun. Fenn. xvii, 1892, p. 126, pl. —, figg. 1 & 2.
- Cothurnia spinosa*, n. sp., LABBÉ, Arch. Zool. exp. iii, pp. xiv & xv.
- Cycloprosthium*, n. g., BUNDLE, Zeitschr. wiss. Zool. lx, heft. 2, p. 288.
- Diplodinium caudatum*, n. sp., EBERLEIN, Zeitschr. wiss. Zool. lix, heft. 2, pp. 260 & 261, pl. xvii, fig. 16.
- Enchelyodon vesiculosus*, n. sp., pond, Trenton, STOKES, P. Amer. Phil. Soc. xxxiii, 1894, pp. 341 & 342.
- Nassula trichocystis*, n. sp., pond, Short Hills, N. Jersey, STOKES, P. Amer. Phil. Soc. xxxiii, 1894, p. 342, pl. xxi, fig. 11.
- Ophryoscolex caudatus*, n. sp., EBERLEIN, Zeitschr. wiss. Zool. lix, heft. 2, pp. 247-250, pl. xvi, figg. 4 (6 & 7).
- Paraisotricha truncata*, n. sp., BUNDLE, Zeitschr. wiss. Zool. lx, heft. 2, pp. 318-320, pl. xvi, fig. 14.
- Tintinnus bottnicus*, n. sp., NORDQUIST, Medd. Soc. Faun. Fenn. xvii, 1892, p. 126, pl. —, fig. 5.
- Urostyla vernalis*, n. sp., shallow pools, N. Jersey, attached to filamentous algæ, STOKES, P. Amer. Phil. Soc. xxxiii, 1894, pp. 342 & 343, pl. xxi, fig. 12.
- Vaginicola longipes*, n. sp., attached to aquatic plants, N. Jersey, STOKES, P. Amer. Phil. Soc. xxxiii, 1894, pp. 340 & 341, pl. xxi, figg. 7 & 8.
- Vasicola annulata*, n. sp., brackish water, Coney I., N. York, STOKES, J. N. York Micr. Soc. xi, pp. 47-51, woodcut.

Class 6.—ACINETARIA.

- Acineta corrugata*, n. sp., brackish water, Coney I., N. York, pp. 343 & 344, pl. xxi, figg. 13-15, *A. flexilis*, n. sp., fresh water, Trenton, N. Jersey, attached to *Spirogyra*, p. 344, pl. xxi, fig. 16, STOKES, P. Amer. Phil. Soc. xxxiii, 1894. *A. jorisi*, n. sp., Pas-de-Calais, on *Vesicularia* and *Sertularia*, SAND, Ann. Soc. Belge Micr. xix, pp. 166 & 167, pl. v, figg. 17, 18, 20, 24, & 25.
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- Hallezia multitentaculata*, n. sp., Pas-de-Calais, on *Leucosolenia (grantia)*, SAND, Ann. Soc. Belge Micr. xix, pp. 161 & 162, pl. v, figg. 3, 9, & 10.
- Tokophrya francottei*, n. sp., Pas-de-Calais, on *Sertularia* and *Ceramium rubrum*, SAND, Ann. Soc. Belge Micr. xix, p. 166, pl. v, fig. 13.

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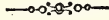
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CORRIGENDA.

- MAMMALIA, p. 33, heading, instead of "ROTIFERA," read "RODENTIA."
- AVES, p. 40, line 10, for "W. R. EAGLE CLARKE," read "W. EAGLE CLARKE."
- REPTILIA, p. 22, line 11, for "Riv. Mus. Paul.," read "Revist. Mus. Paulista."
- INSECTA, p. 3, line 21, for "*Bombecini*," read "*Bembecini*."
- " p. 81, line 23, for "*Eudomychidæ*," read "*Endomychidæ*."
- " p. 236, add "*Systropha pici*, Algeria, PÉREZ, p. 177, Rev. Sci. Bourbon. viii, n. sp."
- " p. 259, add "*Leucodesmia*, n. g., near *Stenomesus*, p. 403, for *L. typica*, n. sp., N. America, p. 404, HOWARD, Insect Life, vii."
- " p. 263, add "*Amasis citrina*, Algeria, PÉREZ, p. 173, Rev. Sci. Bourbon. viii, n. sp."
- " p. 330, line 2, add "AUSTEN (57, 58, 1016)."
- " p. 358, add "*Clastoptera osborni*, Colorado, GILLETTE & BAKER, p. 70, Bull. Colorado exp. Stat. 31, n. sp."
- PROTOZOA, p. 5, line 17, for "del," read "degli."
- " p. 10, title 115, for "M. de Lustroe," read "M. de Lustræ."
- " p. 17, title 213, for "dell' et arenaria," read "dell' arenaria."
- " p. 18, title 219, for "*Ichthyophthinus*," read "*Ichthyophthirius*."
- " p. 20, line 9 from bottom, for "exists," read "exist."
- " p. 22, line 6 from bottom, after "Belluno," add "LONGHI (140)."

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